



TBM 930

PILOT'S INFORMATION MANUAL

P/N DMJPIPYEE0 - Edition 0 - Revision 5

▲ CAUTION ▲

This information manual is a non-official copy of the pilot's operating handbook and may be used for general information purposes only. It is not kept current and therefore cannot be used as a substitute for airworthiness authorities approved manual which is the only one intended for operation of the airplane.

The list of effective pages in this manual corresponds to that of the basic Pilot's Operating Handbook.



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Customer care
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Table of contents

	Section
General	1
Limitations	2
Emergency procedures	3
Normal procedures	4
Performance	5
Weight and balance	6
Description	7
Airplane handling, servicing and maintenance	8
Supplements	9

List of effective pages and validities
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Airplane equipped with MOD70-0476-00

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Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
■ Title	0-5	FEB 20	0.18	0-4	APR 19
			0.19	0-4	APR 19
1	0-3	JUN 18	0.20	0-4	APR 19
2	0-3	JUN 18	0.21	0-5	FEB 20
			0.22	0-5	FEB 20
A	0-3	JUN 18	0.23	0-5	FEB 20
B	0-3	JUN 18	0.24	0-5	FEB 20
C	0-3	JUN 18	0.25	0-5	FEB 20
D	0-3	JUN 18	0.26	0-5	FEB 20
			0.27	0-5	FEB 20
■ 0.1	0-5	FEB 20	0.28	0-5	FEB 20
0.2	0-3	JUN 18	0.29	0-5	FEB 20
0.3	0-0	JAN 18	0.30	0-5	FEB 20
0.4	0-4	APR 19	0.31	0-5	FEB 20
0.5	0-3	JUN 18	0.32	0-5	FEB 20
0.6	0-3	JUN 18	0.33	0-5	FEB 20
0.7	0-3	JUN 18	0.34	0-5	FEB 20
0.8	0-3	JUN 18			
0.9	0-3	JUN 18	1.0.1	0-3	JUN 18
0.10	0-3	JUN 18	1.0.2	0-3	JUN 18
0.11	0-3	JUN 18			
0.12	0-3	JUN 18	■ 1.1.1	0-5	FEB 20
0.13	0-3	JUN 18	1.1.2	0-3	JUN 18
0.14	0-3	JUN 18			
0.15	0-3	JUN 18	1.2.1	0-3	JUN 18
0.16	0-3	JUN 18	1.2.2	0-3	JUN 18
0.17	0-3	JUN 18			

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
1.3.1	0-3	JUN 18			
1.3.2	0-3	JUN 18	2.6.1	0-3	JUN 18
1.3.3	0-3	JUN 18	2.6.2	0-5	FEB 20
1.3.4	0-3	JUN 18	2.6.3	0-5	FEB 20
			2.6.4	0-5	FEB 20
1.4.1	0-3	JUN 18	2.6.5	0-5	FEB 20
1.4.2	0-3	JUN 18	2.6.6	0-5	FEB 20
1.4.3	0-3	JUN 18	2.6.7	0-5	FEB 20
1.4.4	0-3	JUN 18	2.6.8	0-5	FEB 20
1.4.5	0-3	JUN 18	2.6.9	0-5	FEB 20
1.4.6	0-3	JUN 18	2.6.10	0-5	FEB 20
1.4.7	0-3	JUN 18	2.6.11	0-5	FEB 20
1.4.8	0-3	JUN 18	2.6.12	0-5	FEB 20
1.4.9	0-3	JUN 18	2.6.13	0-5	FEB 20
1.4.10	0-3	JUN 18	2.6.14	0-5	FEB 20
			2.6.15	0-5	FEB 20
1.5.1	0-3	JUN 18	2.6.16	0-5	FEB 20
1.5.2	0-3	JUN 18	2.6.17	0-5	FEB 20
1.5.3	0-3	JUN 18	2.6.18	0-5	FEB 20
1.5.4	0-3	JUN 18			
			2.7.1	0-3	JUN 18
1.6.1	0-3	JUN 18	2.7.2	0-3	JUN 18
1.6.2	0-3	JUN 18			
			2.8.1	0-3	JUN 18
2.0.1	0-5	FEB 20	2.8.2	0-5	FEB 20
2.0.2	0-3	JUN 18			
			2.9.1	0-3	JUN 18
2.1.1	0-3	JUN 18	2.9.2	0-5	FEB 20
2.1.2	0-3	JUN 18	2.9.3	0-5	FEB 20
			2.9.4	0-3	JUN 18
2.2.1	0-3	JUN 18	2.9.5	0-4	APR 19
2.2.2	0-3	JUN 18	2.9.6	0-3	JUN 18
			2.9.7	0-3	JUN 18
2.3.1	0-5	FEB 20	2.9.8	0-3	JUN 18
2.3.2	0-3	JUN 18	2.9.9	0-3	JUN 18
2.3.3	0-4	APR 19	2.9.10	0-3	JUN 18
2.3.4	0-3	JUN 18	2.9.11	0-5	FEB 20
			2.9.12	0-3	JUN 18
2.4.1	0-3	JUN 18			
2.4.2	0-3	JUN 18	3.A.1	0-4	APR 19
			3.A.2	0-4	APR 19
2.5.1	0-3	JUN 18			
2.5.2	0-3	JUN 18	3.0.1	0-4	APR 19

Pilot's Operating Handbook

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
3.0.2	0-3	JUN 18	3.7.2	0-3	JUN 18
3.0.3	0-4	APR 19	3.7.3	0-3	JUN 18
3.0.4	0-3	JUN 18	3.7.4	0-3	JUN 18
			3.7.5	0-3	JUN 18
■ 3.1.1	0-5	FEB 20	3.7.6	0-3	JUN 18
3.1.2	0-3	JUN 18	3.7.7	0-3	JUN 18
3.1.3	0-3	JUN 18	3.7.8	0-3	JUN 18
3.1.4	0-3	JUN 18	3.7.9	0-3	JUN 18
			3.7.10	0-3	JUN 18
3.2.1	0-3	JUN 18	3.7.11	0-3	JUN 18
3.2.2	0-3	JUN 18	3.7.12	0-3	JUN 18
			3.7.13	0-3	JUN 18
3.3.1	0-4	APR 19	3.7.14	0-3	JUN 18
3.3.2	0-4	APR 19	3.7.15	0-3	JUN 18
3.3.3	0-4	APR 19	3.7.16	0-3	JUN 18
3.3.4	0-4	APR 19			
3.3.5	0-4	APR 19	3.8.1	0-3	JUN 18
3.3.6	0-4	APR 19	3.8.2	0-3	JUN 18
3.3.7	0-4	APR 19	3.8.3	0-3	JUN 18
3.3.8	0-4	APR 19	3.8.4	0-3	JUN 18
3.3.9	0-4	APR 19	3.8.5	0-3	JUN 18
3.3.10	0-4	APR 19	3.8.6	0-3	JUN 18
3.3.11	0-4	APR 19	3.8.7	0-3	JUN 18
3.3.12	0-4	APR 19	3.8.8	0-3	JUN 18
3.4.1	0-3	JUN 18	3.9.1	0-3	JUN 18
3.4.2	0-4	APR 19	3.9.2	0-4	APR 19
3.4.3	0-4	APR 19	3.9.3	0-4	APR 19
3.4.4	0-3	JUN 18	■ 3.9.4	0-5	FEB 20
			3.9.5	0-5	FEB 20
3.5.1	0-3	JUN 18	3.9.6	0-3	JUN 18
3.5.2	0-3	JUN 18	3.9.7	0-3	JUN 18
3.5.3	0-3	JUN 18	3.9.8	0-3	JUN 18
3.5.4	0-3	JUN 18	3.9.9	0-3	JUN 18
3.5.5	0-3	JUN 18	3.9.10	0-3	JUN 18
3.5.6	0-3	JUN 18	■ 3.9.11	0-5	FEB 20
			3.9.12	0-3	JUN 18
3.6.1	0-3	JUN 18			
3.6.2	0-3	JUN 18	3.10.1	0-3	JUN 18
3.6.3	0-3	JUN 18	3.10.2	0-3	JUN 18
3.6.4	0-3	JUN 18	3.10.3	0-3	JUN 18
			3.10.4	0-3	JUN 18
3.7.1	0-3	JUN 18	■ 3.10.5	0-5	FEB 20

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
■ 3.10.6	0-5	FEB 20	3.12.25	0-3	JUN 18
3.10.7	0-4	APR 19	3.12.26	0-3	JUN 18
3.10.8	0-4	APR 19			
3.10.9	0-4	APR 19	4.0.1	0-4	APR 19
3.10.10	0-4	APR 19	4.0.2	0-4	APR 19
3.10.11	0-4	APR 19			
■ 3.10.12	0-5	FEB 20	4.1.1	0-3	JUN 18
3.10.13	0-4	APR 19	4.1.2	0-3	JUN 18
3.10.14	0-4	APR 19			
			4.2.1	0-3	JUN 18
3.11.1	0-3	JUN 18	4.2.2	0-3	JUN 18
3.11.2	0-3	JUN 18			
3.11.3	0-3	JUN 18	4.3.1	0-3	JUN 18
3.11.4	0-3	JUN 18	4.3.2	0-3	JUN 18
3.11.5	0-3	JUN 18	4.3.3	0-4	APR 19
■ 3.11.6	0-5	FEB 20	4.3.4	0-3	JUN 18
3.11.7	0-5	FEB 20	4.3.5	0-3	JUN 18
3.11.8	0-3	JUN 18	4.3.6	0-3	JUN 18
			4.3.7	0-3	JUN 18
3.12.1	0-3	JUN 18	4.3.8	0-4	APR 19
3.12.2	0-3	JUN 18	■ 4.3.9	0-5	FEB 20
3.12.3	0-3	JUN 18	4.3.10	0-5	FEB 20
3.12.4	0-3	JUN 18	4.3.11	0-3	JUN 18
3.12.5	0-3	JUN 18	4.3.12	0-3	JUN 18
3.12.6	0-3	JUN 18	4.3.13	0-3	JUN 18
3.12.7	0-3	JUN 18	4.3.14	0-3	JUN 18
3.12.8	0-3	JUN 18	4.3.15	0-3	JUN 18
■ 3.12.9	0-5	FEB 20	4.3.16	0-3	JUN 18
3.12.10	0-3	JUN 18	4.3.17	0-3	JUN 18
■ 3.12.11	0-5	FEB 20	4.3.18	0-3	JUN 18
3.12.12	0-3	JUN 18	4.3.19	0-3	JUN 18
3.12.13	0-3	JUN 18	4.3.20	0-3	JUN 18
3.12.14	0-3	JUN 18			
3.12.15	0-3	JUN 18	4.4.1	0-4	APR 19
3.12.16	0-3	JUN 18	4.4.2	0-3	JUN 18
3.12.17	0-3	JUN 18	■ 4.4.3	0-5	FEB 20
3.12.18	0-3	JUN 18	4.4.4	0-3	JUN 18
3.12.19	0-3	JUN 18	4.4.5	0-3	JUN 18
3.12.20	0-3	JUN 18	4.4.6	0-3	JUN 18
3.12.21	0-3	JUN 18	4.4.7	0-4	APR 19
3.12.22	0-3	JUN 18	4.4.8	0-4	APR 19
3.12.23	0-3	JUN 18	4.4.9	0-4	APR 19
3.12.24	0-3	JUN 18	4.4.10	0-4	APR 19

Pilot's Operating Handbook

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
4.4.11	0-4	APR 19	4.4.54	0-4	APR 19
4.4.12	0-4	APR 19	4.4.55	0-4	APR 19
4.4.13	0-4	APR 19	4.4.56	0-4	APR 19
4.4.14	0-4	APR 19	4.4.57	0-4	APR 19
4.4.15	0-4	APR 19	4.4.58	0-4	APR 19
4.4.16	0-4	APR 19	■ 4.4.59	0-5	FEB 20
4.4.17	0-3	JUN 18	4.4.60	0-4	APR 19
4.4.18	0-4	APR 19	4.4.61	0-4	APR 19
4.4.19	0-4	APR 19	4.4.62	0-4	APR 19
4.4.20	0-4	APR 19	4.4.63	0-4	APR 19
4.4.21	0-4	APR 19	■ 4.4.64	0-5	FEB 20
4.4.22	0-4	APR 19	4.4.65	0-4	APR 19
4.4.23	0-4	APR 19	4.4.66	0-4	APR 19
■ 4.4.24	0-5	FEB 20	4.4.67	0-4	APR 19
4.4.25	0-4	APR 19	4.4.68	0-4	APR 19
4.4.26	0-4	APR 19	4.4.69	0-4	APR 19
4.4.27	0-4	APR 19	4.4.70	0-4	APR 19
4.4.28	0-4	APR 19			
4.4.29	0-4	APR 19	4.5.1	0-3	JUN 18
4.4.30	0-4	APR 19	4.5.2	0-3	JUN 18
4.4.31	0-4	APR 19	4.5.3	0-4	APR 19
4.4.32	0-4	APR 19	4.5.4	0-4	APR 19
4.4.33	0-4	APR 19	4.5.5	0-3	JUN 18
4.4.34	0-4	APR 19	4.5.6	0-3	JUN 18
4.4.35	0-4	APR 19	4.5.7	0-3	JUN 18
4.4.36	0-4	APR 19	■ 4.5.8	0-5	FEB 20
4.4.37	0-4	APR 19	4.5.9	0-3	JUN 18
4.4.38	0-4	APR 19	4.5.10	0-3	JUN 18
4.4.39	0-4	APR 19	■ 4.5.11	0-5	FEB 20
4.4.40	0-4	APR 19	4.5.12	0-3	JUN 18
4.4.41	0-4	APR 19	4.5.13	0-3	JUN 18
4.4.42	0-4	APR 19	4.5.14	0-3	JUN 18
4.4.43	0-4	APR 19	4.5.15	0-3	JUN 18
4.4.44	0-4	APR 19	4.5.16	0-3	JUN 18
■ 4.4.45	0-5	FEB 20	4.5.17	0-3	JUN 18
4.4.46	0-4	APR 19	4.5.18	0-3	JUN 18
4.4.47	0-4	APR 19	4.5.19	0-3	JUN 18
4.4.48	0-4	APR 19	4.5.20	0-3	JUN 18
4.4.49	0-4	APR 19	4.5.21	0-3	JUN 18
4.4.50	0-4	APR 19	4.5.22	0-3	JUN 18
4.4.51	0-4	APR 19	4.5.23	0-3	JUN 18
4.4.52	0-4	APR 19	4.5.24	0-4	APR 19
4.4.53	0-4	APR 19	4.5.25	0-4	APR 19

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
4.5.26	0-3	JUN 18	5.9.3	0-5	FEB 20
4.5.27	0-3	JUN 18	5.9.4	0-5	FEB 20
4.5.28	0-5	FEB 20			
5.0.1	0-3	JUN 18	5.10.1	0-5	FEB 20
5.0.2	0-3	JUN 18	5.10.2	0-5	FEB 20
			5.10.3	0-5	FEB 20
5.1.1	0-3	JUN 18	5.10.4	0-5	FEB 20
5.1.2	0-3	JUN 18	5.10.5	0-5	FEB 20
			5.10.6	0-5	FEB 20
5.2.1	0-3	JUN 18	5.10.7	0-5	FEB 20
5.2.2	0-3	JUN 18	5.10.8	0-5	FEB 20
			5.10.9	0-5	FEB 20
5.3.1	0-3	JUN 18	5.10.10	0-5	FEB 20
5.3.2	0-3	JUN 18			
5.4.1	0-5	FEB 20	5.11.1	0-3	JUN 18
5.4.2	0-3	JUN 18	5.11.2	0-5	FEB 20
			5.11.3	0-5	FEB 20
5.5.1	0-3	JUN 18	5.11.4	0-5	FEB 20
5.5.2	0-3	JUN 18	5.11.5	0-5	FEB 20
			5.11.6	0-5	FEB 20
5.6.1	0-3	JUN 18	5.11.7	0-5	FEB 20
5.6.2	0-3	JUN 18	5.11.8	0-5	FEB 20
			5.11.9	0-3	JUN 18
5.7.1	0-3	JUN 18	5.11.10	0-5	FEB 20
5.7.2	0-3	JUN 18	5.11.11	0-5	FEB 20
			5.11.12	0-5	FEB 20
5.8.1	0-5	FEB 20	5.11.13	0-5	FEB 20
5.8.2	0-5	FEB 20	5.11.14	0-5	FEB 20
5.8.3	0-5	FEB 20	5.11.15	0-5	FEB 20
5.8.4	0-5	FEB 20	5.11.16	0-5	FEB 20
5.8.5	0-5	FEB 20	5.11.17	0-3	JUN 18
5.8.6	0-5	FEB 20	5.11.18	0-3	JUN 18
5.8.7	0-5	FEB 20	5.11.19	0-3	JUN 18
5.8.8	0-5	FEB 20	5.11.20	0-3	JUN 18
5.8.9	0-5	FEB 20	5.11.21	0-3	JUN 18
5.8.10	0-5	FEB 20	5.11.22	0-3	JUN 18
5.8.11	0-5	FEB 20			
5.8.12	0-5	FEB 20	5.12.1	0-3	JUN 18
			5.12.2	0-3	JUN 18
5.9.1	0-5	FEB 20			
5.9.2	0-5	FEB 20	5.13.1	0-3	JUN 18
			5.13.2	0-3	JUN 18

Pilot's Operating Handbook

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
5.14.1	0-3	JUN 18	6.4.25	0-4	APR 19
5.14.2	0-3	JUN 18	6.4.26	0-4	APR 19
5.14.3	0-3	JUN 18	6.4.27	0-4	APR 19
5.14.4	0-3	JUN 18	6.4.28	0-4	APR 19
6.0.1	0-3	JUN 18	6.5.1	0-3	JUN 18
6.0.2	0-3	JUN 18	6.5.2	0-3	JUN 18
6.1.1	0-3	JUN 18	7.0.1	0-3	JUN 18
6.1.2	0-3	JUN 18	7.0.2	0-5	FEB 20
			7.0.3	0-5	FEB 20
6.2.1	0-3	JUN 18	7.0.4	0-3	JUN 18
6.2.2	0-3	JUN 18			
			7.1.1	0-3	JUN 18
6.3.1	0-3	JUN 18	7.1.2	0-3	JUN 18
6.3.2	0-3	JUN 18			
6.3.3	0-3	JUN 18	7.2.1	0-3	JUN 18
6.3.4	0-3	JUN 18	7.2.2	0-3	JUN 18
			7.2.3	0-3	JUN 18
6.4.1	0-3	JUN 18	7.2.4	0-3	JUN 18
6.4.2	0-3	JUN 18	7.2.5	0-3	JUN 18
6.4.3	0-3	JUN 18	7.2.6	0-3	JUN 18
6.4.4	0-3	JUN 18	7.2.7	0-3	JUN 18
6.4.5	0-3	JUN 18	7.2.8	0-3	JUN 18
6.4.6	0-3	JUN 18			
6.4.7	0-3	JUN 18	7.3.1	0-3	JUN 18
6.4.8	0-3	JUN 18	7.3.2	0-3	JUN 18
6.4.9	0-3	JUN 18	7.3.3	0-3	JUN 18
6.4.10	0-3	JUN 18	7.3.4	0-3	JUN 18
6.4.11	0-3	JUN 18	7.3.5	0-3	JUN 18
6.4.12	0-3	JUN 18	7.3.6	0-3	JUN 18
6.4.13	0-3	JUN 18	7.3.7	0-3	JUN 18
6.4.14	0-3	JUN 18	7.3.8	0-3	JUN 18
6.4.15	0-3	JUN 18	7.3.9	0-3	JUN 18
6.4.16	0-3	JUN 18	7.3.10	0-3	JUN 18
6.4.17	0-3	JUN 18	7.3.11	0-3	JUN 18
6.4.18	0-3	JUN 18	7.3.12	0-3	JUN 18
6.4.19	0-3	JUN 18	7.3.13	0-3	JUN 18
6.4.20	0-3	JUN 18	7.3.14	0-3	JUN 18
6.4.21	0-3	JUN 18	7.3.15	0-3	JUN 18
6.4.22	0-3	JUN 18	7.3.16	0-3	JUN 18
6.4.23	0-3	JUN 18	7.3.17	0-3	JUN 18
6.4.24	0-3	JUN 18	7.3.18	0-3	JUN 18

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
7.3.19	0-3	JUN 18	7.5.4	0-3	JUN 18
7.3.20	0-3	JUN 18	7.5.5	0-3	JUN 18
7.3.21	0-3	JUN 18	7.5.6	0-3	JUN 18
7.3.22	0-3	JUN 18	7.5.7	0-3	JUN 18
7.3.23	0-3	JUN 18	7.5.8	0-3	JUN 18
7.3.24	0-3	JUN 18	7.5.9	0-5	FEB 20
7.3.25	0-3	JUN 18	7.5.10	0-3	JUN 18
7.3.26	0-3	JUN 18	7.5.11	0-5	FEB 20
7.3.27	0-3	JUN 18	7.5.12	0-3	JUN 18
7.3.28	0-3	JUN 18			
7.3.29	0-3	JUN 18	7.6.1	0-3	JUN 18
7.3.30	0-3	JUN 18	7.6.2	0-3	JUN 18
7.3.31	0-3	JUN 18	7.6.3	0-3	JUN 18
7.3.32	0-5	FEB 20	7.6.4	0-3	JUN 18
7.3.33	0-5	FEB 20	7.6.5	0-3	JUN 18
7.3.34	0-3	JUN 18	7.6.6	0-3	JUN 18
7.3.35	0-3	JUN 18	7.6.7	0-3	JUN 18
7.3.36	0-3	JUN 18	7.6.8	0-3	JUN 18
7.3.37	0-3	JUN 18	7.6.9	0-3	JUN 18
7.3.38	0-3	JUN 18	7.6.10	0-4	APR 19
7.3.39	0-3	JUN 18	7.6.11	0-3	JUN 18
7.3.40	0-3	JUN 18	7.6.12	0-3	JUN 18
7.4.1	0-3	JUN 18	7.7.1	0-3	JUN 18
7.4.2	0-3	JUN 18	7.7.2	0-3	JUN 18
7.4.3	0-3	JUN 18	7.7.3	0-3	JUN 18
7.4.4	0-3	JUN 18	7.7.4	0-3	JUN 18
7.4.5	0-3	JUN 18	7.7.5	0-3	JUN 18
7.4.6	0-3	JUN 18	7.7.6	0-3	JUN 18
7.4.7	0-3	JUN 18	7.7.7	0-3	JUN 18
7.4.8	0-3	JUN 18	7.7.8	0-3	JUN 18
7.4.9	0-3	JUN 18	7.7.9	0-3	JUN 18
7.4.10	0-3	JUN 18	7.7.10	0-3	JUN 18
7.4.11	0-3	JUN 18			
7.4.12	0-3	JUN 18	7.8.1	0-3	JUN 18
7.4.13	0-3	JUN 18	7.8.2	0-3	JUN 18
7.4.14	0-3	JUN 18	7.8.3	0-3	JUN 18
7.4.15	0-3	JUN 18	7.8.4	0-3	JUN 18
7.4.16	0-3	JUN 18	7.8.5	0-3	JUN 18
			7.8.6	0-3	JUN 18
7.5.1	0-3	JUN 18	7.8.7	0-3	JUN 18
7.5.2	0-3	JUN 18	7.8.8	0-3	JUN 18
7.5.3	0-3	JUN 18	7.8.9	0-3	JUN 18

Pilot's Operating Handbook

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
7.8.10	0-3	JUN 18	7.10.7	0-5	FEB 20
7.8.11	0-3	JUN 18	7.10.8	0-5	FEB 20
7.8.12	0-3	JUN 18			
7.8.13	0-3	JUN 18	7.11.1	0-5	FEB 20
7.8.14	0-3	JUN 18	7.11.2	0-3	JUN 18
7.8.15	0-3	JUN 18	7.11.3	0-3	JUN 18
7.8.16	0-3	JUN 18	7.11.4	0-3	JUN 18
7.8.17	0-3	JUN 18	7.11.5	0-3	JUN 18
7.8.18	0-3	JUN 18	7.11.6	0-3	JUN 18
7.8.19	0-3	JUN 18			
7.8.20	0-4	APR 19	7.12.1	0-3	JUN 18
7.8.21	0-3	JUN 18	7.12.2	0-3	JUN 18
7.8.22	0-3	JUN 18	7.12.3	0-3	JUN 18
			7.12.4	0-3	JUN 18
7.9.1	0-5	FEB 20			
7.9.2	0-5	FEB 20	7.13.1	0-3	JUN 18
7.9.3	0-5	FEB 20	7.13.2	0-5	FEB 20
7.9.4	0-5	FEB 20	7.13.3	0-3	JUN 18
7.9.5	0-5	FEB 20	7.13.4	0-3	JUN 18
7.9.6	0-5	FEB 20			
7.9.7	0-5	FEB 20	7.14.1	0-3	JUN 18
7.9.8	0-5	FEB 20	7.14.2	0-3	JUN 18
7.9.9	0-5	FEB 20	7.14.3	0-3	JUN 18
7.9.10	0-5	FEB 20	7.14.4	0-3	JUN 18
7.9.11	0-5	FEB 20	7.14.5	0-3	JUN 18
7.9.12	0-5	FEB 20	7.14.6	0-3	JUN 18
7.9.13	0-5	FEB 20	7.14.7	0-3	JUN 18
7.9.14	0-5	FEB 20	7.14.8	0-5	FEB 20
7.9.15	0-5	FEB 20	7.14.9	0-5	FEB 20
7.9.16	0-5	FEB 20	7.14.10	0-5	FEB 20
7.9.17	0-5	FEB 20	7.14.11	0-5	FEB 20
7.9.18	0-5	FEB 20	7.14.12	0-5	FEB 20
7.9.19	0-5	FEB 20			
7.9.20	0-5	FEB 20	8.0.1	0-3	JUN 18
7.9.21	0-5	FEB 20	8.0.2	0-3	JUN 18
7.9.22	0-5	FEB 20			
			8.1.1	0-3	JUN 18
7.10.1	0-3	JUN 18	8.1.2	0-3	JUN 18
7.10.2	0-3	JUN 18			
7.10.3	0-3	JUN 18	8.2.1	0-3	JUN 18
7.10.4	0-3	JUN 18	8.2.2	0-3	JUN 18
7.10.5	0-3	JUN 18			
7.10.6	0-3	JUN 18	8.3.1	0-3	JUN 18

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
8.3.2	0-3	JUN 18	8.9.11	0-3	JUN 18
			8.9.12	0-3	JUN 18
8.4.1	0-3	JUN 18			
8.4.2	0-3	JUN 18	8.10.1	0-3	JUN 18
			8.10.2	0-3	JUN 18
8.5.1	0-3	JUN 18	Section 9 (See log of supplements)		
8.5.2	0-3	JUN 18			
8.6.1	0-3	JUN 18			
8.6.2	0-3	JUN 18			
8.6.3	0-3	JUN 18			
8.6.4	0-3	JUN 18			
8.6.5	0-3	JUN 18			
8.6.6	0-3	JUN 18			
8.7.1	0-3	JUN 18			
8.7.2	0-3	JUN 18			
8.7.3	0-3	JUN 18			
8.7.4	0-3	JUN 18			
8.7.5	0-3	JUN 18			
8.7.6	0-3	JUN 18			
8.7.7	0-3	JUN 18			
8.7.8	0-3	JUN 18			
8.7.9	0-3	JUN 18			
8.7.10	0-3	JUN 18			
8.7.11	0-3	JUN 18			
8.7.12	0-3	JUN 18			
8.7.13	0-3	JUN 18			
8.7.14	0-3	JUN 18			
8.8.1	0-3	JUN 18			
8.8.2	0-3	JUN 18			
8.9.1	0-3	JUN 18			
8.9.2	0-3	JUN 18			
8.9.3	0-3	JUN 18			
8.9.4	0-3	JUN 18			
8.9.5	0-3	JUN 18			
8.9.6	0-3	JUN 18			
8.9.7	0-3	JUN 18			
8.9.8	0-3	JUN 18			
8.9.9	0-3	JUN 18			
8.9.10	0-3	JUN 18			

Section 1

General

Table of contents

1.1	-	General	1.1.1
1.2	-	Three view drawing	1.2.1
1.3	-	Descriptive data	1.3.1
		Engine	1.3.1
		Propeller	1.3.1
		Fuel	1.3.2
		Engine oil	1.3.3
		Maximum certificated weights	1.3.3
		Standard airplane weights	1.3.3
		Cabin and entry dimensions	1.3.4
		Specific loadings	1.3.4
1.4	-	Abbreviations and terminology	1.4.1
		Meteorological terminology	1.4.1
		General airspeed terminology and symbols	1.4.1
		Power terminology	1.4.2
		Airplane performance and flight planning terminology	1.4.3
		Weight and balance terminology	1.4.3
		General abbreviations	1.4.4
		Radio-navigation abbreviations	1.4.8
1.5	-	Conversion factors	1.5.1
1.6	-	Pressure and standard atmosphere	1.6.1
		Standard atmosphere	1.6.1
		Pressure conversion table	1.6.2

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1.1 - General

This POH contains 9 sections and includes the material required by FAR Part 23 to be furnished to the pilot for operation of the TBM airplane. It also contains supplemental data supplied by the manufacturer, in accordance with GAMA standard.

Section 1 provides basic data and information of general interest. It also contains definitions or explanations of abbreviations and terminology commonly used.

Whenever this POH refers to the GARMIN integrated Flight Deck Pilot's Guide, it states the one described in section 2.1.

Whenever this POH refers to the MD302 Pilot's Guide, it states the one described in section 2.1.

The general information for complex optional systems are given in section 9, Supplements of the POH.

The installed ADS-B OUT system has been shown to meet the equipment requirements of 14 CFR 91.227.

The installed transponder system is able to respond to interrogations in Modes A, C and S and is fully compliant with the requirements of CS ACNS.D.ELS/EHS (Mode S Elementary/Enhanced Surveillance).

The installed ADS-B OUT system is fully compliant with the requirements of CS ACNS.D.ADSB (1090 MHz Extended Squitter ADS-B OUT).

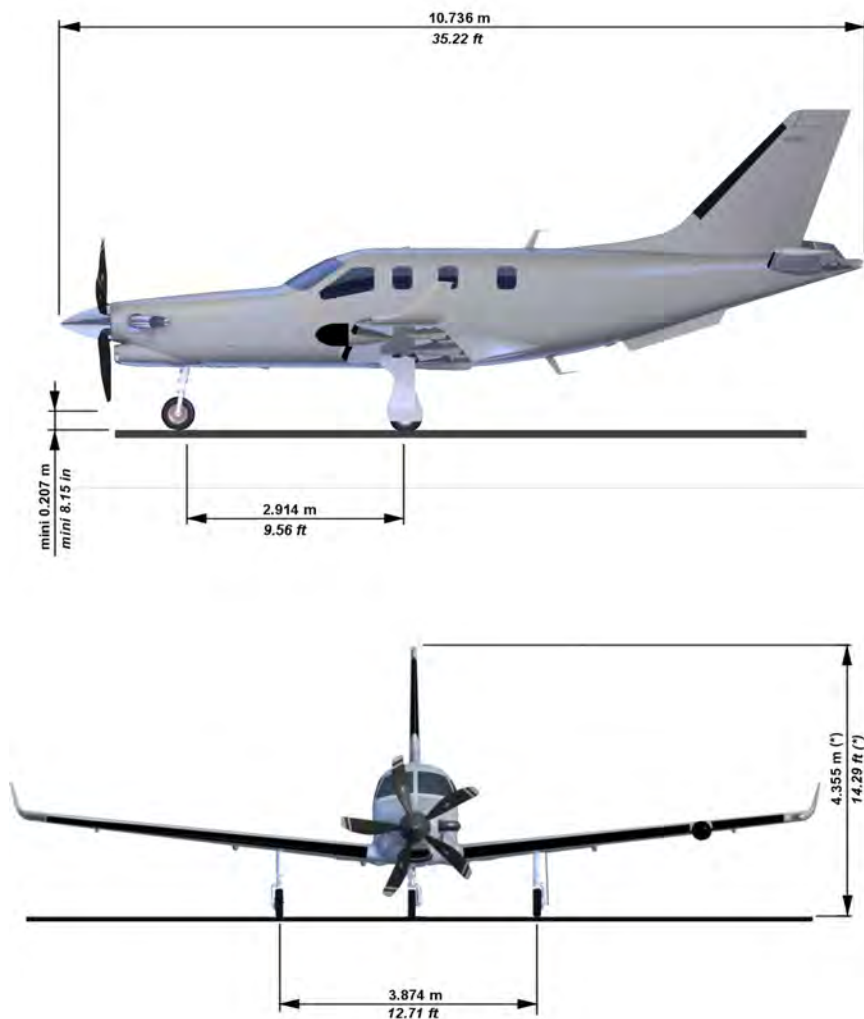
Part 135 operations

For 14 CFR 135 operations, TBM airplane alternative source of electric power is able to supply 150 percent of the electrical loads of all required instruments and equipment for safe emergency operation of the aircraft for at least 1 hour.

Electrical load shedding procedure provided in section 3 of this POH must be followed in order to meet the requirements of that paragraph under 14 CFR 135.163(f)(2).

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1.2 - Three view drawing



* Airplane on level field with fully extended FWD shock-absorber

Figure 1.2.1 (1/2) - Three view drawing

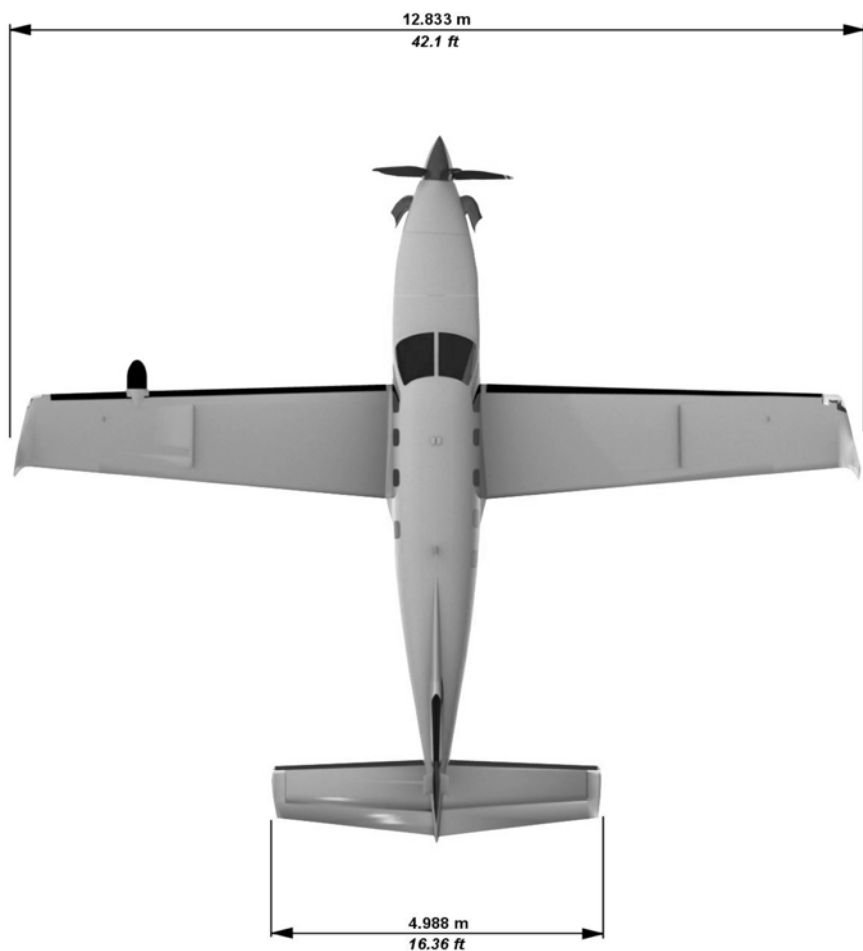


Figure 1.2.1 (2/2) - Three view drawing

1.3 - Descriptive data

Engine

Number of engines : 1

Engine manufacturer : PRATT & WHITNEY CANADA

Engine model number : PT6A - 66D

Engine type : Free turbine, reverse flow and 2 turbine sections

Compressor type : 4 axial stages, 1 centrifugal stage

Combustion chamber type : annular

Turbine type : 1 gas generator turbine stage, 2 power turbines stages

Horsepower rating and propeller speed : 850 SHP at 2000 RPM

Propeller

Number of propellers : 1

Propeller manufacturer : HARTZELL

Propeller model number : HC-E5N-3C / NC8834K

Number of blades : 5

Propeller diameter :

Minimum : 90 in (2.286 m)

Maximum : 91 in (2.311 m)

Propeller type : Adjustable constant speed, with feathering and hydraulic control reverse

Propeller blade setting at station 30 in :

Low pitch : 19.5°

Feathering : 85°

Maximum reverse : - 9°

Propeller governor : 8210.007 WOODWARD

Fuel

Total capacity : 301 USG (1140 litres)

Total capacity each tank : 150.5 USG (570 litres)

Total usable : 292 USG (1106 litres)

▲ CAUTION ▲

The fuel used must contain an anti-ice additive, in accordance with specification MIL-I-27686 or MIL-I-85470. Additive concentrations (EGME or DIEGME) shall be comprised between a minimum of 0.06 % and a maximum of 0.15 % by volume. Refer to section 8 Handling, servicing and maintenance for additional information.



▲ CAUTION ▲

The use of aviation gasoline (AVGAS) must be restricted to emergency purposes only. AVGAS shall not be used for more than 150 cumulative hours during any period between engine overhaul periods.



● NOTE ●

Use of AVGAS to be recorded in engine module logbook.



US specification (US)	French specification (FR)	English specification (UK)	NATO code
ASTM-D1655 JET A ASTM-D1655 JET A1 ASTM-D1655 JET B	AIR 3405C Grade F35	DERD 2494 Issue 9	F35 without additive
MIL-DTL-5624 Grade JP-4	AIR 3407B	DERD 2454 Issue 4 Amdt 1	F40 with additive
MIL-DTL-5624 Grade JP-5	AIR 3404C Grade F44	DERD 2452 Issue 2 Amdt 1	F44 with additive when utilization
MIL-DTL-83133 Grade JP-8	AIR 3405C Grade F34	DERD 2453 Issue 4 Amdt 1	F34 with additive S748
	AIR 3404C Grade F43	DERD 2498 Issue 7	F43 without additive

Figure 1.3.1 - Recommended fuel types
Reference : Service Bulletin P & W C. No. 14004

Pilot's Operating Handbook

Engine oil

System total capacity : 12.7 Quarts (12 litres) (oil cooler included)

Usable capacity : 6 Quarts (5.7 litres)

Maximum oil consumption in 10 hour period : 0.14 qt/hr (0.13 l/hr)
[0.3 lb/hr (0.136 cc/hr)]

Specification

Nominal viscosity	Specification	NATO code
5cSt	MIL-PRF-23699G	O-156 (STD) O-154 (HTS)

Figure 1.3.2 - Recommended engine oil types

Reference : Service Bulletin P & W C. No. 14001 at the latest revision

Maximum certificated weights

Ramp : 7430 lbs (3370 kg)

Takeoff : 7394 lbs (3354 kg)

Landing : 7024 lbs (3186 kg)

Baggage weight

- refer to section 2, paragraph 2.5 for weight and C.G. limits
- refer to section 6 for cargo loading instructions

Standard airplane weights

Standard empty weight : 4583 lbs (2079 kg)

Maximum useful load : 2811 lbs (1275 kg)

Cabin and entry dimensions

Maximum cabin width : 3 ft 11.64 in (1.21 m)

Maximum cabin length : 13 ft 3.45 in (4.05 m)

Maximum cabin height : 4 ft (1.22 m)

Number of cabin entries : 1 (standard) + 1 pilot door (if installed)

Entry width (standard) : 3 ft 6.52 in (1.08 m)

Entry height (standard) : 3 ft 10.85 in (1.19 m)

Pilot entry mean width : 2 ft 3.6 in (0.70 m)

Pilot entry mean height : 3 ft 2.16 in (0.97 m)

Specific loadings

Wing loading : 38.16 lbs / sq.ft (186.3 kg / m²)

Power loading : 8.7 lbs / SHP (3.95 kg / SHP)

1.4 - Abbreviations and terminology

Meteorological terminology

ISA	:	International standard atmosphere
OAT	:	Outside air temperature
SAT	:	Static air temperature
QFE	:	Atmospheric pressure at the airport reference point.
QNH	:	Atmospheric pressure at sea level, at airplane position.

• NOTE •

On the ground, the altimeter will indicate zero if it is set to QFE. It will indicate airport altitude if it is set to QNH.

•

Standard Temperature :

Is 15°C (59°F) at sea level pressure altitude and decreases by 2°C (3.6°F) for each 1000 ft of altitude.

Pressure altitude :

Is the altitude read from an altimeter when the altimeter's barometric scale has been set to 29.92 inches of mercury (1013.2 hPa).

General airspeed terminology and symbols

KCAS	:	Knots Calibrated Airspeed is the indicated airspeed expressed in knots corrected for position and instrument error. Knots calibrated airspeed is equal to KTAS in standard atmosphere at sea level.
KIAS	:	Knots Indicated Airspeed is the speed shown on the airspeed indicator and expressed in knots.
KTAS	:	Knots True Airspeed is the airspeed expressed in knots relative to undisturbed air which is KCAS corrected for altitude and temperature.
V _A	:	Maneuvering Speed is the maximum speed at which full or abrupt control movements may be used.
V _{FE}	:	Maximum Flap Extended Speed is the highest speed permissible with wing flaps in a prescribed extended position.
V _{LE}	:	Maximum Landing Gear Extended Speed is the maximum speed at which an airplane can be safely flown with the landing gear extended.

- V_{LO}** : Maximum Landing Gear Operating Speed is the maximum speed at which the landing gear can be safely extended or retracted.
- V_{MO}** : Maximum Operating Speed is the speed limit that may not be deliberately exceeded in normal flight operations.
- V_R** : Rotation Speed is the speed at which rotation is initiated during takeoff to achieve takeoff safety speed at screen height.
- V_{SO}** : Stalling Speed or the minimum steady flight speed at which the airplane is controllable in the landing configuration.
- V_{S1}** : Stalling Speed or the minimum steady flight speed obtained in a specific configuration.
- V_x** : Best Angle of Climb Speed is the airspeed which delivers the greatest gain of altitude in the shortest possible horizontal distance.
- V_y** : Best Rate of Climb Speed is the airspeed which delivers the greatest gain in altitude in the shortest possible time.

Power terminology

Recovery altitude :

Maximum altitude at which it is possible, in standard temperature, to maintain a specified power.

Overheated start :

Engine start or attempt to start which causes the interturbine temperature to be higher than the maximum value permissible during start.

Flame out : Involuntary loss of the combustion chamber flame during operation.

GPU : Ground power unit.

Feathering : Action which reduces the drag of a propeller by positioning blades at the pitch angle allowing minimal drag.

Maximum Cruise Power :

Power developed corresponding to outside flight level and temperature conditions - refer to chapter 5 Performance.

Ng : Gas generator RPM.

Np : Propeller rotation speed.

Reverse : Drag produced when the propeller blade setting is negative.

RPM : Revolutions per minute.

SHP : Shaft Horsepower.

TRQ : Torque.

Airplane performance and flight planning terminology

Climb gradient :

Is the ratio of the change in height during a portion of climb, to the horizontal distance traversed in the same time interval.

Demonstrated crosswind velocity :

Is the velocity of the crosswind component for which adequate control of the airplane during takeoff and landing was actually demonstrated during certification tests. The value shown is not considered to be limiting.

g : Is acceleration due to gravity.

Usable fuel : Total fuel which can be effectively consumed by the engine.

Weight and balance terminology

Reference datum :

Datum perpendicular to the longitudinal airplane centerline from which all distances are measured for balance purpose.

Arm : Is the distance from the reference datum to the center of gravity (C.G.) of an item.

Moment : Is the product of the weight of an item multiplied by its arm.

Center of gravity (C.G.) :

Airplane balance point. Its distance from the reference datum is found by dividing the total moment by the total weight of the airplane.

C.G. limits : Center of Gravity Limits are the extreme center of gravity locations within which the airplane must be operated at a given weight.

Standard empty weight :

Weight of a standard airplane including unusable fuel and full operating fluids (oil and hydraulic fluids).

Basic empty weight :

Standard empty weight plus optional equipment.

Useful load : Is the difference between maximum ramp weight and the basic empty weight.

Maximum ramp weight :

Is the maximum weight approved for ground maneuver. It includes the weight of start, taxi and run up fuel.

Maximum takeoff weight :

Is the maximum weight approved at the beginning of the takeoff run.

Maximum landing weight :

Is the maximum weight approved for landing touchdown.

General abbreviations

A	: Ampere or Amber
ADC	: Air Data Computer
AGL	: Above ground level
AIL TRIM	: Aileron TRIM
ALT. SEL.	: Altitude selector
ALTI	: Altimeter
AMP	: Ampere
AoA	: Angle of Attack
AP	: Autopilot
ATIS	: Automatic Terminal Information Service
AUTO SEL	: Automatic selector
AUX BP	: Auxiliary boost pump
BAT	: Battery
BRT	: Brightness
CAS	: Crew Alerting System
°C	: Celsius degree
CONT.	: Control
DIEGME	: Diethylene glycol monomethyl ether
DISC	: Disconnect
DN	: Down
EDM	: Emergency Descent Mode
EGME	: Ethylene glycol monomethyl ether

Pilot's Operating Handbook

EIS	: Engine Indication System
EMER	: Emergency
ESHP	: Estimated shaft horsepower
ESP	: Electronic Stability Protection
ESS. BUS TIE	: Essential BUS tie
EXT. LIGHTS	: Exterior lightings
°F	: Fahrenheit degree
FCU	: Fuel control unit
FL	: Flight level
FOB	: Fuel On Board
FPL	: Flight Plan
ft	: Feet
ft/min	: Feet per minute
G	: Green
GIFD	: Garmin Integrated Flight Deck
HI	: High
HP	: High pressure
hPa	: Hectopascal
hr	: Hour
HTR	: Heater
IGNIT	: Ignition
in	: Inch / inches
INERT SEP	: Inertial separator
INDIC	: Indicator
in.Hg	: Inch of mercury
INT. LIGHTS	: Interior lightings
INSTR.	: Instrument
ITT	: Interturbine temperature

kg	: Kilogram
kt	: Knot (1 nautical mile/hr - 1852 m/hr)
kW	: Kilowatt
l	: Litre
L or L.H.	: Left
l/h	: Litre / hour
lb or lbs	: Pound(s)
L / D	: Lift-to-drag
LDG	: Landing
LDG GR	: Landing gear
LDR	: Lightweight Data Recorder
LFE	: Landing Field Elevation
LRCR	: Long Range Cruise
LO	: Low
LP	: Low pressure
LRN	: Long range navigation
LTS TEST	: Lightings test
m	: Metre
m.a.c. or MAC	: Mean aerodynamic chord
MAIN GEN	: Main generation
MAN	: Manual
MAN OVRD	: Manual override
MAX RPM	: Maximum revolutions per minute
MDA	: Minimum Descent Altitude
MFD	: Multi-function Display
MIN	: Minimum
min	: Minute
mm	: Millimetre

Pilot's Operating Handbook

MLW	: Maximum Landing Weight
MRW	: Maximum Ramp Weight
msg	: Message
MTOW	: Maximum Takeoff Weight
MXCR	: Maximum Cruise
MZFW	: Maximum Zero Fuel Weight
NM	: Nautical mile
NOCR	: Normal cruise (recommended)
NORM	: Normal
PFD	: Primary Flight Display
PHF	: Plan Horizontal Fixe (Horizontal stabilizer)
PRESS	: Pressure
PROP	: Propeller
psi	: Pounds per square inch
PSIG	: Pounds per Square Inch Gage
qt	: Quart ($\frac{1}{4}$ USG)
QTY	: Quantity
R or R.H.	: Right
RUD	: Rudder
s or sec	: Second
SEL	: Selector
SIG	: Signalization
SL	: Sea level
S/N	: Serial number
SPKR	: Speaker
ST - BY	: Stand-by
STALL HTR	: Stall heater
Std	: Standard

T°	: Temperature
TEMP	: Temperature
TO	: Takeoff
TURN COORD	: Turn coordinator
USG	: Gallon U.S
USP	: Under Speed Protection
V	: Volt or Voltage
WARN	: Warning
W / S	: Windshield

Radio-navigation abbreviations

ADF	: Automatic Direction Finder System
ADI	: Attitude Director Indicator
ADS-B	: Automatic Dependent Surveillance-Broadcast
AFCS	: Automated Flight Control System
AHRS	: Attitude and Heading Reference System
AIRAC	: Aeronautical Information Regulation And Control
ATC	: Air Traffic Control
B RNAV	: Basic aRea NAVigation
CDI	: Course Deviation Indicator
COM	: Communications Transceivers
DME	: Distance Measuring Equipment
ELT	: Emergency Locator Transmitter
FDE	: Fault Detection and Exclusion
FMS	: Flight Management System
GNSS	: Global Navigation Satellite System
GPS	: Global Positioning System
HF	: High Frequency
IFR	: Instrument Flight Rules

Pilot's Operating Handbook

ILS	: Instrument Landing System
IMC	: Instrument Meteorological Conditions
L NAV	: Lateral NAVigation
LPV	: Localizer Precision Vertical
MKR	: Marker Radio Beacon
NAV	: Navigation Indicators or Receivers
P RNAV	: Precision aRea NAVigation
RAIM	: Receiver Autonomous Integrity and Monitoring
RF Leg	: Radius to Fix Leg
R NAV	: Area NAVigation
RNP	: Required Navigation Performance
SAM	: Standby Attitude Module
SBAS	: Satellite Based Augmentation System
STAR	: Standard Terminal Arrival Route
TAS	: Traffic Advisory System
TAWS	: Terrain Awareness Warning System
VFR	: Visual Flight Rules
VHF	: Very High Frequency
VMC	: Visual Meteorological Conditions
V NAV	: Vertical NAVigation
VOR	: VHF Omnidirectional Range
VOR / LOC	: VHF Omnidirectional Range LOCALizer
WAAS	: Wide Area Augmentation System
WFDE	: WAAS Fault Detection and Exclusion
WGS	: World Geodetic System
WXR	: Weather surveillance radar
XPDR	: Transponder

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1.5 - Conversion factors

Imperial and U.S units to metric units			Metric units to Imperial and U.S units		
Multiply	By	To obtain	Multiply	By	To obtain
feet	0.3048	metre	metre	3.2808	feet
inch	25.4	mm	mm	0.03937	Inch
Imp.Gal	4.546	litre	litre	0.220	Imp.Gal
USG	3.785	litre	litre	0.264	USG
lb	0.45359	kg	kg	2.2046	lb

Figure 1.5.1 - Imperial and U.S units to metric units

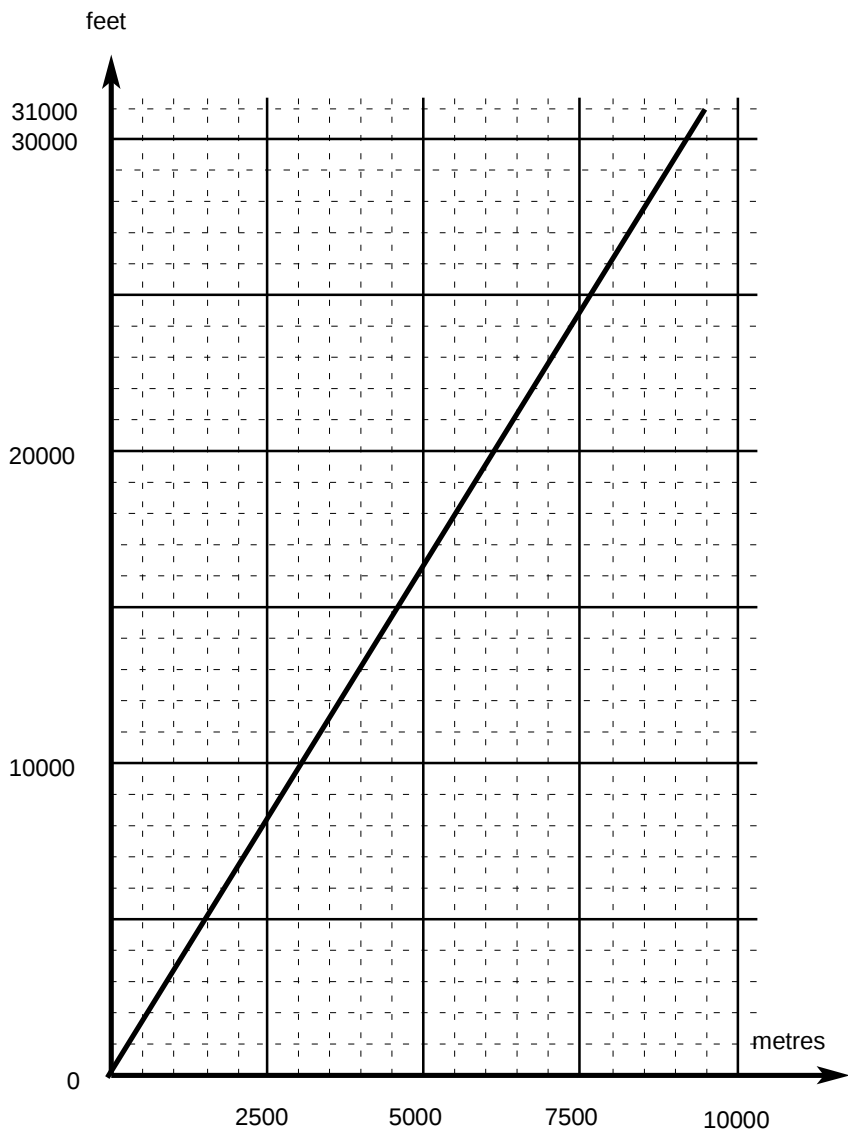


Figure 1.5.2 - Feet versus metres

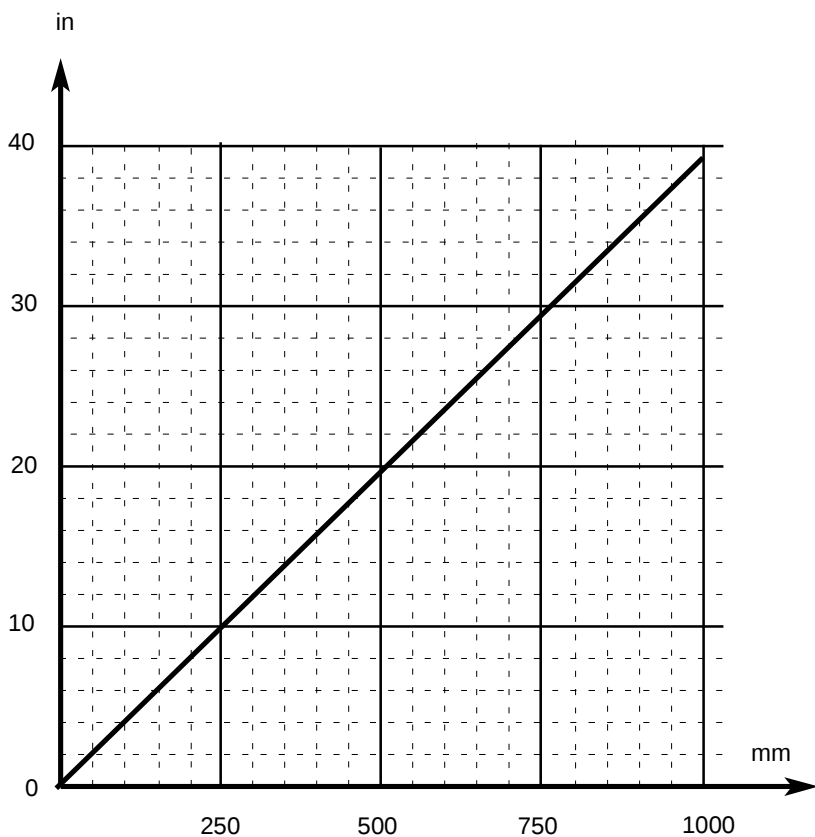


Figure 1.5.3 - Inches versus millimetres

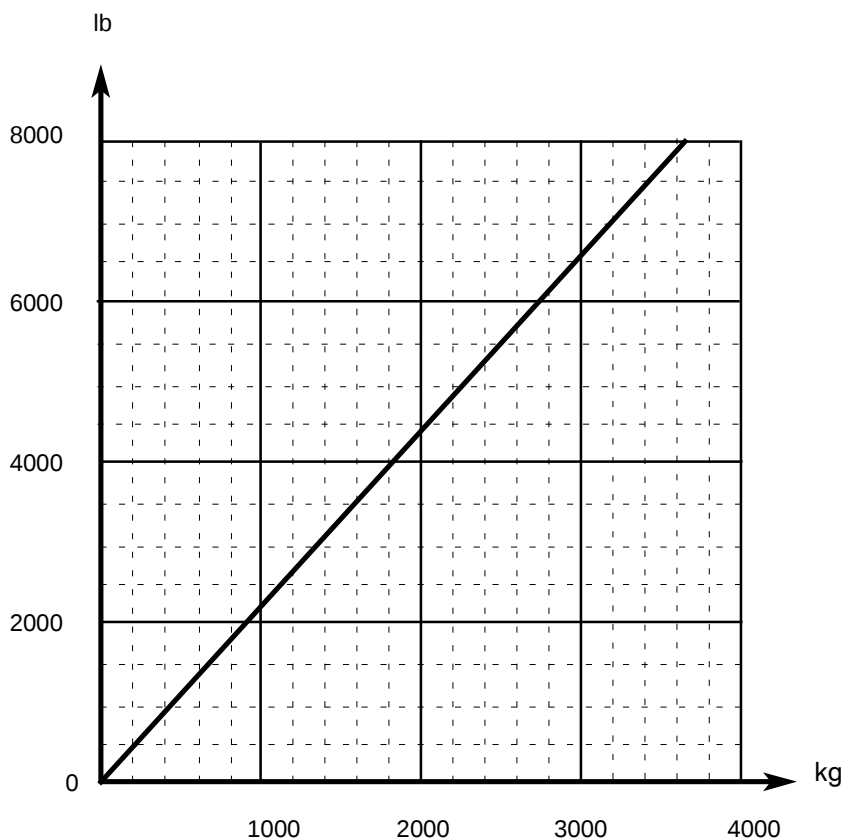


Figure 1.5.4 - Pounds versus kilograms

1.6 - Pressure and standard atmosphere**Standard atmosphere**

Pressure altitude (ft)	Pressure (hPa)	°C	°F
0	1013.2	+ 15.0	+ 59.0
2000	942.1	+ 11.0	+ 51.8
4000	875.0	+ 7.0	+ 44.6
6000	811.9	+ 3.1	+ 37.6
8000	752.6	- 0.8	+ 30.5
10000	696.8	- 4.8	+ 23.4
12000	644.3	- 8.7	+ 16.2
14000	595.2	- 12.7	+ 9.2
16000	549.1	- 16.6	+ 2.2
18000	505.9	- 20.6	- 5.0
20000	465.6	- 24.6	- 12.4
22000	427.8	- 28.5	- 19.3
24000	392.6	- 32.5	- 26.5
26000	359.8	- 36.5	- 33.6
28000	329.3	- 40.4	- 40.7
30000	300.8	- 44.4	- 47.8
31000	287.4	- 46.4	- 51.6

Figure 1.6.1 - Standard atmosphere

Pressure conversion table

• NOTE •

The standard pressure of 1013.2 hPa is equal to 29.92 inches of mercury.

950 28.05	951 28.08	952 28.11	953 28.14	954 28.17	955 28.20	956 28.23	957 28.26	958 28.29	959 28.32
960 28.35	961 28.38	962 28.41	963 28.44	964 28.47	965 28.50	966 28.53	967 28.56	968 28.58	969 28.61
970 28.64	971 28.67	972 28.70	973 28.73	974 28.76	975 28.79	976 28.82	977 28.85	978 28.88	979 28.91
980 28.94	981 28.97	982 29.00	983 29.03	984 29.06	985 29.09	986 29.12	987 29.15	988 29.18	989 29.20
990 29.23	991 29.26	992 29.29	993 29.32	994 29.35	995 29.38	996 29.41	997 29.44	998 29.47	999 29.50
1000 29.53	1001 29.56	1002 29.59	1003 29.62	1004 29.65	1005 29.68	1006 29.71	1007 29.74	1008 29.77	1009 29.80
1010 29.83	1011 29.85	1012 29.88	1013 29.91	1014 29.94	1015 29.97	1016 30.00	1017 30.03	1018 30.06	1019 30.09
1020 30.12	1021 30.15	1022 30.18	1023 30.21	1024 30.24	1025 30.27	1026 30.30	1027 30.33	1028 30.36	1029 30.39
1030 30.42	1031 30.45	1032 30.47	1033 30.50	1034 30.53	1035 30.56	1036 30.59	1037 30.62	1038 30.65	1039 30.68
1040 30.71	1041 30.74	1042 30.77	1043 30.80	1044 30.83	1045 30.86	1046 30.89	1047 30.92	1048 30.95	1049 30.98

Figure 1.6.2 - Pressure conversion table

Section 2

Limitations

Table of contents

2.1	-	General	2.1.1
2.2	-	Airspeed limitations	2.2.1
2.3	-	Powerplant limitations	2.3.1
		Engine	2.3.1
		Oil	2.3.2
		Fuel	2.3.3
		Propeller	2.3.4
2.4	-	Starter operation limits	2.4.1
2.5	-	Weight and C.G. limits	2.5.1
		Weight limits	2.5.1
		C.G. limits	2.5.2
2.6	-	Operation limits	2.6.1
		Maneuver limits	2.6.1
		Temperature limits	2.6.1
		Flight load factor limits	2.6.1
		Generator limits	2.6.2
		GFC 700 autopilot limits	2.6.2
		GNSS (GPS/SBAS) navigation equipment approvals	2.6.2
		GNSS (GPS/SBAS) navigation system limitations	2.6.6
		Icing conditions	2.6.7
		Severe icing conditions	2.6.8
		Flap operating envelope	2.6.9
		Reverse utilization	2.6.9
		Weather radar GWX 70	2.6.9
		Equipment required depending on type of operation	2.6.10
		Altitude operating limits	2.6.15
		In-flight breaker use limits	2.6.15
		Enhanced mode S	2.6.16
		Chartview system operating limitations	2.6.17

2.7	-	Miscellaneous limits	2.7.1
		Seating limits C.G.	2.7.1
		Baggage limits	2.7.1
		Minimum crew	2.7.1
		Maximum occupancy	2.7.1
		Use of doors	2.7.1
		Chemical toilet cabinet, if installed	2.7.1
		Cargo net installation limits	2.7.2
		Weather radar limitation	2.7.2
2.8	-	Markings	2.8.1
		Airspeed Indicator on PFD(s) and on Standby airspeed indicator	2.8.1
		Pressurization	2.8.1
		Engine instruments	2.8.2
2.9	-	Placards	2.9.1

2.1 - General

TBM 930 is the trade name of the TBM 700 N version airplane (TBM 700 type), which is certified in the normal category.

This airplane must be flown in compliance with the limits specified by placards or markings and with those given in this section and throughout the POH.

The GARMIN G3000 Integrated Flight Deck Pilot's Guide, No. 190-02046-00, or any later version as applicable, must be readily available to the pilot and permanently kept in the airplane with the POH.

The Pilot's Guide for MD302 Standby Attitude Module P/N 9017846-00 or any later version as applicable, must be permanently kept in the airplane with the POH.

Departure into IMC is not authorized if the MD302 battery fails its initial capacity check with associated message :

"WARNING
INTERNAL BATTERY MAY PROVIDE LESS THAN 60 MINUTES OF
OPERATIONS"

or if there is a red "X" over the battery symbol at MD302 initialization.

This section of the airplane POH presents the various operating limitations, the significance of such limitations, instrument markings, color coding, and basic placards necessary for the safe operation of the airplane, its powerplant and installed equipment.

The limitations included in this section have been approved by the Federal Aviation Administration in accordance with 14 CFR section 21.29.

The limitations for some optional systems are given in section 9, Supplements of the POH.

TBM 700 airplane is certified under EASA.A.010 and FAA N° A60EU Type Certificates.

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2.2 - Airspeed limitations

Airspeed limitations and their operational significance are shown in figure 2.2.1.

	Speed	KCAS	KIAS	Remarks
V _{MO}	Maximum operating speed	271	266	Do not intentionally exceed this speed in normal flight category
V _A	Maneuvering speed	160	158	Do not make abrupt or full control movements above this speed
V _{FE}	Maximum flaps extended speed : landing configuration takeoff configuration	 120 180	 122 178	Do not exceed these speeds depending on flaps position
V _{LO}	Maximum landing gear operating speed : extension retraction emergency extension	 180 151 151	 178 150 150	Do not extend or retract landing gear above this speed
V _{LE}	Maximum landing gear extended speed	180	178	Do not exceed this speed with landing gear extended

Figure 2.2.1 - Airspeed limitations

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2.3 - Powerplant limitations

Engine

Number of engines : 1

Engine manufacturer : PRATT & WHITNEY CANADA

Engine model number : PT6A - 66D

Maximum power :

100 % at Np = 2000 RPM

Ng limitation :

104.1 %

Np limitation :

2000 RPM $\pm$ 40 RPM

ITT limitations :

- Takeoff : 850°C
- Maximum climb/cruise : 840°C
- During start :
 - < 840°C, no duration limitation
 - < 870°C for 20 seconds max.
 - < 1000°C for 5 seconds max.

▲ **CAUTION** ▲

When normally operating, refer to chapter 5.8 Engine operation tables.



Oil

▲ CAUTION ▲

Do not mix different viscosities or specifications of oil as their different chemical structure can make them incompatible.



Maximum oil temperature : 104 °C

Oil pressure :

- Minimum : 60 psi
- Maximum : 135 psi, a transient oil pressure up to 170 psi is acceptable for maximum 20 seconds

Normal oil pressure is 105 to 135 psi. Oil pressures under 105 psi are undesirable. Under emergency conditions, to complete a flight, a lower oil pressure of 60 psi is permitted at reduced power level not exceeding 80% torque. Oil pressures below 60 psi are unsafe and require that either the engine be shut down or a landing be made as soon as possible using the minimum power required to sustain flight.

Oil capacity :

- System total capacity : 12.7 Quarts (12 litres), oil cooler included
- Usable capacity : 6 Quarts (5.7 litres)

Fuel

Fuel limitations :

- 2 tanks : 150.5 USG (570 litres) each
- Total fuel : 301 USG (1140 litres)
- Usable fuel : 292 USG (1106 litres)
- Unusable fuel : 9 USG (34 litres)
- Maximum fuel imbalance : 15 USG (57 litres)

• NOTE •

Usable fuel can be safely used during all normal airplane maneuvers.

•

▲ CAUTION ▲

The fuel used must contain an anti-ice additive, in accordance with specification MIL-I-27686 or MIL-I-85470. Additive concentrations (EGME or DIEGME) shall be comprised between a minimum of 0.06 % and a maximum of 0.15 % by volume. Refer to section 8 Handling, servicing and maintenance for additional information.

▲

▲ CAUTION ▲

The use of aviation gasoline (AVGAS) must be restricted to emergency purposes only. AVGAS shall not be used for more than 150 cumulative hours during any period between engine overhaul periods.

▲

• NOTE •

Use of AVGAS to be recorded in engine module logbook.

•

▲ CAUTION ▲

Maximum time for sideslip condition is 30 seconds.

▲

US specification (US)	French specification (FR)	English specification (UK)	NATO code
ASTM-D1655 JET A ASTM-D1655 JET A1 ASTM-D1655 JET B	AIR 3405C Grade F35	DERD 2494 Issue 9	F35 without additive
MIL-DTL-5624 Grade JP-4	AIR 3407B	DERD 2454 Issue 4 Amdt 1	F40 with additive
MIL-DTL-5624 Grade JP-5	AIR 3404C Grade F44	DERD 2452 Issue 2 Amdt 1	F44 with additive when utilization
MIL-DTL-83133 Grade JP-8	AIR 3405C Grade F34	DERD 2453 Issue 4 Amdt 1	F34 with additive S748
	AIR 3404C Grade F43	DERD 2498 Issue 7	F43 without additive

Figure 2.3.1 - Recommended fuel types
Reference : Service Bulletin P & W C. No. 14004

Propeller

Number of propellers : 1

Propeller manufacturer : HARTZELL

Propeller model number : HC-E5N-3C / NC8834K

Propeller diameter :

- Minimum : 90 in (2.286 m)
- Maximum : 91 in (2.311 m)

■ Propeller blade setting at station 30 in :

- Low pitch : 19.5°
- Feathering : 85°
- Maximum reverse : - 9°

2.4 - Starter operation limits

Starter operation sequence is limited as follows :

if Ng < 30 % 30 seconds

if Ng > 30 % 60 seconds

Should several sequences be necessary, respect following spacing :

1st sequence

wait 1 minute

2nd sequence

wait 5 minutes

3rd sequence

wait 30 minutes

4th sequence

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2.5 - Weight and C.G. limits

Weight limits

Maximum ramp weight (MRW) : 7430 lbs (3370 kg)

Maximum takeoff weight (MTOW) : 7394 lbs (3354 kg)

Maximum landing weight (MLW) : 7024 lbs (3186 kg)

Maximum zero fuel weight (MZFW) : 6032 lbs (2736 kg)

Maximum baggage weight :

- in FWD compartment (non pressurized) : 110 lbs (50 kg)

>> *With 6-seat accommodation*

- in rear part of pressurized cabin : 220 lbs (100 kg)

>> *With 4-seat accommodation*

- in rear part of pressurized cabin : 396 lbs (180 kg), with small or large net, see sketch below

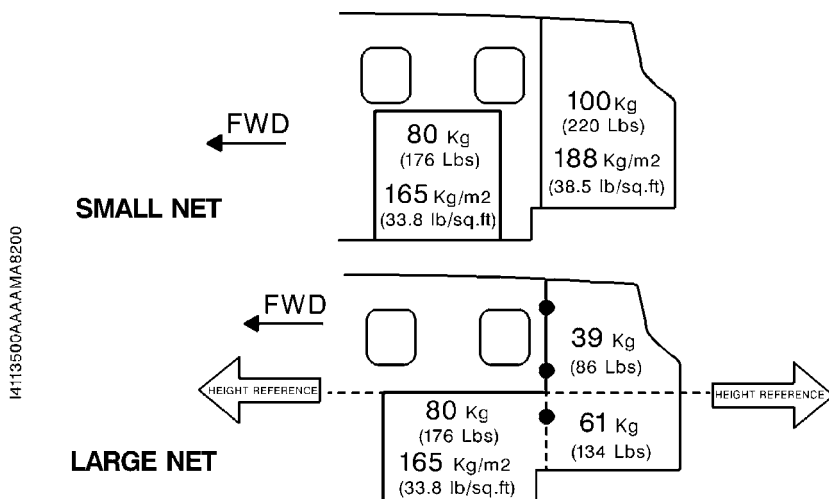


Figure 2.5.1 - Baggage limits

C.G. limits

Center of gravity range with landing gear down and flaps up, attitude 0° :

Forward limits :

181.3 in (4.604 m) aft of datum at 4409 lbs (2000 kg) or less (14 % of m.a.c)

183.6 in (4.664 m) aft of datum at 6250 lbs (2835 kg) (18 % of m.a.c)

185.3 in (4.707 m) aft of datum at 6579 lbs (2984 kg) (20.85 % of m.a.c)

187 in (4.752 m) aft of datum at all weights above 7024 lbs (3186 kg) (23.8 % of m.a.c)

Aft limits :

193.65 in (4.921 m) aft of datum at 7394 lbs (3354 kg) (35 % of m.a.c)

194 in (4.928 m) aft of datum at 6986 lbs (3169 kg) (35.5 % of m.a.c)

Reference datum : 118.1 in (3 m) in front of the firewall front face.

Straight line variation between points.

Leveling point : Cabin floor rails.

• NOTE •

It is the responsibility of the pilot to insure that the airplane is properly loaded.

See section 6 Weight and balance for proper loading instructions.

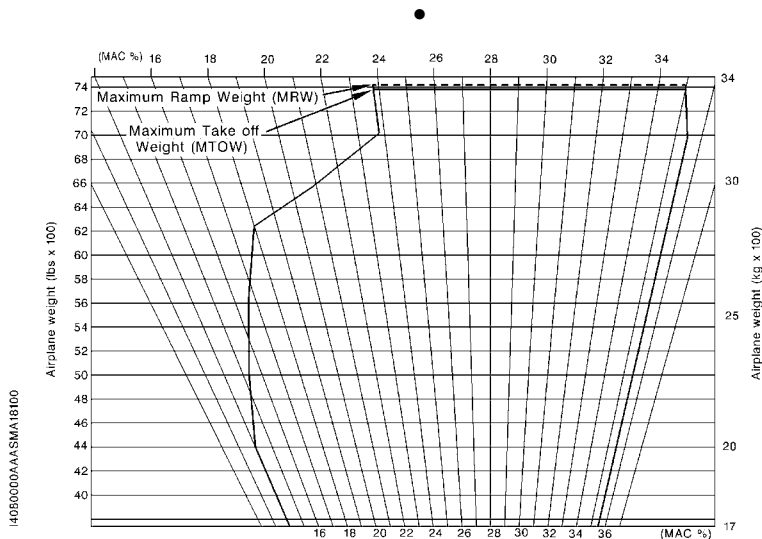


Figure 2.5.2 - C.G. limits

2.6 - Operation limits

Maneuver limits

This airplane is certified in the normal category.

The normal category is applicable to airplanes intended for non-aerobatic operations.

Non-aerobatic operations include any maneuvers incidental to normal flying, stalls (except whip stalls), lazy eights, chandelles, and steep turns in which the angle of bank is no more than 60°.

▲ WARNING ▲

Aerobatic maneuvers, including spins, are not approved.



Temperature limits

Minimum temperature at start and takeoff : - 40°C (- 40°F)

Maximum temperature at start and takeoff :

ISA + 37°C (+ 67°F) from 0 to 8000 ft pressure altitude

Maximum temperature in flight :

ISA + 37°C (+ 67°F) from 0 to 8000 ft pressure altitude

ISA + 30°C (+ 54°F) above 8000 ft pressure altitude

Flight load factor limits

Flaps up

Weight below 6579 lbs (2984 kg) : - 1.5 < n < + 3.8 g

Weight above 6579 lbs (2984 kg) : - 1.5 < n < + 3.5 g

Flaps down

- 0 < n < + 2.0 g

▲ CAUTION ▲

Intentional negative load factors prohibited.



Generator limits

- Generator load must be below 200 A when the airplane is on the ground.

GFC 700 autopilot limits

- During autopilot operation, a pilot with seat belt fastened must be seated at the left or right position.
- The autopilot and yaw damper must be OFF during takeoff and landing.
- Do not engage autopilot below 1000 ft (300 m) AGL in cruise or climb.
- Do not use autopilot in approach below 200 ft (60 m) AGL.
- Do not use autopilot for airspeeds below 85 KIAS.

● NOTE ●

Do not use the autopilot in descent below 2000 ft (600 m) AGL with a vertical speed in excess of 2000 ft/min.

●

GNSS (GPS/SBAS) navigation equipment approvals

The GARMIN GNSS navigation system installed in this airplane :

- is a GPS system with a Satellite Based Augmentation System (SBAS) comprised of :
 - two TSO-C145a (or later) Class 3 approved GARMIN GIAs,
 - TSO-C146c Class 3 approved GARMIN GDUs Display Units,
 - GARMIN GA36 and GA37 antennas,
 - GPS software version 5.0 or later approved version.
- is installed in this airplane in accordance with AC 20-138A.
- is, as installed in this airplane, approved for navigation using GPS and GPS/SBAS (within the coverage of a SBAS complying with ICAO Annex 10) for IFR enroute, terminal area, and RNP APCH operations (to LNAV, LNAV/VNAV and LPV minima).
- is, as installed in this airplane, complying with the equipment, performance, and functional requirements to conduct RNAV and RNP operations in accordance with the applicable requirements of the reference documents listed in the following table.

• NOTE •

Depending on the area of navigation, an operational approval may be required to use the navigation performance that are detailed in the table hereafter. The pilot is responsible to ensure compliance with current operational requirements.

•

This table is accurate at the time it was published.

Phase of flight	Approved PBN Capability	Operational limitations	Reference Documents	ICAO Flight Plan Code		Notes
				Item 10a Code	Item 18 PBN/	
En-route, Oceanic and Remote continental (Class II Navigation)	RNAV 10 RNP 10	GNSS FDE availability must be verified prior to flight. Maximum predicted FDE unavailability is 34 minutes. ¹ Two GNSS systems required to be operational. ²	FAA AC 90-105A	R	A1	Additional communication and surveillance equipment may be required to obtain operational approval to utilize RNP 10 / RNAV 10 performance.
En-route continental, Arrival	RNAV 5 <i>(formerly designated as B-RNAV)</i>	One GNSS system required to be operational.	JAA AMJ 20X2	R	B2	
En-route, Oceanic and Remote continental (Class II Navigation)	RNP 4	GNSS FDE availability must be verified prior to flight. Maximum predicted FDE unavailability is 25 minutes. ¹ Two GNSS systems required to be operational. ²	FAA AC 90-105A	R	L1	Additional communication and surveillance equipment may be required to obtain operational approval to utilize RNP 4 performance.
Departure En-route continental, Arrival	RNAV 2 / RNAV 1	One GNSS system required to be operational,	JAA TGL-10 FAA AC 90-105A	R	C2 / D2	

Phase of flight	Approved PBN Capability	Operational limitations	Reference Documents	ICAO Flight Plan Code		Notes
				Item 10a Code	Item 18 PBN/	
Domestic, Offshore, Oceanic and Remote continental	RNP 2	GNSS FDE availability must be verified prior to oceanic or remote continental flight. Maximum predicted FDE unavailability is 5 minutes. Two GNSS systems required to be operational. ² Only one operational GNSS system required for domestic and offshore operations areas.	FAA AC 90-105A	R	-	Additional communication and surveillance equipment may be required to obtain operational approval to utilize RNP 2 performance.
Departure, Arrival,	RNP 1 (with and without RF legs)	At a minimum, the flight director must be displayed and utilized when conducting procedures containing RF legs.	FAA AC 90-105A	R	O2	Includes RNP terminal departure and arrival procedures. This includes procedures with Radius-to-Fix legs (RF legs).
Approach	RNP APCH LNAV minima (with and without RF legs)	At a minimum, the flight director must be displayed and utilized when conducting procedures containing RF legs.	EASA AMC 20-27 FAA AC 90-105A	R	S1	Includes non-precision approaches based on conventional navigation aids with "or GPS" in the title and area navigation approaches titled "GPS", "RNAV (GPS)", and "RNAV (GNSS)". This includes procedures with RF legs. RF legs may be used in the initial and intermediate legs of the approach procedure or the final leg of the missed approach procedure only.

Phase of flight	Approved PBN Capability	Operational limitations	Reference Documents	ICAO Flight Plan Code		Notes
				Item 10a Code	Item 18 PBN/	
Approach	RNP APCH LPV minima (with and without RF legs)	At a minimum, the flight director must be displayed and utilized when conducting procedures containing RF legs.	EASA AMC 20-28	B		RF legs may be used in the initial and intermediate legs of the approach procedure or the final leg of the missed approach procedure only.

¹ and ², see Note 1 and Note 2 hereafter

Table 2.6.1 - GNSS operational requirements

- Note 1 FDE/RAIM availability worldwide can be determined using the WFDE Prediction program, part number 006-A0154-01 or later approved version with GARMIN GA36 and GA37 antennas selected, or :
- Within the United States, using the FAA's en-route and terminal RAIM prediction website : www.raimprediction.net, or by contacting a Flight Service Station.
 - Within Europe, using Europe's AUGUR GPS RAIM Prediction Tool at <http://augur.ecacnav.com/augur/app/home>.
- Note 2 A **BOTH ON GPS1** or **BOTH ON GPS2** system annunciation does not necessarily mean that one GPS has failed. Refer to the MFD – GPS STATUS page to determine the state of the unused GPS.

General considerations

The route planning and WFDE prediction program may be downloaded from the GARMIN website on the internet. For information on using the WFDE Prediction Program, refer to GARMIN WAAS FDE Prediction Program, part number 190-00643-01, 'WFDE Prediction Program Instructions'.

Garmin International holds an FAA Type 2 Letter of Acceptance (LOA) in accordance with RTCA/DO-200A and AC 20-153B for database integrity, quality, and database management processes for many of its aviation databases. LOA status and RTCA/DO-200A List of Applicable Avionics (190-01999-00) can be viewed at FlyGarmin.com.

Navigation information is referenced to WGS-84 reference system, and should only be used where the Aeronautical Information Publication (including electronic data and aeronautical charts) conform to WGS-84 or equivalent.

GNSS (GPS/SBAS) navigation system limitations

Navigation database limitations

The pilot must confirm at system initialization that the Navigation database is current.

If the AIRAC cycle will change during flight, the pilot must ensure the accuracy of navigation data, including suitability of navigation facilities used to define the routes and procedures for flight. If an amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

GPS/SBAS based IFR enroute, oceanic, and terminal navigation is prohibited unless the pilot verifies and uses a valid, compatible, and current Navigation database or verifies each waypoint for accuracy by reference to current approved data.

Discrepancies that invalidate a procedure must be reported to Garmin International. The affected procedure is prohibited from being flown using data from the Navigation database until a new Navigation database is installed in the airplane and verified that the discrepancy has been corrected.

Contact information to report Navigation database discrepancies can be found at www.Garmin.com>Support>Contact Garmin Support>Aviation. Pilots and operators can view navigation data base alerts at www.Garmin.com>In the Air>NavData Alerts.

RNP APCH including "GPS", "or GPS", "RNAV (GPS)" and "RNAV (GNSS)" instrument approaches using the Garmin integrated flight deck are prohibited unless the pilot verifies and uses the current Navigation database. GPS based instrument approaches must be flown in accordance with an approved instrument approach procedure that is loaded from the Navigation database into the flight plan by its name.

Not all published Instrument Approach Procedures (IAP) are in the Navigation database.

Manual entry of waypoints using latitude/longitude or place/bearing is prohibited for published RNP and RNAV routes.

Whenever possible, RNP and RNAV routes including Standard Instrument Departures (SIDs) and Obstacle Departure Procedures (ODPs), Standard Terminal Arrival (STAR), and enroute RNAV Q and RNAV T routes should be loaded into the flight plan from the database in their entirety, rather than loading route waypoints from the database into the flight plan individually. Selecting and inserting individual named fixes from the database is permitted, provided all fixes along the published route to be flown are inserted.

GNSS integrity limitations

For flight planning purposes, in areas where SBAS coverage is not available, the pilot must check RAIM availability. The availability of GPS integrity RAIM shall be confirmed for the intended route of flight.

In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended route of flight, the flight should be delayed, cancelled, or re-routed on a track where RAIM requirements can be met.

For flight planning purposes, in Remote Continental and Oceanic areas, the pilot must check FDE availability. Refer to the Table 2.6.1 - GNSS operational requirements, to check maximum authorized FDE unavailability and WFDE Prediction program references.

Approach operations limitations

LNAV+V feature is a standard LNAV approach with advisory vertical guidance provided for assistance in maintaining a constant vertical glidepath similar to an ILS glideslope on approach. This guidance is displayed on the PFD in the same location as the ILS glideslope using a magenta diamond. In all cases where LNAV+V is indicated by the system during an approach, LNAV minima shall be used.

Use of the GARMIN GPS/SBAS receivers to provide navigation guidance during the final approach segment of an ILS, LOC, LOC-BC, LDA, SDF, MLS or any other type of approach not approved for "or GPS" navigation is prohibited.

When using the VOR/LOC/GS receivers to fly the final approach segment, VOR/LOC/GS navigation data must be selected and presented on the CDI of the pilot flying.

Procedures with RF legs (Radius to Fix legs)

At a minimum, the flight director must be displayed and utilized when conducting procedures containing RF legs.

Icing conditions

Except for certain phases of flight where the POH specifies that deicing boots should not be used (e.g. take-off, final approach, and landing), compliance with the following is required.

Wing and Tail Leading Edge Pneumatic Deicing Boot System must be activated:

- At the first sign of ice formation anywhere on the aircraft, and
- The system must either be continued to be operated in the automatic cycling mode, if available; or the system must be manually cycled as needed to minimize the ice accretions on the airframe.

The wing and tail leading edge pneumatic deicing boot system may be deactivated only after leaving icing conditions and after the airplane is determined to be clear of ice.

In any case of icing conditions, first refer to Particular procedures described in chapter 4.5 and in case of unforeseen icing conditions, refer in addition to the Emergency procedure described in chapter 3.12.

Severe icing conditions

▲ WARNING ▲

Severe icing may result from environmental conditions outside of those for which the airplane is certificated. Flight in freezing rain, freezing drizzle, or mixed icing conditions (supercooled liquid water and ice crystals) may result in ice build-up on protected surfaces exceeding the capability of the ice protection system, or may result in ice forming aft of the protected surfaces. This ice may not be shed using the ice protection systems, and may seriously degrade the performance and controllability of the airplane.



During flight, severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues. If one or more of these visual cues exists, immediately request priority handling from air traffic control to facilitate a route or an altitude change to exit the icing conditions.

- Unusually extensive ice accumulation on the airframe and windshield in areas not normally observed to collect ice.
- Accumulation of ice on the upper surface of the wing aft of the protected area.

Since the autopilot, when operating, may mask tactile cues that indicate adverse changes in handling characteristics, use of the autopilot is prohibited when any of the visual cues specified above exist, or when unusual lateral trim requirements or autopilot trim warnings are encountered while the airplane is in icing conditions.

All wing icing inspection lights must be operative prior to flight into icing conditions at night.

• NOTE •

This supersedes any relief provided by the Master Minimum Equipment List (MMEL).

•

Refer to the list of equipment required depending on type of operation in this same chapter.

Refer to Particular procedures described in chapter 4.5 and in case of unforeseen icing conditions, refer in addition to the Emergency procedure described in chapter 3.12.

Flap operating envelope

The use of flaps is not authorized above 15 000 ft.

Reverse utilization

The use of control reverse BETA (β) range is prohibited :

- during flight,
- on ground, if the engine is not running.

Weather radar GWX 70

On ground, the radar radiation is inhibited when the landing gear shock absorbers are compressed. However, it is important to obey the following restrictions :

- Do not operate the radar during refueling operations or in the vicinity of trucks or containers containing flammables or explosives.
- Do not allow personnel within 12 feet of area being scanned by antenna when system is transmitting.

Equipment required depending on type of operation

The airplane is approved for day & night VFR and day & night IFR operations when appropriate equipment is installed and operating correctly.

The type certification for each use requires the following equipment. The equipment must be installed and operate perfectly according to the indicated type of use.

▲ CAUTION ▲

It is the pilot's responsibility to check that the following equipment lists are in accordance with the specific national operation rules of the airplane registration country depending on the type of operation.



▲ CAUTION ▲

Systems and equipment mentioned hereafter do not include specific flight and radio-navigation instruments required by decree concerning operation conditions for civil airplanes in general aviation or other foreign regulations (for example FAR PART 91 and 135).



Day VFR

1. Pilot instruments
 - Airspeed indicator
 - Sensitive and adjustable altimeter
 - Magnetic compass with built-in compensator
2. CAS warning and caution messages
 - Oil pressure
 - Low fuel pressure
 - Fuel selector OFF
 - Fuel auxiliary pump ON
 - L.H. and R.H fuel tank low level
 - Non functioning of fuel timer
 - Battery stop
 - Main generator OFF
 - Low voltage
 - Ground power unit connected
 - Inertial separator
 - Starter
 - Ignition
 - Flaps
 - Landing gears and doors
3. Aural warning
 - V_{MO} warning
 - Landing gear warning
 - Stall warning
4. Engine instruments
 - Torquemeter
 - Propeller tachometer
 - Interturbine temperature indicator (ITT)
 - Gas generator tachometer (Ng)
 - Oil pressure indicator
 - Oil temperature indicator

5. Various indicators

- Fuel gauge indicators (2)
- Voltmeter
- Ammeter
- Outside air temperature

6. Installations

- Fuel mechanical pump (main)
- Fuel electrical pump (auxiliary)
- Fuel shut-off valve
- Fuel timer
- Starter generator
- Inertial separator
- Stall warning
- Electrical aileron trim
- Electrical rudder trim
- Manual elevator pitch trim
- Engine ignition
- Landing gear electro-hydraulic unit
- Landing gear emergency hydraulic pump (manual)
- Flaps
- Overspeed regulator
- Electrical feathering
- Battery

7. Miscellaneous

- Seats (each occupant)
- Belts (each occupant)
- Straps (each occupant)
- Pilot's operating handbook

Night VFR

1. All equipment required for day VFR
2. Attitude display indicator
3. Instrument lighting
4. Instrument panel lighting
5. Emergency lighting
6. Vertical speed indicator
7. Navigation lights (4)
8. Anticollision lights (2)
9. Landing light

IFR

1. All equipment required for day VFR
2. All equipment required for night VFR, if flight is performed during night
3. Taxi light, if flight is performed during night
4. Clock
5. 2nd altimeter
6. Emergency static source
7. Pitot static tube deicing

Pressurized flight

1. Cabin altimeter
2. Cabin vertical speed indication
3. Cabin differential pressure indication
4. Pressurization control valve
5. Safety valve
6. Pressurization control
7. Maximum cabin altitude and pressure warning light

Flight into icing conditions

1. All equipment required for IFR flight
2. Propeller deicing
3. L.H. windshield deicing
4. Airframe, stabilizer and elevator horn deicing
5. Wing leading edge inspection light, if night flight
6. Stall warning deicing
7. Inertial separator
8. Garmin annunciation "Airspeed"

Altitude operating limits

Maximum altitude : 31000 ft (9449 m)

Maximum differential pressure : 6.2 psi

Operation in RVSM area

This airplane is approved for operations in Reduced Vertical Separation Minimum (RVSM) airspace when required equipment is maintained in accordance with the airplane maintenance manual - refer to section List of equipment, paragraph List of critical RVSM equipment.

This does not constitute operational approval. Individual airplane and operational approval must be obtained in accordance with applicable operating rules.

Each operator must ensure compliance with required crew training and operating practices and procedures.

Moreover, the following equipment must be installed and operating normally upon entering RVSM airspace :

- Pilot and R.H. station primary altimeters
- Autopilot
- Altitude alerter
- ATC transponder

• NOTE •

Any changes to the pitot / static, air data computer, autopilot, altitude alerting and / or transponder systems, or other changes that affect operation of these systems must be evaluated for impact on the RVSM approval.

The standby altimeter is not approved for RVSM operations.

•

In-flight breaker use limits

A tripped breaker should not be reset in flight unless deemed necessary for continued safe flight and landing. Only one reset should be attempted.

Enhanced mode S

The installed mode S system satisfies the data requirements of ICAO Doc 7030/4, regional supplementary procedures for SSR mode S enhanced surveillance in designated european airspace. The capability to transmit data parameters is shown in column 2 :

Parameter	Available (A) / Not available (NA)
Magnetic heading	A
Indicated airspeed	A
Mach No	A
Vertical rate	A
Roll angle	A
True airspeed	A
True track angle	A
Groundspeed	A
Selected altitude	A
Barometric pressure setting	A

Chartview system operating limitations

The geographic-referenced airplane symbol on some charts must not be used for navigation.

• NOTE •

The airplane symbol displayed on some charts provides supplemental airplane situational awareness information. It is not intended as a means for navigation or flight guidance. The airplane symbol is not to be used for conducting instrument approaches or departures, and it should not be relied upon during low visibility taxi operations. Position accuracy, orientation, and related guidance must be assured by other means of required navigation.

•

Operators must have back-up charts available to the flight crew.

Database currency must be verified prior to use via database effectivity page.

The flight crew is responsible for verifying availability of charts for the planned flight.

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2.7 - Miscellaneous limits

Seating limits C.G.

- 2 front seats at 178.5 in (4.534 m)
- >> *With 4-seat accommodation or 6-seat accommodation*
- 2 intermediate seats at 224.8 in (5.710 m)
- >> *With 6-seat accommodation*
- Rear bench (2 seats) at 267.1 in (6.785 m)

Baggage limits

- Baggage in pressurized cabin at 303 in (7.695 m)
- Baggage in non pressurized forward section at 128 in (3.250 m)

Minimum crew

- One pilot at L.H. front seat

Maximum occupancy

The number of persons on board is limited by approved seating configuration installed but must not exceed six, including the pilot.

The number of persons must be less than or equal to the number of seats.

Use of doors

Flight with door open or ajar is prohibited.

Chemical toilet cabinet, if installed

The cabinet must be stowed during takeoff and landing. No baggage on the top of the cabinet for the whole flight.

Cargo net installation limits

Small cargo net : maximum loading height = 28 in (710 mm)

Large cargo net : maximum loading height = 22 in (565 mm) in cabin, out of baggage compartment.

▲ CAUTION ▲

No item may extend forward of the cargo net system to protect door from obstruction.



Weather radar limitation

Weather radar can be displayed on :

- PFD 1,
- PFD 2,
- MFD, with different indications of mode.

Example :

- PFD 1 : "SBY" MODE
- MFD : "SBY" MODE
- PFD 2 : "ACTIVE" MODE

▲ CAUTION ▲

The radar is OFF only when all displays indicate OFF.



2.8 - Markings

Airspeed indicator on PFD(s) and on Standby airspeed indicator

Markings and their color code significance are shown in figure 2.8.1.

Marking	KIAS (Value or range)	Significance
Red strip	Below 65	/
White strip	65 - 122	Full flap operating range Lower limit is maximum weight V _{SO} in landing configuration.
Green strip	122 - 266	Normal operating airspeed range
Red/white barber pole strip	Above 266	266 = VMO

Figure 2.8.1 - Airspeed indicator markings

Pressurization

Marking	Value	Significance
Red line	6.2 psi	Cabin Δ P limit

Figure 2.8.2 - Pressurization marking

Engine instruments

Engine instrument markings and their color code significance are shown in figure 2.8.3.

Indication	Red line or arc ----- Minimum limit	Yellow line or arc ----- Caution range	Green line or arc ----- Normal operating	Red line ----- Maximum limit
Oil temperature	- 40 °C (- 40 °F)	- 40 to 0 °C (- 40 to 32 °F) 104 to 110 °C (219.2 to 230 °F)	0 to 104 °C (32 to 219.2 °F)	110 °C (230 °F)
Oil pressure	60 psi	60 to 105 psi	105 to 135 psi	135 psi (red line) normal limit
Generator RPM (Ng)	---	---	51 to 104 %	104 %
Propeller RPM (Np)	---	450 to 1000 RPM	1950 to 2050 RPM	2050 RPM
ITT Engine start or off	---	840 to 1090 °C (1544 to 1994 °F)	400 to 840 °C (752 to 1544 °F)	840 °C (1544 °F) normal limit ----- 870 °C (1598 °F) (< 20 seconds limit) ----- 1090 °C (1994 °F) (red line) absolute limit
Engine running	---	---	400 to 840 °C (752 to 1544 °F)	840 °C (1544 °F) normal limit
Torque (TRQ)	---	100 %	0 to 100 %	101 %

Figure 2.8.3 - Engine instrument markings

2.9 - Placards

- (1) Under L.H. front side window

14113004AAA KMA18200

FLIGHT CONDITIONS :

DAY AND NIGHT VFR AND IFR

THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE
IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM
OF PLACARDS, MARKINGS AND PILOT OPERATING HANDBOOK

ICING CONDITIONS ALLOWED

INVERTED FLIGHT _____ PROHIBITED ACROBATIC MANEUVERS _____ PROHIBITED INTENTIONAL SPINS _____ PROHIBITED MAXIMUM TAKEOFF WEIGHT _____ 3354 kg / 7394 lbs MAXIMUM LANDING WEIGHT _____ 3186 kg / 7024 lbs DESIGN LOAD FACTOR (MAXIMUM) FLAPS UP WEIGHT BELOW 2984 kg / 6579 lbs _____ $1.5 < n < 3.8$ g ABOVE 2984 kg / 6579 lbs _____ $1.5 < n < 3.8$ g FLAPS DOWN _____ $0 < n < 2$ g	MANEUVERING SPEED V_A _____ 158 KIAS MAXIMUM OPERATING SPEED V_{MO} _____ 266 KIAS FLAPS EXTENDED MAXIMUM SPEED V_{FE} _____ TAKEOFF CONFIGURATION _____ 178 KIAS LANDING CONFIGURATION _____ 122 KIAS LANDING GEAR EXTENDED MAXIMUM SPEED V_{LE} _____ 178 KIAS LANDING GEAR OPERATING MAXIMUM SPEED V_{LO} UP _____ 150 KIAS DOWN _____ 178 KIAS
--	--

- (2) Calibration chart on compass and on windshield post



For	N	30	60	E	120	150
Steer						
For	S	210	240	W	300	330
Steer						

DATE : _____ RADIO ON _____

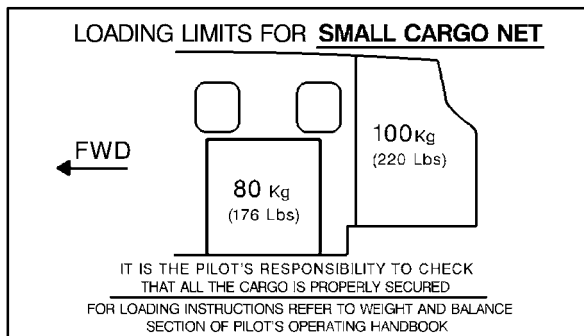
- (3) On pressurized baggage compartment partition wall

100 kg - 220 lbs MAXIMUM

**IT IS THE PILOT'S RESPONSIBILITY TO
CHECK THAT ALL THE BAGGAGES ARE
PROPERLY SECURED**

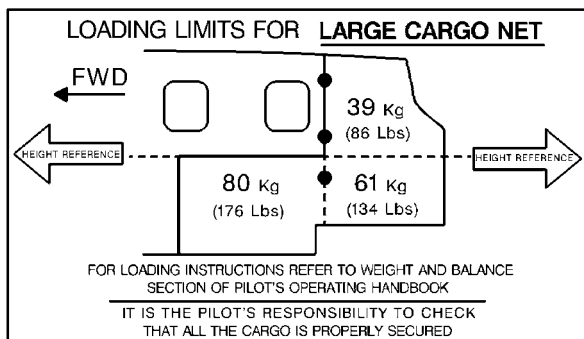
**FOR LOADING INSTRUCTIONS
SEE WEIGHT AND BALANCE DATA
IN PILOT'S OPERATING HANDBOOK**

- (3)a For the small cargo net, on frame C13bis or on the right lower upholstery panel



14113500AAAAA18000

- (3)b For the large cargo net, on R.H. side upholstery panel, in the rear baggage compartment



14113500AAAAA18100

- (3)c On FWD baggage compartment door frame (non pressurized)

50 kg - 110 lbs MAXIMUM

**FOR LOADING INSTRUCTIONS
SEE WEIGHT AND BALANCE DATA
IN PILOT'S OPERATING HANDBOOK**

- (4) On pedestal console

14113600AAAMMA8001



- (5) On fuel selector

14113056AAALMA8000



- (6) Near fuel tank caps

JET-A-FUEL

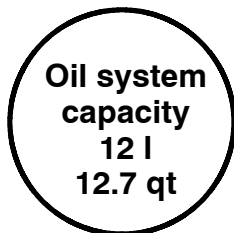
TOTAL CAPACITY 150.5 us gal - 570 l

ANTHICE ADDITIVE REQUIRED.SEE PILOT'S
OPERATING HANDBOOK FOR OTHER APPROVED
FUELS QUANTITY AND TYPE OF ADDITIVE

14112004AAAMMA8200



- (7) On internal face of L.H. engine cowling



- (8) On landing gear emergency control access door



- (9) Under window, at L.H. Intermediate seat



- (10) On rear passenger's table casing

TABLE MUST BE STOWED DURING TAKEOFF AND LANDING

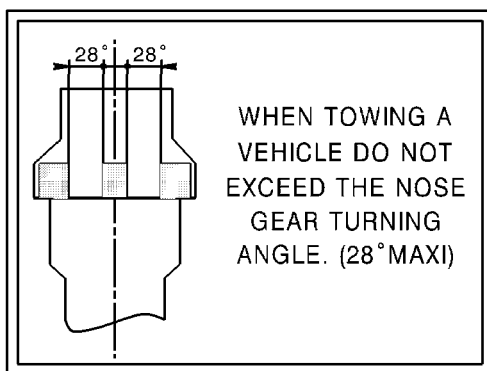
- (11) Under R.H. control wheel

I4351000AAACMA8000



- (12) On nose gear door

I4112001AAACMA8000



- (13) On nose gear leg

NOSE LANDING GEAR
TIRE PRESSURE : 6,5 bar
94 psi

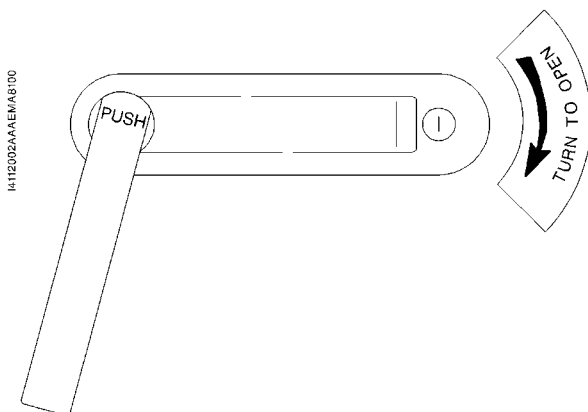
- (14) On main gear leg

**MAIN LANDING GEAR
TIRE PRESSURE : 8,96 bar
130 psi**

- (15) On engine cowling, in front of compartment door

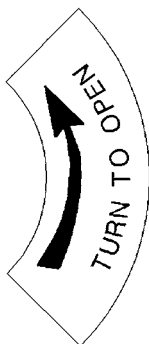
**EXTERNAL POWER
28 VOLTS D.C. NOMINAL
800 AMP
STARTING CAPACITY MIN
DO NOT EXCEED 1000 AMP**

- (16) On pilot door - External side, if installed



- (17) On access door - External side

I4112002AAEAEMA8000



- (18) On outer fuselage skin aft of access door and in the cabin forward of access door



- (19) On access door - Internal side

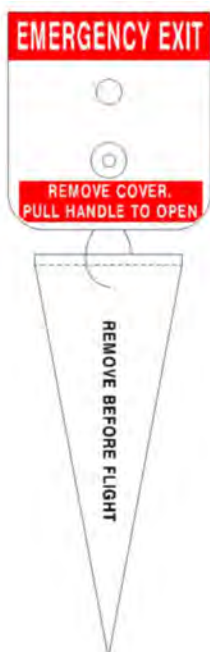


- (20) On pilot door - Internal side, if installed



- (21) On emergency exit handle

Marking on cover



Marking on handle



- (22) On last step of stairs

STAIRS MAX LOAD : ONE PERSON

- (23) On R.H. access door jamb

**DO NOT USE
HAND RAIL
TO RETRACT
OR STOW
STAIRS**

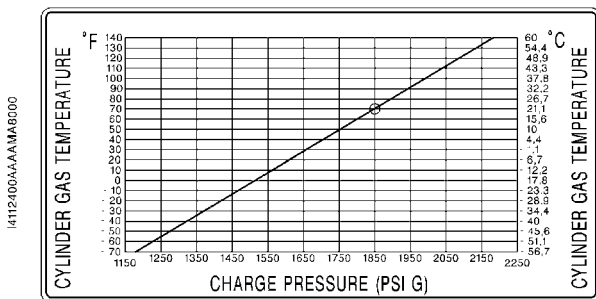
- (24) On R.H. side at front seat level and on the first rear passengers masks container (R.H. side on the ceiling)

**WARNING
GREASY SUBSTANCES ARE CAPABLE
OF SPONTANEOUS COMBUSTION
ON CONTACT WITH OXYGEN
DO NOT SMOKE WHILE OXYGEN IS IN USE**

- (25) On rear passengers masks containers

**OXYGEN MASKS INSIDE
PULL MASKS FOR
OXYGEN SUPPLY** ↓

- (26) On internal face of the oxygen cylinder service door



- (27) On the oxygen service door

I4112400AAAA/MA8100

**OXYGEN SERVICE POINT
USE NO LUBRICANTS**

- (28) On emergency locator transmitter inspection door

I4112200AAAA/MA8000



- (29) On the potty seat curtain, if installed, on pilot's side

CURTAIN MUST BE STOWED FOR TAKE-OFF AND LANDING

>> Airplane equipped with coat hanger (Post-MOD70-0557-25B)

(30) On the L.H. Rear cargo compartment panel upper edge

I4113200AALMA8000

CLOTHING ONLY**>> Airplane equipped with coat hanger (Post-MOD70-0557-25C)**

(31) On the L.H. Rear cargo compartment panel upper edge

I4113200AALMA8300

MAX WEIGHT CAPACITY 4,5kg - 10 lbs

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Section 3

CAS messages

Table of contents

• NOTE •

CAS MESSAGES are in alphabetical order by either Chapter, Section, Paragraph or Supplement

•

AP ON YD OFF	3.12.16
AURAL WRN 1 CHNL	3.12.8
AURAL WRN FAIL	3.12.7
AUTO SEL	3.8.5
AUX BOOST PMP ON	3.8.3
BAT AMP	3.9.1
BAT OFF	3.9.1
BLEED OFF	3.10.2
BLEED TEMP	3.10.1
CABIN ALTITUDE and USE OXYGEN MASK	3.10.5
CABIN ALTITUDE and USE OXYGEN MASK and EDM ...	3.10.6
CABIN DIFF PRESS	3.10.9
CHIP	3.3.11
CPCS BACKUP MODE	3.10.4
DOOR	3.10.12
EDM	3.10.7
EDM OVERRIDE	3.10.8
ELEC FEATH FAULT	3.9.7
FIRE	If installed - Supplement 18
FLAPS ASYM	3.7.3
FRONT CARGO DOOR	3.12.13
FUEL IMBALANCE	3.8.6
FUEL LOW L	3.8.4
FUEL LOW R	3.8.4

FUEL OFF	7.7.1
FUEL PRESS	3.8.1
GEAR UNSAFE	3.7.5
GPU DOOR	3.12.14
IGNITION	3.12.15
INERT SEP FAIL	3.11.3
INERT SEP ON	7.6.10
ITT	3.3.10
LOW LVL FAIL L	3.8.7
LOW LVL FAIL R	3.8.7
LOW VOLTAGE	3.9.3
MAIN GEN	3.9.2
MAIN GEN and LOW VOLTAGE	3.9.4
MAX DIFF MODE	7.9.6
NG HI	3.3.11
OIL PRESS	3.3.4
OIL TEMP	3.3.12
OXYGEN	3.10.11
PARK BRAKE	7.5.10
PITOT HT ON L	7.13.3
PITOT HT ON R	7.13.3
PITOT NO HT L	3.11.6
PITOT NO HT R	3.11.6
PROP DEICE FAIL	3.11.2
PROP DEICE ON	7.13.2
STALL HEAT ON	7.13.3
STALL NO HEAT	3.11.7
STARTER	7.6.8
USP ACTIVE	3.12.6
VACUUM LOW	3.10.13

Section 3

Emergency procedures

Table of contents

3.1	- General	3.1.1
	Procedure format	3.1.3
3.2	- Rejected takeoff	3.2.1
	Engine failure at takeoff before rotation	3.2.1
	Rejected takeoff for any other reason	3.2.2
3.3	- Engine failures	3.3.1
	Engine failure before rotation	3.3.1
	Engine failure after rotation	3.3.1
	Engine failure in flight	3.3.3
	OIL PRESS or OIL PRESS	3.3.4
	Engine regulation discrepancy, power loss, throttle control loss	3.3.5
	Governor control not operating	3.3.8
	Excessive propeller rotation speed	3.3.8
	Engine does not stop on ground	3.3.9
	ITT	3.3.10
	CHIP	3.3.11
	NG HI	3.3.11
	OIL TEMP	3.3.12
3.4	- Air start	3.4.1
	Air start envelope	3.4.1
	Air start procedures	3.4.2

3.5	-	Fire and smoke	3.5.1
		Engine fire on ground	3.5.1
		Cabin fire on ground	3.5.2
		Engine fire in flight	3.5.3
		Fire or smoke in flight	3.5.4
3.6	-	Emergency descents	3.6.1
		Emergency descents profiles	3.6.1
		Maximum rate descent	3.6.2
		Maximum range descent	3.6.3
3.7	-	Emergency landings, flaps, gear	3.7.1
		Forced landing	3.7.1
		Tire blowout during landing	3.7.2
		FLAPS ASYM	3.7.3
		Flaps malfunction	3.7.4
		Landing with flaps malfunction	3.7.4
		Landing gear retraction discrepancy	3.7.5
		Landing gear extension discrepancy	3.7.6
		Emergency gear extension	3.7.7
		Landing with unlocked main landing gear	3.7.10
		Landing with defective nose landing gear (down unlocked or not down)	3.7.12
		Landing with gear up	3.7.13
		Ditching	3.7.14
		Landing without elevator control	3.7.15
3.8	-	Fuel system	3.8.1
		FUEL PRESS	3.8.1
		AUX BOOST PMP ON	3.8.3
		FUEL LOW L-R	3.8.4
		AUTO SEL	3.8.5
		FUEL IMBALANCE	3.8.6
		LOW LVL FAIL L-R	3.8.7

3.5	-	Fire and smoke	3.5.1
		Engine fire on ground	3.5.1
		Cabin fire on ground	3.5.2
		Engine fire in flight	3.5.3
		Cabin electrical fire or smoke during flight	3.5.4
		Smoke elimination	3.5.5
3.6	-	Emergency descents	3.6.1
		Emergency descents profiles	3.6.1
		Maximum rate descent	3.6.2
		Maximum range descent	3.6.3
3.7	-	Emergency landings, flaps, gear	3.7.1
		Forced landing	3.7.1
		Tire blowout during landing	3.7.2
		FLAPS ASYM	3.7.3
		Flaps malfunction	3.7.4
		Landing with flaps malfunction	3.7.4
		Landing gear retraction discrepancy	3.7.5
		Landing gear extension discrepancy	3.7.6
		Emergency gear extension	3.7.7
		Landing with unlocked main landing gear	3.7.10
		Landing with defective nose landing gear (down unlocked or not down)	3.7.12
		Landing with gear up	3.7.13
		Ditching	3.7.14
		Landing without elevator control	3.7.15
3.8	-	Fuel system	3.8.1
		FUEL PRESS	3.8.1
		AUX BOOST PMP ON	3.8.3
		FUEL LOW L-R	3.8.4
		AUTO SEL	3.8.5
		FUEL IMBALANCE	3.8.6
		LOW LVL FAIL L-R	3.8.7

3.9	-	Electrical system	3.9.1
		BAT AMP	3.9.1
		BAT OFF	3.9.1
		MAIN GEN	3.9.2
		LOW VOLTAGE	3.9.3
		MAIN GEN and LOW VOLTAGE	3.9.4
		ELEC FEATH FAULT	3.9.7
		Bus bar	3.9.8
		Total loss of electrical power	3.9.11
3.10	-	Pressurization and air conditioning	3.10.1
		BLEED TEMP	3.10.1
		BLEED OFF	3.10.2
		CPCS BACKUP MODE	3.10.4
		CABIN ALTITUDE and USE OXYGEN MASK	3.10.5
		CABIN ALTITUDE and USE OXYGEN MASK and EDM	3.10.6
		EDM	3.10.7
		EDM OVERRIDE	3.10.8
		CABIN DIFF PRESS	3.10.9
		Cabin not depressurized after landing	3.10.10
		OXYGEN	3.10.11
		DOOR	3.10.12
		VACUUM LOW	3.10.13
		Defog malfunction	3.10.14

3.11	-	Deicing system	3.11.1
		Leading edges deicing failure	3.11.1
		PROP DEICE FAIL	3.11.2
		INERT SEP FAIL	3.11.3
		Windshield deicing failure	3.11.4
		Windshield misting or internal icing	3.11.5
		PITOT NO HT L-R	3.11.6
		STALL NO HEAT	3.11.7
3.12	-	Miscellaneous	3.12.1
		Trim runaway	3.12.1
		Crack in cockpit window or window panel	3.12.2
		Emergency exit use	3.12.3
		Emergency beacon (ELT) use	3.12.4
		Inadvertent spins	3.12.5
		AP off, stall warning	3.12.6
		USP ACTIVE	3.12.6
		AURAL WRN FAIL	3.12.7
		AURAL WRN 1 CHNL	3.12.8
		Oxygen use	3.12.9
		Airspeed indicating system failure	3.12.11
		Flight into severe icing conditions	3.12.12
		FRONT CARGO DOOR	3.12.13
		GPU DOOR	3.12.14
		IGNITION	3.12.15
		AP ON YD OFF	3.12.16
		Autopilot or electric pitch trim malfunction	3.12.17
		Dual GPS/SBAS failure (DR or LOI annunciation on HSI) ..	3.12.18
		GPS approach alarm limits exceeded	3.12.20
		Left PFD failure	3.12.21
		AHRS failure	3.12.22
		ADC failure	3.12.24
		MFD failure	3.12.25

3.1 - General

The recommended procedures for different failures or emergency situations are provided in this section.

Emergency procedures associated with optional or particular equipment that require pilot's operating handbook supplements are provided in section 9 Supplements.

The pilot must know procedures given in this section and be prepared to take appropriate action should an emergency arise.

Some emergency procedures are a part of pilot basic training. Although these emergencies are discussed here, this information is not intended to replace such training, but only to provide a source of reference and review.

It is important for the pilot to be familiar with standard emergency procedures

Alarm system recall

Main failure or state modification of the different systems are provided by warning or caution messages appearing on CAS display.

The color code philosophy for CAS messages is the following :

- the **red** warning messages indicate a failure or a condition that requires an immediate action from the pilot,
- the **amber** caution messages indicate a failure or a condition that requires an action from the pilot as soon as practical.

Red or amber failure warnings are coupled with the lighting of

- a flashing red indicator/button



or

- a fixed amber indicator/button



Both indicators/buttons are located on the upper part of the L.H. instrument panel. When either one lights up, press it once to reactivate. It will go out and is ready to signal in the event of another failure. On the CAS display, the corresponding failure message remains ON as long as the failed condition exists.

The actions associated to the **red** warning or **amber** caution messages are described in this Section of the POH.

Procedure format

PROCEDURE TITLES

Name of the procedure	1/X
-----------------------	-----

Procedure introduction or description of symptoms associated with the failure are presented like this at the beginning of the procedure.

1/X is written if the procedure extends over 2 pages or more.

MEMORY ITEMS

The memory items are indicated with a grey border box as shown hereafter :

The memory items are written like this.

Memory items are critical steps that must be executed quickly from memory without referring to POH or checklist.

CONDITIONAL STEPS

Conditions are presented like this :

- 1 - With related actions to perform indented inside.

VALIDITY / EFFECTIVITY

>> *Pre/Post-MOD70-xxxx-xx*

Before procedure title, represents a specific validity / effectivity for the entire procedure below. If nothing is specified, the procedure applies to all airplanes.

>> *Validity inside a procedure is presented like this*

- 1 - With actions related to this validity listed under.

CONTINUATION AND ENDING

The end of the entire procedure is indicated by :

End of procedure.

Procedure completion within the body of the procedure as a result of a condition is indicated by :

End of procedure ■

Continuation of a procedure on several pages is indicated by :

► *Continuing*

Continue ►

LANDING DIRECTIVES

- Land as soon as possible ◀ means land on the nearest suitable runway.
- Land as soon as practical ◀ means land on the nearest suitable runway with convenient facilities.

CAS MESSAGES

Indicated as displayed in the MFD CAS window :

- **FUEL PRESS** means FUEL PRESS warning CAS message,
- **MAIN GEN** means MAIN GEN caution CAS message.

ANNUNCIATIONS ON PFDs or MFD

Indicated as displayed in the PFD or MFD with specifying “annunciation” next to the message :

- **BOTH ON AHRS1** annunciation,
- **HDG NO COMP** annunciation.

3.2 - Rejected takeoff

Engine failure at takeoff before rotation

- | | | |
|-----|----------------|-------------|
| 1 - | THROTTLE | Flight IDLE |
| 2 - | Brakes | As required |

If the airplane cannot be stopped on the runway :

- | | | |
|-----|--------------------------|-----------|
| 3 - | THROTTLE | CUT OFF |
| 4 - | FUEL TANK SELECTOR | OFF |
| 5 - | Crash lever | Pull down |

If necessary :

- | | |
|-----|---|
| 6 - | Evacuate after the airplane has come to a stop. |
|-----|---|

End of procedure.

Rejected takeoff for any other reason

- | | | |
|-----|----------------|-------------|
| 1 - | THROTTLE | Flight IDLE |
| 2 - | Reverse | As required |
| 3 - | Brakes | As required |

If the airplane cannot be stopped on the runway :

- | | | |
|-----|--------------------------|-----------|
| 4 - | THROTTLE | CUT OFF |
| 5 - | FUEL TANK SELECTOR | OFF |
| 6 - | Crash lever | Pull down |

If necessary :

- 7 - Evacuate after the airplane has come to a stop.

End of procedure.

3.3 - Engine failures

Engine failure before rotation

Perform procedure Engine failure at takeoff before rotation
Refer to chapter 3.2

End of procedure.

Engine failure after rotation

1/2

► Fly the airplane ◀

1 - MAN OVRD control Full forward

If power recovery successful :

► Fly the airplane using the MAN OVRD control for power ◀

2 - THROTTLE Flight IDLE

► Land as soon as possible ◀

End of procedure ■

If power recovery unsuccessful :

3 - MAN OVRD control Full backward

If height does not allow to choose a suitable landing surface :

► Land straight ahead without changing LANDING GEAR position ◀

4 - FLAPS lever TO

5 - Airspeed Maintain above 100 KIAS

6 - THROTTLE CUT OFF

Continue ►

Engine failure after rotation

2/2

► Continuing

7 - FUEL TANK SELECTOR OFF

Before touch down :

8 - FLAPS lever LDG

9 - Crash lever Pull down

10 - Evacuate airplane after coming to complete stop.

Do not unfasten seat belts before complete stop.

End of procedure ■

If height allows to reach a suitable landing surface :

11 - LANDING GEAR lever DN

12 - FLAPS lever As required

Maintain airspeeds

Flaps UP

105 < KIAS < 178

Flaps TO

100 < KIAS < 178

Flaps LDG

85 < KIAS < 122

13 - THROTTLE CUT OFF

14 - FUEL TANK SELECTOR OFF

Before touch down :

15 - Crash lever Pull down

16 - Evacuate airplane after coming to complete stop.

Do not unfasten seat belts before complete stop.

End of procedure.

Engine failure in flight■ *Symptoms : Loss of power*

► Fly the airplane ◀

- | | | |
|-----|--------------------------|--------------|
| 1 - | FUEL TANK SELECTOR | Switch tanks |
| 2 - | AUX BP switch | ON |
| 3 - | Autopilot | Disconnect |

■ *If power recovery successful :*

- 4 - Remaining fuel Check

► Land as soon as possible ◀

End of procedure ■■ *If power recovery unsuccessful :*

- | | | |
|-----|--------------------|---------|
| 5 - | THROTTLE | CUT OFF |
| 6 - | Oxygen masks | Use |

- 7 - Air start envelope Check
-
- Refer to chapter 3.4

End of procedure.

OIL PRESS or **OIL PRESS**

■ Indicates that oil pressure is below 105 psi.

► Fly the airplane ◀

► Land as soon as possible ◀

- | | | |
|-----|--------------------|-------------------|
| 1 - | Oil pressure | Monitor |
| 2 - | TRQ | Minimum necessary |

▲ CAUTION ▲

Due to the oil pressure drop, the propeller blade angle may go towards high pitch and therefore lead to a Np propeller rotation speed decrease.



If engine power decreases :

- | | | |
|-----|-------------------------|---|
| 3 - | THROTTLE | CUT OFF |
| 4 - | Perform procedure | Emergency descent
Refer to chapter 3.6 |
| 5 - | Perform procedure | Forced landing
Refer to chapter 3.7 |

End of procedure.

Engine regulation discrepancy, power loss, throttle control loss

1/3

Symptoms :

- *power fluctuations, or*
- *uncommanded power loss, or*
- *bad response to THROTTLE movements.*

▶ Fly the airplane ◀

If circumstances and obtained minimum power allow :

▲ CAUTION ▲

In manual override mode, engine is neither protected against slam accelerations, nor against maximum speed overshooting. Avoid rapid control movements and manage engine parameters.



- | | | |
|-----|--|---|
| 1 - | THROTTLE | Flight IDLE |
| 2 - | Confirm engine still running. | |
| 3 - | FUEL TANK SELECTOR | Switch tanks |
| 4 - | Check that no engine indication exceeds allowed value. | |
| 5 - | MAN OVRD control | Actuate
Progressively to minimum necessary |
- 6 - Continue the flight.

▶ Land as soon as possible ◀

If the available power is weak :

- 7 - LANDING GEAR lever DN
Only on a final approach glide path
- 8 - FLAPS lever LDG
Only in short final

Engine regulation discrepancy, power loss,
throttle control loss

2/3

► Continuing

▲ CAUTION ▲

When MAN OVRD control is used, the available power may not be sufficient to ensure a go-around in landing configuration, particularly if the weight is near the maximum weight.



► Do not perform a go around ◀

► Do not use the reverse ◀

9 - Land normally.

10 - Brakes As required

End of procedure ■

If minimum power obtained is excessive :

11 - Airspeed Reduce below 178 KIAS
By setting nose-up attitude

12 - INERT SEP switch ON

If ITT > 840°C :

13 - INERT SEP switch OFF

14 - LANDING GEAR lever DN

15 - FLAPS lever TO

16 - Long final or ILS approach Establish
At IAS < 178 KIAS

Continue ►

**Engine regulation discrepancy, power loss,
throttle control loss****3/3**► *Continuing**When runway is assured :*

- 17 - THROTTLE CUT OFF
- 18 - FLAPS lever LDG as required
At IAS < 122 KIAS
- 19 - Land normally.
- 20 - Brakes As required

End of procedure.

Governor control not operating

► Fly the airplane ◀

1 - Continue the flight.

If $N_p < 1960$ RPM :

► Do not perform a go around ◀

► Do not use the reverse ◀

In that case, the go-around performance and the reverse efficiency might be lower than expected.

Repair before further flight.

End of procedure.

Excessive propeller rotation speed

► Fly the airplane ◀

1 - Reduce power and airplane speed to avoid propeller rotation speeds higher than 2050 RPM.

► Land as soon as possible ◀

► Do not perform a go around ◀

In that case, the go-around may damage the gear reduction box and the reverse efficiency might be lower than expected.

Repair before further flight.

End of procedure.

Engine does not stop on ground

If the engine does not stop when the THROTTLE is set to CUT OFF :

1 - FUEL TANK SELECTOR OFF

2 - Wait for engine stop due to lack of fuel in the pipes.

3 - GENERATOR selector OFF

4 - SOURCE selector OFF

5 - Crash lever Pull down

Inform maintenance department.

End of procedure.

ITT

During engine start :

1 - Starting procedure Abort
Refer to procedure Engine start, chapter 4.4

2 - Cancel the flight.

Inform maintenance department.

End of procedure ■

After engine start :

On ground :

3 - Cancel the flight.

Inform maintenance department.

End of procedure ■

In flight :

► Fly the airplane ◀

4 - TRQ Reduce
To get ITT < 840°C

► Land as soon as possible ◀

Inform maintenance department.

End of procedure.

CHIP

■ Indicates that metallic chips have been detected in the engine oil.

In flight :

► Fly the airplane ◀

► Land as soon as practical ◀

Inform maintenance department.

End of procedure ■

On ground :

► Do not take off ◀

Airplane is grounded.

Inform maintenance department.

End of procedure.

NG HI

Indicates that Ng speed is more than 103 %.

1 - TRQ Reduce
To get Ng below 103 %

End of procedure.

OIL TEMP

Indicates that oil temperature is below 0°C or above 104°C (possibly with **OIL PRESS**)

Indicates that oil temperature is below 0°C or above 104°C

1 - Oil temperature indicator Check

If the indicated temperature is in the green sector :

► Land as soon as possible ◀

► Fly the airplane ◀

2 - Oil temperature Monitor

End of procedure ■

If the indicated temperature is not in the green sector :

Failure is confirmed, you can expect an oil pressure failure shortly.

▲ **CAUTION** ▲

Due to the oil pressure drop, the propeller blade angle may go towards high pitch and therefore lead to a Np propeller rotation speed decrease.



▲ **CAUTION** ▲

Prepare for an engine stop shortly.



3 - TRQ Minimum necessary

► Land as soon as possible ◀

If engine power decreases :

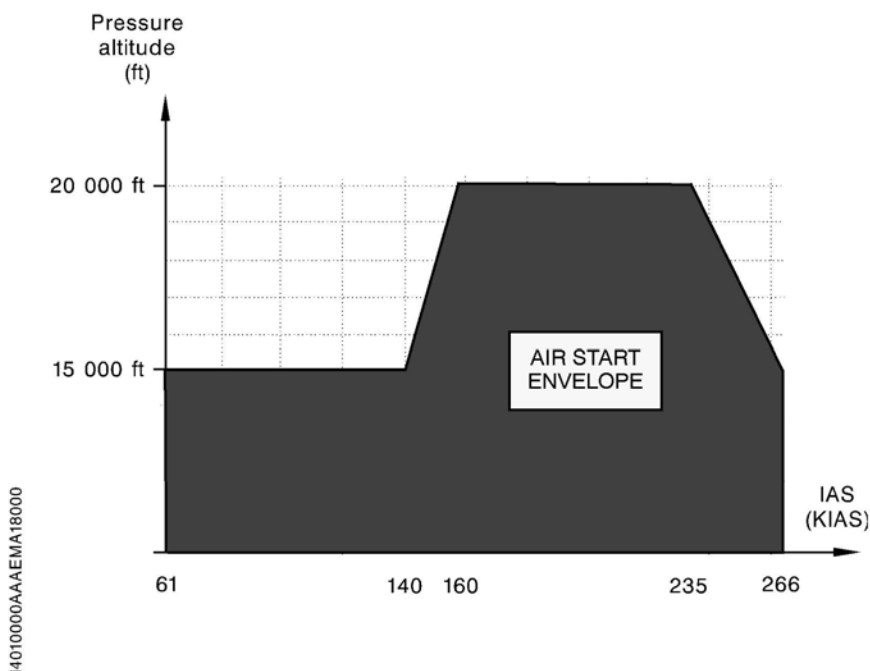
4 - THROTTLE CUT OFF

5 - Perform procedure Forced landing
Refer to chapter 3.7

End of procedure.

3.4 - Air start

Air start envelope



• NOTE •

Air start may be attempted outside of the envelope. However, above 20000 ft or at lower speeds, ITT tends to increase during start and prudence is recommended.

•

End of procedure.

Air start procedures

1/2

- 1 - Oxygen masks Use

▲ CAUTION ▲

The starter cannot operate if the GENERATOR selector is on ST-BY.



- 2 - GENERATOR selector MAIN

▲ CAUTION ▲

BLEED switch set to AUTO may cause overtemperature or abnormal acceleration.



- 3 - BLEED switch OFF

- 4 - A/C switch OFF

- 5 - Electric consumption Reduce

- 6 - FUEL TANK SELECTOR L or R

- 7 - AUX BP switch ON

- 8 - IGNITION switch AUTO or ON

- 9 - THROTTLE CUT OFF

- 10 - STARTER switch ON, start timer

If there is no start after 5 seconds :

- 11 - STARTER switch ABORT

When Ng around 13 % :

- 12 - THROTTLE LO-IDLE

- 13 - ITT and Ng Monitor

Continue ►

Air start procedures

2/2

► *Continuing*

When Ng > 50 % :

14 - Starter Check OFF automatically

If starter has not turned off automatically :

15 - STARTER switch ABORT

16 - THROTTLE Flight IDLE

17 - THROTTLE As required

18 - BLEED switch As required

19 - AUX BP switch AUTO

20 - Electrical equipment As required

If necessary :

21 - Perform procedure Emergency descent
Refer to chapter 3.6

If air start is not successful :

22 - Perform procedure Forced landing
Refer to chapter 3.7

End of procedure.

Intentionally left blank

3.5 - Fire and smoke

Engine fire on ground

Symptoms : ITT increasing, **ITT**, smoke, ...

- | | | |
|-----|--------------------|---------|
| 1 - | THROTTLE | CUT OFF |
| 2 - | BLEED switch | OFF |
| 3 - | A/C switch | OFF |
- 4 - Brakes As required
- 5 - FUEL TANK SELECTOR OFF

If necessary :

- 6 - Warn ground assistance.
- 7 - Crash lever Pull down
- Evacuate as soon as possible ◀

End of procedure.

Cabin fire on ground

1 - THROTTLE CUT OFF

2 - Brakes As required

If necessary :

3 - Warn ground assistance.

4 - Crash lever Pull down

5 - Cabin extinguisher As required

► Evacuate as soon as possible ◀

End of procedure.

Engine fire in flight

Symptoms : ITT increasing, **ITT** , smoke, ...

▲ WARNING ▲

No air start attempt after an engine fire.



► Fly the airplane ◀

- | | | |
|-----|--------------------------|---------|
| 1 - | Oxygen masks | Use |
| 2 - | THROTTLE | CUT OFF |
| 3 - | AUX BP switch | OFF |
| 4 - | FUEL TANK SELECTOR | OFF |

- | | | |
|-----|--------------------|-----|
| 5 - | BLEED switch | OFF |
| 6 - | A/C switch | OFF |

If necessary :

- | | | |
|-----|-------------------------|---|
| 7 - | Perform procedure | Emergency descent
Refer to chapter 3.6 |
| 8 - | Perform procedure | Forced landing
Refer to chapter 3.7 |

End of procedure.

Fire or smoke in flight

1/4

Symptoms: smoke or fire is detected in the cockpit or the cabin area.

- | | | |
|-----|--------------------------------|--------|
| 1 - | Oxygen masks and goggles | Use |
| 2 - | PASSENGER OXYGEN switch | Deploy |

▲ WARNING ▲

The pilot and the front passenger must set the regulator control tab on oxygen masks to 100 % oxygen, and the control knob to EMERGENCY to breathe oxygen at positive pressure.



- | | | |
|-----|--------------------|-----|
| 3 - | BLEED switch | OFF |
|-----|--------------------|-----|

▲ WARNING ▲

The cabin pressurization system is inoperative, and the cabin altitude increases towards airplane altitude.



- | | | |
|-----|--------------------|----------|
| 4 - | A/C switch | OFF |
| 5 - | FAN selector | Select 0 |

- | | | |
|-----|---|--|
| 6 - | Transmit a MAYDAY signal on current ATC frequency or on COM VHF 121.5 MHz | |
| 7 - | Transponder | Squawk 7700 |
| 8 - | Perform procedure | Maximum rate descent
Refer to chapter 3.6 |

When the cabin differential pressure is below 0.5 psi:

- | | | |
|------|--------------------------------------|---------|
| 9 - | DUMP switch | Actuate |
| 10 - | EMERGENCY RAM AIR control knob | Pull |

If smoke or fire increases:

- | | | |
|------|--------------------------------------|------|
| 11 - | EMERGENCY RAM AIR control knob | Push |
|------|--------------------------------------|------|

Continue ►

Fire or smoke in flight

2/4

► **Continuing**

12 - Cabin extinguisher Use

▲ **WARNING** ▲

Avoid prolonged exposure to toxic residue from the extinguishing agents.



If smoke or fire disappears:

► Land as soon as possible ◀

End of procedure ■

If smoke or fire persists:

13 - GENERATOR selector OFF

14 - Left hand DISPLAY BACKUP pushbutton Press

15 - ESS BUS TIE switch EMER

► Land as soon as possible ◀

▲ **WARNING** ▲

If the cause of the smoke is an unextinguished fire, maintain OFF for the BLEED switch and OFF for the A/C switch to eliminate the risk of spreading the fire.



▲ **CAUTION** ▲

Only the left Primary Flight Display (PFD 1) is available.

Autopilot (AP) is inoperative.

De-icing system is inoperative.

Landing Gear and Flaps controls are inoperative.

Automatic fuel tank selection is inoperative.

Electric Boost Pump (AUX BP) is inoperative.



Continue ►

Fire or smoke in flight

3/4

► **Continuing**

• NOTE •

In this configuration, the battery only supplies power to ESS BUS 1, ESS BUS 2, and BATT BUS, refer to chapter 3.9.

•

If smoke or fire persists:

► Fly the airplane ◀

16 - Crash lever Pull down

17 - Use the standby instrument (MD302) for:

- attitude
- airspeed
- altitude
- heading

• NOTE •

The internal battery will provide power to the MD302.

•

If smoke or fire stops:

18 - Crash lever Up

• NOTE •

This will allow the pilot to use PFD 1 and COM 1.

•

19 - Use VHF 1 to seek assistance from Air Traffic Control for landing

If not:

20 - Return to VMC conditions if possible

For approach and landing:

21 - Perform procedure Emergency gear extension
Refer to chapter 3.7

Continue ►

Fire or smoke in flight

4/4

► Continuing

22 - Minimum airspeed according to conditions and flaps configuration

	Normal conditions	Icing conditions
Flaps UP	105	135
Flaps TO	100	115
Flaps LDG	85	95

23 - Land normally

When airplane is stopped:

24 - THROTTLE CUT OFF

25 - FUEL TANK SELECTOR OFF

26 - Brakes As required

27 - Crash lever Pull down

► Evacuate as soon as possible ◀

End of procedure.

Intentionally left blank

Cabin electrical fire or smoke during flight

► Fly the airplane ◀

1 - Oxygen masks and goggles Use

If the origin is known :

2 - Defective equipment breaker Pull

3 - Cabin extinguisher Use

If the origin is unknown :

4 - A/C switch OFF

5 - All unnecessary equipment OFF

6 - Perform procedure Emergency descent
Refer to chapter 3.6

If necessary :

7 - Perform procedure Smoke elimination
Refer to procedure hereafter

► Land as soon as possible ◀

End of procedure.

Smoke elimination

- 1 - Oxygen masks and goggles Use
- 2 - BLEED switch OFF
- 3 - A/C switch OFF
- 4 - DUMP switch Actuate
- 5 - Wait until the differential pressure drops.
- 6 - EMERGENCY RAM AIR control knob Pull

If smoke decreases :

► Land as soon as possible ◀

End of procedure ■

If smoke increases :

- 7 - EMERGENCY RAM AIR control knob Push

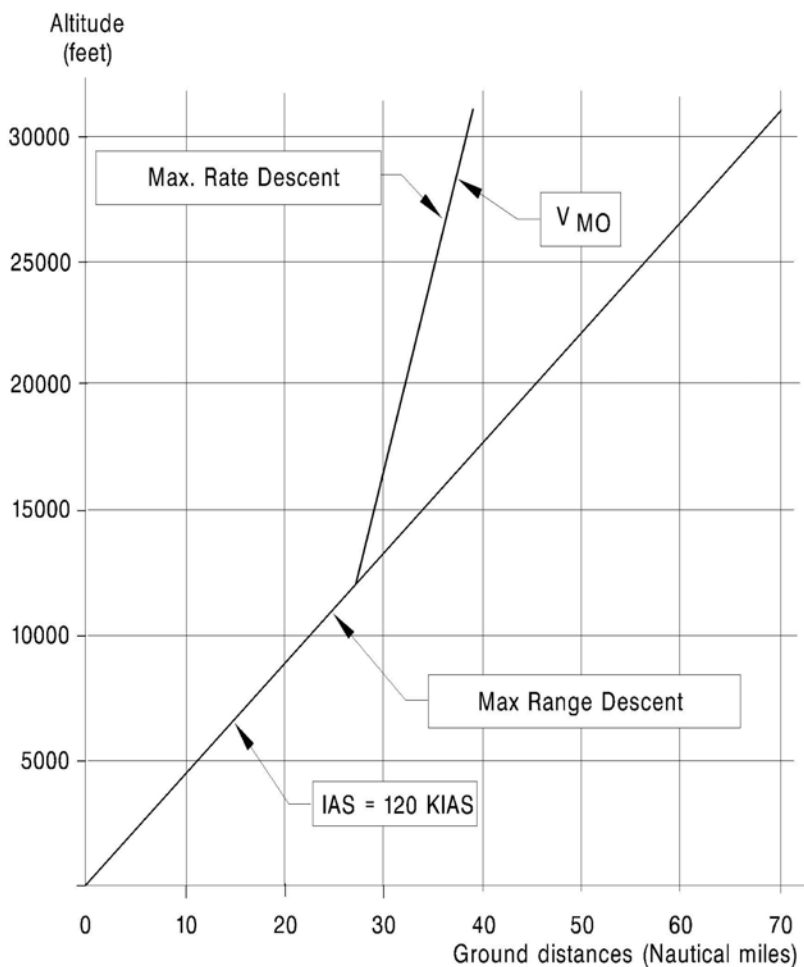
► Land as soon as possible ◀

End of procedure.

Intentionally left blank

3.6 - Emergency descents

Emergency descents profiles



14010000AAAAA8200

Maximum rate descent

- 1 - THROTTLE Flight IDLE
- 2 - Oxygen masks Use
- 3 - Pitch attitude -10° to -20°

If smooth air :

- 4 - FLAPS and LANDING GEAR levers UP
- 5 - Airspeed $V_{MO} = 266$ KIAS

If rough air or in case of structure problem :

- 6 - Airspeed Below 178 KIAS
- 7 - FLAPS lever UP
- 8 - LANDING GEAR lever DN

End of procedure.

Maximum range descent

1/2

- | | | |
|-----|--------------------------------------|----------|
| 1 - | Oxygen masks | Use |
| 2 - | THROTTLE | CUT OFF |
| 3 - | FLAPS and LANDING GEAR levers | UP |
| 4 - | Airspeed | 120 KIAS |
| 5 - | DUMP switch | Actuate |
| 6 - | EMERGENCY RAM AIR control knob | Pull |

If VMC and non icing conditions are possible :

- | | | |
|-----|--------------------------|--|
| 7 - | ESS BUS TIE switch | EMER |
| 8 - | Prepare for | Forced landing
Refer to chapter 3.7 |

End of procedure ■

If VMC and non icing conditions are not possible :

Breakers :

- | | | |
|------|--------------|------|
| 9 - | PFD 2 | Pull |
| 10 - | ADC 2 | Pull |
| 11 - | XPDR 2 | Pull |

Switches :

- | | | |
|------|-------------------------------|---------|
| 12 - | DE ICE SYSTEM | All OFF |
| 13 - | Lights | All OFF |
| 14 - | BLEED | OFF |
| 15 - | A/C | OFF |
| 16 - | AUX BP | OFF |
| 17 - | FUEL SEL | MAN |
| 18 - | AP / TRIMS | OFF |
| 19 - | DIMMER / CABIN / ACCESS | OFF |

Continue ►

Maximum range descent

2/2

► *Continuing*

If icing conditions :

- 20 - PITOT L HTR switch ON
- 21 - WINDSHIELD switch ON
- 22 - Airspeed Above 135 KIAS
Configuration flaps UP

If time permits :

- 23 - PLUGS breakers Pull
- 24 - AIR COND breaker Pull
- 25 - Prepare for Forced landing
Refer to chapter 3.7

End of procedure.

3.7 - Emergency landings, flaps, gear

Forced landing

- | | | |
|-----|--------------------------|--|
| 1 - | THROTTLE | CUT OFF |
| 2 - | FUEL TANK SELECTOR | OFF |
| 3 - | AUX BP switch | OFF |
| 4 - | BLEED switch | OFF |
| 5 - | A/C switch | OFF |
| 6 - | DUMP switch | Actuate |
| 7 - | Gliding airspeed | Maintain 120 KIAS
Until favorable ground approach |
| 8 - | ESS BUS TIE switch | NORM
To have GEAR and FLAPS available |

■ If landing surface is suitable :

- 9 - LANDING GEAR lever DN

■ If landing surface is not suitable :

- 10 - LANDING GEAR lever Keep UP

■ If night conditions :

- 11 - OFF/TAXI/LDG switch LDG

When chosen landing surface is assured :

- 12 - FLAPS lever LDG
- 13 - Crash lever Pull down
- 14 - Airspeed on final approach 85 KIAS
- 15 - Land flaring out.
- 16 - Evacuate after stop.

End of procedure.

Tire blowout during landing

- 1 - Control direction with brakes and nose wheel steering.
- 2 - Reverse As required
- 3 - Stop airplane to minimize damages.
- 4 - Perform procedure Shutdown
Refer to chapter 4.3
End of procedure.

FLAPS ASYM

Indicates a dissymmetry of flap deflection. This immediately stops the flap motor and prevents further operation of the flaps.

► Fly the airplane ◀

- | | | |
|-----|---------------------|------|
| 1 - | FLAPS breaker | Pull |
| 2 - | FLAPS lever | UP |

► Land as soon as possible ◀

- 3 - Maintain airspeeds :
- IAS < 178 KIAS for deflections between UP and TO positions
 - IAS < 122 KIAS for deflections greater than TO position
- 4 - For landing, refer to procedure Landing with flaps malfunction
Refer to procedure on following page
End of procedure.

Flaps malfunction

*In case of blockage of flaps or inoperative flaps control lever between UP and LDG positions, without **FLAPS ASYM** :*

- | | | |
|-----|---------------------|------|
| 1 - | FLAPS breaker | Pull |
| 2 - | FLAPS lever | UP |

► Land as soon as possible ◀

- 3 - Maintain airspeeds
- IAS < 178 KIAS for deflections between UP and TO positions
 - IAS < 122 KIAS for deflections greater than TO position
- 4 - For landing, refer to procedure Landing with flaps malfunction
Refer to procedure hereafter
- End of procedure.*

Landing with flaps malfunction

For flaps deflections between UP and TO :

Proceed as for a normal landing with 105 KIAS of approach airspeed.

Provide for a landing distance increased by 60 %.

For flaps deflections greater than TO :

Proceed as for a normal landing with 100 KIAS of approach airspeed.

Provide for a landing distance increased by 50 %.

End of procedure.

Landing gear retraction discrepancy

• NOTE •

Symptoms have to be considered at the end of the sequence.

•

Symptoms :

- **GEAR UNSAFE** CAS msg and GEAR UNSAFE red warning light are ON, or
- amber light flashing and 3 green lights are OFF.

1 - Airspeed Maintain below 150 KIAS

2 - LDG GEAR breaker Pull

If **GEAR UNSAFE** CAS msg and GEAR UNSAFE red warning light are OFF :

- 3 - The flight may be continued without any restriction.

For landing gear extension :

- 4 - Perform procedure Emergency gear extension
Refer to following procedures

End of procedure ■

If not :

- 5 - LDG GEAR breaker Push
- 6 - Perform procedure Emergency gear extension
Refer to following procedures

End of procedure.

Landing gear extension discrepancy

• NOTE •

Symptoms have to be considered at the end of the sequence.

•

Symptoms :

- **GEAR UNSAFE** CAS msg and GEAR UNSAFE red warning light are ON, or
- amber light flashing and 0 to 3 green lights are OFF.

1 - Airspeed Maintain below 150 KIAS

- 2 - Perform procedure Emergency gear extension
Refer to procedure on following page

End of procedure.

Emergency gear extension

1/3

• NOTE •

Follow this procedure in case of any doubt about the gear extension.

▲ CAUTION ▲

Do not enter icing conditions. This could adversely increase drag and weight due to ice accumulation, and lock wheels and struts.

Climb performance will be degraded by 50 %.

Cruise IAS speed will be reduced compared to a clean airplane, because of the drag.

This should be taken into account when calculating the airplane range.

- | | | |
|-----|--------------------------|-------------------------|
| 1 - | Airspeed | Maintain below 150 KIAS |
| 2 - | LANDING GEAR lever | DN |
| 3 - | LDG GEAR breaker | Pull |
| 4 - | Floor hatch | Open |
| 5 - | By-pass selector | Fully pull / Locked |

▲ CAUTION ▲

The entire extension of the landing gear may take up to 110 cycles. It is mandatory to have a clear hardening of the manual control at the end of the maneuver.

- | | | |
|-----|--|--|
| 6 - | Landing gear emergency pump handle | Actuate
With maximum amplitude until pump hardening |
| 7 - | MASTER WARNING push-button | Press |

To reset the **GEAR UNSAFE**

Continue ►

Emergency gear extension

2/3

► Continuing

If :

- GEAR UNSAFE red warning light is OFF and
 - **GEAR UNSAFE** is OFF and
 - 3 green lights are ON :
 - 8 - Exit and / or remain outside icing conditions.
- Continue flight at airspeed < 178 KIAS.

► Land as soon as practical ◀

End of procedure ■

If :

- GEAR UNSAFE red warning light is ON and
- **GEAR UNSAFE** is ON and
- 0 to 3 green lights are ON :
 - 9 - LDG GEAR breaker Push
 - 10 - CHECK DOWN push-button Press

If :

- hardening of the pump is marked and
- 3 green lights are ON or
- 3 green lights are ON and flickering while pressing the CHECK DOWN push-button :
 - 11 - Land

End of procedure ■

Continue ►

Emergency gear extension

3/3

► Continuing

If :

- emergency pump remains soft or
- one (or more) green light(s) is(are) not ON and / or flickering while pressing the CHECK DOWN push-button :

A gear unlock condition is confirmed.

Recycle the landing gear as follows :

- 12 - By-pass selector Unlock / Push
- 13 - Wait one minute.
- 14 - LANDING GEAR lever UP
At airspeed < 150 KIAS
- 15 - Perform landing gear extension attempts in the normal mode while applying positive load factors during the maneuver as well as skidding.

In case of failure :

- 16 - Perform procedure Landing with unlocked
main landing gear
or Landing with defective nose landing gear
Refer to following procedures

▲ CAUTION ▲

If one main landing gear is not down, it is recommended to land with landing gear up - refer to procedure Landing with gear up in the following procedures.



End of procedure.

Landing with unlocked main landing gear

1/2

▲ CAUTION ▲

If one main landing gear is not down, it is recommended to land with landing gear up - refer to procedure Landing with gear up in the following procedures.



- 1 - Ask ATC or another airplane to visually check landing gear position.

If defective gear is down but unlocked :

- 2 - BLEED switch OFF
- 3 - DUMP switch Actuate
- 4 - FUEL TANK SELECTOR Maintain on defective LDG gear side
To lighten corresponding wing (maximum fuel imbalance 15 USG)
- 5 - Choose a runway with headwind or crosswind blowing from defective gear side.
- 6 - Align the airplane to land on the runway edge opposite to the defective landing gear.
- 7 - Perform a normal approach.
- 8 - FLAPS lever LDG
At airspeed = 90 KIAS
- 9 - Land and set nose gear immediately on ground to assure lateral control.
- 10 - Use full aileron during roll-out to lift the wing with the defective landing gear.

Continue ►

Landing with unlocked main landing gear**2/2**► *Continuing**If landing gear drags during landing :*

- 11 - THROTTLE CUT OFF
- 12 - Crash lever Pull down
- 13 - FUEL TANK SELECTOR OFF
- 14 - Evacuate after airplane comes to a stop.

*End of procedure ■**If landing gear does not drag during landing :*

- 15 - Preferably do not use reverse.
- 16 - Complete taxiing with a slight turn towards defective landing gear.
- 17 - THROTTLE CUT OFF
- 18 - Perform procedure Shutdown
Refer to chapter 4.3
- 19 - Evacuate.

End of procedure.

**Landing with defective nose landing gear
(down unlocked or not down)**

- 1 - Ask ATC or another airplane to visually check landing gear position.

If necessary :

- 1 - Transfer passengers to the rear.
- 2 - Perform a normal approach.
- 3 - FLAPS lever LDG
- 4 - Airspeed Maintain 90 KIAS
- 5 - Land with nose-up attitude. Keep nose high.
- 6 - THROTTLE CUT OFF
- 7 - Touch down slowly with nose wheel and keep elevator at nose-up stop.
- 8 - Brakes Apply moderately
- 9 - Crash lever Pull down
- 10 - FUEL TANK SELECTOR OFF
- 11 - Evacuate after airplane comes to a stop.

End of procedure.

Landing with gear up

- 1 - Do a standard final approach.
- 2 - FLAPS lever LDG
- 3 - Airspeed Maintain 85 KIAS
- 4 - BLEED switch OFF
- 5 - DUMP switch Actuate

When runway is assured :

- 6 - THROTTLE CUT OFF
- 7 - FUEL TANK SELECTOR OFF
- 8 - Flare out.

After touch-down :

- 9 - Crash lever Pull down
- 10 - Evacuate after airplane comes to a stop.

End of procedure.

Ditching

▲ CAUTION ▲

In heavy swell with light wind, land parallel to the swell (rollers).
In heavy wind, land facing wind.



- 1 - LANDING GEAR lever UP
- 2 - FLAPS lever LDG
- 3 - Airspeed Maintain above 85 KIAS
- 4 - Maintain a descent rate as low as possible when approaching the water.
- 5 - BLEED switch OFF
- 6 - DUMP switch Actuate
- 7 - Crash lever Pull down
- 8 - Maintain attitude without flaring out until touch-down.
- 9 - Evacuate through EMERGENCY EXIT.

End of procedure.

Landing without elevator control

- 1 - LANDING GEAR lever DN
- 2 - FLAPS lever LDG
- 3 - Airspeed Maintain 95 KIAS
- 4 - TRQ As required
To maintain airspeed according to an easy approach slope ≈ 300 ft/min
- 5 - Adjust elevator by using manual pitch trim wheel.

When ground approaches :

- 6 - Slope Decrease progressively
- 7 - TRQ Reduce progressively

End of procedure.

Intentionally left blank

3.8 - Fuel system

FUEL PRESS

1/2

Indicates a fuel pressure drop at HP engine pump inlet.

► Fly the airplane ◀

- | | | |
|-----|--------------------------|--------------|
| 1 - | Remaining fuel | Check |
| 2 - | FUEL TANK SELECTOR | Switch tanks |
| 3 - | AUX BP switch | AUTO |

If **FUEL PRESS** remains ON :

- | | | |
|-----|---------------------|----|
| 4 - | AUX BP switch | ON |
|-----|---------------------|----|

- 5 - **AUX BOOST PMP ON** Check ON

If pressure is normal again and **FUEL PRESS** is OFF :

Mechanical pump has failed.

- 6 - AUX BP switch Maintain ON

► Land as soon as practical ◀

End of procedure ■

If **FUEL PRESS** remains ON :

- 7 - FUEL TANK SELECTOR Switch tanks

If **FUEL PRESS** is OFF :

A supply problem may have occurred from the tank selected first (air vent, fuel icing, etc...).

End of procedure ■

Continue ►

FUEL PRESS

2/2

► *Continuing*

If **FUEL PRESS** remains ON :

- 8 - Fullest tank Select
- 9 - Avoid high power and rapid movements of the THROTTLE.
- 10 - Altitude Below 18000 ft

► Land as soon as possible ◀

► Fly the airplane ◀

End of procedure.

AUX BOOST PMP ON

Indicates the auxiliary booster pump is running.

► Fly the airplane ◀

If AUX BP switch is in ON position :

Indication is normal.

End of procedure ■

If AUX BP switch is in AUTO position :

- 1 - Reset AUX BP switch to ON
- 2 - Then, AUX BP switch AUTO

*If **AUX BOOST PMP ON** goes OFF :*

- 3 - Continue the flight normally.

End of procedure ■

*If **AUX BOOST PMP ON** remains ON :*

Mechanical booster pump has failed.

- 4 - AUX BP switch ON

► Land as soon as possible ◀

End of procedure.

FUEL LOW L-R

Indicates a level drop in the corresponding tank.

- 1 - Corresponding gage Check
- 2 - Check the other tank has been automatically selected.

If other tank not automatically selected :

- 3 - FUEL SEL switch MAN
- 4 - Select tank manually As required

► Fly the airplane ◀

- 5 - Minimum fuel Check
- 6 - Take decision.

If necessary :

► Land as soon as practical ◀

End of procedure.

AUTO SEL

Indicates that there is no more automatic control mode running.

► Fly the airplane ◀

1 - FUEL SEL switch Check AUTO

If FUEL SEL switch already on AUTO :

Failure is confirmed.

2 - FUEL SEL switch MAN

3 - Select tanks manually As required

▲ CAUTION ▲

Maximum fuel imbalance is 15 USG



End of procedure.

LOW LVL FAIL L-R

Indicates a failure of fuel low level sensor.

- 1 - Remaining fuel in tanks Check
- 2 - Take decision.

If any doubt :

► Land as soon as practical ◀

► Fly the airplane ◀

On the ground :

Inform maintenance department.

End of procedure.

Intentionally left blank

3.9 - Electrical system

BAT AMP

Indicates that battery current is over 50 A while on ground.

After starting the engine with airplane power, a battery charge over 50 amperes is normal.

▲ CAUTION ▲

Do not take off if battery charge is over 50 A.



If this indication remains steady at a high value :

It may be due to a battery or generation system failure.

End of procedure.

BAT OFF

Indicates that :

- the SOURCE selector has been positioned on OFF or
- the battery plug is disconnected

► Fly the airplane ◀

- | | | |
|-----|-----------------------|------|
| 1 - | SOURCE selector | OFF |
| 2 - | SOURCE selector | BATT |

If warning persists :

► Land as soon as possible ◀

- | | | |
|-----|------------------------------|---------|
| 3 - | Airplane mains voltage | Monitor |
|-----|------------------------------|---------|

End of procedure.

MAIN GEN

Indicates that GENERATOR selector has been positioned to OFF or ST-BY, or main generator is cut off.

- 1 - GENERATOR selector Check / Correct
If necessary

If warning persists :

Main generator switching is confirmed.

- 2 - MAIN GENERATOR RESET push-button Press

In case of failure :

► Fly the airplane ◀

- 3 - Keep the following systems connected :

- Autopilot system
- Deicing systems
- STROBE and NAV lights
- Cockpit emergency lights
- VHF 1
- NAV/GPS 1
- BLEED
- LDG LIGHTS on short final

This will allow to keep electrical consumption
below maximum standby capacity.

All other not necessary equipment can be disconnected.

- 4 - GENERATOR selector ST- BY

If necessary :

- 5 - ST-BY GENERATOR RESET push-button Press

- 6 - Maintain ST-BY loads below 100 A.

End of procedure.

LOW VOLTAGE

Normal functioning with GENERATOR selector on MAIN.

1 - Voltmeter voltages Check

If voltages are < 26 V :

2 - Monitor a possible voltage drop or any indication of battery discharge.

► Fly the airplane ◀

3 - Keep the following systems connected :

- Autopilot system
- Deicing systems
- STROBE and NAV lights
- Cockpit emergency lights
- VHF 1
- NAV/GPS 1
- BLEED
- LDG LIGHTS on short final

This will allow to keep electrical consumption
below maximum standby capacity.

All other not necessary equipment can be disconnected.

4 - GENERATOR selector ST-BY

If necessary :

5 - ST-BY GENERATOR RESET push-button Press

6 - Maintain ST-BY loads below 100 A.

End of procedure.

MAIN GEN and **LOW VOLTAGE**

1/3

With GENERATOR selector on ST-BY (after MAIN generator failure), functioning on ST-BY generator.

- 1 - GENERATOR selector MAIN
- 2 - MAIN GENERATOR RESET push-button Press

► Fly the airplane ◀

If MAIN GENERATOR successfully connected :

- 3 - Disconnect non-essential systems.
- 4 - Voltmeter and ammeter Monitor

► Land as soon as possible ◀

End of procedure ■

If MAIN GENERATOR not successfully connected :

- 5 - GENERATOR selector ST-BY
- 6 - ST-BY GENERATOR RESET push-button Press

If ST-BY GENERATOR successfully connected :

- 7 - Disconnect non-essential systems.
- 8 - Voltmeter and ammeter Monitor

► Land as soon as possible ◀

End of procedure ■

If ST-BY GENERATOR not successfully connected :

Both generators failure is confirmed.

Return to VMC conditions, if possible.

Continue ►

MAIN GEN and **LOW VOLTAGE**

2/3

▶ *Continuing*

9 - GENERATOR selector OFF

If altitude > 10000 ft :

10 - OXYGEN switch ON

If VMC and non-icing conditions are possible :

11 - ESS BUS TIE switch EMER
In this configuration, only both ESS BUS bars and
BATT BUS bar are directly supplied by the battery.

▶ Land as soon as possible ◀

If use of other systems is required :

12 - ESS BUS TIE switch NORM

End of procedure ■

If VMC and non-icing conditions are not possible :

13 - Manually disconnect systems as follows :

Breakers :

- PFD 2 Pull
- ADC 2 Pull
- TAS Pull
- DATA LINK Pull
- XPDR 2 Pull

Switches :

- AIRFRAME DE ICE OFF
- ICE LIGHT OFF
- PROP DE ICE OFF
- WINDSHIELD OFF

Continue ▶

MAIN GEN and **LOW VOLTAGE**

3/3

► Continuing

- PITOT R & STALL HTR OFF
- OFF/LDG/TAXI light OFF
- PULSE OFF
- STROBE OFF
- BLEED OFF
- A/C OFF
- AUX BP OFF
- FUEL SEL MAN
- AP / TRIMS OFF
- DIMMER / CABIN / ACCESS OFF

If icing conditions :

- 14 - PITOT L HTR switch Check ON
- 15 - WINDSHIELD switch ON
- 16 - Maintain minimum recommended airspeeds into known icing conditions.

Flaps UP	> 135 KIAS
Flaps TO	> 115 KIAS
Flaps LDG	> 95 KIAS

If time permits :

- 17 - PLUGS breakers Pull
 - 18 - AIR COND breaker Pull
- Land as soon as possible ◀

End of procedure.

ELEC FEATH FAULT

Indicates a propeller feathering system malfunction.

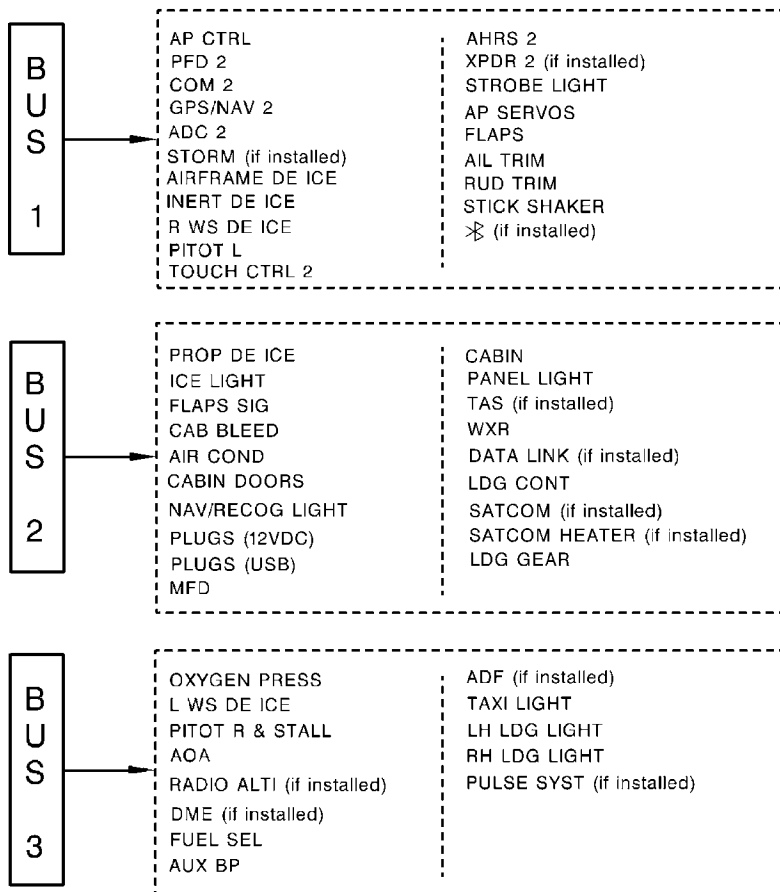
► Fly the airplane ◀

1 - FEATHER breaker Pull

► Land as soon as possible ◀

End of procedure.

Bus bar 1/3



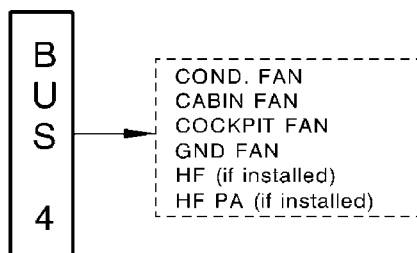
I4246000AAANMA8400

Figure 3.9.1 (1/3) - Electrical distribution of bus bars

Bus bar

2/3

I4246000AAANVA8101



NOTE: CIRCUIT BREAKERS ON C13 BIS FRAME

I4246000AAAGMA8300

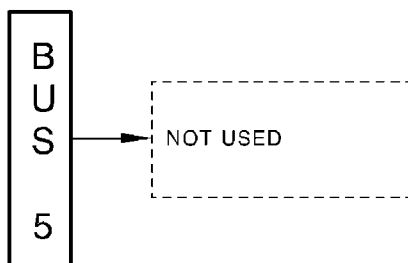
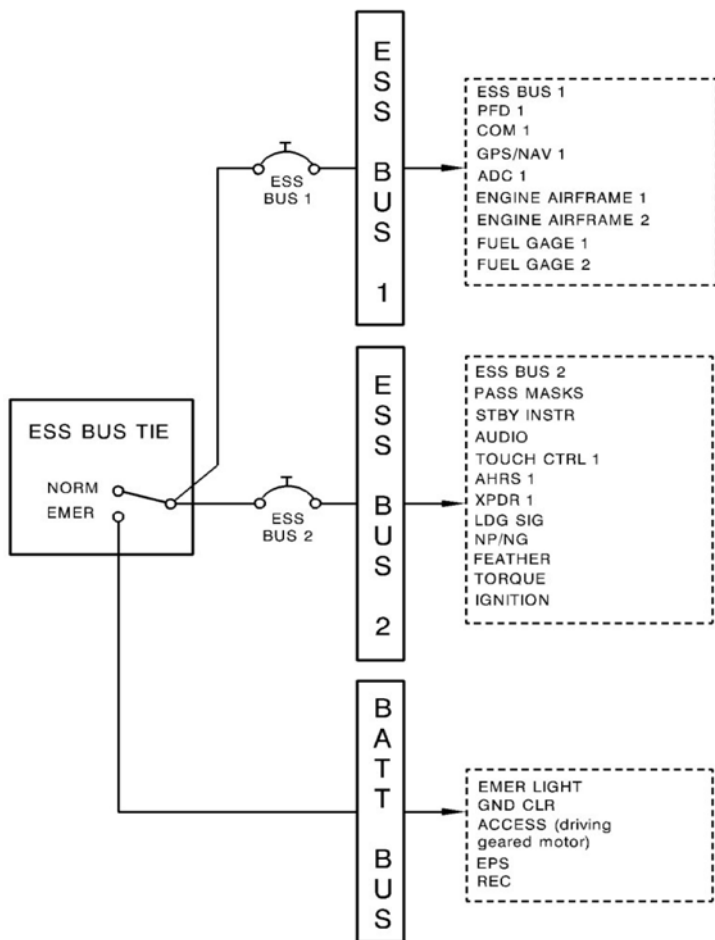


Figure 3.9.1 (2/3) - Electrical distribution of bus bars

Bus bar

3/3



14246000AAAGMA18200

Figure 3.9.1 (3/3) - Electrical distribution of bus bars

Total loss of electrical power

- 1 - Maintain airplane control.
- 2 - Use the MD302 for
 - attitude,
 - airspeed and/or
 - altitude

► Fly the airplane ◀

► Land as soon as possible ◀

● NOTE ●

Airplane power is provided to the MD302 display for normal operation. Operation of the basic system is automatic. The system is powered ON while airplane power is ON.

If airplane power is lost, the internal battery will provide power to the MD302.

End of procedure.

Intentionally left blank

3.10 - Pressurization and air conditioning

BLEED TEMP

Indicates overheat of bleed air system. Normally this leads to **BLEED** cut-off and to **BLEED OFF** appearance.

► Fly the airplane ◀

Should automatic cut-off occur or not :

If possible :

- 1 - TRQ Reduce
- 2 - HOT AIR FLOW distributor Turn to the right
- 3 - A/C switch PILOT
- 4 - TEMP selector Mini
- 5 - BLEED switch OFF
- 6 - BLEED switch AUTO

If **BLEED TEMP** and **BLEED OFF** are still ON :

- 7 - Perform procedure **BLEED OFF**

Refer to procedure hereafter

End of procedure ■

If **BLEED TEMP** is ON and **BLEED OFF** is OFF :

- 8 - Shorten the flight.
- Inform maintenance department.

End of procedure.

BLEED OFF

1/2

Possibly due to :

- system malfunction
- BLEED switch on OFF position

If in flight :

- | | | |
|----------------------|--------------------|-----------------|
| 1 - | Oxygen masks | Use |
| 2 - | BLEED switch | Check / Correct |
| If possible : | | |
| 3 - | TRQ | Reduce |
| ► Fly the airplane ◀ | | |
| 4 - | BLEED switch | OFF |
| 5 - | BLEED switch | AUTO |

If **BLEED OFF** is still ON :

If altitude > 10000 ft :

If necessary :

- | | | |
|-----|-------------------------|---|
| 6 - | Perform procedure | Emergency descent
Refer to chapter 3.6 |
| 7 - | Continue the flight. | |

• NOTE •

If $Z_p > 10000 \text{ ft} \pm 500 \text{ ft}$, it may be followed by **CABIN ALTITUDE** and

USE OXYGEN MASK

•
Inform maintenance department.

End of procedure ■

Continue ►

BLEED OFF

2/2

► *Continuing**If on ground :*

- 8 - BLEED switch OFF
 - 9 - Taxi back to apron.
 - 10 - Perform procedure Shutdown
Refer to chapter 4.3
- Inform maintenance department.

End of procedure.

CPCS BACKUP MODE

Indicates a GASC system malfunction. The GASC cannot compute optimal cabin altitude and is automatically set to 9800 ft default value as cabin altitude reference.

► Fly the airplane ◀

1 - Continue the flight.

Inform maintenance department before next flight.

▲ **CAUTION** ▲

When the airplane descends below 9800 ft, cabin descent rate coincides with airplane descent rate. The pilot should take into account the airplane descent profile in order to avoid pressure annoyance.



End of procedure.

CABIN ALTITUDE and **USE OXYGEN MASK**

• NOTE •

CABIN ALTITUDE is followed by **USE OXYGEN MASK** and 3 voice alerts
"Use oxygen mask / Use oxygen mask".

Indicates a cabin altitude over 10000 ft ± 500 ft.

- | | | |
|---|--------------------------------|-------|
| 1 - | Pressurization indicator | Check |
| <i>If cabin altitude > 10000 ft ± 500 ft :</i> | | |
| 2 - | Oxygen masks | Use |

► Fly the airplane ◀

- | | | |
|-----|--------------------------------------|----------------------|
| 3 - | BLEED switch | Check AUTO |
| 4 - | DUMP switch | Check NORM / Guarded |
| 5 - | EMERGENCY RAM AIR control knob | Check pushed |

If necessary :

- | | | |
|-----|-------------------------|---|
| 6 - | Perform procedure | Emergency descent
Refer to chapter 3.6 |
|-----|-------------------------|---|

- | | |
|-----|--|
| 7 - | Limit flight altitude to maintain cabin altitude below 10000 ft. |
|-----|--|

■ Inform maintenance department before next flight.

End of procedure.

>> Without EDM evolution patch (Pre-MOD70-0657-34)

CABIN ALTITUDE

and

USE OXYGEN MASK

and

EDM

• NOTE •

CABIN ALTITUDE is followed by **USE OXYGEN MASK** and 3 voice alerts
"Use oxygen mask / Use oxygen mask".

EDM makes a 90° left heading change and descent to 15000 ft.
EDM override is possible by pressing twice the AP / TRIM DISC push-button,
and other AP modes are usable.
Power reduction to speed up the descent is recommended.

Indicates a cabin altitude over 10000 ft ± 500 ft.

- | | | |
|---|--------------------------------|-------|
| 1 - | Pressurization indicator | Check |
| <i>If cabin altitude > 10000 ft ± 500 ft :</i> | | |
| 2 - | Oxygen masks | Use |

► Fly the airplane ◀

- | | | |
|-----|--------------------------------------|----------------------|
| 3 - | BLEED switch | Check AUTO |
| 4 - | DUMP switch | Check NORM / Guarded |
| 5 - | EMERGENCY RAM AIR control knob | Check pushed |

If necessary :

- | | | |
|-----|-------------------------|---|
| 6 - | Perform procedure | Emergency descent
Refer to chapter 3.6 |
|-----|-------------------------|---|

- | | |
|-----|--|
| 7 - | Limit flight altitude to maintain cabin altitude below 10000 ft. |
|-----|--|

■ Inform maintenance department before next flight.

End of procedure.

>> With EDM evolution patch (Post-MOD70-0657-34)

EDM

• NOTE •

EDM may come on 45 s after **CABIN ALTITUDE** and

USE OXYGEN MASK.

EDM makes a 90° left heading change and descent to 15000 ft.
EDM override is possible by pressing twice the AP / TRIM DISC push-button,
and other AP modes are usable.

Power reduction to speed up the descent is recommended.

•

Indicates a cabin altitude over 10000 ft ± 500 ft.

1 - Pressurization indicator Check

If cabin altitude > 10000 ft ± 500 ft :

2 - Oxygen masks Use

► Fly the airplane ◀

3 - BLEED switch Check AUTO

4 - DUMP switch Check NORM / Guarded

5 - EMERGENCY RAM AIR control knob Check pushed

If necessary :

6 - Perform procedure Emergency descent
Refer to chapter 3.6

7 - Limit flight altitude to maintain cabin altitude below 10000 ft.

End of procedure.

EDM OVERRIDE

*Indicates that Emergency Descent Mode has been overridden by the crew, and is not available again until **EDM OVERRIDE** is OFF.*

► Fly the airplane ◀

End of procedure.

CABIN DIFF PRESS

Indicates a cabin pressure differential over 6.4 PSI $\pm$ 0.2 PSI.

- 1 - Pressurization indicator Check

If $\Delta P > 6.4 \text{ PSI} \pm 0.2 \text{ PSI}$:

- 2 - BLEED switch OFF

- 3 - Oxygen masks Use

► Fly the airplane ◀

If necessary :

- 4 - Perform procedure Emergency descent
Refer to chapter 3.6

End of procedure.

Cabin not depressurized after landing

If ΔP cabin remains > 0 :

- 1 - DUMP switch Actuate
- 2 - BLEED switch OFF

If necessary :

- 3 - EMERGENCY RAM AIR control knob Pull
- 4 - Wait for complete cabin depressurization before opening any door.

End of procedure.

OXYGEN*Indicates that the oxygen cylinder isolation valve is closed.***▲ WARNING ▲****Flight is prohibited with oxygen cylinder closed.**

1 - Oxygen cylinder Open

End of procedure.

DOOR

Indicates that one of the door latches of the door(s) is not correctly locked.

On ground :

- 1 - Check the correct locking, as well as the latches position of the door(s).

*If **DOOR** is still ON :*

- 2 - Do not take off.

End of procedure ■

In flight :

► Fly the airplane ◀

- 3 - Start a slow descent.

- 4 - Decrease cabin pressure differential By selecting a higher LFE
(LFE between 9500 ft and 10000 ft)

If a real failure of one of the doors is noticed :

- 5 - Oxygen masks Use
- 6 - BLEED switch OFF
- 7 - DUMP switch Actuate

If necessary :

- 8 - Perform procedure Emergency descent
Refer to chapter 3.6

End of procedure.

VACUUM LOW

Low vacuum may lead to malfunctioning of leading edge deicing and pressurization.

- 1 - Monitor the normal functioning of leading edge deicing and pressurization.

If necessary :

- 2 - Altitude Below 10000 ft

- 3 - Return to VMC conditions as soon as possible.

► Fly the airplane ◀

- 4 - BLEED switch OFF

End of procedure.

Defog malfunction

If moisture starts to quickly cover the inside of the windscreen with the HOT AIR FLOW distributor already turned to the left :

- 1 - HOT AIR FLOW distributor Set to around
a 10 o'clock position

If moisture continues :

- 2 - HOT AIR FLOW distributor Turn to the left
- 3 - WINDSHIELD switch ON

If there is no improvement and if the flight safety is engaged :

- 4 - Altitude Around 10000 ft
- 5 - BLEED switch OFF

▲ CAUTION ▲

In flight, the cabin will quickly depressurize. Therefore, the cabin vertical speed indicator and altimeter indications will rapidly meet those of respectively the airplane VSI and altimeter.



End of procedure.

3.11 - Deicing system

Leading edges deicing failure

Symptoms : failure on one of the two pneumatic deicing pulses :

- *ice on wing outboard sections,*
- *or, ice on wing inboard sections and stabilizers,*
- *one of the two cycling green lights is not lit.*

► Leave icing conditions as soon as possible ◀

1 - AIRFRAME DE ICE switch OFF

End of procedure.

PROP DEICE FAIL

Symptoms :

- *propeller deicing green light is not lit,*
- *propeller vibrations.*

- | | | |
|-----|------------------------------------|---------|
| 1 - | TRQ | Reduce |
| | ▶ Fly the airplane ◀ | |
| 2 - | THROTTLE | Actuate |
| | To vary RPM within operating range | |

- ▶ Leave icing conditions as soon as possible ◀

End of procedure.

INERT SEP FAIL

Symptoms :

- **INERT SEP ON** does not appear within 50 seconds following INERT SEP switch setting ON,
- inertial separator is not retracted after 50 seconds following INERT SEP switch setting OFF,
- INERT DE ICE breaker triggered.

► Leave icing conditions as soon as possible ◀

► Fly the airplane ◀

End of procedure.

Windshield deicing failure

Symptoms :

- *windshield being covered uniformly by ice,*
- *no perception of heat when touching deiced section,*
- *windshield deicing green light is not lit.*

If symptoms result from overheat :

- 1 - WINDSHIELD switch OFF / ON
When necessary

In case of total failure :

- 2 - TEMP selector Max warm
- 3 - HOT AIR FLOW distributor Turn to the left

Before landing :

- 4 - Wait for a sufficient visibility.

End of procedure.

Windshield misting or internal icing

Symptoms : mist or ice on windshield internal face.

- 1 - TEMP selector Set to 12 o'clock position
- 2 - HOT AIR FLOW distributor Turn to the left
- 3 - WINDSHIELD switch ON

If unsuccessful, to get sufficient visibility :

- 4 - HOT AIR FLOW distributor Fully turn to the left
- 5 - Manually clean a sufficient visibility area.

If necessary :

▲ CAUTION ▲

In case of sideslip approach with pedal on the right during a long period, select R.H. fuel tank.



- 6 - Clean L.H. side window.
- 7 - Perform a sideslip approach with rudder pedals to the right.
To get sufficient landing visual references

For landing :

- 8 - FLAPS lever LDG
- 9 - Airspeed Maintain above 95 KIAS

End of procedure.

PITOT NO HT L-R

Indicates that :

- *corresponding pitot tube heating has failed or*
- *PITOT L HTR switch or PITOT R & STALL HTR switch is not ON while the engine is running.*

*If **PITOT NO HT L** :*

Icing conditions may alter airspeed indications provided by ADC1.

1 - Avoid icing conditions.

► Fly the airplane ◀

If not possible :

- 2 - Perform moderate descent or climb attitudes.

V_{MO} overshoot and stall warning system are always operating.

End of procedure ■

*If **PITOT NO HT R** :*

V_{MO} overshoot warning may be altered by icing conditions.

► Fly the airplane ◀

- 3 - Airspeed Monitor below 266 KIAS

End of procedure.

Intentionally left blank

3.12 - Miscellaneous

Trim Runaway

► Fly the airplane ◀

- | | | |
|-----|----------------------------------|----------------|
| 1 - | AP / TRIM DISC push-button | Press and hold |
|-----|----------------------------------|----------------|

The three trim tabs are disconnected and runaway stops.

- | | | |
|-----|----------------------------------|---------|
| 2 - | AP / TRIMS switch | OFF |
| 3 - | AP / TRIM DISC push-button | Release |
| 4 - | Pitch trim may be used manually. | |

If necessary :

- | | | |
|-----|----------------|------------------------------------|
| 5 - | Airspeed | Reduce
To reduce control forces |
|-----|----------------|------------------------------------|

In case of pitch trim runaway :

- | | | |
|-----|-------------------------|--------|
| 6 - | AP / TRIMS switch | AP OFF |
|-----|-------------------------|--------|

The pitch trim may be used manually, the two other trim tabs may be used again electrically.

End of procedure ■

In case of rudder or aileron trim runaway :

- | | | |
|-----|------------------------------------|---|
| 7 - | RUD TRIM or AIL TRIM breaker | Pull
According to the defective trim |
| 8 - | AP / TRIMS switch | ON |

The two other trim tabs may be used again electrically.

End of procedure.

Crack in cockpit window or window panel

► Fly the airplane ◀

- 1 - Descend slowly.
- 2 - Cabin ΔP Reduce
By setting Landing Field Elevation to 10000 ft

End of procedure.

Emergency exit use

- 1 - Check that the anti-theft safety pin has been removed.

>> Pre-MOD70-0793-25

- 2 - Remove the upholstery panel of the emergency exit. Pull it firmly through the access area to the opening handle.

Refer to paragraph Emergency exit in chapter 7.3

>> All

- 3 - Lift up the opening handle.
- 4 - Pull emergency exit assembly towards oneself to release it from its recess.
- 5 - Put the emergency exit door inside fuselage or throw it away from the fuselage through the opening.
- 6 - Evacuate airplane.

End of procedure.

Emergency exit use

- 1 - Check that the anti-theft safety pin has been removed.
- 2 - Lift up the opening handle.
- 3 - Pull emergency exit assembly towards oneself to release it from its recess.
- 4 - Put the emergency exit door inside fuselage or throw it away from the fuselage through the opening.
- 5 - Evacuate airplane.

End of procedure.

Emergency beacon (ELT) use

Before a forced landing :

If possible :

- 1 - Transmit a MAY DAY signal on COM VHF 121.5 MHz or on a known ATC frequency.

After landing :

- 2 - ELT remote control switch ON
Maintain ON until aid arrives

End of procedure.

Inadvertent spins**▲ WARNING ▲****Voluntary spins are prohibited.**

- 1 - AP / TRIM DISC push-button Press and Hold until recovery
- 2 - Control wheel Neutral
Pitch and roll axis
- 3 - Rudder Fully opposed to the spin
- 4 - THROTTLE Flight IDLE
- 5 - FLAPS lever UP

When rotation is stopped :

- 6 - Level the wings and ease out of the dive.

► Fly the airplane ◀*End of procedure.*

AP off, stall warning

• NOTE •

Shaker will vibrate simultaneously with stall warning aural alert.

•

- 1 - Fly the airplane, wings levelled and nose down until stall warning stops.
- 2 - TRQ As required
- 3 - Return to the desired flight path.

End of procedure.

USP ACTIVE

- 1 - Do not disconnect AP
- 2 - Increase power up to 50 % minimum
- 3 - Manage the flight

• NOTE •

Stall warning may be triggered but AP will remain ON

•

End of procedure.

AURAL WRN FAIL

Indicates that no aural warning alerts are available.

▲ CAUTION ▲

No aural stall warning.

No aural overspeed warning.

No landing gear warning.



1 - Maintain airspeeds

Flaps UP	105 < KIAS < 266
Flaps TO	100 < KIAS < 178
Flaps LDG	85 < KIAS < 122

End of procedure.

AURAL WRN 1 CHNL

• NOTE •

System switches automatically on the remaining valid aural channel.

•

End of procedure.

Oxygen use

1/2

With or without **USE OXYGEN MASK**.

▲ WARNING ▲

Smoking is strictly prohibited any time oxygen system is used. Before using oxygen, remove any trace of oil, grease, soap and other fatty substances (including lipstick, make-up, etc...)



For front seats :

- 1 - Take a mask on the opposite seat side (pilot : R.H. side ; R.H. Front passenger : L.H. side). Draw it out of the stowage cup and uncoil tube totally.
- 2 - Press on the red side vanes to inflate the harness.
- 3 - Put the mask onto the face.

If no smokes :

- 4 - 3-position selector NORMAL
100 % as required

In case of smokes :

- 5 - 3-position selector EMERGENCY
- 6 - Don the smoke goggles onto the face.
- 7 - PASSENGER OXYGEN switch DEPLOY
- 8 - Check oxygen flow indicator for the front seats (the blinker is transparent) and for the rear passengers (the blinker is green).
- 9 - MICRO/MASK switch MASK
- 10 - Perform an emergency descent To the minimum
enroute altitude

If possible :

- 11 - Perform an emergency descent To an altitude
below 10000 ft

Continue ►

Oxygen use

2/2

► *Continuing*

For rear passengers :

- 1 - Take a mask.
- 2 - Uncoil tube totally.
- 3 - Pull on the lanyard cord to take out the lanyard pin.
- 4 - Put the mask onto the face.

End of procedure.

Airspeed indicating system failure

Symptoms : erroneous indication in flight.

- 1 - PITOT L HTR switch Check ON
- 2 - PITOT R & STALL HTR switch Check ON

If symptoms persist :

- 3 - ALTERNATE STATIC SOURCE selector Pull thoroughly
- 4 - Use standby instrument only.

If symptoms persist, as well as on the electronic standby instrument on the L.H instrument panel :

- 5 - Perform a precautionary approach maintaining an adequate
airspeed.

End of procedure.

Flight into severe icing conditions

Severe icing conditions, particularly freezing rain and freezing drizzle, can be identified by :

- *unusually extensive ice accumulation on the airframe and windshield in areas not normally observed to collect ice,*
- *accumulation of ice on the upper surface of the wing aft of the protected area.*

Procedures for exiting freezing rain or freezing drizzle conditions :

- 1 - Inform ATC to exit severe icing conditions by changing the route or the altitude.
- 2 - Avoid any sudden maneuver on flight controls.

► Do not engage the autopilot ◀

If the autopilot is engaged :

- 3 - Hold the control wheel firmly and disengage the autopilot.

If an unusual roll response or uncommanded roll control movement is observed :

- 4 - Angle of Attack Reduce

► Do not extend flaps when holding in icing conditions ◀

Operation with extended flaps can result in a reduced wing Angle of Attack, with the possibility of ice forming on the upper surface further aft on the wing than normal, possibly aft of the protected area.

If the flaps are extended :

- 5 - Do not retract them until the airframe is clear of ice.

End of procedure.

FRONT CARGO DOOR

Indicates that front cargo door is open.

On ground :

- 1 - Check and close the door.

In flight :

► Fly the airplane ◀

- 2 - Airspeed Reduce
To minimum available

► Land as soon as practical ◀

End of procedure.

GPU DOOR

Indicates that GPU door is open.

On ground :

- 1 - Check and close the door.

In flight :

► Fly the airplane ◀

- 2 - Airspeed Reduce
To minimum available

► Land as soon as practical ◀

End of procedure.

IGNITION

Indicates that ignition exciter is running.

1 - IGNITION switch Check position

If weather permits :

2 - IGNITION switch AUTO

► Fly the airplane ◀

• NOTE •

IGNITION switch may be left ON for a long period.

•

End of procedure.

AP ON YD OFF

Indicates that the autopilot is ON while Yaw Damper is OFF, so no automatic rudder trim is available.

1 - Yaw Damper status Check

If necessary :

2 - Yaw Damper status Correct

End of procedure.

Autopilot or electric pitch trim malfunction**▲ CAUTION ▲**

When disconnecting the autopilot after a pitch trim malfunction, hold the control wheel firmly. Up to 30 pounds of force on the control wheel may be necessary to hold the airplane level.



- 1 - AP / TRIM DISC push-button Press and hold
- 2 - AP / TRIMS switch OFF
- 3 - AP / TRIM DISC push-button Release

If necessary :

- 4 - Control wheel Retrim

End of procedure.

Dual GPS/SBAS failure (DR or LOI annunciation on HSI)	1/2
---	-----

Loss of GPS/SBAS navigation data

When both GPS/SBAS receivers are inoperative or GPS navigation information is not available or invalid, the GARMIN system will enter one of two modes : Dead Reckoning mode (DR) or Loss Of Integrity mode (LOI). The mode is indicated on the HSI by an amber DR or LOI.

Which mode is active depends on the distance from the destination airport in the active flight plan.

If the LOI annunciation is displayed, revert to an alternate means of navigation appropriate to the route and phase of flight.

In Dead Reckoning mode, the MAP – NAVIGATION MAP will continue to be displayed with a ghosted airplane icon in the center and an amber 'DR' overwriting the icon. Airplane position will be based upon the last valid GPS position, then estimated by Dead Reckoning methods. Changes in true airspeed, altitude, or winds aloft can affect the estimated position substantially. Dead Reckoning is only available in Enroute mode; Terminal and Approach modes do not support DR. Course deviation information will be displayed as an amber CDI on both PFDs and will remain for up to 20 minutes after GPS position data has been lost. The autopilot and/or flight director may be coupled in GPS mode while the system is in Dead Reckoning mode.

■ Refer to the GARMIN Pilot's Guide for further information.

Revert to an alternate means of navigation appropriate to the route and phase of flight.

If alternate navigation sources (ILS, LOC, VOR, DME, ADF) are available :

- 1 - Navigation Use alternate sources

Continue ►

Dual GPS/SBAS failure
(**DR** or **LOI** annunciation on HSI)

2/2

► *Continuing*

If no alternate navigation sources are available :

Dead Reckoning (DR) Mode - Active when the airplane is greater than 30 NM from the destination airport :

- 1 - Navigation Use the airplane symbol, magenta course line on the map display and the amber CDI for course information

• NOTE •

All information normally derived from GPS turns amber. All of this information will become less accurate over time.

TAWS is inoperative.

DR mode uses heading, true airspeed, last known wind data, and the last known GPS position to estimate the airplane's current position. DR information will be available for a maximum of 20 minutes.

MAP – TRAFFIC MAP display is not dependent on GPS information.

The position of displayed traffic relative to the airplane symbol on the map is still accurate.

•

Loss Of Integrity (LOI) Mode - Active when the airplane is within 30 NM of departure airport (as calculated from the previous GPS or DR position)

- 1 - Navigation Fly towards known visual conditions, use ATC or other information sources as possible

• NOTE •

All information derived from GPS or DR will be removed from the displays.

TAWS is inoperative.

The airplane symbol is removed from all maps. The map will remain centered at the last known position. NO GPS POSITION will be annunciated in the center of the map.

•

End of procedure.

GPS approach alarm limits exceeded

During a GPS LPV, LNAV/VNAV, or LNAV+V approach, if the Horizontal or Vertical alarm limits are exceeded, the GARMIN System will downgrade the approach. This will be annunciated in the ALERTS window and by an annunciation change on the HSI from LPV, L/VNAV, or LNAV+V to LNAV. GPS glide path vertical guidance will be removed from the PFD.

The approach may be continued using the LNAV only minimums.

During any GPS approach in which both precision and non-precision alarm limits are exceeded, the GARMIN System will flag the lateral guidance and display a system message ABORT APPROACH loss of navigation.

Immediately upon viewing the message, the unit will revert to Terminal navigation mode alarm limits. If the position integrity is within these limits, lateral guidance will be restored and the GPS may be used to execute the missed approach, otherwise alternate means of navigation must be utilized.

Left PFD failure

► Fly the airplane ◀

At takeoff :

- 1 - Fly the airplane manually Using stand-by instruments
- 2 - AP / TRIM DISC push-button Press
To mute aural tone

In flight :

▲ CAUTION ▲

In case of ILS approach, don't forget to select LOC2 on CDI source.

Use of reversionary mode will report left PFD information on MFD and
disable supplementary functions as stormscope,...



- 3 - Fly the airplane manually Using stand-by instruments
- 4 - AP / TRIM DISC push-button Press
To mute aural tone
- 5 - DISPLAY BACKUP mode Engage on PFD2
Pressurization switches to CPCS BACKUP MODE,
with **CPCS BACKUP MODE**
- 6 - PFD 1 breaker Check pushed
- 7 - XFR button (on AFCS) Press / to right side
- 8 - Autopilot Use normally

Following systems are lost :

- COM 1, NAV 1, DME 1, XPDR 1
- Radio altimeter, TAS, if installed

► Land as soon as possible ◀

- 9 - COM 2, NAV 2, DME 2, XPDR 2 Use
- 10 - COM 2 MIC Select

End of procedure.

AHRS failure

1/2

Symptoms : Autopilot is disconnected

- On PFD(s) : Comparator window

HDG

and/or

PIT

and/or

ROL

annunciation(s)

- On PFD(s) : Reversionary sensor window

BOTH ON AHRS1

or

BOTH ON AHRS2

annunciation

Lost systems :

- AHRS1 or AHRS2
- Autopilot (AP)

Systems still operative :

- Flight Director (FD), when engaged again.

Actions :

Autopilot is not operative.

- 1 - AHRS1 and/or AHRS2 breaker Check pushed

If **BOTH ON AHRS1** or **BOTH ON AHRS2** annunciation is associated to

HDG

and/or

PIT

and/or

ROL

annunciation(s) :

- 2 - Fly the airplane manually.

If pilot wishes :

- 3 - FD default mode Engage
PIT and ROL

- 4 - FD specific modes Engaged as desired
HDG, NAV, ALT, ...

- 5 - Fly the airplane manually to follow Command Bars.

End of procedure ■

Continue ►

AHRS failure

2/2

► Continuing

If all annunciations **HDG** and/or **PIT** and/or **ROL** go off, refer to following condition.

If **BOTH ON AHRS1** or **BOTH ON AHRS2** annunciation not associated to

HDG and/or **PIT** and/or **ROL** annunciation(s) :

- 6 - PFD1 and PFD2 SENSOR softkeys Press
- 7 - AHRS1 on PFD1 and/or AHRS2 on PFD2 Reset
- 8 - **BOTH ON AHRS1** or **BOTH ON AHRS2** annunciation Check OFF
- 9 - Autopilot Use normally
As desired

End of procedure.

ADC failure

Symptoms :

- On PFD(s) : Comparator window

IAS

and/or

ALT

annunciation(s)

- On PFD(s) : Reversionary sensor window

BOTH ON ADC1

or

BOTH ON ADC2

annunciation

Lost systems :

- ADC1 or ADC2

Actions :

Autopilot is still operative.

- 1 - ADC 1 and/or ADC 2 breaker Check pushed

If **BOTH ON ADC1** or **BOTH ON ADC2** annunciation

is associated to **IAS** and/or **ALT** annunciation(s)

- 2 - No action required.

End of procedure ■

If all annunciations

IAS

, **ALT**

go off, refer to following condition.

If **BOTH ON ADC1** or **BOTH ON ADC2** annunciation

not associated to **IAS** and/or **ALT** annunciation(s)

- 3 - PFD1 and PFD2 SENSOR softkeys Press

- 4 - ADC1 on PFD1 and/or ADC2 on PFD2 Reset

- 5 - **BOTH ON ADC1** or **BOTH ON ADC2**

annunciation Check OFF

End of procedure.

MFD failure

• NOTE •

If PFD2 is in fullscreen mode, it will be splitted a few seconds after MFD failure.

•

Lost system :

- MFD

Actions :

- 1 - L.H. DISPLAY BACKUP button Press
- 2 - MFD breaker Check pushed

End of procedure.

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Section 4

Normal procedures

Table of contents

4.1	-	General	4.1.1
4.2	-	Airspeeds for normal operation	4.2.1
4.3	-	Check-list procedures	4.3.1
		Inside inspection	4.3.1
		Before starting engine	4.3.3
		Motoring (if residual ITT > 150°C)	4.3.4
		Engine start	4.3.5
		After engine start with GPU	4.3.6
		After engine start	4.3.6
		Before taxiing	4.3.7
		Before line up	4.3.8
		Normal takeoff	4.3.9
		Short takeoff	4.3.10
		After takeoff	4.3.11
		Climb	4.3.12
		Cruise	4.3.13
		Before descent	4.3.14
		Approach	4.3.15
		Final approach (in GS) or downwind leg (VMC)	4.3.16
		Short final (≈ 500 ft)	4.3.17
		Runway clear	4.3.18
		Shutdown	4.3.19
4.4	-	Amplified procedures	4.4.1
		Preflight inspection	4.4.1
		Inside inspection	4.4.17
		Before starting engine	4.4.21
		Engine start	4.4.24
		Motoring	4.4.27
		Motoring followed by an engine start	4.4.30
		After engine start with GPU	4.4.33
		After engine start	4.4.34
		In-flight available oxygen quantity	4.4.36

	Before taxiing	4.4.37
	Taxiing	4.4.41
	Before line up	4.4.42
	Normal takeoff	4.4.46
	Short takeoff	4.4.48
	After takeoff	4.4.51
	Climb	4.4.52
	Cruise	4.4.54
	Before descent	4.4.56
	Approach	4.4.57
	Final approach (in GS) or downwind leg (VMC)	4.4.58
	Short final (≈ 500 ft)	4.4.59
	Landing	4.4.60
	Go-around with AP OFF	4.4.61
	Go-around with AP ON	4.4.63
	Touch and go	4.4.64
	Runway clear	4.4.66
	Shutdown	4.4.67
	Outside check after shutdown	4.4.70
4.5	- Particular procedures	4.5.1
	Flight into known icing conditions	4.5.1
	Flight into severe icing conditions	4.5.6
	Flight under heavy precipitations	4.5.7
	Utilization on runways covered with water	4.5.7
	Utilization on runways covered with melting or not tamped snow	4.5.8
	Utilization on icy or covered with tamped snow runways	4.5.11
	Utilization by cold weather (0°C to - 25°C) and very cold weather (- 25°C to - 40°C)	4.5.13
	Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 1	4.5.14
	Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2	4.5.17
	Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 3	4.5.22
	Landing procedure with strong headwind or crosswind	4.5.24
	Utilization on grass runway	4.5.26
	GPS navigation	4.5.28

4.1 - General

This section provides procedures for the conduct of normal operation of TBM airplane.

The first part of this section lists the normal procedures required as a check list.

The amplified procedures are developed in the second part of the section.

The normal procedures for optional systems are given in section 9, Supplements of the POH.

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4.2 - Airspeeds for normal operation

Conditions :

- Takeoff weight : 7394 lbs (3354 kg)
- Landing weight : 7024 lbs (3186 kg)

Rotation airspeed (V_R) :

- Flaps TO 90 KIAS

Best rate of climb speed (V_Y) :

- Landing gear and flaps UP 124 KIAS

Best angle of climb speed (V_X) :

- Landing gear and flaps UP 100 KIAS

Maximum speed :

- Flaps TO 178 KIAS
- Flaps LDG 122 KIAS

Maximum airspeed with landing gear down 178 KIAS

Maximum landing gear operating airspeeds

- Extension 178 KIAS
- Retraction 150 KIAS

Approach airspeed :

- Flaps LDG 85 KIAS

Maximum operating speed (V_{MO}) 266 KIAS

Glide speed (maximum L / D ratio)

- Landing gear and flaps UP 120 KIAS

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4.3 - Check-list procedures

Initial inside inspection and outside inspection performed.
OXYGEN cylinder open.

Inside inspection		1/2
1 -	Cabin door and pilot door, if installed	Closed / Locked
2 -	Baggage	Stowed
3 -	EMERGENCY EXIT pin	Removed
4 -	Seat, pedals, harness	Adjust / Lock
5 -	PASSENGER OXYGEN	STBY
6 -	OXYGEN	ON
7 -	Crew oxygen masks	Test
8 -	EXT LIGHTS	All OFF
9 -	INT LIGHTS	All OFF
10 -	Crash lever	Down
11 -	STARTER	OFF
12 -	IGNITION	AUTO
13 -	AUX BP	OFF
14 -	FUEL SEL	MAN
15 -	AP / TRIMS	OFF
16 -	A/C	OFF
17 -	CB LIGHTS	OFF
18 -	MICRO / MASK	MICRO / Guarded
19 -	DE ICE SYSTEM	All OFF
20 -	INERT SEP	OFF
21 -	PARK BRAKE	Reset / ON
22 -	LANDING GEAR	DN

Continue ►

Inside inspection

2/2

► *Continuing*

- 23 - DUMP NORM / Guarded
- 24 - BLEED OFF
- 25 - HOT AIR FLOW Fully turned to the right
- 26 - MAN OVRD Full backward (notched)
- 27 - THROTTLE CUT OFF
- 28 - FUEL TANK SELECTOR Open / L or R
- 29 - ALTERNATE STATIC SOURCE Pushed
- 30 - EMERGENCY RAM AIR Pushed
- 31 - ESS BUS TIE NORM / Guarded
- 32 - Breakers All pushed
- 33 - Landing gear emergency pump handle Check

End of procedure.

Before starting engine

- 1 - Crash lever Up
- 2 - ATIS Copied
- 3 - Start clearance As required
- 4 - SOURCE BATT or GPU
- 5 - GENERATOR MAIN
- 6 - TEST Press
- 7 - LANDING GEAR LIGHTS / CHECK DOWN Test
- 8 - MFD Initialize
- 9 - Fuel on board Check
- 10 - Residual ITT Check

If residual ITT > 150°C :

- 11 - Perform procedure Motoring

Refer to procedure hereafter
- 12 - VOLTS : BATT > 24.5 V / GPU ~ 28 V Check
- 13 - CAS Check

End of procedure.

Motoring (if residual ITT > 150°C)

- 1 - IGNITION OFF
- 2 - AUX BP ON
- 3 - **AUX BOOST PMP ON** Check ON
- 4 - Propeller area Clear
- 5 - STARTER ON
2 sec then OFF

After 30 seconds maximum :

- 6 - STARTER ABORT
Then OFF
- 7 - AUX BP OFF

End of procedure.

Engine start

▲ CAUTION ▲

After aborted engine starts, wait :

1 min / 5 min / 30 min before 2nd / 3rd / 4th new engine start.



- 1 - IGNITION AUTO
- 2 - AUX BP ON
- 3 - **AUX BOOST PMP ON** Check ON
- 4 - Propeller area Clear
- 5 - STARTER ON
2 sec then OFF

When Ng around 13 % :

- 6 - THROTTLE LO-IDLE
- 7 - ITT, Ng, OIL °C and OIL PSI Monitor

ITT	Maximum 1000°C for 5 sec 870°C for 20 sec
Ng	30 % before 30 sec 50 % before 1 min

When

- Ng > 50 % and,
 - 1 minute max :
- 8 - Starter Check OFF automatically

End of procedure.

After engine start with GPU

- 1 - SOURCE BATT
- 2 - GPU Disconnect
- 3 - **GPU DOOR** Check OFF

End of procedure.

After engine start

- 1 - THROTTLE LO-IDLE ►Flight IDLE
- 2 - Ng Check 70 % $\pm$ 2 %
- 3 - OIL °C and OIL PSI Check
- 4 - AUX BP AUTO
- 5 - FUEL SEL AUTO
- 6 - SHIFT Test
- 7 - AP / TRIMS ON

If BATT < 80 amps :

- 8 - GENERATOR ST-BY / Test
- 9 - GENERATOR MAIN
- 10 - CAS Check
- 11 - A/C As required
- 12 - BLEED AUTO or MAX DIFF

End of procedure.

Before taxiing

- 1 - Stand-by instruments Check
- 2 - DE ICE SYSTEM Test
- 3 - INERT SEP ON
- 4 - Flight controls Check
- 5 - TRIMS Test
- 6 - FLAPS UP
- 7 - MFD
 - FPL Set
 - LFE Set / Check
 - WX RADAR STBY
- 8 - THROTTLE Feather twice
- 9 - EIS Check
- 10 - CAS Check
- 11 - TAXI lights ON

End of procedure.

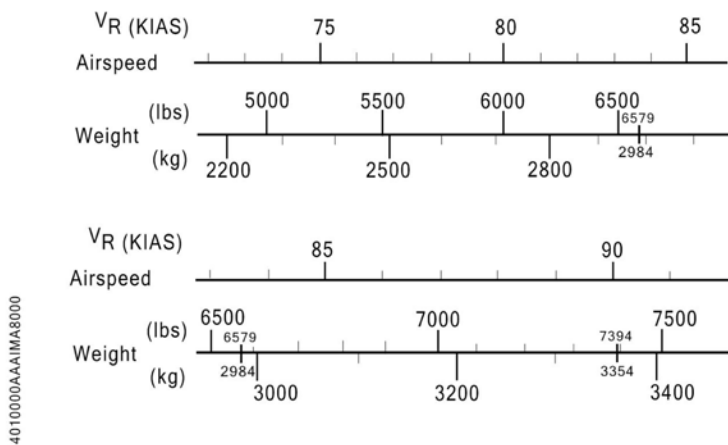
Before line up

- 1 - LDG lights ON
- 2 - NAV ON
- 3 - STROBE ON
- 4 - IGNITION As required
AUTO or ON
- 5 - AUX BP AUTO
- 6 - FUEL SEL AUTO
- 7 - DE ICE SYSTEM As required
- 8 - PITOT L HTR / PITOT R & STALL HTR ON
- 9 - INERT SEP ON
- 10 - TRIMS TO
- 11 - FLAPS TO
- 12 - A/C As required
- 13 - BLEED AUTO or MAX DIFF
- 14 - LFE Check
- 15 - FUEL gages Check imbalance
- 16 - BATT Check below **50 amps**
- 17 - EIS Check
- 18 - CAS Check
- 19 - Altimeters setting As required
- 20 - Instruments departure setting Check
- 21 - SID (PROC) Set
- 22 - ALT SEL Set
- 23 - XPDR squawk Set

End of procedure.

Normal takeoff

- 1 - ADI, HSI, headings Check
- 2 - PROP RPM Green sector
- 3 - Brakes Release
- 4 - TRQ 100 %
- 5 - Rotation airspeed



- 6 - Attitude 10° Up

When vertical speed is positive :

- 7 - Brakes Apply
- 8 - LANDING GEAR UP

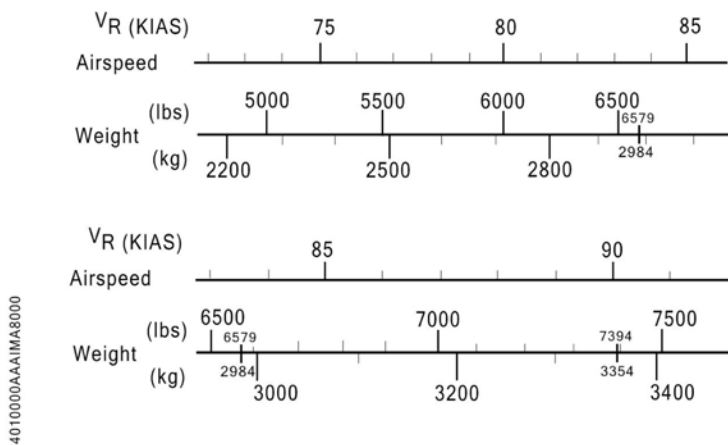
When airspeed above 115 KIAS :

- 9 - FLAPS UP

End of procedure.

Short takeoff

- 1 - ADI, HSI, headings Check
- 2 - PROP RPM Green sector
- 3 - TRQ 100 %
- 4 - Brakes Release
- 5 - Rotation airspeed



Weight < 6579 lbs (2984 kg) :

- 6 - Attitude 15° Up

Weight > 6579 lbs (2984 kg) :

- 7 - Attitude 12.5° Up

When vertical speed is positive :

- 8 - Brakes Apply
- 9 - LANDING GEAR UP

When airspeed above 115 KIAS :

- 10 - FLAPS UP

End of procedure.

After takeoff

- 1 - LANDING GEAR Check UP
- 2 - FLAPS Check UP
- 3 - TRQ Check max 100 %
- 4 - EIS Check
- 5 - CAS Check
- 6 - DE ICE SYSTEM As required
- 7 - INERT SEP As required

End of procedure.

Climb

- 1 - ALT SEL Check
- 2 - Altimeters setting As required
- 3 - Autopilot Check
- 4 - TRQ adjustment / ITT / Ng Check
- 5 - EIS Check
- 6 - CAS Check
- 7 - WX RADAR As required
- 8 - Pressurization Check
- 9 - FUEL gages Check
- 10 - AMPS / VOLTS Check
- 11 - DE ICE SYSTEM As required
- 12 - INERT SEP As required
- 13 - LDG lights As required

End of procedure.

Cruise

- | | | |
|------|---------------------------------|-------------|
| 1 - | Altimeters setting | Check |
| 2 - | Autopilot | Check |
| 3 - | TRQ adjustment / ITT / Ng | Check |
| 4 - | EIS | Check |
| 5 - | CAS | Check |
| 6 - | Pressurization | Check |
| 7 - | FUEL gages | Check |
| 8 - | AMPS / VOLTS | Check |
| 9 - | DE ICE SYSTEM | As required |
| 10 - | INERT SEP | As required |
| 11 - | LDG lights | OFF |
| 12 - | Top of descent | Computed |

End of procedure.

Before descent

- | | | |
|-----|--------------------------------|-------------|
| 1 - | Briefing before approach | Completed |
| 2 - | Altimeters setting | Check |
| 3 - | Pressurization | Check |
| 4 - | LFE | Check |
| 5 - | FUEL gages | Check |
| 6 - | AMPS / VOLTS | Check |
| 7 - | DE ICE SYSTEM | As required |
| 8 - | INERT SEP | As required |

End of procedure.

Approach

- | | | |
|-----|--------------------------------|-------------|
| 1 - | Altimeters setting (QNH) | Set / Check |
| 2 - | Minimums | Set / Check |
| 3 - | COM / NAV / GPS | Set / Check |
| 4 - | Pressurization | Check |
| 5 - | LFE | Check |
| 6 - | FUEL gages | Check |
| 7 - | AMPS / VOLTS | Check |
| 8 - | DE ICE SYSTEM | As required |
| 9 - | INERT SEP | ON |

Below FL 100 :

- | | | |
|------|------------------|----|
| 10 - | LDG lights | ON |
|------|------------------|----|

End of procedure.

Final approach (in GS) or downwind leg (VMC)

- 1 - LDG lights ON
- 2 - LANDING GEAR DN
Check 3 green
- 3 - FLAPS TO
End of procedure.

Short final ($\approx$ 500 ft)

- 1 - LANDING GEAR Check
DN and 3 green
- 2 - FLAPS LDG
- 3 - AP / YD Disconnect
End of procedure.

Runway clear

- 1 - TAXI light ON
- 2 - NAV As required
- 3 - STROBE As required
- 4 - DE ICE SYSTEM As required
- 5 - TRIMS Reset to TO
- 6 - FLAPS UP
- 7 - A/C As required
- 8 - XPDR Check
- 9 - WX RADAR Check

End of procedure.

Shutdown

- 1 - PARK BRAKE Set / ON
- 2 - EXT LIGHTS All OFF
- 3 - INT LIGHTS As required
- 4 - OXYGEN OFF
- 5 - FUEL SEL MAN
- 6 - AP / TRIMS OFF
- 7 - A/C OFF
- 8 - BLEED OFF
- 9 - THROTTLE Flight IDLE
For 2 min
- 10 - THROTTLE LO-IDLE
For 15 sec
- 11 - THROTTLE CUT OFF
- 12 - INERT SEP OFF
- 13 - **AUX BOOST PMP ON** Check ON
- 14 - AUX BP OFF
- 15 - GENERATOR OFF

When inertial separator is retracted, after approximately 40 sec :

- 16 - SOURCE OFF
- 17 - Crash lever Pull down
- 18 - Stand-by instruments OFF
- 19 - Oxygen cylinder (R.H. Karman) Close

• NOTE •

Within 10 minutes following the engine shutdown, check engine oil level.
Refer to chapter 8.7 Oil level check.

•

End of procedure.

Intentionally left blank

4.4 - Amplified procedures

Preflight inspection

1/16

The preflight inspection procedure is based on a scanning method.

It is divided in 6 subparts to cover all items of the preflight - see figure 4.4.1

- I Initial inside inspection
- II Cabin
- III L.H. Wing
- IV Fuselage forward section
- V R.H. Wing
- VI Fuselage rear section / Empennages

▲ WARNING ▲

During outside inspection, visually check inspection doors and airplane general condition. Check for systems and parts attachments / deflections / leaks / cracks / deteriorations / non-obstructions / nicks / numbers / free movements / position.

In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces.

In case of night flight, check good operation of all navigation lights, landing lights, strobe lights and make sure that an emergency lamp is on board.

If icing conditions are foreseen, particularly check good functioning of all electrical and pneumatic ice protection systems.

Check that type and quantity of fuel used for refueling are correct.

Remove covers on : pitots (2), static ports (2), static dischargers (2), engine air inlet (1), air inlets (2), exhaust cover and propeller locks (2).

*Continue ►*

Preflight inspection

2/16

► Continuing

▲ WARNING ▲
Remove tie-downs.

Refer to section 8 for quantities, products and specifications of products and materials currently used.

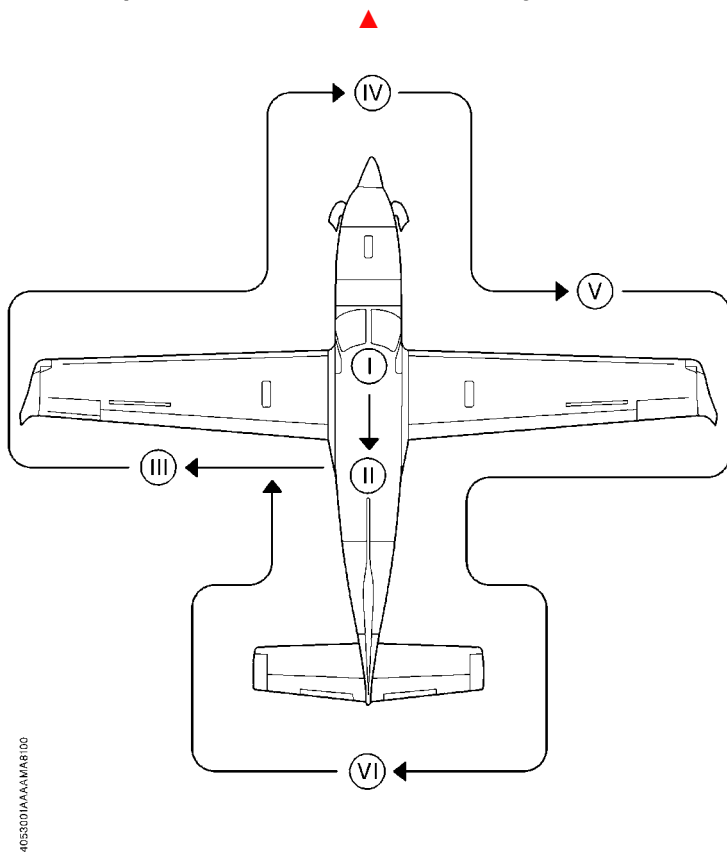


Figure 4.4.1 - Preflight inspection

Continue ►

Preflight inspection

3/16

► Continuing

Initial inside inspection

Cockpit (I)

▲ CAUTION ▲

When engine is shut down, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.



- 1 - A/C switch OFF
- 2 - DE ICE SYSTEM panel All OFF
- 3 - MICRO/MASK switch MICRO / Guarded
- 4 - Flight controls lock Removed / Stowed

● NOTE ●

The flight controls lock is normally stowed in the front cargo compartment with the towing bar and the blanking covers.



- 5 - Flight controls deflections Check
- 6 - PARK BRAKE ON
- 7 - LANDING GEAR lever DN
- 8 - DUMP switch NORM / Guarded
- 9 - BLEED switch OFF

Engine controls

- 10 - MAN OVRD control Backward

Continue ►

Preflight inspection

4/16

► *Continuing*

▲ **CAUTION** ▲

When the engine is shut down, the throttle must not be moved into the reverse area as a lack of hydraulic pressure prevents movement into reverse range. Trying to force the mechanism will cause damage.



- 11 - THROTTLE CUT OFF
 - 12 - FLAPS lever UP
 - 13 - FUEL TANK SELECTOR L or R
- Open door of emergency landing compartment to check LANDING GEAR emergency control.
- 14 - Lever Pushed down
 - 15 - By-pass selector Fully depressed
 - 16 - Door In place

● **NOTE** ●

By-pass selector must be pushed at its maximum stop, so as to have the door in place.



- 17 - ALTERNATE STATIC SOURCE selector Pushed
 - 18 - EMERGENCY RAM AIR control knob Pushed
 - 19 - Breakers panel All breakers checked
 - 20 - ELT switch ARM / OFF
 - 21 - AP / TRIMS switch OFF
- FUEL panel
- 22 - FUEL SEL switch MAN
 - 23 - AUX BP switch OFF

Continue ►

Preflight inspection

5/16

► Continuing

ENGINE START panel

24 - IGNITION switch AUTO or OFF

• NOTE •

The IGNITION switch is normally selected to AUTO. This ensures ignition, whenever the STARTER switch is set to ON.

•

25 - STARTER switch OFF

• NOTE •

If not, starter is going to operate as soon as SOURCE selector is moved to BATT or GPU (if connected).

•

ELECTRIC POWER panel

26 - Crash lever Up

27 - GENERATOR selector MAIN

28 - SOURCE selector OFF

29 - ACCESS lighting Check
To ensure that the fuse of the BATT BUS operates correctly

30 - INT LIGHTS panel All OFF

31 - EXT LIGHTS panel All OFF

32 - OXYGEN switch OFF

33 - PASSENGER OXYGEN switch STBY

34 - Emergency lighting Check

▲ CAUTION ▲

Before selecting source, check position of ignition and starter switches.

▲

35 - IGNITION switch AUTO or OFF

36 - STARTER switch OFF

Continue ►

Preflight inspection

6/16

► *Continuing*

- 37 - LANDING GEAR lever DN
- 38 - SOURCE selector BATT or GPU
- 39 - Standby instrument battery indicator symbol Not displayed

If a battery symbol appears on the standby instrument display, airplane takeoff is not allowed until the situation is resolved. Refer to the battery details in the standby instrument Pilot's guide for further information.

If BATT source :

- 40 - Voltage Check > 24.5 volts

● NOTE ●

If not, use a GPU or charge battery. This minimum voltage is not an absolute guarantee for a correctly charged battery. It is recommended to use a GPU in cold weather, when airplane has been stopped more than 3 hours at a temperature below - 10°C (+ 14°F).

●

If GPU source :

▲ CAUTION ▲

Low voltage (around 24.5 V) may indicate that only the battery is powering the airplane and not the pair GPU + battery.
Make sure that a GPU is connected and powering the airplane.

▲

- 41 - Voltage Check ≈ 28 volts

● NOTE ●

If using a GPU, ensure that it provides a 28-volt regulated voltage, with negative on earth, as well as it supplies 800 amps minimum and 1000 amps maximum. See placard located near ground power receptacle door.

●

EXT LIGHTS panel

- 42 - OFF/TAXI/LDG switch OFF
- 43 - STROBE switch ON
- 44 - NAV switch ON

Continue ►

Preflight inspection

7/16

► Continuing

DE ICE SYSTEM panel

45 - All switches OFF

46 - ICE LIGHT switch ON

47 - From outside the airplane, check operation of all lights and stall warning alert.

Reentering the airplane

48 - EXT LIGHTS panel All OFF

49 - CAS display Check

50 - Left and right FUEL quantities Check

51 - FLAPS lever LDG

LANDING GEAR panel

52 - Warning lights Check 3 green ON

53 - LIGHT TEST push-button Press
Check all lights flashing

DE ICE SYSTEM panel

▲ WARNING ▲

Do not touch pitots nor stall warning vane. They could be hot enough to burn skin.



54 - PITOT L HTR switch ON

55 - **PITOT HT ON L** Check ON

Continue ►

Preflight inspection

8/16

► Continuing

56 - PITOT R & STALL HTR switch ON

• NOTE •

Correct operation of pitot (PITOT L and R) tube heating elements and of stall aural warning system (STALL HTR) is indicated by display of corresponding CAS message, when control switches are ON.

57 - **PITOT HT ON L-R** Check ON

58 - **STALL HEAT ON** Check ON

59 - PITOT L HTR switch OFF

60 - PITOT R & STALL HTR switch OFF

61 - Crash lever Pull down

Cabin (II)

62 - Cabin fire extinguisher Pressure / Attachment

63 - Seats / belts Check

64 - Windows General condition / No crack

65 - Emergency exit Closed / Locked

66 - Anti-theft safety pin Removed / Stowed

Continue ►

Preflight inspection

9/16

► Continuing

67 - Baggage compartment Straps in place
 >> 6-seat accommodation

68 - Partition net General condition / In place
 >> 4-seat accommodation and baggage transportation

69 - Large net or small net General condition / In place
 >> All

70 - Doors operation Check

71 - Stairs condition Condition / Play

Outside inspection

The preflight inspection described in figure 4.4.1 is recommended before each flight.

● NOTE ●

If a preflight inspection is performed just after the engine shutdown, be careful because the leading edge of engine air inlet, as well as exhaust stubs may be very hot.

●

If the airplane was in long term storage or if it has undergone major maintenance or if it has been used from emergency airfields, a thorough outside inspection is recommended.

When the airplane is stored outside, the use of the flight control lock and blanking covers is recommended. Propeller should be tied down to prevent rotation without oil pressure.

When the airplane is stored for extended periods of time, a thorough preflight inspection is recommended. Particular attention should be paid to possible blockages in airspeed sensing lines, foreign objects in engine intake and exhaust stubs and water contamination of the fuel system.

Continue ►

Preflight inspection

10/16

► *Continuing*

L.H. wing (III)

- 72 - Flap Condition / Play

Also inspect the lower surface, as well as flap fairing, where pebbles (and even ice in case of slush on the runway) may have accumulated.

- 73 - Aileron and trim / Spoiler Condition / Free movement / Deflection

• NOTE •

Ensure there are no foreign objects in the spoiler recess. When ailerons are in the neutral position, it is normal that spoilers are lightly extended at upper surface.

•

- 74 - Trailing edge static discharger Condition / Number / Attachment

- 75 - Winglet / nav. lights / strobe / landing light /
recognition light / taxi light Condition

- 76 - OAT probe Condition

- 77 - Fuel tank cap Closed / Locked

• NOTE •

Fuel tank caps must be tight (which is characterized by a consequent exertion to lock and unlock them) to avoid water infiltration in case of rain on ground, and to avoid fuel loss in flight.

•

- 78 - Fuel tank air vent Unobstructed

• NOTE •

Air vent is not likely to be obstructed by ice or water, as it is located in a wing lower surface recess.

•

Continue ►

Preflight inspection

11/16

► Continuing

- 79 - Left pitot Condition
- 80 - Wing lower surface No leak
- 81 - Check fuel tank access doors for leaks.
- 82 - Check for surface damage.
- 83 - Wing deicer boots Condition / Attachment

• NOTE •

Care must be taken when refuelling the airplane to avoid damaging the wing deicer boots. A protective apron should be used if possible.

•

- 84 - Fuel tank drain (two on each wing) Drain
Fuel free of water and contamination

• NOTE •

In case of water in fuel system, drain it carefully using the four drain valves of tank sumps, and the fuel filter drain valve, till every trace of water or deposit has disappeared.

A long term storage of the airplane causes water accumulation in fuel, which absorbs additive. This phenomenon occurs when an excessive quantity of water accumulates in fuel tank sumps. Refer to section 8 for servicing operations relative to fuel additives.

•

L.H. main LANDING GEAR

- 85 - Shock absorber Check
- 86 - Doors Check
- 87 - Tire Check
- 88 - Wheel well Check

Continue ►

Preflight inspection

12/16

► *Continuing*

• NOTE •

If airplane has been used from muddy airfields or in snow, check wheel wells to make sure they are clean and not obstructed.

Check frequently all landing gear retraction mechanism components, shock-absorbers, tires and brakes. This is particularly important for airplanes used from hilly fields.

Improperly serviced or worn shock-absorbers may result in excessive loads being transmitted to the airplane structure during ground operations. Without passengers and baggages on board, the unpainted surface of the main gear shock absorber tube must be visible about :

55 mm (2.17 in) of minimum height with half tank,

40 mm (1.57 in) of minimum height with full tanks.

•

Fuselage forward section (IV)

Forward compartment

89 - Inside	Check
90 - Door	Close / Lock
91 - GPU door	Closed If not used
92 - Fuel circuit drain	Drain Fuel free of water and contamination

▲ WARNING ▲

If the clogging indicator is extended, red collar visible, the flight is not authorized.

▲

93 - Filter contamination indicator (clogging indicator)	Check
94 - L.H. exhaust stub	Condition / No cracks

Continue ►

Preflight inspection

13/16

► *Continuing*

• NOTE •

Inspect if possible pressure port located inside exhaust stub. A missing port or a cracked port may hinder correct operation of continuous heating of air inlet lip.

•

■ 95 - Upper engine cowl Open

For the first flight of the day :

96 - Oil cap Closed / Locked

97 - Engine oil level Check

98 - Fuel pipes No leak, deterioration, wear

99 - Engine cowl Condition
Closed / Locked

Air inlets

■ 100 - Main No cracks - Unobstructed

• NOTE •

Check for no cracks, which are sometimes put in evidence by traces of soot resulting from exhaust gases.

•

■ 101 - Lateral / upper Unobstructed

• NOTE •

Lateral air inlets, which supply air conditioning system and oil cooler, are provided with blanking covers. It is not the case for upper air inlets of RAM AIR system (circular grille located in front of R.H. windshield) and of vapor cycle cooling system (two rectangular grilles located forward of the circular grille).

•

Continue ►

Preflight inspection

14/16

► *Continuing*

102 - Propeller and spinner No nicks, cracks or oil leaks / Attachment

• NOTE •

In case of operation from contaminated runways, it is necessary to carefully examine propeller blades, where traces of abrasion may be found. Propeller damage may reduce blade life time and degrade performance. Any propeller damage should be referred to maintenance personnel.

•

Nose gear

103 - Shock absorber Check

104 - Doors Check

105 - Tire Check

106 - Wheel well Check

• NOTE •

Without passengers and baggages on board, the unpainted surface of the nose gear shock absorber tube must be visible about :
57 mm (2.22 in) of minimum height with full tanks,
63 mm (2.46 in) of minimum height with half tank.

•

• NOTE •

Crush or relieve the shock absorber one time or twice before the inspection to remove possible sticking.

•

In case of doubt, request a check of the shock absorber pressure.

107 - R.H. exhaust stub Condition / No cracks

R.H. wing (V)

Additional remarks are identical to those of L.H. wing.

108 - Fuel tank drain (two on each wing) Drain
Fuel free of water and contamination

Continue ►

Preflight inspection

15/16

► Continuing

R.H. main LANDING GEAR

- 109 - Shock absorber Check
- 110 - Doors Check
- 111 - Tire Check
- 112 - Wheel well Check
- 113 - Wing deicer boots Condition / Attachment
- 114 - Stall warning Condition / Deflection
- 115 - Wing lower surface No leaks
- 116 - Fuel tank cap Closed / Locked
- 117 - Fuel tank air vent Unobstructed
- 118 - Right pitot Condition
- 119 - Winglet / nav. light / strobe / landing light /
recognition light / taxi light Condition
- 120 - Trailing edge static discharger Condition / Number / Attachment
- 121 - Aileron / spoiler Condition / Free movement / Deflection
- 122 - Flap Condition / Play

Rear R.H. karman

- 123 - Oxygen cylinder Open
- 124 - Oxygen pressure Check
- 125 - Confirm OXYGEN quantity in regards with the expected flight.
- 126 - Oxygen pressure Check

Fuselage rear section / empennages (VI)

Check that outside handle of emergency exit is flush with door skin.

- 127 - ELT ARM / OFF

Continue ►

Preflight inspection

16/16

► *Continuing*

128 - ELT door Closed / Locked

• NOTE •

Access to ELT is possible through an inspection door located on R.H. side of fuselage rear section.

•

129 - Static pressure ports Clean

130 - Ventral fins Condition / Attachments

• NOTE •

Ventral fins are made of two parts (one fixed part and one removable part with rear lower inspection door). Check that these two parts are connected by the locking roller.

•

131 - Inspection door under fuselage Attachments - Closed

132 - Horizontal stabilizer deicer boots (R.H. side) Condition / Attachments

133 - Elevator and trim Condition / Deflection free movement /
Trim position

• NOTE •

To check the deflection, hold the two half-elevators near fuselage, inside both elevator trims to avoid stresses.

•

134 - Static dischargers Condition

135 - Vertical stabilizer deicer boots Condition / Attachments

136 - Rudder and trim Condition / Trim position

137 - Static dischargers Condition

138 - Tail cone / nav. lights / strobe Condition

139 - Static pressure ports Clean

End of procedure.

Inside inspection

1/4

After completion of preflight inspection. Initial inside inspection and outside inspection performed.

- 1 - Cabin door and pilot door, if installed Closed / Locked
- 2 - Baggage Stowed
- 3 - EMERGENCY EXIT pin Removed
- 4 - Seats, pedals, harness Adjust / Lock

▲ CAUTION ▲

It is mandatory to adjust seats in fore-aft movement when seat is in maximum high permissible position, to avoid interference between side upholstery panel and seat housing in low and intermediate positions.



Pilot seat and R.H. front seat, if occupied Adjust

● NOTE ●

Adjust seats and harnesses, so as to permit access to flight controls. The pilot at L.H. station must be able to easily reach A/C and PRESSURIZATION panel.



- 5 - Height adjustment Max. UP
- 6 - Fore and aft adjustment Adjust and check locking
- 7 - Height adjustment Adjust
- 8 - L.H and R.H. pedals Adjust
- 9 - Pilot and passengers belts and harnesses Fasten

● NOTE ●

Check for pilot and passengers correct locking of belt buckles, as well as automatic locking of shoulder harness by exerting a rapid pull on the latter. If airbags installed, unoccupied seat belts have to be strapped. It is forbidden to fly with these belts unstrapped.



Continue ►

Inside inspection

2/4

► *Continuing*

- 10 - PASSENGER OXYGEN switch STBY
11 - OXYGEN switch ON

• NOTE •

Make sure to set on STBY the PASSENGER OXYGEN switch before setting the OXYGEN switch to ON to avoid passengers mask deployment.

•

- 12 - Crew oxygen masks Test

• NOTE •

Press push-button PRESS TO TEST : the blinker shall turn red momentarily, then turns transparent.

•

- 13 - EXT LIGHTS panel All OFF
14 - INT LIGHTS panel All OFF
15 - DIMMER switch OFF
16 - CABIN switch OFF
17 - ACCESS switch OFF
18 - PANEL rheostat Fully turned to the left
19 - All lights OFF
20 - Crash lever Down
21 - STARTER switch OFF

• NOTE •

If not, starter is going to operate as soon as SOURCE selector is positioned on BATT or GPU.

•

Continue ►

Inside inspection

3/4

► Continuing

■ 22 - IGNITION switch AUTO

• NOTE •

The IGNITION switch is normally selected to AUTO. This ensures ignition,
whenever the starter is activated.

•

■ 23 - AUX BP switch OFF

■ 24 - FUEL SEL switch MAN

■ 25 - AP / TRIMS switch OFF

■ 26 - A/C switch OFF

■ 27 - CB LIGHTS switch OFF

■ 28 - MICRO / MASK switch MICRO / Guarded

■ 29 - DE ICE SYSTEM panel All OFF

■ 30 - INERT SEP switch OFF

■ 31 - PARK BRAKE Reset / ON

■ 32 - LANDING GEAR lever DN

■ 33 - DUMP switch NORM / Guarded

■ 34 - BLEED switch OFF

■ 35 - HOT AIRFLOW distributor Fully turned to the right

■ 36 - Pitch trim wheel Check

▲ CAUTION ▲

Make sure that MAN OVRD control is backward to avoid
overtemperature risks at start.

▲

■ 37 - MAN OVRD control Full backward (notched)

Continue ►

Inside inspection4/4

► Continuing

▲ CAUTION ▲

When the engine is shut down, the THROTTLE must not be moved into the reverse area.



- 38 - THROTTLE CUT OFF

39 - FUEL TANK SELECTOR Open / L or R

40 - ALTERNATE STATIC SOURCE selector Normal / Pushed

41 - EMERGENCY RAM AIR Closed / Pushed

42 - ESS BUS TIE switch NORM / Guarded

43 - Breakers All pushed

44 - EMERGENCY LANDING GEAR lever Check

End of procedure.

Before starting engine

1/3

Check that the weight and balance are within the correct limits. Brief passengers about use of seat belts and the emergency oxygen system, as well as opening the access door and the emergency exit.

- 1 - Preflight inspection Completed
- 2 - Crash lever Up
- 3 - ATIS Copied
- 4 - Start clearance As required
- 5 - SOURCE selector BATT (battery start) or GPU (GPU start)

If one screen (L or R PFD, or MFD) is missing :

- 6 - SOURCE selector OFF
- 7 - Wait for 30 seconds
- 8 - SOURCE selector BATT (battery start) or GPU (GPU start)

If GPU use :

- 9 - **GPU DOOR** Check ON
- 10 - Voltmeter Check 28 Volts $\pm$ 0.5 Volt

• NOTE •

Voltage is higher than 24.5 Volts which corresponds to the voltage in case of battery use.

•

If battery use :

- 11 - Battery voltage Check > 24.5 V

If battery voltage < 24.5 V :

- 12 - Ask for a GPU and be ready to a GPU start.

- 13 - GENERATOR selector MAIN
- 14 - **MAIN GEN** Check ON

Continue ►

Before starting engine

2/3

► Continuing

15 - **OXYGEN** Check OFF

If **OXYGEN** is ON :

16 - Open isolation valve of the oxygen cylinder in R.H. Karman.

17 - TEST push-button Press
Audio / DE ICE SYSTEM lights / stick shaker

18 - DUMP switch NORM / Guarded

19 - LANDING GEAR light / CHECK DOWN Test

20 - MFD Initialize

21 - Fuel onboard Check

- Quantity Check

- FUEL TANK SELECTOR L or R

22 - Residual ITT Check

If residual ITT > 150°C :

23 - Perform procedure Motoring
Refer to this chapter

• NOTE •

A start up procedure with an engine residual ITT above 150°C may generate an ITT exceedance.

Particular monitoring of ITT will have to be performed during start up to ensure to keep the temperature within ITT envelope.

•

24 - VOLTS : BAT > 24.5 V / GPU ≈ 28 V Check

25 - CAS display Check

26 - PARK BRAKE Check ON
Last check before proceeding to engine start

27 - **PARK BRAKE** Check ON

Continue ►

Before starting engine

2/3

► *Continuing*

• NOTE •

PARK BRAKE appearance does not indicate that parking brake is set. For that, press on brake pedals before turning brake selector to the right.

•

Engine start

1/3

- 1 - STROBE switch ON
- 2 - G3000 DISPLAY BACKUP
Composite mode

• NOTE •

If there is a loss of MFD during start up sequence, that sequence will be ended using the left PFD in composite mode.

- 3 - IGNITION switch AUTO
- 4 - AUX BP switch ON
- 5 - **AUX BOOST PMP ON** Check ON
- 6 - **FUEL PRESS** Check OFF
- 7 - Propeller area Clear

▲ CAUTION ▲

If 5 seconds after having positioned the STARTER switch in ON position there is no start, interrupt starting attempt using the ABORT position of the STARTER switch.

▲ CAUTION ▲

Starter operation is bound by limitations in chapter 2.4 Starter operating limits.

- 8 - STARTER switch ON
2 sec then OFF

Simultaneously :

- 9 - Timer clock Start
To check startup acceleration
- 10 - **STARTER** Check ON
- 11 - **MAIN GEN** Check ON

Continue ►

Engine start

2/3

► Continuing

▲ CAUTION ▲

When THROTTLE is positioned on LO-IDLE before having obtained 13 % of Ng, there is a risk of overtemperature further to an excessive accumulation of fuel inside the combustion chamber before ignition.



• NOTE •

In case of starting with high residual ITT, an ITT decrease below 150°C (within starter operation limits) may allow to stay within the allowed ITT envelope during startup sequence.



When

- Ng about 13 % and,
- ITT below 150°C and,
- time below 20 seconds :

12 - THROTTLE LO-IDLE

Abort starting procedure if :

- No ignition 10 seconds after having positioned THROTTLE to LO-IDLE,
- **ITT** lights on (max ITT < 870°C for more than 20 seconds, < 1000°C for more than 5 seconds),
- Ng < 30 % after 30 seconds of starter use,
- Ng < 50 % after 60 seconds of starter use,

13 - THROTTLE CUT OFF

14 - IGNITION switch OFF or AUTO

When ITT < 850°C :

15 - STARTER switch ABORT

End of procedure ■

Continue ►

Engine start

3/3

► *Continuing*

When

- *Ng > 50 % and,*
- *1 minute max :*

▲ **CAUTION** ▲

If the starter does not go off automatically, disengage it using the
ABORT position of the STARTER switch.



- 16 - Starter Check OFF automatically
- 17 - **STARTER** Check OFF
- 18 - Engine parameters Check
Check $54 \% \leq Ng \leq 58 \%$, oil pressure and ITT in green sector

End of procedure.

Motoring

1/3

To drain fuel accumulated inside the combustion chamber, a motoring procedure is required following an aborted start.

A 15-second dry motoring run is sufficient to clear any fuel pooled in the engine. The fuel is removed in liquid or vapor form, through an airflow intended to dry combustion chamber, turbines and exhaust nozzles.

To improve cooling of the bearing cavities and prevent oil coking after shutdown in high OAT [above 35°C (95°F)] environment, it is recommended to perform a 30-second dry motoring run.

It is possible that no trace of drainage be observed under engine, due to the drainage collector intended to prevent parking area from contamination.

▲ CAUTION ▲

After any starting interrupt procedure, wait for engine total shutdown and wait at least 30 seconds before initiating a motoring.



Engine controls

- 1 - MAN OVRD control Full backward (notched)

▲ CAUTION ▲

When the engine is shut down, the THROTTLE must not be moved into the reverse area.



- 2 - THROTTLE CUT OFF
- 3 - IGNITION switch OFF
- 4 - **IGNITION** Check OFF

Fuel

- 5 - FUEL TANK SELECTOR L or R
- 6 - AUX BP switch ON
- 7 - **AUX BOOST PMP ON** Check ON

Continue ►

Motoring

2/3

► Continuing

- 8 - **FUEL PRESS** Check OFF

Fuel pressure is necessary for lubrication of HP pump.

- 9 - Propeller area Clear

To clear fuel and vapor internally trapped :

- 10 - STARTER switch ON
2 sec then OFF

Simultaneously :

- 11 - Timer clock Start

- 12 - **STARTER** Check ON

- 13 - Motor For 15 sec. max

- 14 - STARTER switch ABORT
Then OFF

- 15 - **STARTER** Check OFF

To cool engine following shutdown in high temperature environment :

- 16 - STARTER switch ON
2 sec then OFF

Simultaneously :

- 17 - Timer clock Start

- 18 - **STARTER** Check ON

- 19 - Motor For 30 sec. max

If ignition symptoms occur (ITT increasing) :

- 20 - IGNITION switch Check OFF

- 21 - THROTTLE Check CUT OFF

- 22 - Continue motoring.

Continue ►

Motoring

3/3

► Continuing

23 - STARTER switch ABORT
Then OFF

24 - **STARTER** Check OFF

FUEL panel

25 - AUX BP switch OFF

26 - **AUX BOOST PMP ON** Check OFF

27 - **FUEL PRESS** Check ON

End of procedure.

Motoring followed by an engine start

1/3

Amplified procedures stated in starting engine sequences using airplane power or with GPU are also to be applied to hereunder procedure.

Within starter operating limits (continuous max. 1 minute), it is possible to initiate a starting procedure from a motoring procedure.

This procedure will conserve the battery by taking advantage of first Ng acceleration.

Engine controls

- 1 - MAN OVRD control Full backward (notched)

▲ CAUTION ▲

When the engine is shut down, the THROTTLE must not be moved into the reverse area.



- 2 - THROTTLE CUT OFF
- 3 - IGNITION switch OFF
- 4 - **IGNITION** Check OFF

Fuel

- 5 - FUEL TANK SELECTOR L or R
- 6 - AUX BP switch ON
- 7 - **AUX BOOST PMP ON** Check ON
- 8 - **FUEL PRESS** Check OFF
Fuel pressure is necessary for lubrication of HP pump.
- 9 - Propeller area Clear
- 10 - STARTER switch ON
2 sec then OFF

Simultaneously :

- 11 - Timer clock Start
- 12 - **STARTER** Check ON

Continue ►

Motoring followed by an engine start

3/3

► Continuing

Fuel panel

24 - AUX BP switch AUTO

25 - **AUX BOOST PMP ON** Check OFF

Electric power

26 - **MAIN GEN** Check OFF

Reset if necessary

• NOTE •

MAIN GEN normally goes off as soon as **STARTER** goes off.

•

If **MAIN GEN** does not go off :

27 - Ng Increase over 70 %
To start main generator

28 - Generator and battery AMPS Check charge
On EIS of MFD

29 - Battery and ESS. bus VOLTS Check voltage ≈ 28 Volts
On EIS of MFD

End of procedure.

After engine start with GPU

- 1 - SOURCE selector BATT
- 2 - Electrical network Check
- 3 - GPU Disconnect
Performed by ground personnel
- 4 - **GPU DOOR** Check OFF
- 5 - GENERATOR selector MAIN
- 6 - **MAIN GEN** Check OFF

• NOTE •

MAIN GEN normally goes off as soon as **STARTER** goes off.

•

If **MAIN GEN** does not go off :

- 7 - Ng Increase over 70 %
To start main generator
- 8 - Generator and battery AMPS Check charge
On EIS of MFD
- 9 - Battery and ESS. bus VOLTS Check voltage ≈ 28 Volts
On EIS of MFD
- 10 - CAS display Check
- 11 - A/C switch As required
- 12 - BLEED switch AUTO or MAX DIFF

When ground personnel is cleared from propeller area :

- 13 - Perform procedure After engine start
Refer to procedure hereafter

End of procedure.

After engine start

1/2

▲ CAUTION ▲

Generator load < 200 amps



- 1 - THROTTLE LO-IDLE ►Flight IDLE
- 2 - Ng Check 70 % $\pm$ 2 %
- 3 - OIL °C and OIL PSI Check
- 4 - AUX BP switch AUTO
- 5 - FUEL SEL switch AUTO
- 6 - SHIFT push-button Test
Verify rotation of FUEL TANK SELECTOR
- 7 - AP / TRIMS switch ON
This initializes the A/P system
- 8 - PFD 1, MFD and PFD 2 NORMAL mode

Perform generator test :

- 9 - BLEED switch OFF
To unload the generator circuit
- 10 - GENERATOR selector Check MAIN
- 11 - AMPS / VOLTS Check

When MAIN LOAD < 80 amps :

- 12 - GENERATOR selector ST-BY
- 13 - AMPS / VOLTS Check

If the voltage on the ST-BY generator is low (close to 27 volts) :

- 14 - GENERATOR RESET ST-BY push-button Press
To reset ST-BY generator
- 15 - AMPS / VOLTS Check
The indicated voltage should be in the green range
- 16 - GENERATOR selector MAIN

Continue ►

After engine start

2/2

► Continuing

- 17 - Oxygen Check
Verify quantity available for the planned flight.
See tables of paragraph In-flight available oxygen quantity
in this chapter and chapter 7.10 for a FAR 135 type operation

PFD 1, MFD and PFD 2

• NOTE •

Detailed control procedures of avionics system are described in the GARMIN
Integrated Flight Deck Pilot's Guide.

•

- 18 - Brightness Adjust
19 - DISPLAY BACKUP push-button Check
Then return to NORMAL mode
20 - CAS Check
Check engine parameters
21 - A/C switch As required

• NOTE •

A good cabin temperature regulation will only be obtained if A/C switch is set to
PILOT or PLT + PAX.

•

- 22 - TEMP selector Adjust
23 - BLEED switch AUTO or MAX DIFF
24 - HOT AIR FLOW distributor As required

• NOTE •

HOT AIR FLOW distributor is usually set fully turned to the right. However, if
canopy misting is evident, set it fully turned to the left.

•

End of procedure.

In-flight available oxygen quantity

- 1 - Oxygen pressure Read
- 2 - Outside air temperature (OAT) Read
- 3 - Determine the usable oxygen percent using the chart figure 4.4.2

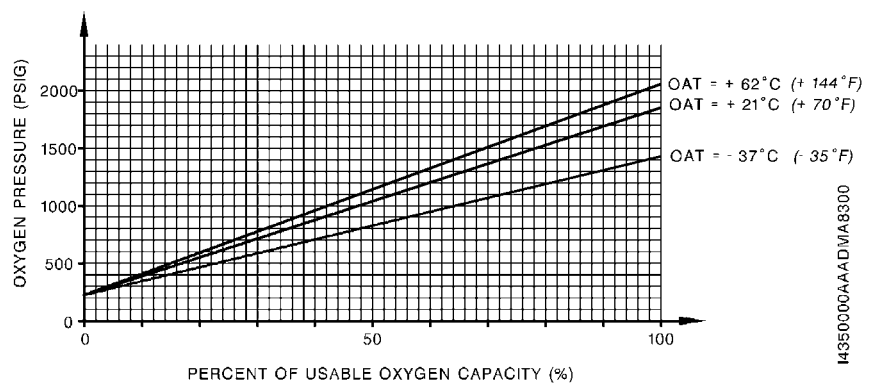


Figure 4.4.2 - Usable oxygen

- 4 - Determine the oxygen duration in minutes by multiplying the values read on table figure 4.4.3 by the percent obtained with the chart figure 4.4.2

Number of passengers	Duration : Passengers, plus 1 pilot	Duration : Passengers, plus 2 pilots
0	226	113
1	162	94
2	127	81
3	104	71
4	88	65

Figure 4.4.3 - Oxygen duration

End of procedure.

Before taxiing

1/4

- 1 - Stand-by instruments Check

Check de-ice system

• NOTE •

Flight into known icing conditions is authorized only when all ice protection equipment are operating correctly. This equipment may be activated before takeoff, even during taxiing, in case of icing conditions on ground. Refer to chapter 4.5 Particular procedures of this section.

•

- 2 - PROP DE ICE switch ON

- 3 - Check illumination of the green light located above the switch.

• NOTE •

Illumination of the green light shows that electric power is supplied to blade root electric resistors. It is advised to wait at least a whole half cycle (90 seconds) to check that both blade heating systems are correctly supplied with electric power.

•

- 4 - PROP DE ICE switch OFF

- 5 - WINDSHIELD switch ON

- 6 - Check illumination of the green lights located above the switch (except if hot conditions).

• NOTE •

These lights may remain OFF if cabin temperature is very high, for example after a prolonged parking in hot conditions (see chapter 7.13 for operational principle).

•

- 7 - WINDSHIELD switch OFF

Continue ►

Before taxiing

2/4

► *Continuing*

- 8 - Ng Increase > 80 %
To check AIRFRAME DE ICE

• NOTE •

Theoretically, necessary air bleed to inflate wing and empennage leading edges, as well as depression necessary to their deflation are sufficient when THROTTLE is positioned on Flight IDLE. However, it is advised for check to choose a Ng power > 80 % in order to obtain operation design pressure, which enables illuminating surely the two green lights and avoiding **VACUUM LOW** untimely alarms.

•

- 9 - AIRFRAME DE ICE switch ON

- 10 - Visually check functioning of deicer boots during 1 total cycle and illumination of the two green lights located above the switch.

• NOTE •

The cycle lasts 67 seconds. Check both inflation impulses and illumination of each corresponding green light :

- the first impulse inflates the external and middle wing boots,
- the second impulse inflates the leading edge boots of empennages and inner wing.

•

- 11 - AIRFRAME DE ICE switch OFF

- 12 - INERT SEP switch ON
Keep ON while taxiing in order to avoid ingestion of particles by the engine

- 13 - Flight controls Check
Proper operation from stop to stop, full deflection

Check autopilot and electrical pitch trim :

- 14 - AP / TRIMS Check

• NOTE •

Detailed control procedures of autopilot and electrical pitch trim are described in the GARMIN Integrated Flight Deck Pilot's Guide.

•

Continue ►

Before taxiing

3/4

► Continuing

- 15 - Pitch trim UP / DN
 - 16 - Pitch trim Adjust in green range
Graduated from 12 to 37 %
 - 17 - Yaw trim L / R
 - 18 - Yaw trim Adjust in green range
Takeoff range
 - 19 - Roll trim L / R
 - 20 - Roll trim Adjust at neutral position
 - 21 - FLAPS lever UP
- Perform MFD flight management
- 22 - Weight computing Set / Check
 - 23 - FOB (fuel on board) synchronization Set
- If requested :*
- 24 - FPL Set
- 25 - LFE selection Done
- Landing Field Elevation selection is done on the touchscreen controller using either :
- automatically the destination airport of the flight plan,
 - or
 - a manual entry by pressing : HOME, AIRCRAFT SYSTEMS, LFE and then MANUAL.
- 26 - VHF/VOR/GPS Adjust / Test
 - 27 - Radar Adjust / Test
 - 28 - Stormscope/TAS/TAWS/Radio altimeter, if installed Adjust / Test
 - 29 - ADI/HSI on PFD1 / PFD2 Check
 - 30 - Altimeter setting Set / Check

Continue ►

Before taxiing

4/4

► *Continuing*

▲ **CAUTION** ▲

During feathering test, keep the spent time with the propeller RPM in the caution (yellow) range at a minimum.



- 31 - THROTTLE FEATHER twice
Flight IDLE to LO-IDLE then Flight IDLE, twice
- 32 - EIS Check
- 33 - CAS display Check
- 34 - Passenger briefing As required
- 35 - TAXI lights ON
- 36 - PARK BRAKE OFF
Make sure that chocks are removed, if used
- 37 - **PARK BRAKE** Check OFF

End of procedure.

Taxiing

▲ CAUTION ▲

Generator load < 200 amps.



▲ CAUTION ▲

Avoid using reverse during taxiing.



● NOTE ●

Operation in the Beta (β) range / reverse is not restricted during ground operations. However, foreign particles (dust, sand, grass, gravel, etc...) may be blown into the air, ingested by the engine (above all if INERT SEP switch is turned OFF) and cause damage to the propeller.



- 1 - TAXI lights Check ON
- 2 - THROTTLE As required

● NOTE ●

After initial acceleration, THROTTLE may be in the TAXI range sector, avoiding excessive movements in order to keep a constant ground speed.



- 3 - Brakes Test
- 4 - Nose wheel steering Check
Check that the control wheel moves (roll) in the same direction
as the rudder pedals due to the rudder / aileron interconnect.
- 5 - Flight instruments Check
Check navigation and communication systems
before or during taxiing, check gyroscopic instruments
on PFDs 1 / 2 and stand-by indicator during ground turns.

End of procedure.

Before line up

1/4

▲ CAUTION ▲

Generator load < 200 amps.



- 1 - PARK BRAKE ON
- 2 - **PARK BRAKE** Check ON
- 3 - THROTTLE Flight IDLE
Ng = 69 % ± 2 %
- 4 - LDG lights ON
- 5 - NAV switch ON
- 6 - STROBE switch ON
- 7 - IGNITION As required
AUTO or ON
- 8 - AUX BP switch AUTO
- 9 - FUEL SEL switch AUTO

DE ICE SYSTEM panel

- 10 - AIRFRAME DE ICE switch As required
- 11 - PROP DE ICE switch As required
- 12 - WINDSHIELD switch As required
- 13 - PITOT L HTR switch ON
- 14 - PITOT R & STALL HTR switch ON
- 15 - INERT SEP switch ON

If icing conditions are foreseen :

- 16 - Perform procedure Flight into known icing conditions
Refer to chapter 4.5

Continue ►

Before line up

2/4

► Continuing

Adjust trims for takeoff

- 17 - Pitch TO
Adjust inside green index sector,
depending on the current balance condition
- 18 - Yaw TO
Adjust inside green index sector
- 19 - Roll TO
Adjust at neutral position
- 20 - FLAPS lever TO
- 21 - Flight controls Check
Check again for proper operation from stop to stop,
full deflection
- 22 - A/C switch As required
- 23 - BLEED switch AUTO or MAX DIFF
- 24 - LFE Check
- 25 - FUEL gages Check quantity and imbalance

▲ CAUTION ▲

Do not take off if battery charge > 50 amps ± 4 amps.



● NOTE ●

After starting engine with airplane power, a battery charge above 50 amps is normal. If this indication remains steady at a high value, it may be then a battery or generation system failure. Do not take off in these conditions.



- 26 - AMPS Check below 50 amps
- 27 - **BAT AMP** Check OFF
- 28 - EIS Check

Continue ►

Before line up

3/4

► *Continuing*

- 29 - CAS display Check
All messages OFF,
except **PARK BRAKE** and, if used **INERT SEP ON**
- 30 - Altimeter setting Set / Check
- 31 - Instruments departure setting Check
- 32 - SID Set
- 33 - ALT SEL Set
- 34 - XPDR Set
- 35 - VHF/VOR/GPS/XPDR Adjust / Check
- 36 - Stormscope/TAS/TAWS/ADF, if installed Adjust / Check
- 37 - Radar Adjust / Check
On ground, maintain radar on STANDBY
in order not to generate radiations prejudicial to outside persons.
- 38 - Radio altimeter, if installed Adjust / Check
- 39 - Transponder code Adjust / Check
- 40 - Takeoff distances Check
Refer to chapter 5.9

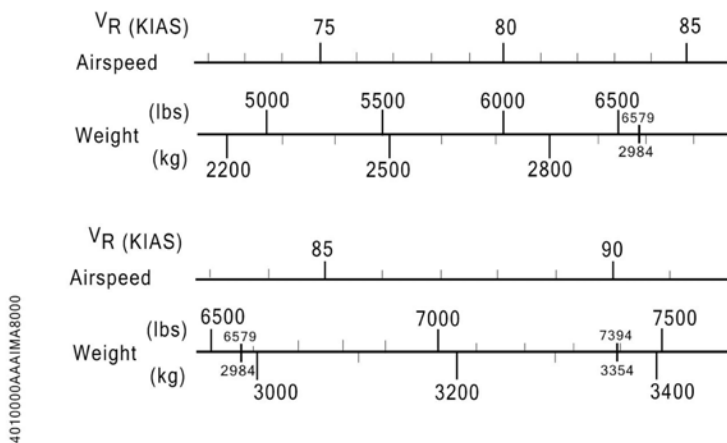
Continue ►

Before line up

4/4

► **Continuing**

41 - Rotation airspeed (V_R) Check



42 - Pilot's / Passengers' belts Check

43 - Passengers' table Stowed

44 - Engine instruments Check

All engine parameters must be in green range,
except propeller RPM, which will be about 1000 RPM or more
with THROTTLE at Flight IDLE.

45 - PARK BRAKE OFF

46 - **PARK BRAKE** Check OFF

End of procedure.

Normal takeoff

1/2

When lined up, on brakes :

▲ **CAUTION** ▲

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.
If icing conditions are foreseen, refer to chapter 4.5, paragraph Flight into known icing conditions.



- 1 - ADI / HSI / headings Check
- 2 - Horizon Check attitude $\approx + 2^\circ$

● NOTE ●

Horizon has been set so as to indicate a 2° nose up attitude, when airplane center of gravity is at a middle average.



- 3 - HSI - Heading - Stand-by compass Check

● NOTE ●

The indication of the stand-by compass is disturbed when windshield deice systems are activated.



- 4 - OFF/TAXI/LDG switch LDG
- 5 - Engine instruments Check
ITT in green sector
- 6 - CAS display Check
All messages OFF, except **IGNITION** and **INERT SEP ON**, if used

- 7 - Apply brakes and increase power.
- 8 - PROP RPM Check green sector
- 9 - Brakes Release
- 10 - TRQ 100 %

● NOTE ●

Torque will be about 40 % to 60 % before brake release. For a normal takeoff, maximum torque (100 %) will be applied after brakes release.



Continue ►

Normal takeoff

2/2

► *Continuing*

11 - Rotation airspeed

12 - Attitude 10° Up

When vertical speed is positive :

13 - Brakes Apply
Briefly

14 - LANDING GEAR lever UP
Airspeed < 150 KIAS

• NOTE •

During the sequence :

- The amber caution light flashes. It indicates that the landing gear pump is running. It goes off when the 3 landing gears are up locked. GEAR UNSAFE red warning light ON and **GEAR UNSAFE** indicate an anomaly (refer to chapter 3.7 Emergency procedures).
- It is possible that the 3 landing gear position green indicator lights flash unevenly then go off at the end of the sequence.

•

15 - GEAR UNSAFE red warning light
and **GEAR UNSAFE** Check OFF
At the end of the sequence

In case of initial climb at V_x :

▲ WARNING ▲

It is recommended not to retract FLAPS to UP before 500 ft AGL.

▲

16 - Airspeed 100 KIAS

When airspeed above 115 KIAS :

17 - FLAPS lever UP
End of procedure.

Short takeoff

1/3

When lined up, on brakes :

▲ **CAUTION** ▲

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.
If icing conditions are foreseen, refer to chapter 4.5, paragraph Flight into known icing conditions.



- 1 - ADI / HSI / headings Check
- 2 - Horizon Check attitude $\approx + 2^\circ$

● NOTE ●

Horizon has been set so as to indicate a 2° nose up attitude, when airplane center of gravity is at a middle average.



- 3 - HSI - Heading - Stand-by compass Check

● NOTE ●

The indication of the stand-by compass is disturbed when windshield deice systems are activated.



- 4 - OFF/TAXI/LDG switch LDG
- 5 - Engine instruments Check
ITT in green sector
- 6 - CAS display Check
All messages OFF, except **IGNITION** and **INERT SEP ON**, if used
- 7 - Apply brakes and increase power.
- 8 - PROP RPM Check green sector
- 9 - TRQ 100 %

Continue ►

Short takeoff

2/3

► *Continuing*

10 - Brakes Release

• NOTE •

On short runway, maximum torque will be applied before brakes release.

•

11 - Rotation airspeed

Weight < 6579 lbs (2984 kg) :

12 - Attitude 15° Up

Weight > 6579 lbs (2984 kg) :

13 - Attitude 12.5° Up

When vertical speed is positive :

14 - Brakes Apply
Briefly

15 - LANDING GEAR lever UP
Airspeed < 150 KIAS

• NOTE •

During the sequence :

- The amber caution light flashes. It indicates that the landing gear pump is running. It goes off when the 3 landing gears are up locked. GEAR UNSAFE red warning light ON and **GEAR UNSAFE** indicate an anomaly (refer to chapter 3.7 Emergency procedures).
- It is possible that the 3 landing gear position green indicator lights flash unevenly then go off at the end of the sequence.

•

16 - GEAR UNSAFE red warning light
and **GEAR UNSAFE** Check OFF
At the end of the sequence

Continue ►

Short takeoff

3/3

► *Continuing*

In case of initial climb at V_x :

▲ **WARNING** ▲

It is recommended not to retract FLAPS to UP before 500 ft AGL.



17 - Airspeed 100 KIAS

When airspeed above 115 KIAS :

18 - FLAPS lever UP

End of procedure.

After takeoff

- 1 - LANDING GEAR lever Check UP
- 2 - FLAPS lever Check UP
- 3 - TRQ Check 100 % max
- 4 - Climb airspeed 124 KIAS
- 5 - EIS Check
- 6 - CAS display Check
- 7 - DE ICE SYSTEM panel As required
- 8 - INERT SEP switch As required

End of procedure.

Climb	1/2
-------	-----

- 1 - ALT SEL Check
- 2 - Altimeters setting As required
- 3 - Autopilot Check
Autopilot status and yaw damper ON

▲ **CAUTION** ▲

Observe TRQ / Ng / Np / ITT / OIL T° and PSI limitations.
Use optimum torque and / or refer to tables in chapter 5.8.



- 4 - TRQ adjustment / ITT / Ng Check

● **NOTE** ●

Torque setting during climb must be adjusted according to engine operation tables in chapter 5.8. These tables give the max. climb power torque setting (MXCL). For each engine, when torque is reduced below 100 % at high altitude according to the tables, during the final climb, reaching the maximum permitted Ng (104 %) is possible and the ITT will be approximately constant, giving a particular value of ITT.

For a simplified engine operation during climb, power may be set first of all by torque, using 100 %, then, when the ITT typical value for climb is reached, by indicated ITT, using this particular value. The margin between this indicated ITT and 790°C (recommended ITT limit during continuous operation) will gradually reduce as flight time is performed.



- 5 - Climb airspeed 124 KIAS
Performance tables concerning climb at 124 KIAS and 170 KIAS / M 0.40 are given in chapter 5.10
- 6 - EIS Check
- 7 - CAS display Check
- 8 - Weather radar As required
- 9 - Pressurization Check

Continue ►

Climb

2/2

► *Continuing*

A/C panel

- 10 - TEMP selector Adjust
- 11 - FUEL gages Check
Verify fuel quantity and imbalance, correct if necessary.
- 12 - AMPS / VOLTS Check

▲ **CAUTION** ▲

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.



- 13 - DE ICE SYSTEM panel As required
Refer to chapter 4.5
- 14 - INERT SEP switch As required
- 15 - LDG lights As required
- End of procedure.*

Cruise		1/2
--------	--	-----

- 1 - Altimeters setting Check
- 2 - Autopilot Check
Autopilot status and yaw damper ON

▲ **CAUTION** ▲

Observe TRQ / Ng / Np / ITT / OIL T° and PSI limitations.
Use optimum torque and / or refer to tables in chapter 5.8.



- 3 - TRQ adjustment / ITT / Ng Check
Adjust according to engine operation tables - chapter 5.8
or to cruise index on the PFDs

● **NOTE** ●

Engine operation tables (chapter 5.8) give torque to be applied according to
OAT, in order not to exceed authorized maximum power.
When INERT SEP switch is OFF, a more accurate setting of torque must then
be performed according to cruise performance tables presented in
chapter 5.11.



- 4 - EIS Check
- 5 - CAS display Check
- 6 - Pressurization Check

Regularly check fuel gages for :

- 7 - Consumption
- 8 - Expected fuel at destination
- 9 - Tank automatic change every 5 minutes
- 10 - Imbalance
Max. imbalance 15 USG

When the cruise parameters are stabilized, after 4 min minimum :

- 11 - AMPS / VOLTS Check

Continue ►

Cruise

2/2

► *Continuing*▲ **CAUTION** ▲

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.



- 12 - DE ICE SYSTEM panel As required
Refer to chapter 4.5
- 13 - INERT SEP switch As required
- 14 - LDG lights As required

End of procedure.

Before descent

- 1 - Briefing before approach Completed
- 2 - Altimeters settings Check
- 3 - Pressurization Check
- 4 - LFE Check
- 5 - FUEL gages Check
Check for quantity and imbalance
- 6 - Fullest tank Select
- 7 - AMPS / VOLTS Check

▲ CAUTION ▲

If heavy precipitation, turn IGNITION and INERT SEP switches to ON.



- 8 - DE ICE SYSTEM panel As required
Refer to chapter 4.5
- 9 - Windshield misting protection system As required

Prior to descent in moist conditions and to avoid canopy misting :

- 10 - HOT AIR FLOW distributor Set to 12 o'clock position
- 11 - WINDSHIELD switch ON

If misting continues :

- 12 - HOT AIR FLOW distributor Turn to the left
Or refer to chapter 3.11
paragraph Windshield misting or internal icing
- 13 - INERT SEP switch As required
End of procedure.

Approach

- 1 - Altimeters settings (QNH) Set / Check
- 2 - Minimums Set / Check
- 3 - COM / NAV / GPS Set / Check
- 4 - Pressurization Check
- 5 - LFE Check
- 6 - FUEL gages Check
Check for quantity and imbalance
- 7 - Fullest tank Select
- 8 - AMPS / VOLTS Check

▲ CAUTION ▲

If heavy precipitation, turn IGNITION and INERT SEP switch to ON.



- 9 - DE ICE SYSTEM panel As required
Refer to chapter 4.5

- 10 - Windshield misting protection system As required

Prior to descent in moist conditions and to avoid canopy misting :

- 11 - HOT AIR FLOW distributor Set to 12 o'clock position
- 12 - WINDSHIELD switch ON

If misting continues :

- 13 - HOT AIR FLOW distributor Turn to the left
Or refer to chapter 3.11
paragraph Windshield misting or internal icing

- 14 - INERT SEP switch ON

When below FL 100 :

- 15 - LDG lights ON
- 16 - Passenger's briefing As required
- 17 - Seats, belts, harnesses Locked
- 18 - Passenger's table Stowed

End of procedure.

Final approach (in GS) or downwind leg (VMC)

Long final :

- 1 - Altimeters Check
- 2 - FUEL gages Check
Check for quantity and imbalance
- 3 - Fullest tank Select
Maximum tolerated imbalance is 15 USG

When below FL 100 :

- 4 - LDG lights ON
- 5 - INERT SEP switch ON

When airspeed is below 178 KIAS :

- 6 - LANDING GEAR lever DN
- 7 - 3 green indicator lights Check ON
- 8 - GEAR UNSAFE red warning light Check OFF
- 9 - **GEAR UNSAFE** Check OFF
- 10 - Amber light Check OFF

• NOTE •

During the sequence :

- The amber caution light flashes. It indicates that the landing gear pump is running. It goes off when the 3 landing gears are down locked. GEAR UNSAFE red warning light ON and **GEAR UNSAFE** indicate an anomaly (refer to chapter 3.7 Emergency procedures).
- It is possible that the 3 landing gear position green indicator lights flash unevenly then come ON at the end of the sequence.

•

- 11 - FLAPS lever TO
Airspeed < 178 KIAS
- 12 - Radar Mode softkey STANDBY

End of procedure.

Short final ($\approx$ 500 ft)

Stabilized approach

- 1 - LANDING GEAR lever Check
DN and 3 green

When airspeed is below 122 KIAS :

- 2 - FLAPS lever LDG

• NOTE •

However, when autopilot is engaged, in APR mode, with coupled GS, FLAPS must be extended in landing position before crossing the OUTER MARKER.

•

Without AP engaged :

- 3 - Approach airspeed 85 KIAS

With AP engaged :

- 4 - Approach airspeed Above 85 KIAS

• NOTE •

This is to avoid any vertical deviation in case of late FLAPS extension to LDG position in short final.

•

- 5 - AP / YD Disconnect
Before 200 ft

• NOTE •

The pilot effort required to use the rudder pedals is reduced if the yaw damper is turned off. This is particularly significant when landing in a crosswind.

•

End of procedure.

Landing

▲ WARNING ▲

Reduce power smoothly.

Quickly reducing the power to idle during the flare may induce a pronounced deceleration which may lead to a drop down of the airplane.



1 - THROTTLE Flight IDLE

● NOTE ●

Avoid three-point landings. Adopt a positive flight attitude in order to touch runway first with main landing gear.



After wheels touch :

▲ CAUTION ▲

On snowy or dirty runway, it is better not to use reverse below 40 KIAS.



2 - Reverse As required
Reverse may be applied as soon as the wheels touch the ground

● NOTE ●

To avoid ingestion of foreign objects, come out of the reverse range as speed reduces and use the brakes if necessary for further deceleration.



● NOTE ●

High power reverse at low speed can throw loose material into the air, and can cause control problems and decrease the comfort of crew and passengers. If permitted by the runway length, it is better to adopt a moderate reverse.



3 - Brakes As required

● NOTE ●

It is advised not to brake energetically, as long as speed has not reached 40 KIAS, as otherwise wheels may be locked.



End of procedure.

Go-around with AP OFF

1/2

- 1 - GO AROUND push-button Press
It provides the moving up of the flight director to + 10°.

Simultaneously :

- 2 - THROTTLE T/O power

• NOTE •

The airplane will tend to yaw to the left when power is applied. Right rudder pressure will be required to maintain coordinated straight flight until the rudder trim can be adjusted.

•

- 3 - Attitude 10° Up

- 4 - FLAPS lever TO

>> *Weight below 6579 lbs (2984 kg)*

If airspeed has been maintained at 80 KIAS or more and TRQ 100 %, select flaps to TO position as soon as the 10° Up attitude has been attained.

When the vertical speed is positive and when airspeed is at or above 85 KIAS :

- 5 - LANDING GEAR lever UP
All warning lights OFF

When airspeed is at or above 110 KIAS :

- 6 - FLAPS lever UP
7 - Climb airspeed As required

>> *Weight above 6579 lbs (2984 kg)*

If airspeed has been maintained at 85 KIAS or more and TRQ 100 %, select flaps to TO position as soon as the 10° Up attitude has been attained.

When the vertical speed is positive and when airspeed is at or above 90 KIAS :

- 8 - LANDING GEAR lever UP
All warning lights OFF

Continue ►

Go-around with AP OFF

2/2

► *Continuing*

When airspeed is at or above 115 KIAS :

9 - FLAPS lever UP

10 - Climb airspeed As required

>> *All*

11 - TRQ As required

End of procedure.

Go-around with AP ON

- 1 - GO AROUND push-button Press
AP remains ON with the flight director moving up to + 10°.

Simultaneously :

- 2 - THROTTLE T/O power
3 - FLAPS lever TO

>> *Weight below 6579 lbs (2984 kg)*

If airspeed has been maintained at 80 KIAS or more and TRQ 100 %, select flaps to TO position as soon as the 10° Up attitude has been attained.

When the vertical speed is positive and when airspeed is at or above 85 KIAS :

- 4 - LANDING GEAR lever UP
All warning lights OFF

When airspeed is at or above 110 KIAS :

- 5 - FLAPS lever UP
6 - Climb airspeed As required

>> *Weight above 6579 lbs (2984 kg)*

If airspeed has been maintained at 85 KIAS or more and TRQ 100 %, select flaps to TO position as soon as the 10° Up attitude has been attained.

When the vertical speed is positive and when airspeed is at or above 90 KIAS :

- 7 - LANDING GEAR lever UP
All warning lights OFF

When airspeed is at or above 115 KIAS :

- 8 - FLAPS lever UP
9 - Climb airspeed As required

>> *All*

- 10 - TRQ As required

End of procedure.

Touch and go

1/2

Before wheels touch :

▲ WARNING ▲

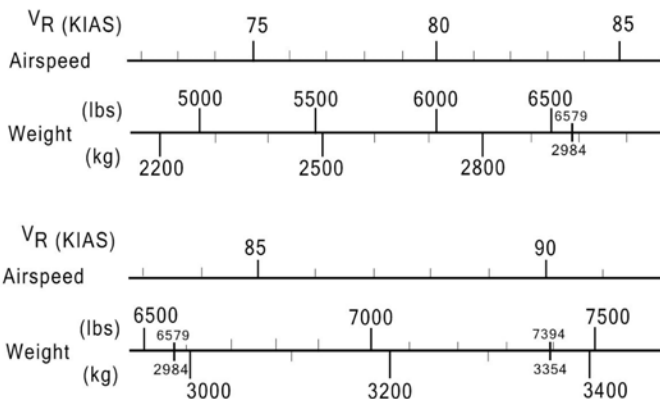
Reduce power smoothly.

Quickly reducing the power to idle during the flare may induce a pronounced deceleration which may lead to a drop down of the airplane.



- 1 - Takeoff distances Checked
Refer to chapter 5.9
- 2 - Rotation airspeed (V_R) Checked

140100004AA1MA8000



After wheels touch :

- 3 - FLAPS lever TO
- 4 - Elevator trim Green sector
It is faster to use manual elevator trim control than electric one.
Ensure that runway length is sufficient to complete this sequence.

Continue ►

Touch and go

2/2

► Continuing

▲ **WARNING** ▲

Check that flaps have well reached the TO position before increasing power. Do not increase power with full flaps, as airplane may lift off prematurely at low speed.



5 - THROTTLE T/O power

If normal takeoff :

6 - Attitude 10° Up

If short takeoff :

Weight < 6579 lbs (2984 kg)

7 - Attitude 15° Up

Weight > 6579 lbs (2984 kg)

8 - Attitude 12°5 Up

● NOTE ●

However, the POH does not supply distances concerning touch and go. These distances are let to pilot's initiative.



End of procedure.

Runway clear

Runway clear - airplane stopped

▲ CAUTION ▲

Generator load < 200 amps



- 1 - TAXI lights ON
- 2 - NAV switch OFF
- 3 - STROBE switch OFF
- DE ICE SYSTEM panel :
- 4 - AIRFRAME DE ICE switch OFF
- 5 - PROP DE ICE switch OFF
- 6 - WINDSHIELD switch As required
- 7 - PITOT L HTR switch OFF
- 8 - PITOT R & STALL HTR switch OFF
- 9 - INERT SEP switch Check ON
- 10 - Trims Reset to takeoff position
- 11 - FLAPS lever UP
- 12 - A/C switch As required
- 13 - XPDR Check GND
- 14 - WX radar Check

Maintain WX radar on standby in order
not to generate radiations prejudicial to outside persons.
The WX radar is automatically set to standby after the touchdown.

End of procedure.

Shutdown

1/3

- 1 - PARK BRAKE Set ON
- 2 - **PARK BRAKE** Check ON
- 3 - EXT LIGHTS panel All OFF
- 4 - INT LIGHTS panel As required
- 5 - OXYGEN switch OFF
- 6 - FUEL SEL switch MAN
- 7 - AP / TRIMS switch OFF
- 8 - A/C switch OFF
- 9 - BLEED switch OFF
- 10 - Check for cabin depressurization ($\Delta p = 0$ Psi).
- 11 - THROTTLE Flight IDLE
For 2 min

• NOTE •

This allows the engine to stabilize at minimum obtainable ITT in order to minimize the likelihood of oil coking in the #3 bearing area.

•

- 12 - THROTTLE LO-IDLE
For 15 sec

• NOTE •

Keep THROTTLE on LO-IDLE position for 15 sec minimum before shutting down engine.

•

- 13 - THROTTLE CUT OFF
- 14 - INERT SEP switch OFF
- 15 - Radar Mode Softkey OFF

Continue ►

Shutdown

2/3

► *Continuing*

Fuel system check

- 16 - **AUX BOOST PMP ON** Check ON
Wait for AUX BP operation, an audible operation of the auxiliary booster pump should be heard, it confirms the proper functioning of the system
- 17 - AUX BP switch OFF
- 18 - GENERATOR selector OFF
- When inertial separator is retracted, after approximately 40 sec :*
- 19 - SOURCE selector OFF
- 20 - Crash lever Pull down
- 21 - FUEL TANK SELECTOR OFF
- 22 - PARK BRAKE As required

▲ **CAUTION** ▲

In case of high OAT [above 35°C (95°F)], it is required to perform 30 sec dry motoring run after shutdown to improve cooling of the bearing cavities and minimize oil coking - refer to procedure Motoring.



Shutdown stand-by instruments

MD302 normal shutdown procedure :

- 23 - No pilot action required for normal shutdown. The MD302 will shut down automatically within 60 seconds following electrical power shutdown.

MD302 manual shutdown procedure :

● **NOTE** ●

The MD302 can be manually shut down when in the discharge mode to conserve battery power.



- 24 - Press and hold the control knob for approximately 2 seconds.

Continue ►

Shutdown

3/3

► *Continuing*

- 25 - Turn the control knob to select POWER OFF on the menu and press the control knob to shut down the standby attitude module.

End of procedure.

Outside check after shutdown

- 1 - Oxygen cylinder (R.H. Karman) Close

• NOTE •

Within 10 minutes following the engine shutdown, check engine oil level.
Refer to chapter 8.7 Oil level check.

•

End of procedure.

4.5 - Particular procedures

• NOTE •

The procedures and procedure elements given in this chapter Particular procedures supplement the normal procedures or complete certain elements of the normal procedures described in chapter(s) 4.3 and/or 4.4.

•

Flight into known icing conditions

1/5

▲ CAUTION ▲

The stall warning system does not function properly in icing conditions and should not be relied upon to provide adequate stall warning in icing conditions and after leaving icing conditions, if ice accretion remains on the airplane.

Moreover, the ESP and USP functions may not be correctly engaged.

▲

General

Icing conditions exist when the OAT on the ground or in flight is + 5°C or below, and visible moisture in any form is present (clouds, fog with visibility of one mile (1.6 km) or less, rain, snow, sleet or ice crystals).

Icing conditions also exist when the OAT on the ground is + 5°C or below and when operating on ramps, taxiways or runways where surface snow, ice, standing water or slush may be ingested by the engine or freeze on engine or cowlings.

• NOTE •

Refer to figure 5.5.1 to convert OAT to SAT in flight.

SAT = OAT - 2°C on the ground.

•

Flight into known icing conditions is authorized when all airplane equipment provided for ice protection is operating correctly. This includes :

- Pneumatic deice system for inboard and outboard wing, for stabilizers and for elevator horns.
- Propeller electrical deice system.
- Electrical heating system for both pitots and for the stall warning incidence sensor.

Continue ►

Flight into known icing conditions

2/5

► Continuing

- Windshield electrical deice system.
- Inertial separator.

Description of deice systems is presented in chapter 7.13.

Ice accumulation thickness is monitored by the pilot on the L.H. wing leading edge.

At night, a leading edge icing inspection light located on the fuselage L.H. side, activated by the ICE LIGHT switch, is provided.

Boots are automatically cycling at the optimum time to assure proper ice removal. Correct operation of the system can be checked observing the corresponding green advisory light illumination at each boot inflation impulse. If correct operation cannot be confirmed, do not enter or leave as soon as possible icing conditions.

Perform emergency procedure Leading edges deicing failure, paragraph 3.11.

Ice protection procedures

▲ CAUTION ▲

Should conditions require it, apply these directives from beginning of taxi onwards.



Prior to entering IMC, as a preventive and if OAT < 5°C :

▲ CAUTION ▲

Inertial separator position affects engine parameters, particularly TRQ and ITT. Care must be exercised when operating the inertial separator or when increasing power with the inertial separator ON, to avoid exceeding engine limitations.



- 1 - INERT SEP switch ON
- 2 - IGNITION switch ON

● NOTE ●

IGNITION switch may be left ON for a long period.



Continue ►

Flight into known icing conditions

3/5

► **Continuing**

- 3 - **INERT SEP ON** Check ON
- 4 - AIRFRAME DE ICE switch ON
- 5 - PROP DE ICE switch ON
- 6 - WINDSHIELD switch ON

• NOTE •

Standby compass indications are altered when windshield deicing system(s) operate(s).

•

When operating under IMC :

▲ CAUTION ▲

Inertial separator position affects engine parameters, particularly TRQ and ITT. Care must be exercised when operating the inertial separator or when increasing power with the inertial separator ON, to avoid exceeding engine limitations.

▲

- 7 - INERT SEP switch ON
- 8 - IGNITION switch ON

• NOTE •

IGNITION switch may be left ON for a long period.

•

- 9 - **INERT SEP ON** Check ON
- 10 - AIRFRAME DE ICE switch ON
- 11 - PROP DE ICE switch ON

Continue ►

Flight into known icing conditions

4/5

► Continuing

12 - WINDSHIELD switch ON

• NOTE •

Standby compass indications are altered when windshield deicing system(s) operate(s).

•

• NOTE •

The INERT SEP switch must be left ON while the airplane remains in icing conditions.

•

▲ CAUTION ▲

If airplane leaves icing conditions, maintain INERT SEP switch to ON as long as ice thickness on non-deiced visible parts exceeds 15 mm (or ½ in).

▲

This will avoid ice fragments coming from propeller spinner and being ingested by engine.

Procedures for holding, approach and landing in icing conditions :

- Minimum recommended airspeeds are :

	Weight	
	< 6579 lbs (2984 kg)	> 6579 lbs (2984 kg)
FLAPS UP	130 KIAS	135 KIAS
FLAPS TO	110 KIAS	115 KIAS
FLAPS LDG	90 KIAS	95 KIAS

- If there is ice on the unprotected surfaces of the airplane, during flight end phase, conduct holding with the flaps up. Use flaps as required for final approach and landing at minimum airspeeds noted above.

Continue ►

Flight into known icing conditions

5/5

► *Continuing***Ice accumulation effects**

When ice has accumulated on the unprotected surfaces of the airplane, aerodynamic characteristics may be changed.

Particularly stall airspeeds may increase by up to :

FLAPS UP	20 KIAS
FLAPS TO	15 KIAS
FLAPS LDG	10 KIAS

In case of severe or prolonged icing, an ice concretion due to refreezing around the heated stall warning may appear. Above-recommended airspeeds take into account, on one side, the stall airspeed increase due to profile shape deterioration and, on the other side, the weight increase of the iced-up airplane, taking as a basis the airplane maximum weight when not iced-up.

Rate of climb values with ice accumulation on the unprotected surfaces are to be decreased by 10 %.

Cruise airspeeds may be decreased by 10 %, if cruise power is not changed, or more, if cruise power setting should be decreased due to the additional inertial separator limitations (ITT limitation).

Because of the higher landing airspeed, landing distances will be increased. In the landing configuration, using 90 KIAS approach airspeed increases landing distance by 20 % - refer to chapter 5.14 Landing distances.

End of procedure.

Flight into severe icing conditions

The following weather conditions may be conducive to severe in-flight icing :

- Visible rain at temperatures below 0°C ambient air temperature,
- Droplets that splash or splatter on impact at temperatures below 0°C ambient air temperature.

Procedures for exiting the severe icing environment

• NOTE •

These procedures are applicable to all flight phases from takeoff to landing.

•

Monitor the ambient air temperature. While severe icing may form at temperatures as cold as - 18°C, increased vigilance is warranted at temperatures around freezing with visible moisture present. If the visual cues specified in section 2 Limitations for identifying severe icing conditions are observed, accomplish the following :

- 1 - Immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the severe icing conditions in order to avoid extended exposure to flight conditions more severe than those for which the airplane has been certificated.
- 2 - Avoid abrupt and excessive maneuvering that may exacerbate control difficulties.
- 3 - Do not engage the autopilot.

If the autopilot is engaged :

- 4 - Hold the control wheel firmly and disengage the autopilot.

If an unusual roll response or uncommanded roll control movement is observed :

- 5 - Angle-of-attack Reduce
- 6 - Do not extend flaps when holding in icing conditions. Operation with flaps extended can result in a reduced wing angle-of-attack, with the possibility of ice forming on the upper surface further aft on the wing than normal, possibly aft of the protected area.

If the flaps are extended :

- 7 - Do not retract them until the airframe is clear of ice.
- 8 - Report these weather conditions to Air Traffic Control.

End of procedure.

Flight under heavy precipitations

- 1 - IGNITION switch ON

• NOTE •

This action is intended, in highly improbable case of an engine flame-out further to an important ingestion, to ensure immediate restarting without action of the pilot.



- 2 - INERT SEP switch ON

End of procedure.

Utilization on runways covered with water

If takeoff or landing must be performed on a runway covered with water :

- 1 - IGNITION switch ON

- 2 - INERT SEP switch ON

End of procedure.

Utilization on runways covered with melting
or not tamped snow

1/3

If required :

Refer to paragraph Utilization by cold weather and very cold weather.

▲ **CAUTION** ▲

When engine is shut down, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.



Preflight inspection :

- 1 - Remove any snow or ice from the wings, stabilizers and movable surfaces, landing gear wells and gear doors, as well as flap tracks, actuators and their fairings.
- 2 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces) and in the landing gear wells, shortly before takeoff.

Taxiing :

- 3 - INERT SEP switch ON
- 4 - **INERT SEP ON** Check ON
- 5 - FLAPS lever UP
- 6 - Taxi airspeed Max. 5 KIAS
- 7 - Brakes Apply occasionally
To maintain the brake pads warm, this will prevent
any subsequent locking due to freezing after takeoff

Before line up :

If the runway is long enough :

- 8 - FLAPS lever UP

Continue ►

Utilization on runways covered with melting
or not tamped snow

2/3

► *Continuing*

- 9 - Rotation airspeed Increased by 5 KIAS

• NOTE •

Takeoff distances must be increased to take into account the flap position
(+ 15 % compared to the takeoff position) and the runway condition.
The ground roll may be multiplied by 3 in some melting or not tamped snow
cases.

•

- 10 - IGNITION switch ON

- 11 - INERT SEP switch ON

- 12 - **INERT SEP ON** Check ON

Takeoff :

During takeoff run :

- 13 - Lightly lift up nose wheel
In order to reduce the forward resistance due to snow
accumulation against the wheel.

After takeoff :

- 14 - Normally retract the landing gear, then perform a complete cycle
(extension / retraction) at IAS < 150 KIAS.

Before landing :

- 15 - IGNITION switch ON

- 16 - INERT SEP switch ON

- 17 - **INERT SEP ON** Check ON

Continue ►

Utilization on runways covered with melting
or not tamped snow

3/3

► *Continuing*

Touch and Go :

▲ WARNING ▲
Touch and Go is prohibited.

On the ramp, after landing or taxiing :

- 18 - Do not use the parking brake to prevent brake lock.
- 19 - Use chocks and / or tie-down the airplane.

End of procedure.

Utilization on icy or covered with tamped snow runways 1/2

If required :

Refer to paragraph Utilization by cold weather and very cold weather.

▲ **CAUTION** ▲

When engine is shut down, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.


Preflight inspection

- 1 - Remove any snow or ice from the wings, stabilizers and movable surfaces, landing gear wells and gear doors, as well as flap tracks, actuators and their fairings.
- 2 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces), shortly before takeoff.

Taxiing :

- 3 - INERT SEP switch ON
- 4 - **INERT SEP ON** Check ON
- 5 - Taxi airspeed Max. 5 KIAS
Use β area of THROTTLE to adjust airspeed
Apply very smooth variations using THROTTLE
- 6 - Steer the airplane using the rudder.

● **NOTE** ●

Make turns at a very low airspeed, engine torque tends to make the airplane turn to the left.



- 7 - Use brakes only at very low airspeed and progressively.

Before line up :

- 8 - IGNITION switch ON
- 9 - INERT SEP switch ON
- 10 - **INERT SEP ON** Check ON

Continue ►

Utilization on icy or covered with tamped snow runways 2/2

► *Continuing*

Takeoff :

- 11 - After takeoff, normally retract the landing gear, then perform a complete cycle (extension / retraction) at IAS < 150 KIAS.

Before landing :

- 12 - IGNITION switch ON
- 13 - INERT SEP switch ON
- 14 - **INERT SEP ON** Check ON

Landing :

After wheels touch

- 15 - Use reverse only if necessary and very progressively by monitoring the airplane behaviour.

• NOTE •

The engine torque tends to make the airplane turn to the left.



- 16 - Taxi airspeed Max. 5 KIAS
Use β area of THROTTLE to adjust airspeed
Apply very smooth variations using THROTTLE

- 17 - Steer the airplane using the rudder.

• NOTE •

Make turns at a very low airspeed, engine torque tends to make the airplane turn to the left.



- 18 - Use brakes only at very low airspeed and progressively.

On the ramp, after landing or taxiing :

- 19 - Do not use the parking brake to prevent brake lock.
- 20 - Use chocks and / or tie-down the airplane.

End of procedure.

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C)

• NOTE •

The procedure hereafter supplements the normal procedures for the airplane use when operating under temperatures between 0°C and - 40°C on ground.

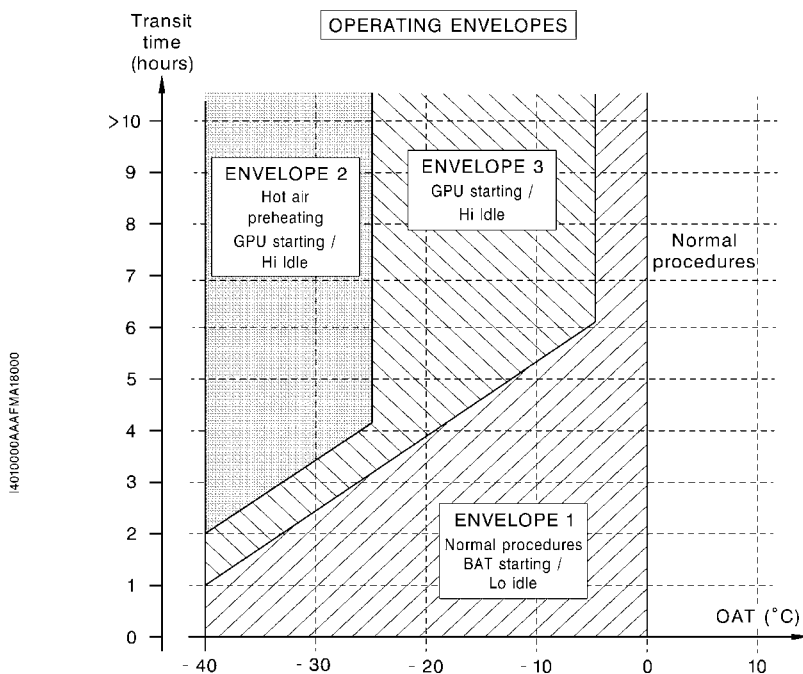


Figure 4.5.1 - Operating envelopes by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C)

End of procedure.

Utilization by cold weather (- 0°C to - 25°C) and very cold
weather (- 25°C to - 40°C) - Envelope 1 1/3

• NOTE •

The procedure hereafter supplements the normal procedures for the airplane
use when operating in the Envelope 1 defined in figure 4.5.1.

•

Preflight inspection :

- 1 - Remove any snow or ice from the wings, stabilizers and movable surfaces.

According to the condition of runways and taxiways

- 2 - Perform procedure Utilization on runways covered with
melting or not tamped snow
Refer to chapter 4.5

or

- 3 - Perform procedure Utilization on icy or covered with
tamped snow runways
Refer to chapter 4.5

- 4 - Carry out a complete rotation of the propeller to check its free rotation.
- 5 - Do not perform a fuel draining. If the airplane is operating permanently
under negative temperatures, drainings will have to be performed once a
week after having parked the airplane in a heated hangar.
- 6 - Remove chocks and / or release ties from the airplane.
- 7 - Check the free deflection of the flight controls and of the elevator trim.
- 8 - Check the free deflection of THROTTLE.

Before starting engine / Engine start / After engine start :

- 9 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.

Before taxiing / Taxiing / Before line up / Takeoff :

DE ICE SYSTEM panel

- 10 - INERT SEP switch ON

- 11 - **INERT SEP ON** Check ON

Continue ►

Utilization by cold weather (- 0°C to - 25°C) and very cold
weather (- 25°C to - 40°C) - Envelope 1 2/3

► *Continuing*

- 12 - PITOT L HTR switch ON
- 13 - PITOT R & STALL HTR switch ON
- 14 - PROP DE ICE switch ON
- 15 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.
According to the condition of runways and taxiways
- 16 - Perform procedure Utilization on runways covered with
melting or not tamped snow
Refer to chapter 4.5
- or
- 17 - Perform procedure Utilization on icy or covered with
tamped snow runways
Refer to chapter 4.5

Landing / After landing :

- 18 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.
According to the condition of runways and taxiways
- 19 - Perform procedure Utilization on runways covered with
melting or not tamped snow
Refer to chapter 4.5
- or
- 20 - Perform procedure Utilization on icy or covered with
tamped snow runways
Refer to chapter 4.5

Shutdown :

- 21 - PARK BRAKE OFF

Continue ►

Utilization by cold weather (- 0°C to - 25°C) and very cold
weather (- 25°C to - 40°C) - Envelope 1 3/3

► *Continuing*

22 - **PARK BRAKE** Check OFF

• NOTE •

It is recommended not to use the parking brake by cold or very cold weather, so
that the brakes do not stick when cooling.

•

23 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.

24 - Use chocks and / or tie-down the airplane using anchor points on
ground.

25 - Put blanking caps and plugs on air inlets, exhaust stubs, pitots and static
ports.

End of procedure.

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2	1/5
--	-----

• NOTE •

The procedures hereafter supplement or replace the normal procedures for the airplane use when operating in the Envelope 2 defined in figure 4.5.1.



Preflight inspection :

- 1 - Preheat the engine and the cabin.

• NOTE •

Preheating during at least 30 minutes is necessary using a heater (70°C mini). Hot air pipes must be installed in the air inlet, on engine rear table by opening the upper cowling and in the cabin by half-opening the door.



- 2 - Remove any snow or ice from the wings, stabilizers and movable surfaces.

According to the condition of runways and taxiways

- 3 - Perform procedure Utilization on runways covered with melting or not tamped snow
Refer to chapter 4.5

or

- 4 - Perform procedure Utilization on icy or covered with tamped snow runways
Refer to chapter 4.5

- 5 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces), shortly before takeoff.
- 6 - Carry out a complete rotation of the propeller to check its free rotation.
- 7 - Do not perform a fuel draining. If the airplane is operating permanently under negative temperatures, drainings will have to be performed once a week after having parked the airplane in a heated hangar.
- 8 - Remove chocks and / or release ties from the airplane.
- 9 - Check the free deflection of the flight controls and of the elevator trim.
- 10 - Check the free deflection of THROTTLE.

Continue ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2 2/5

► *Continuing*

11 - IGNITION switch ON during 30 seconds

12 - **IGNITION** Check ON

Then :

13 - IGNITION switch AUTO

14 - **IGNITION** Check OFF

• NOTE •

This enables to preheat spark igniters before starting the engine.

•

Before starting the engine :

15 - Perform normal procedures defined in Chapter(s) 4.3 and / or 4.4.

Engine start :

▲ CAUTION ▲

The starting must be mandatorily performed using an external power source (GPU).

▲

16 - Ground power unit Connected

17 - SOURCE selector GPU

18 - **GPU DOOR** Check ON

19 - Battery and ESS. bus VOLTS Check voltage ≈ 28 Volts
On EIS of MFD

Engine controls

20 - MAN OVRD control Full backward (notched)

Continue ►

Utilization by cold weather (- 0°C to - 25°C) and very cold
weather (- 25°C to - 40°C) - Envelope 2 3/5

► Continuing

▲ CAUTION ▲

When the engine is shut down, the THROTTLE must not be moved into the reverse area.



21 - THROTTLE CUT OFF

FUEL panel

22 - AUX BP switch ON

23 - **AUX BOOST PMP ON** Check ON

24 - **FUEL PRESS** Check OFF

25 - Propeller area Clear

ENGINE START panel

26 - IGNITION switch ON

27 - **IGNITION** Check ON

28 - STARTER switch ON
2 sec then OFF

Simultaneously :

29 - Timer Start

30 - **STARTER** Check ON

When Ng ≈ 13 % :

31 - THROTTLE HI-IDLE
Move directly THROTTLE to HI-IDLE

● NOTE ●

The more the temperature is low, the more the selector is hard to move.
Starter limits and checks of starting sequence are unchanged.



Continue ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 2 4/5

► Continuing

When Ng > 50% :

▲ CAUTION ▲

If the starter does not go off automatically, disengage it using the ABORT position of the STARTER switch.



- 32 - Starter Check OFF automatically
- 33 - **STARTER** Check OFF
- 34 - Engine parameters Check
Ng = 70 % ± 2 %
Oil pressure and ITT in green sector
- 35 - SOURCE selector BATT
- 36 - **BAT OFF** Check OFF
- 37 - IGNITION switch AUTO
- 38 - **IGNITION** Check OFF
- 39 - Ground power unit Disconnect
- 40 - GPU door Close
- 41 - **GPU DOOR** Check OFF
- FUEL panel
- 42 - AUX BP switch AUTO
- 43 - **AUX BOOST PMP ON** Check OFF
- 44 - GENERATOR selector MAIN
- 45 - **MAIN GEN** Check OFF
Reset if necessary

Continue ►

Utilization by cold weather (- 0°C to - 25°C) and very cold
weather (- 25°C to - 40°C) - Envelope 2 5/5

► *Continuing*

■ After engine start :

As soon as the current flow is lower than 100 A :

A/C panel

46 - A/C switch PILOT

■ 47 - TEMP selector Max warm

48 - FAN speed selector 0

PRESSURIZATION panel

49 - BLEED switch AUTO or MAX DIFF

As soon as the oil temperature is greater than 0°C :

50 - THROTTLE FEATHER twice
Flight IDLE to LO-IDLE, then Flight IDLE twice

51 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.

■ Before taxiing / Taxiing / Before line up / Takeoff :

52 - Perform procedures defined for Envelope 1.

Landing / After landing / Shutdown :

53 - Apply procedures defined for Envelope 1.

End of procedure.

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 3 1/2

• NOTE •

The procedures defined for the Envelope 2 are also applicable for the Envelope 3. However it is possible to start the engine using GPU without preheating of the engine and the cabin with a heater. In that case follow the procedure hereafter.

•

■ Preflight inspection / Before starting the engine / Engine start :

- 1 - Apply the procedures defined for the Envelope 2.

■ After engine start :

As soon as the current flow is lower than 100 A :

A/C panel

- 2 - A/C switch PILOT

■ 3 - TEMP selector Max warm

- 4 - FAN airspeed selector 0

PRESSURIZATION panel

- 5 - BLEED switch AUTO or MAX DIFF

6 - Preheat the cabin respecting time defined in figure 4.5.2.

Before switching on the navigation and monitoring systems. This allows to respect minimum temperatures necessary for the equipment operation.

As soon as the oil temperature is greater than 0°C :

- 7 - THROTTLE FEATHER twice
Flight IDLE to LO-IDLE, then Flight IDLE twice

- 8 - Perform normal procedures defined in chapter(s) 4.3 and / or 4.4.

■ Taxiing / Before line up / Takeoff /

- 9 - Perform procedures defined for Envelope 1.

Continue ►

Utilization by cold weather (- 0°C to - 25°C) and very cold weather (- 25°C to - 40°C) - Envelope 3

2/2

► Continuing

Landing / After landing / Shutdown /

10 - Perform procedures defined for Envelope 1.

• NOTE •

If landing is foreseen by cold or very cold weather, or in case of prolonged operation of the airplane in such conditions, it is recommended to prepare the airplane as specified in chapter 8.10.

•

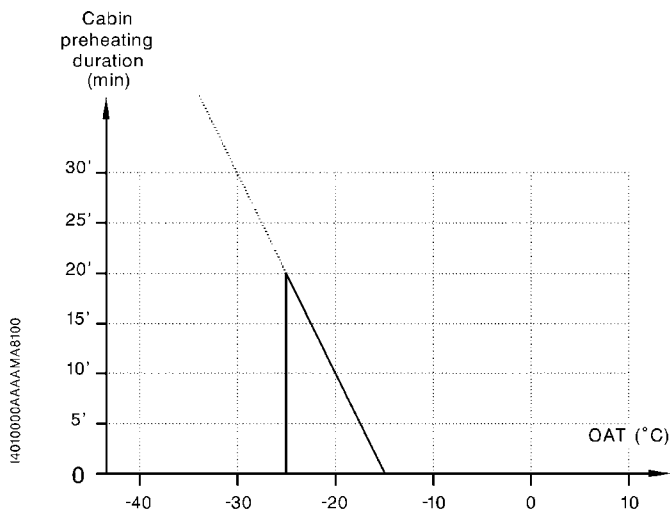


Figure 4.5.2 - Preheating duration

End of procedure.

Landing procedure with strong headwind or crosswind 1/2

If landing must be performed with strong headwind or crosswind :

- 1 - Increase approach airspeed by the greatest of these 2 following values :

$$\Delta V = \frac{(\text{wind down} - 10)}{2} \text{ (Ex. wind down} = 30 \text{ kt i.e. } \Delta V = 10 \text{ kt)}$$

The wind down is the longitudinal component of the wind.

- Gust amplitude

- 2 - FLAPS lever LDG

• NOTE •

It is not desirable to adopt configuration with flaps in TO position. Lateral control is not improved, and flare phase is lengthened in time and in distance, with increase of piloting difficulties and landing performance.

•

During approach with crosswind :

▲ CAUTION ▲

Do not use or select the fuel tank on the low wing side during prolonged sideslips with a fuel low warning or gage indicating low.

▲

▲ CAUTION ▲

Maximum time for sideslip condition is 30 seconds.

▲

- 3 - Maintain airplane in drift correction at the latest until the beginning of flare.

In short final, on a short runway :

- 4 - Use normal approach airspeed IAS = 80 KIAS

- 5 - FLAPS lever LDG

To avoid an excessive airspeed

• NOTE •

In this case, landing distance indicated in chapter 5.14, would not be respected.

•

Continue ►

Landing procedure with strong headwind or crosswind 2/2

► *Continuing*

Before touch-down :

- 6 - Generate a slideslip with the rudder in order to align fuselage with the runway (ie left crosswind, left wing low).

Immediately after landing :

▲ **CAUTION** ▲

Do not try to stabilize the airplane by pushing down the elevator control just after the touch ; this operation may provide pitch oscillations while increasing the yaw movement to the wind.

Do not deflect ailerons into wind while taxiing. This will raise spoilers and have a detrimental effect. A good solution is to maintain ailerons to neutral position during taxiing after landing and taxiing before takeoff.



- 7 - FLAPS lever UP

● NOTE ●

Flaps travel is slow and will not have an appreciable effect on landing performance.



Maximum demonstrated crosswind for landing is 20 kt.

The most restrictive situation is as follows :

- takeoff with wind coming from the left,
- wet runway,
- aft C.G.

End of procedure.

Utilization on grass runway

1/2

▲ CAUTION ▲

The small wheels of the airplane and its weight may lead it to sink in soaked or soft ground.



Before planning the landing, ensure that the field is hard, smooth and dry enough. Landing and moreover takeoff shall not begin if any doubt exists about the condition of such a runway.

Particular directives

Taxi / Takeoff :

1 - INERT SEP switch ON

2 - **INERT SEP ON** Check ON

► Do not use the reverse ◀

● NOTE ●

In fact, on a flat runway with grass, it is necessary to adopt a power greater than the one obtained when the THROTTLE is set to Flight IDLE, so the pilot will not be tempted to use the reverse.



End of procedure ■

Landing :

3 - INERT SEP switch ON

4 - **INERT SEP ON** Check ON

After wheels touch down :

5 - Reverse Only if necessary

▲ CAUTION ▲

Do not maintain reverse at airspeeds below 40 KIAS to avoid ingestion of foreign matter.



Continue ►

Utilization on grass runway

2/2

► *Continuing*

• NOTE •

Under 40 KIAS, using the reverse makes a cloud of solid particles (dusts, sand, gravels, cut grass, ...) appear around the front face of the airplane. This will damage the propeller and, after ingestion, the engine internal components (compressor and turbine blades).

•

End of procedure.

GPS navigation

Set up conditions

- 1 - Verify if the data base is current.
- 2 - Verify that altitude data is valid for the GPS prior to flight.

Check the systems availability requirements in the table 2.6.1 in section 2 / GNSS (GPS/SBAS) navigation equipment approvals, depending on the planned navigation performance.

GPS flight plan

In the active flight plan, addition of a STAR or an approach is always made at the end of the flight plan. In the scope of these additions, the pilot must pay attention not to duplicate points.

End of procedure.

Section 5

Performance

Table of contents

5.1	- General	5.1.1
5.2	- Noise level	5.2.1
5.3	- Airspeed calibration	5.3.1
5.4	- Cabin pressurization envelope	5.4.1
5.5	- SAT - OAT conversions	5.5.1
5.6	- Stall speeds	5.6.1
5.7	- Wind components	5.7.1
5.8	- Engine operation	5.8.1
	Maximum climb power (FL < 200) - 124 KIAS	5.8.4
	Maximum climb power (FL > 200) - 124 KIAS	5.8.5
	Maximum climb power (FL < 200) - 170 KIAS / M 0.40	5.8.6
	Maximum climb power (FL > 200) - 170 KIAS / M 0.40	5.8.7
	Maximum cruise power (FL < 200)	5.8.8
	Maximum cruise power (FL > 200)	5.8.9
	Normal (recommended) cruise power (FL < 200)	5.8.10
	Normal (recommended) cruise power (FL > 200)	5.8.11
5.9	- Takeoff distances	5.9.1
	Weight : 5512 lbs (2500 kg)	5.9.2
	Weight : 6579 lbs (2984 kg)	5.9.3
	Weight : 7394 lbs (3354 kg)	5.9.4

5.10	-	Climb performance	5.10.1
		MXCL - Speeds (IAS = 124 KIAS)	5.10.1
		MXCL - Speeds (IAS = 170 KIAS / M 0.40)	5.10.2
		MXCL - Time, consumption and climb distance (IAS = 124 KIAS)	5.10.3
		MXCL - Time, consumption and climb distance (IAS = 170 KIAS / M 0.40)	5.10.6
		Climb performance after go-around	5.10.9
		Climb performance - Flaps TO	5.10.10
5.11	-	Cruise performance	5.11.1
		Maximum cruise	5.11.1
		Normal cruise (Recommended)	5.11.9
		Long range cruise (5500 lbs - 2495 kg)	5.11.17
		Long range cruise (6300 lbs - 2858 kg)	5.11.19
		Long range cruise (7100 lbs - 3220 kg)	5.11.21
5.12	-	Time, consumption and descent distance	5.12.1
5.13	-	Holding time	5.13.1
5.14	-	Landing distances	5.14.1
		Weight : 7024 lbs (3186 kg)	5.14.2
		Weight : 6250 lbs (2835 kg)	5.14.3
		Weight : 5071 lbs (2300 kg)	5.14.4

5.1 - General

This section provides all of the required and additional performance data for airplane operations.

The section 9, Supplements of the POH, provides specific airplane performance associated with optional equipment and systems.

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5.2 - Noise level

	Maximum noise level permitted	Demonstrated noise level
FAR PART 36, Appendix G - Amdt 28	88 dB(A)	76.4 dB(A)
ICAO, Annex 16, Vol. 1, 6th edition, Amdt 8 Chapter 10, Appendix 6	85 dB(A)	76.4 dB(A)

Approved noise levels for TBM airplane are stated in EASA.A.010 Type Certificate Data Sheet.

● NOTE ●

No determination has been made by the Federal Aviation Administration that the noise levels of this airplane are or should be acceptable or unacceptable for operation at, into or out of any airport.

●

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5.3 - Airspeed calibration

• NOTE •

Indicated airspeeds (IAS) : instrument error supposed to be null (power configuration for cruise condition flight).

•

Flaps UP LDG GR UP		Flaps TO LDG GR DN		Flaps LDG LDG GR DN	
KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
125	128	70	69	60	58
150	154	80	80	70	68
175	179	90	90	80	78
200	205	100	101	90	88
225	230	120	121	100	98
250	255	140	141	110	108
266	271	160	162	120	118
MPH IAS	MPH CAS	MPH IAS	MPH CAS	MPH IAS	MPH CAS
144	147	81	79	69	67
173	177	92	92	81	78
201	206	104	104	92	90
230	236	115	116	104	101
259	264	138	139	115	113
288	293	161	162	127	124
307	312	184	187	138	136

Figure 5.3.1 - Normal static source

Flaps UP LDG GR UP		Flaps TO LDG GR DN		Flaps LDG LDG GR DN	
KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
125	124	70	70	60	59
150	149	80	80	70	69
175	174	90	90	80	79
200	199	100	100	90	90
225	224	120	120	100	100
250	249	140	139	110	110
271	270	160	159	120	120
MPH IAS	MPH CAS	MPH IAS	MPH CAS	MPH IAS	MPH CAS
144	142	81	81	69	68
173	171	92	92	81	79
201	200	104	104	92	91
230	229	115	115	104	104
259	258	138	138	115	115
288	287	161	160	127	127
312	311	184	183	138	138

Figure 5.3.2 - Alternate static source (Bleed auto)

5.4 - Cabin pressurization envelope

• NOTE •

The cabin pressurization envelope below characterizes the cabin altitude that could be sustained by the fuselage at different flight levels. The curve shows the minimum cabin altitude as a function of flight level, corresponding to the maximum differential pressure. The maximum differential pressure is limited by the pressurization system protection function.

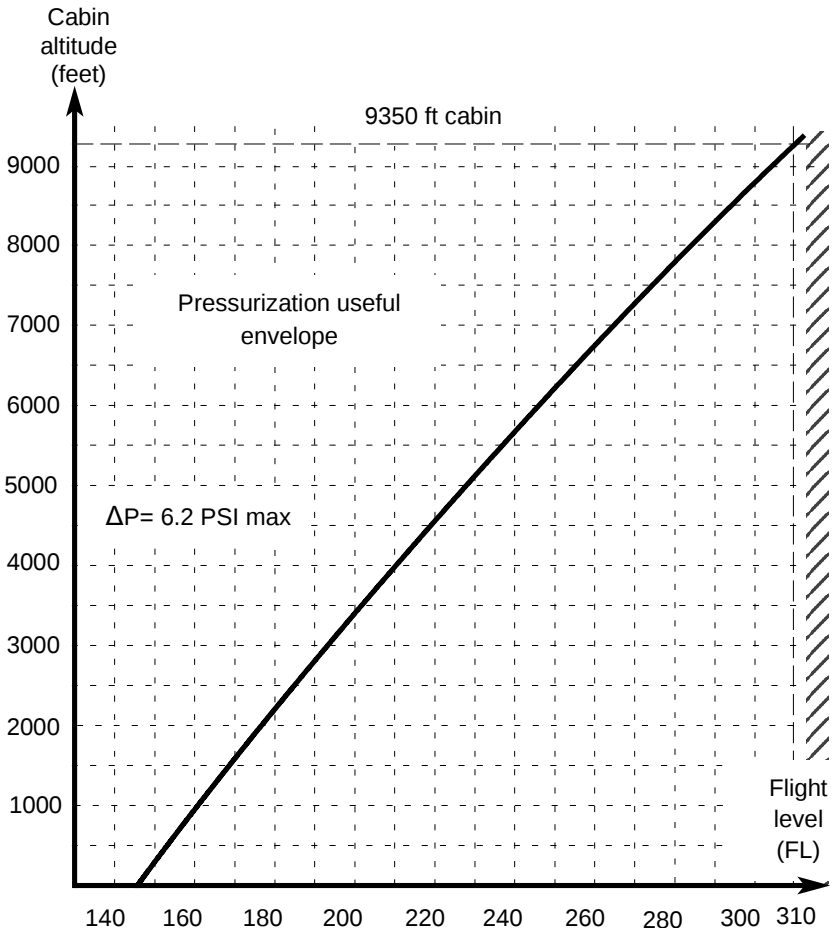


Figure 5.4.1 - Cabin pressurization envelope

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5.5 - SAT - OAT conversions

• NOTE •

These indicated temperatures are available for stabilized cruise at normal operating power.

Pressure altitude (feet)	ISA - 20°C		ISA - 10°C		ISA		ISA + 10°C		ISA + 20°C	
	SAT	OAT	SAT	OAT	SAT	OAT	SAT	OAT	SAT	OAT
SL	- 05	- 04	05	06	15	16	25	26	35	36
2000	- 09	- 08	01	02	11	12	21	22	31	32
4000	- 13	- 12	- 03	- 02	07	08	17	18	27	28
6000	- 17	- 16	- 07	- 06	03	04	13	14	23	24
8000	- 21	- 20	- 11	- 10	- 01	00	09	10	19	20
10000	- 25	- 24	- 15	- 14	- 05	- 04	05	06	15	16
12000	- 29	- 28	- 19	- 18	- 09	- 08	01	02	11	12
14000	- 33	- 32	- 23	- 22	- 13	- 12	- 03	- 02	07	08
16000	- 37	- 36	- 27	- 26	- 17	- 16	- 07	- 06	03	04
18000	- 41	- 40	- 31	- 30	- 21	- 20	- 11	- 10	- 01	00
20000	- 45	- 44	- 35	- 34	- 25	- 24	- 15	- 14	- 05	- 04
22000	- 49	- 48	- 39	- 38	- 29	- 28	- 19	- 18	- 09	- 08
24000	- 53	- 52	- 43	- 42	- 33	- 32	- 23	- 22	- 13	- 12
26000	- 57	- 56	- 47	- 46	- 37	- 36	- 27	- 26	- 17	- 16
28000	- 61	- 60	- 51	- 50	- 41	- 40	- 31	- 30	- 21	- 20
30000	- 65	- 64	- 55	- 54	- 45	- 44	- 35	- 34	- 25	- 24
31000	- 67	- 66	- 57	- 56	- 47	- 46	- 37	- 36	- 27	- 26

Figure 5.5.1 - SAT - OAT conversions

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5.6 - Stall speeds

Airplane weight	Config.		Bank											
	Flight idle		0°			30°			45°			60°		
	LDG GR	Flaps	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS
4850 lbs (2200 kg)	UP	UP	65	66	75	70	71	81	78	79	90	91	93	105
	DN	TO	62	63	71	67	68	77	73	75	84	87	89	100
	DN	LDG	53	53	61	57	57	66	63	63	73	75	75	86
5512 lbs (2500 kg)	UP	UP	70	71	81	75	76	86	82	84	94	98	100	113
	DN	TO	66	67	76	71	72	82	78	80	90	93	95	107
	DN	LDG	57	57	66	61	61	70	68	68	78	81	81	93
6579 lbs (2984 kg)	UP	UP	75	76	86	80	82	92	88	90	101	105	107	121
	DN	TO	71	72	82	75	77	86	84	86	97	100	102	115
	DN	LDG	61	61	70	66	66	76	73	73	84	86	86	99
7394 lbs (3354 kg)	UP	UP	81	83	93	88	89	101	97	99	112	119	117	137
	DN	TO	77	77	89	81	83	93	91	92	105	108	109	124
	DN	LDG	65	65	75	69	70	79	76	77	88	92	92	106

Figure 5.6.1 - Stall speeds

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5.7 - Wind components

Example : Angle between wind direction and flight path : 50°
 Headwind : 8 kts
 Crosswind : 10 kts
 Wind speed : 13 kts

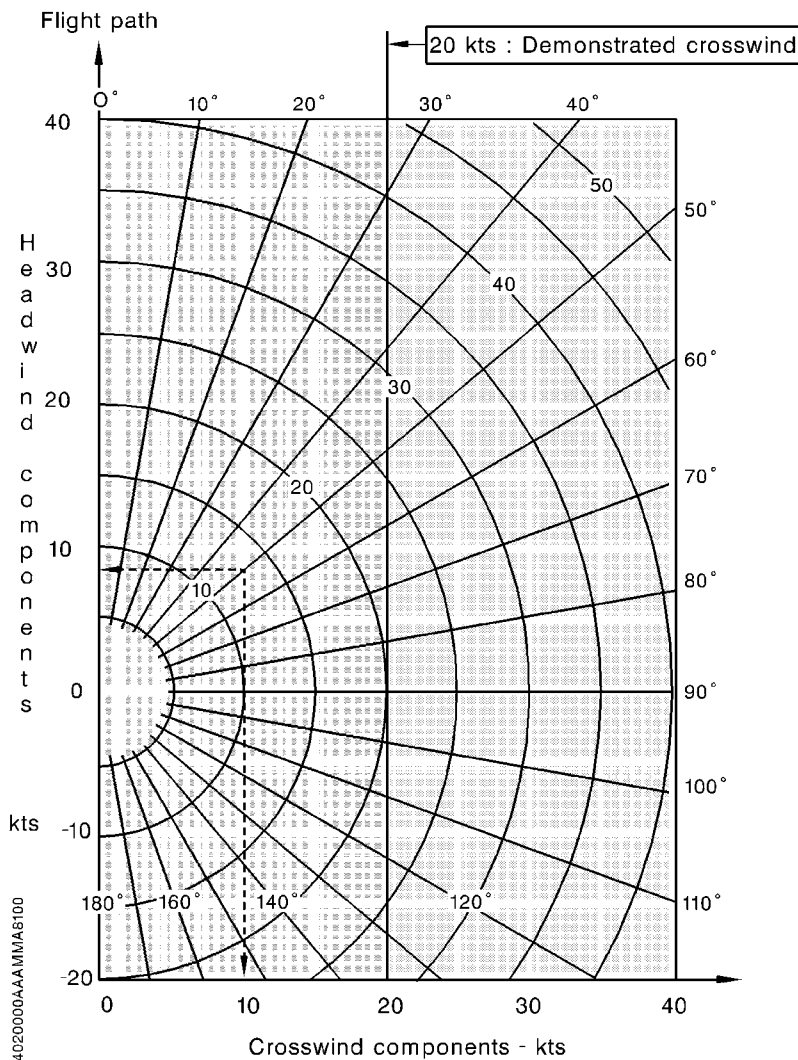


Figure 5.7.1 - Wind components

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Pilot's Operating Handbook

5.8 - Engine operation

The following tables or/and the optimum torque indicator must be used during normal operation of the airplane.

▲ CAUTION ▲

It is the responsibility of the operator to make sure that the required version of GARMIN system software is installed prior to using the hereafter engine operation tables.

The GARMIN system software required for this revision of the engine operation tables is the version 0719.14 or later.

This information is displayed on the MFD power-up page upon system start.

**▲ CAUTION ▲**

The TRQ setting must never exceed 100 %.
When setting TRQ, Ng must never exceed 104 %.



The following conditions are given for all the tables (pages 5.8.4 to 5.8.11) :

● NOTE ●

Inertial separator must be OFF and BLEED HI msg OFF.



- Landing gear and flaps UP.
- BLEED switch on AUTO.
-  represent the ISA conditions at the flight level.

The torque must be set at or below the value corresponding to the local conditions of flight level and temperature.

● NOTE ●

The engine ITT limit at 840°C during continuous operation may be used in case of operational need.



Example, for conditions :

- FL = 260
- OAT = - 22°C

the following tables give the maximum torque to be set.

Maximum climb power

TRQ setting = 83 % for IAS = 124 KIAS (Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed), cf. tables figures 5.8.1 and 5.8.1A

Maximum cruise power

TRQ setting = 97 %, cf. tables figures 5.8.3 and 5.8.3A

Recommended cruise power

TRQ setting = 92 %, cf. tables figures 5.8.4 and 5.8.4A

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Maximum climb power (FL < 200) - 124 KIAS

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE • : Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
OAT	100	110	120	130	140	150	160	170	180	190	200	
-24												
-22												
-20												
-18												
-16												
-14												
-12												
-10												
-8												
-6												
-4												
-2												
0												
2												
4												
6												
8												
10												
12												
14												
16												
18												
20												
22												
24												
26												
28												
30												
32												
34												

▲ CAUTION ▲

TRQ max 100 %

Ng max 104 %

Recommended Ng < 103 %

Figure 5.8.1 - Maximum climb power (FL < 200) - 124 KIAS

- NOTE •

Refer to page 5.8.1 for general conditions

•

Pilot's Operating Handbook

Maximum climb power (FL > 200) - 124 KIAS

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE : Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
-66									99	95	90	86
-64									98	94	89	85
-62									97	93	88	84
-60								100	96	92	87	83
-58								100	95	91	86	82
-56								99	94	90	85	81
-54								98	93	89	85	81
-52							100	97	92	88	84	80
-50							100	95	91	87	83	79
-48							99	94	90	86	82	78
-46							98	93	89	85	81	77
-44						100	97	92	88	84	80	77
-42						100	96	91	87	83	79	75
-40						99	95	90	86	82	78	74
-38						98	93	89	85	81	77	73
-36					100	97	92	88	84	80	76	72
-34					99	95	91	87	82	78	75	71
-32					98	94	90	85	81	77	73	70
-30				100	97	93	88	84	80	76	72	69
-28				100	96	92	87	83	79	75	71	68
-26				98	94	90	86	82	78	74	70	66
-24			100	97	93	89	85	80	76	73	69	65
-22			100	96	92	88	83	79	75	71	67	64
-20			99	95	90	86	82	78	74	70	66	62
-18		100	97	93	89	85	81	77	72	68	64	60
-16		100	96	92	88	83	79	75	71	66	62	59
-14		99	94	90	86	82	77	73	69	65	61	57
-12	100	97	93	89	85	80	75	71	67	63	59	55
-10	100	96	91	87	82	78	74	69	65	61	57	53
-8	98	94	89	85	81	76	72	67	63	59	55	51
-6	96	92	88	83	79	74	70	65	61	57	53	
-4	95	90	85	81	77	72	67	63	59	55		
-2	93	88	83	79	74	70	65	61	57			
0	91	85	81	76	71	67	63	59				
2	88	83	78	74	69	65	61					
4	85	80	76	71	67	63						
6	82	78	74	69	65							
8	80	76	71	67								
10	78	73	69									
12	75	70										

Figure 5.8.1A - Maximum climb power (FL > 200) - 124 KIAS

- NOTE

Refer to page 5.8.1 for general conditions

Maximum climb power (FL < 200) - 170 KIAS / M 0.40

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE : Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
OAT	100	110	120	130	140	150	160	170	180	190	200	
-24												
-22	▲ CAUTION ▲		Recommended Ng < 103 %									
-20	TRQ max 100 %											
-18	Ng max 104 %											
-16	▲											
-14												
-12												
-10												
-8											100	
-6											100	
-4											98	
-2										100	95	
0									100	98	92	
2									100	95	90	
4								100	97	92	87	
6								99	94	90	85	
8							100	97	92	87	82	
10							99	94	89	84	79	
12						100	96	91	86	81	77	
14					100	98	93	88	83	79	74	
16					100	95	90	85	81	76		
18				100	97	92	87	82	78			
20				99	94	89	85	80				
22			100	96	91	86	82					
24		100	98	93	88	84						
26		99	95	90	85							
28	100	96	92	87								
30	98	93	89									
32	95	90										
34	92											

Figure 5.8.2 - Maximum climb power (FL < 200) - 170 KIAS / M 0.40

- NOTE

Refer to page 5.8.1 for general conditions

Pilot's Operating Handbook

Maximum climb power (FL > 200) - 170 KIAS / M 0.40

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE : Add 0.5 % of TRQ for each additional 10 KIAS on climb airspeed.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
-66										98	93	88
-64	▲ CAUTION ▲ TRQ max 100 % Ng max 104 % ▲			Recommended Ng < 103 %						97	92	87
-62									100	96	91	86
-60									100	95	90	85
-58									99	94	89	84
-56									98	93	88	83
-54								100	96	92	87	83
-52								100	95	90	86	82
-50								99	94	89	85	81
-48								98	93	89	84	80
-46							100	97	92	88	83	79
-44							100	96	91	86	82	78
-42							99	94	90	85	81	77
-40							98	93	88	84	80	76
-38						100	97	92	87	83	79	75
-36						100	95	91	86	82	78	73
-34						99	94	89	85	81	76	72
-32						97	93	88	84	79	75	71
-30					100	96	91	87	82	78	74	70
-28					99	95	90	86	81	77	73	69
-26					98	94	89	84	80	76	72	68
-24				100	97	92	88	83	79	75	71	66
-22				100	96	91	86	82	77	73	69	65
-20				99	94	90	85	80	76	72	67	63
-18			100	97	93	88	83	79	74	70	65	61
-16			100	96	91	86	82	77	72	68	64	60
-14			98	94	89	85	80	75	71	66	62	57
-12		100	96	92	87	83	78	73	69	64	60	55
-10		99	95	90	85	81	76	71	66	62	58	54
-8	100	97	93	88	83	79	73	68	64	60	56	52
-6	100	95	91	86	81	76	71	66	62	58	54	
-4	98	93	88	83	78	74	69	64	60	56		
-2	95	90	85	81	76	71	67	62	58			
0	92	88	83	78	74	69	65	60				
2	90	85	81	76	72	67	62					
4	87	83	78	74	69	65						
6	85	80	76	71	67							
8	82	78	73	69								
10	79	75	71									
12	77	72										

Figure 5.8.2A - Maximum climb power (FL > 200) - 170 KIAS / M 0.40

- NOTE

Refer to page 5.8.1 for general conditions

Maximum cruise power (FL < 200)

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE • : Use preferably recommended cruise power.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
OAT	100	110	120	130	140	150	160	170	180	190	200	
-24												
-22												
-20												
-18												
-16												
-14												
-12												
-10												
-8												
-6												
-4												
-2												
0												
2												100
4												98
6												95
8												92
10												89
12												87
14												84
16												
18												
20												
22												
24												
26												
28												
30												
32												
34												

Figure 5.8.3 - Maximum cruise power (FL < 200)

- NOTE •

Refer to page 5.8.1 for general conditions

•

Pilot's Operating Handbook

Maximum cruise power (FL > 200)

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

- NOTE : Use preferably recommended cruise power.

Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
-62												100
-60	▲ CAUTION ▲ Recommended Ng < 103 %											
-58												98
-56												97
-54											100	96
-52											99	94
-50											98	93
-48										100	97	92
-46										100	95	90
-44										99	94	89
-42										97	92	87
-40									100	96	91	86
-38								99	94	89	85	80
-36								98	93	88	83	78
-34							100	96	91	86	81	76
-32							100	95	90	85	80	75
-30							98	93	88	84	79	74
-28							97	92	87	82	77	72
-26							100	95	90	85	81	76
-24							99	94	89	84	79	74
-22							97	92	87	82	77	72
-20						100	96	90	85	80	75	70
-18						99	94	88	83	78	73	68
-16					100	97	92	86	81	76	71	66
-14					100	95	89	84	79	74	69	64
-12					98	93	87	82	77	72	67	62
-10				100	96	90	85	80	74	69	64	60
-8				99	93	88	82	77	72	67	62	58
-6			100	96	90	85	80	74	69	65	60	
-4			99	93	88	82	77	72	67	63		
-2		100	96	90	85	80	75	70	65			
0		98	93	87	82	77	73	68				
2	100	95	90	85	80	75	70					
4	98	93	88	82	77	73						
6	95	90	85	80	75							
8	92	87	82	77								
10	89	84	79									
12	87	81										

Figure 5.8.3A - Maximum cruise power (FL > 200)

- NOTE

Refer to page 5.8.1 for general conditions

Normal (recommended) cruise power (FL < 200)

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

• NOTE • : Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
OAT	100	110	120	130	140	150	160	170	180	190	200	
-24	Recommended Ng < 103 %											
-22	Recommended Ng < 103 %											
-20	Recommended Ng < 103 %											
-18	Recommended Ng < 103 %											
-16	Recommended Ng < 103 %											
-14	Recommended Ng < 103 %											
-12	Recommended Ng < 103 %											
-10	Recommended Ng < 103 %											
-8	Recommended Ng < 103 %											
-6	Recommended Ng < 103 %											
-4	Recommended Ng < 103 %											
-2	Recommended Ng < 103 %											
0	Recommended Ng < 103 %											
2	Recommended Ng < 103 %											
4	Recommended Ng < 103 %											
6	Recommended Ng < 103 %											
8	Recommended Ng < 103 %											
10	Recommended Ng < 103 %											
12	Recommended Ng < 103 %											
14	Recommended Ng < 103 %											
16	Recommended Ng < 103 %											
18	Recommended Ng < 103 %											
20	Recommended Ng < 103 %											
22	Recommended Ng < 103 %											
24	Recommended Ng < 103 %											
26	Recommended Ng < 103 %											
28	Recommended Ng < 103 %											
30	Recommended Ng < 103 %											
32	Recommended Ng < 103 %											
34	Recommended Ng < 103 %											

Figure 5.8.4 - Normal (recommended) cruise power (FL < 200)

• NOTE •

Refer to page 5.8.1 for general conditions

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Pilot's Operating Handbook

Normal (recommended) cruise power (FL > 200)

Conditions : If BLEED HI msg ON, reduce TRQ by 5 %

• NOTE • : Table not valid if **INERT SEP ON** and/or BLEED HI msg ON.

T° (°C)	Flight level (FL)											
OAT	200	210	220	230	240	250	260	270	280	290	300	310
-66												100
-64												99
-62												98
-60											100	96
-58											100	95
-56											98	93
-54										100	96	92
-52										100	95	90
-50										98	93	89
-48									100	97	92	87
-46									100	95	91	86
-44									99	94	89	84
-42									97	92	87	83
-40								100	96	91	86	82
-38								99	94	90	85	80
-36								98	93	88	83	79
-34							100	96	92	87	82	78
-32							100	95	90	85	81	76
-30							99	94	89	84	79	75
-28							97	92	87	82	78	73
-26						100	96	91	86	81	76	72
-24						99	94	89	84	79	74	70
-22					100	97	92	87	82	77	72	68
-20					100	95	90	85	80	75	70	66
-18					98	93	88	83	78	73	68	64
-16				100	96	91	86	81	76	71	66	61
-14				99	94	89	84	79	73	68	63	59
-12			100	97	92	87	81	76	71	66	61	57
-10			100	95	89	84	78	73	68	64	59	55
-8		100	97	92	86	81	76	71	66	62	57	53
-6		100	94	89	84	79	74	69	64	59	55	
-4	100	97	91	86	81	76	71	66	62	57		
-2	99	94	89	83	79	74	69	64	59			
0	96	91	86	81	76	71	66	62				
2	94	88	83	78	73	69	64					
4	91	85	80	75	71	66						
6	88	83	78	73	68							
8	85	80	75	70								
10	82	77	72									
12	79	74										

Figure 5.8.4A - Normal (recommended) cruise power (FL > 200)

• NOTE •

Refer to page 5.8.1 for general conditions

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5.9 - Takeoff distances

The following tables give the takeoff distances for several weight configurations.

All common information applicable to tables (pages 5.9.2 to 5.9.4) are listed below.

Associated conditions :

- Landing gear DN and flaps TO
- TRQ = 100 %
- BLEED switch on AUTO
- Hard, dry and level runway

In table headings :

- GR = Ground roll (in ft)
- D₅₀ = Takeoff distance (clear to 50 ft) (in ft)

• NOTE •

Between ISA + 30°C and ISA + 37°C, it may be necessary to cut-off the BLEED in order to set TRQ = 100 % during takeoff while respecting the engine limitations. In this case, reduce power after takeoff to set the BLEED switch to AUTO.

In SL ISA conditions, nominal Np is of 1985 RPM.

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Corrections :

- In case of wind, apply the following corrections :
 - Reduce total distances by 10 % every 10 kts of headwind
 - Increase total distances by 30 % every 10 kts of tail wind
- Other runway surfaces :

Takeoff distances given in the tables are for takeoff from hard, dry and level runway. Other runway surfaces require the following correction factors.

Increase distances by :

7 % on hard grass

10 % on short grass

15 % on wet runway

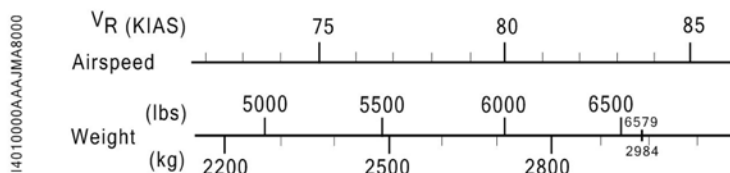
25 % on high grass

30 % on slippery runway

Weight : 5512 lbs (2500 kg)

Associated condition :

- 15° of attitude after rotation
- Rotation speed choice (V_R)



Weight : 5512 lbs (2500 kg) At 50 ft = 91 KIAS - 105 MPH IAS								
Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	665	1085	740	1190	780	1255	820	1295
2000	735	1185	800	1265	850	1340	905	1415
4000	800	1260	885	1380	935	1460	990	1545
6000	880	1375	965	1505	1025	1595	1090	1690
8000	965	1500	1060	1645	1140	1765	1220	1880
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	865	1365	920	1435	965	1505	1000	1555
2000	955	1490	1005	1565	1060	1645	1100	1705
4000	1050	1625	1110	1720	1180	1825	1230	1895
6000	1165	1800	1240	1910	1320	2020	1380	2100
8000	1305	2000	1390	2120	1480	2245	1565	2330

Figure 5.9.1 - Takeoff distances - 5512 lbs (2500 kg)

▲ CAUTION ▲

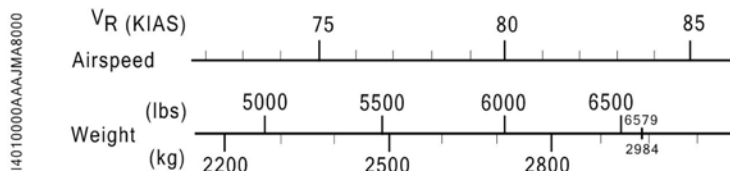
Refer to page 5.9.1 for notes and correction factors.



Weight : 6579 lbs (2984 kg)

Associated condition :

- 15° of attitude after rotation
- Rotation speed choice (V_R)



Weight : 6579 lbs (2984 kg) At 50 ft = 94 KIAS - 108 MPH IAS								
Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1020	1470	1115	1600	1185	1680	1245	1765
2000	1115	1595	1220	1730	1285	1820	1355	1915
4000	1215	1725	1325	1875	1400	1975	1475	2075
6000	1320	1865	1445	2030	1545	2160	1645	2305
8000	1435	2020	1600	2240	1715	2400	1850	2570
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1310	1855	1375	1940	1440	2030	1490	2090
2000	1425	2010	1500	2110	1595	2235	1660	2320
4000	1580	2205	1675	2345	1790	2485	1865	2590
6000	1755	2455	1880	2615	2005	2780	2095	2895
8000	1980	2745	2115	2925	2275	3110	2380	3245

Figure 5.9.2 - Takeoff distances - 6579 lbs (2984 kg)

▲ CAUTION ▲

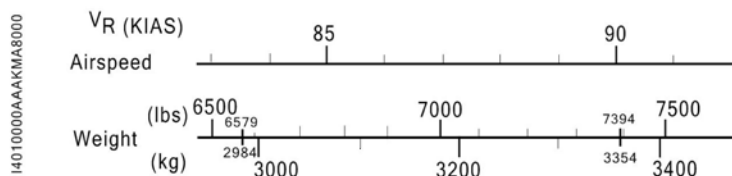
Refer to page 5.9.1 for notes and correction factors.



Weight : 7394 lbs (3354 kg)

Associated condition :

- 12°5 of attitude after rotation
- Rotation speed choice (V_R)



Weight : 7394 lbs (3354 kg) At 50 ft = 99 KIAS - 114 MPH IAS								
Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1440	2020	1560	2175	1645	2275	1725	2380
2000	1555	2170	1690	2335	1770	2445	1860	2560
4000	1685	2325	1820	2505	1910	2630	2045	2785
6000	1810	2500	1970	2710	2130	2930	2290	3135
8000	1960	2695	2220	3045	2410	3265	2590	3490
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1800	2485	1880	2595	1965	2705	2060	2810
2000	1945	2675	2080	2865	2215	3040	2325	3160
4000	2185	3000	2355	3200	2500	3385	2610	3520
6000	2470	3340	2640	3550	2810	3765	2935	3915
8000	2775	3720	2965	3950	3180	4185	3315	4350

Figure 5.9.3 - Takeoff distances - 7394 lbs (3354 kg)

▲ CAUTION ▲

Refer to page 5.9.1 for notes and correction factors.



5.10 - Climb performance

MXCL - Speeds (IAS = 124 KIAS)

Conditions :

- Maximum climb power TRQ = 100 %
- Landing gear and flaps UP
- IAS = 124 KIAS - BLEED switch on AUTO and BLEED HI msg OFF

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)					
		ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
5794 lbs (2628 kg)	SL	2885	2870	2855	2845	2830	2810
	2000	2860	2845	2830	2810	2795	2775
	4000	2840	2820	2805	2785	2765	2750
	6000	2810	2790	2770	2750	2735	2710
	8000	2775	2755	2735	2710	2690	2665
6594 lbs (2991 kg)	SL	2440	2425	2410	2400	2380	2365
	2000	2415	2400	2385	2365	2350	2330
	4000	2395	2375	2360	2340	2325	2305
	6000	2365	2345	2330	2310	2290	2270
	8000	2335	2315	2290	2270	2250	2230
7394 lbs (3354 kg)	SL	2080	2065	2050	2040	2020	2005
	2000	2055	2040	2025	2005	1990	1975
	4000	2035	2015	1995	1980	1965	1945
	6000	2005	1985	1970	1950	1930	1910
	8000	1975	1955	1935	1910	1890	1870

Figure 5.10.1 - MXCL - Speeds (IAS = 124 KIAS)

• NOTE •

In SL ISA conditions, nominal Np is of 1985 RPM.

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MXCL - Speeds (IAS = 170 KIAS / M 0.40)

Conditions :

- Maximum climb power TRQ = 100 %
- Landing gear and flaps UP
- IAS = 170 KIAS / M 0.40
- BLEED switch on AUTO and BLEED HI msg OFF

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)					
		ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
5794 lbs (2628 kg)	SL	2 420	2 390	2 365	2 335	2 310	2 285
	2000	2 385	2 355	2 325	2 295	2 265	2 235
	4000	2 345	2 315	2 280	2 250	2 220	2 190
	6000	2 305	2 270	2 235	2 205	2 170	2 140
	8000	2 260	2 225	2 190	2 155	2 120	2 085
6594 lbs (2991 kg)	SL	2 075	2 050	2 025	2 000	1 975	1 955
	2000	2 045	2 015	1 990	1 965	1 935	1 910
	4000	2 010	1 985	1 950	1 920	1 895	1 865
	6000	1 975	1 940	1 910	1 880	1 850	1 820
	8000	1 930	1 900	1 870	1 835	1 805	1 770
7394 lbs (3354 kg)	SL	1 800	1 775	1 755	1 730	1 710	1 685
	2000	1 770	1 745	1 720	1 695	1 670	1 645
	4000	1 735	1 710	1 685	1 655	1 630	1 605
	6000	1 705	1 670	1 645	1 615	1 590	1 560
	8000	1 660	1 635	1 605	1 575	1 545	1 515

Figure 5.10.2 - MXCL - Speeds (IAS = 170 KIAS / M 0.40)

• NOTE •

In SL ISA conditions, nominal Np is of 1985 RPM.

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Pilot's Operating Handbook

MXCL - Time, consumption and climb distance (IAS = 124 KIAS)

Conditions :

- **ISA - 20°C**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 124 KIAS - BLEED switch on AUTO

- **NOTE** • : Time, consumption and distance from the 50 ft
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in :
 - Time to climb increased by up to 7 %
 - Climb distance increased by up to 7 %
 - Fuel consumption increased by up to 5 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2000	00:45	4	3	1.0	1	00:45	5	4	1.2	2	01:00	5	4	1.4	2
4000	01:30	8	6	2.0	3	01:45	9	7	2.4	3	02:00	11	8	2.8	4
6000	02:15	11	9	3.0	4	02:30	13	10	3.5	5	03:00	16	12	4.1	6
8000	03:00	15	12	3.9	6	03:30	18	14	4.6	7	04:00	21	16	5.5	8
10000	03:30	18	14	4.9	8	04:15	22	17	5.7	9	05:00	26	20	6.8	11
12000	04:15	22	17	5.8	9	05:15	26	20	6.8	11	06:00	30	24	8.0	13
14000	05:00	25	20	6.7	11	06:00	30	23	7.9	13	07:15	35	28	9.3	16
16000	05:45	29	23	7.6	13	07:00	34	27	9.0	15	08:15	40	32	10.6	18
18000	06:30	32	25	8.5	15	07:45	38	30	10.0	18	09:15	45	35	11.9	21
20000	07:30	35	28	9.4	17	08:45	42	33	11.1	20	10:30	50	39	13.2	24
22000	08:15	39	30	10.3	19	09:45	46	36	12.2	23	11:30	55	43	14.4	27
24000	09:00	42	33	11.1	21	10:45	50	39	13.2	25	12:45	60	47	15.7	30
26000	09:45	46	36	12.0	24	11:45	54	43	14.3	28	13:45	64	51	17.0	34
28000	10:30	49	38	13.0	26	12:45	58	46	15.4	31	15:00	70	55	18.4	38
30000	11:30	53	41	13.9	29	13:45	63	49	16.6	35	16:30	75	59	19.8	42
31000	12:00	54	43	14.4	31	14:30	65	51	17.2	37	17:15	78	61	20.6	44

Figure 5.10.3 - MXCL - Time, consumption and climb distance
(IAS = 124 KIAS) / ISA - 20°C

MXCL - Time, consumption and climb distance (IAS = 124 KIAS)

Conditions :

- **ISA**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 124 KIAS - BLEED switch on AUTO

- **NOTE** ● : Time, consumption and distance from the 50 ft
- If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in :
 - Time to climb increased by up to 8 %
 - Climb distance increased by up to 8 %
 - Fuel consumption increased by up to 6 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2000	00:45	4	3	1.0	1	00:45	5	4	1.2	2	01:00	6	4	1.5	2
4000	01:30	8	6	2.1	3	01:45	9	7	2.4	4	02:00	11	9	2.9	4
6000	02:15	12	9	3.1	5	02:30	14	11	3.6	5	03:00	16	13	4.3	6
8000	03:00	15	12	4.1	6	03:30	18	14	4.8	7	04:00	21	17	5.7	9
10000	03:45	19	15	5.0	8	04:15	22	18	5.9	10	05:15	27	21	7.0	11
12000	04:30	23	18	6.0	10	05:15	27	21	7.1	12	06:15	32	25	8.4	14
14000	05:15	26	21	6.9	12	06:15	31	24	8.2	14	07:15	37	29	9.7	17
16000	06:00	30	23	7.9	14	07:00	35	28	9.3	16	08:15	42	33	11.0	19
18000	06:45	33	26	8.8	16	08:00	39	31	10.4	19	09:30	47	37	12.4	22
20000	07:30	37	29	9.7	18	09:00	44	34	11.5	21	10:45	52	41	13.7	26
22000	08:15	40	32	10.6	20	10:00	48	38	12.7	24	11:45	57	45	15.1	29
24000	09:15	44	34	11.6	23	11:00	52	41	13.8	27	13:00	62	49	16.5	32
26000	10:00	47	37	12.5	25	12:00	57	44	14.9	30	14:15	68	53	17.9	37
28000	11:00	51	40	13.5	28	13:15	61	48	16.2	34	16:00	73	58	19.4	41
30000	12:15	55	43	14.6	32	14:30	66	52	17.5	39	17:45	80	63	21.1	47
31000	12:45	57	45	15.1	34	15:30	69	54	18.2	41	18:45	83	65	21.9	51

Figure 5.10.4 - MXCL - Time, consumption and climb distance
(IAS = 124 KIAS) / ISA

Pilot's Operating Handbook

MXCL - Time, consumption and climb distance (IAS = 124 KIAS)

Conditions :

- **ISA + 20°C**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 124 KIAS - BLEED switch on AUTO

- **NOTE** • : Time, consumption and distance from the 50 ft
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in :

- Time to climb increased by up to 10 %
- Climb distance increased by up to 10 %
- Fuel consumption increased by up to 7 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2 000	00:45	4	3	1.1	2	00:45	5	4	1.3	2	01:00	6	4	1.5	2
4 000	01:30	8	6	2.1	3	01:45	10	8	2.5	4	02:00	11	9	3.0	4
6 000	02:15	12	9	3.2	5	02:30	14	11	3.8	6	03:00	17	13	4.5	7
8 000	03:00	16	12	4.2	7	03:30	19	15	5.0	8	04:15	22	17	5.9	9
10 000	03:45	20	15	5.2	8	04:30	23	18	6.2	10	05:15	28	22	7.3	12
12 000	04:30	23	18	6.2	10	05:15	28	22	7.3	12	06:15	33	26	8.7	15
14 000	05:15	27	21	7.2	12	06:15	32	25	8.5	15	07:30	38	30	10.1	18
16 000	06:00	31	24	8.1	14	07:15	37	29	9.7	17	08:30	44	34	11.5	21
18 000	06:45	34	27	9.1	17	08:15	41	32	10.8	20	09:45	49	38	12.9	24
20 000	07:45	38	30	10.1	19	09:15	46	36	12.0	23	11:00	54	43	14.4	27
22 000	08:30	42	33	11.1	22	10:15	50	39	13.2	26	12:15	60	47	15.9	31
24 000	09:45	46	36	12.1	25	11:30	55	43	14.5	30	14:00	66	52	17.5	36
26 000	10:45	50	39	13.2	28	13:00	60	47	15.9	34	15:45	73	57	19.2	42
28 000	12:00	54	43	14.4	33	14:30	66	51	17.3	40	17:45	80	63	21.0	49
30 000	13:30	59	46	15.6	38	16:30	72	56	18.9	46	20:15	88	69	23.2	58
31 000	14:15	62	48	16.3	41	17:30	75	59	19.8	50	21:45	92	72	24.4	63

Figure 5.10.5 - MXCL - Time, consumption and climb distance
(IAS = 124 KIAS) / ISA + 20°C

MXCL - Time, consumption and climb distance (IAS = 170 KIAS / M 0.40)

Conditions :

- ISA - 20°C
- Maximum climb power
- Landing gear and flaps UP
- IAS = 170 KIAS / M 0.40 - BLEED switch on AUTO

- NOTE • : Time, consumption and distance from the 50 ft
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in :
 - Time to climb increased by up to 10 %
 - Climb distance increased by up to 10 %
 - Fuel consumption increased by up to 7 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)						Weight 6579 lbs (2984 kg)						Weight 7394 lbs (3354 kg)					
	Time (min. s)	Consump.			Dist. (NM)		Time (min. s)	Consump.			Dist. (NM)		Time (min. s)	Consump.			Dist. (NM)	
		l	kg	USG				l	kg	USG				l	kg	USG		
SL	00:00	0	0	0	0		00:00	0	0	0	0		00:00	0	0	0	0	
2000	00:45	4	3	1.2	2		01:00	5	4	1.4	3		01:00	6	5	1.6	3	
4000	01:45	9	7	2.3	5		02:00	10	8	2.7	5		02:15	12	9	3.1	6	
6000	02:30	13	10	3.5	7		03:00	15	12	4.0	8		03:30	18	14	4.7	10	
8000	03:30	17	14	4.6	10		04:00	20	16	5.4	11		04:30	23	18	6.2	13	
10000	04:15	22	17	5.7	12		05:00	25	20	6.7	15		05:45	29	23	7.7	17	
12000	05:15	26	20	6.8	15		06:00	30	24	7.9	18		07:00	35	27	9.2	21	
14000	06:00	30	24	7.9	18		07:00	35	27	9.3	22		08:15	41	32	10.8	25	
16000	07:00	34	27	9.1	22		08:15	40	31	10.6	25		09:30	47	37	12.3	29	
18000	08:00	39	30	10.2	25		09:15	45	35	11.9	29		11:00	52	41	13.8	34	
20000	09:00	43	34	11.3	29		10:30	50	39	13.2	33		12:15	58	46	15.4	39	
22000	10:00	47	37	12.4	32		11:45	55	43	14.6	38		13:45	64	50	17.0	44	
24000	11:00	51	40	13.6	36		13:00	60	47	15.9	43		15:00	70	55	18.6	50	
26000	12:00	55	43	14.6	40		14:00	65	51	17.0	47		16:30	76	59	20.0	55	
28000	12:45	59	46	15.5	43		15:00	69	54	18.2	51		17:30	81	63	21.3	59	
30000	13:45	62	49	16.5	46		16:00	73	57	19.3	55		19:00	86	67	22.7	64	
31000	14:15	64	50	16.9	48		16:45	75	59	19.9	57		19:45	89	70	23.4	67	

Figure 5.10.6 - MXCL - Time, consumption and climb distance
(IAS = 170 KIAS / M 0.40) / ISA - 20°C

Pilot's Operating Handbook

MXCL - Time, consumption and climb distance
(IAS = 170 KIAS / M 0.40)

Conditions :

- **ISA**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 170 KIAS / M 0.40 - BLEED switch on AUTO

- **NOTE** • : Time, consumption and distance from the 50 ft
- If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in :
 - Time to climb increased by up to 11 %
 - Climb distance increased by up to 11 %
 - Fuel consumption increased by up to 8 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)						Weight 6579 lbs (2984 kg)						Weight 7394 lbs (3354 kg)					
	Time (min. s)	Consump.			Dist. (NM)		Time (min. s)	Consump.			Dist. (NM)		Time (min. s)	Consump.			Dist. (NM)	
		l	kg	USG				l	kg	USG				l	kg	USG		
SL	00:00	0	0	0	0		00:00	0	0	0	0		00:00	0	0	0	0	
2000	00:45	5	4	1.2	2		01:00	5	4	1.4	3		01:15	6	5	1.7	3	
4000	01:45	9	7	2.4	5		02:00	11	8	2.8	6		02:15	12	10	3.3	7	
6000	02:30	14	11	3.6	8		03:00	16	13	4.2	9		03:30	19	15	4.9	10	
8000	03:30	18	14	4.8	10		04:00	21	17	5.6	12		04:45	25	19	6.5	14	
10000	04:30	23	18	6.0	13		05:15	26	21	7.0	16		06:00	31	24	8.1	18	
12000	05:15	27	21	7.2	16		06:15	32	25	8.4	19		07:15	37	29	9.7	22	
14000	06:15	32	25	8.4	20		07:15	37	29	9.8	23		08:30	43	34	11.4	27	
16000	07:15	36	28	9.5	23		08:30	42	33	11.2	27		10:00	49	39	13.0	32	
18000	08:15	41	32	10.7	27		09:45	48	37	12.6	32		11:15	56	44	14.7	37	
20000	09:15	45	36	11.9	31		11:00	53	42	14.0	36		12:45	62	49	16.4	42	
22000	10:30	50	39	13.2	35		12:15	58	46	15.4	41		14:15	68	54	18.1	48	
24000	11:30	54	43	14.4	39		13:30	64	50	16.9	46		15:45	75	59	19.8	54	
26000	12:30	59	46	15.5	43		14:45	69	54	18.2	51		17:15	81	63	21.3	60	
28000	13:30	63	49	16.5	48		16:00	74	58	19.5	56		18:45	87	68	22.9	66	
30000	14:45	67	52	17.6	52		17:15	79	62	20.8	62		20:30	93	73	24.6	73	
31000	15:15	69	54	18.2	55		18:15	81	64	21.5	65		21:30	96	76	25.5	77	

Figure 5.10.7 - MXCL - Time, consumption and climb distance
(IAS = 170 KIAS / M 0.40) / ISA

MXCL - Time, consumption and climb distance (IAS = 170 KIAS / M 0.40)

Conditions :

- **ISA + 20°C**
- Maximum climb power
- Landing gear and flaps UP
- IAS = 170 KIAS / M 0.40 - BLEED switch on AUTO

- **NOTE** • : Time, consumption and distance from the 50 ft
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in :
 - Time to climb increased by up to 15 %
 - Climb distance increased by up to 16 %
 - Fuel consumption increased by up to 12 %

Pressure altitude (ft)	Weight 5794 lbs (2628 kg)					Weight 6579 lbs (2984 kg)					Weight 7394 lbs (3354 kg)				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	USG			l	kg	USG			l	kg	USG	
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0
2000	00:45	5	4	1.3	3	01:00	6	4	1.5	3	01:15	7	5	1.7	3
4000	01:45	10	8	2.6	5	02:00	11	9	3.0	6	02:30	13	10	3.5	7
6000	02:45	14	11	3.8	8	03:00	17	13	4.5	9	03:30	20	15	5.2	11
8000	03:30	19	15	5.1	11	04:15	22	18	5.9	13	05:00	26	20	6.9	15
10000	04:30	24	19	6.3	14	05:15	28	22	7.4	17	06:15	33	26	8.6	19
12000	05:30	29	22	7.5	18	06:30	33	26	8.8	21	07:30	39	31	10.3	24
14000	06:30	33	26	8.8	21	07:30	39	31	10.3	25	09:00	46	36	12.0	29
16000	07:30	38	30	10.1	25	08:45	45	35	11.8	29	10:15	52	41	13.8	34
18000	08:30	43	34	11.3	29	10:00	50	40	13.3	34	11:45	59	46	15.6	40
20000	09:45	48	38	12.7	33	11:30	56	44	14.8	39	13:15	66	52	17.4	46
22000	11:00	53	42	14.1	38	13:00	63	49	16.5	45	15:15	74	58	19.5	53
24000	12:30	59	46	15.6	45	14:45	70	55	18.4	53	17:15	82	64	21.7	62
26000	13:45	64	50	17.0	51	16:30	76	60	20.1	60	19:30	90	71	23.8	72
28000	15:30	70	55	18.4	57	18:15	83	65	21.9	68	22:00	99	77	26.1	82
30000	17:15	75	59	19.8	64	20:30	90	70	23.7	77	25:00	108	85	28.5	94
31000	18:00	78	61	20.6	68	21:45	93	73	24.7	82	26:30	113	89	29.8	101

Figure 5.10.8 - MXCL - Time, consumption and climb distance
(IAS = 170 KIAS / M 0.40) / ISA + 20°C

Pilot's Operating Handbook

Climb performance after go-around

Conditions :

- Landing gear DN and flaps LDG
- **IAS = 90 KIAS**

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
6594 lbs (2991 kg)	SL	1635	1610	1590	1565	1545	1525	1505
	2000	1615	1580	1555	1535	1510	1490	1470
	4000	1585	1545	1525	1500	1480	1455	1435
	6000	1555	1515	1490	1465	1440	1420	1395
	8000	1520	1480	1455	1430	1400	1375	1345

Conditions :

- Landing gear DN and flaps LDG
- **IAS = 95 KIAS**

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
7394 lbs (3354 kg)	SL	1350	1320	1295	1275	1255	1235	1215
	2000	1325	1290	1265	1245	1225	1205	1180
	4000	1295	1255	1235	1210	1190	1165	1140
	6000	1265	1225	1200	1175	1150	1120	1095
	8000	1230	1190	1160	1135	1105	1075	1050

Figure 5.10.9 - Climb performance after go-around

Climb performance - Flaps TO

Conditions :

- Landing gear UP and flaps TO
- **IAS = 110 KIAS**

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
6594 lbs (2991 kg)	SL	2295	2275	2260	2250	2240	2225	2215
	2000	2280	2260	2245	2230	2220	2210	2190
	4000	2265	2245	2230	2215	2200	2180	2165
	6000	2250	2225	2210	2190	2175	2155	2135
	8000	2235	2205	2185	2165	2145	2130	2110

Conditions:

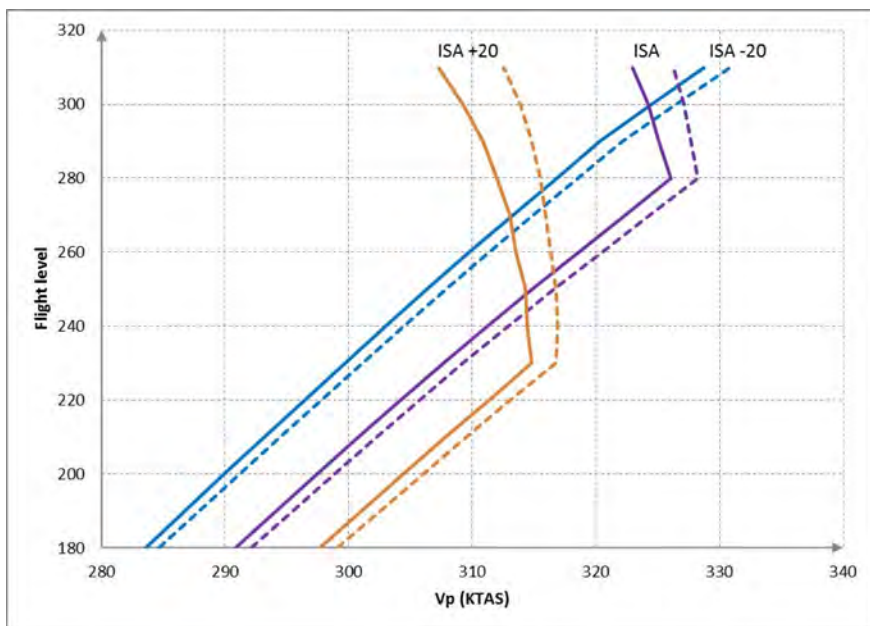
- Landing gear UP and flaps TO
- **IAS = 115 KIAS**

Airplane weight	Pressure altitude (feet)	Rate of climb (ft/min)						
		ISA - 35°C	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C	ISA + 30°C
7394 lbs (3354 kg)	SL	1985	1965	1955	1940	1930	1915	1900
	2000	1970	1950	1940	1925	1910	1890	1875
	4000	1955	1935	1920	1900	1885	1865	1850
	6000	1940	1910	1895	1875	1860	1840	1825
	8000	1915	1890	1870	1850	1835	1815	1795

Figure 5.10.10 - Climb performance - Flaps TO

5.11 - Cruise performance

Maximum cruise



———— 7100 lbs
 - - - - - 6300 lbs

Figure 5.11.1 - Cruise performance (Maximum cruise)

Maximum cruise

Conditions :

- **ISA - 20°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	100	325	255	85.9	240	236	239	236	239	235
5000	-14	100	299	234	78.9	235	248	235	248	234	247
10000	-24	100	278	218	73.3	230	262	230	261	229	260
15000	-34	100	265	208	70.1	226	276	225	275	224	275
18000	-40	100	256	201	67.7	223	285	222	285	221	284
20000	-44	100	251	197	66.2	221	292	220	291	219	290
21000	-46	100	248	195	65.6	220	295	219	294	218	293
22000	-48	100	246	193	65.0	219	299	218	298	217	296
23000	-50	100	244	192	64.5	218	302	217	301	216	300
24000	-52	100	243	190	64.1	217	306	216	304	215	303
25000	-54	100	241	189	63.7	216	309	215	308	214	306
26000	-56	100	240	188	63.3	215	313	214	311	213	310
27000	-57	100	239	188	63.2	214	316	213	315	212	313
28000	-59	100	238	187	63.0	213	320	212	318	211	317
29000	-61	100	238	187	62.9	212	324	211	322	209	320
30000	-63	100	238	187	62.8	211	328	210	326	209	324
31000	-65	100	238	187	63.0	210	332	209	331	208	329

Figure 5.11.2 - Cruise performance
Maximum cruise / ISA - 20°C

Maximum cruise

Conditions :

- **ISA - 10°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	100	329	258	86.9	238	239	238	239	237	238
5000	-4	100	302	237	79.7	234	252	233	251	233	250
10000	-14	100	281	220	74.2	229	265	228	265	228	264
15000	-24	100	268	210	70.8	224	280	223	279	222	278
18000	-30	100	259	203	68.4	221	289	220	288	219	287
20000	-34	100	253	199	66.9	219	296	218	295	217	294
21000	-36	100	251	197	66.2	218	299	217	298	216	297
22000	-38	100	249	195	65.7	217	303	216	302	215	300
23000	-40	100	247	194	65.1	216	306	215	305	214	304
24000	-42	100	245	192	64.7	215	310	214	309	213	307
25000	-44	100	243	191	64.3	214	314	213	312	212	311
26000	-46	100	242	190	63.9	213	317	212	316	211	314
27000	-47	100	242	190	63.8	212	321	211	320	210	318
28000	-49	100	241	189	63.6	211	325	210	323	209	322
29000	-51	100	240	189	63.5	210	329	209	328	208	326
30000	-53	100	239	188	63.2	209	333	208	332	207	329
31000	-55	97	230	181	60.8	205	333	204	331	202	328

Figure 5.11.3 - Cruise performance
Maximum cruise / ISA - 10°C

Maximum cruise

Conditions :

- **ISA - 5°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	100	331	259	87.3	238	240	237	240	237	240
5000	1	100	304	238	80.2	233	253	232	253	232	252
10000	-9	100	282	221	74.5	228	267	227	266	227	265
15000	-19	100	269	211	71.2	223	282	222	281	222	280
18000	-25	100	260	204	68.7	220	291	219	290	218	289
20000	-29	100	254	200	67.2	218	298	217	297	216	296
21000	-31	100	252	198	66.5	217	301	216	300	215	299
22000	-33	100	250	196	66.0	216	305	215	304	214	302
23000	-35	100	248	195	65.5	215	308	214	307	213	306
24000	-37	100	246	193	65.0	214	312	213	311	212	309
25000	-39	100	244	192	64.6	213	316	212	315	211	313
26000	-41	100	243	191	64.2	212	320	211	318	210	316
27000	-42	100	243	191	64.1	211	323	210	322	209	320
28000	-44	100	242	190	64.0	210	328	209	326	208	324
29000	-46	100	242	190	63.8	210	332	209	330	207	328
30000	-48	97	233	183	61.5	206	332	205	330	203	327
31000	-50	94	224	176	59.3	202	332	200	329	199	326

Figure 5.11.4 - Cruise performance
Maximum cruise / ISA - 5°C

Pilot's Operating Handbook

Maximum cruise

Conditions :

- **ISA**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	100	333	261	87.9	237	242	237	242	236	241
5000	6	100	305	240	80.7	232	255	232	254	231	253
10000	-4	100	284	223	74.9	227	268	227	268	226	267
15000	-14	100	271	213	71.5	222	283	222	283	221	282
18000	-20	100	261	205	69.0	219	293	219	292	218	291
20000	-24	100	256	201	67.6	217	300	216	299	215	297
21000	-26	100	253	199	66.9	216	303	215	302	214	301
22000	-28	100	251	197	66.3	215	307	214	306	213	304
23000	-30	100	249	195	65.8	214	310	213	309	212	308
24000	-32	100	247	194	65.3	213	314	212	313	211	311
25000	-34	100	246	193	64.9	212	318	211	317	210	315
26000	-36	100	244	192	64.5	211	322	210	320	209	319
27000	-37	100	244	191	64.4	210	326	209	324	208	322
28000	-39	100	242	190	64.1	210	330	208	328	207	326
29000	-41	97	234	184	61.8	206	330	204	328	203	325
30000	-43	94	226	177	59.7	202	329	200	327	199	324
31000	-45	90	218	171	57.5	198	329	196	326	194	323

Figure 5.11.5 - Cruise performance
Maximum cruise / ISA

Maximum cruise

Conditions :

- **ISA + 5°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** ● : Use preferably recommended cruise power.
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	334	263	88.4	236	243	236	243	235	242
5000	11	100	307	241	81.1	231	256	231	256	230	255
10000	1	100	285	224	75.3	226	270	226	269	225	269
15000	-9	100	272	214	72.0	221	285	221	284	220	283
18000	-15	100	263	206	69.4	218	295	218	294	217	293
20000	-19	100	257	202	67.9	216	302	216	301	215	299
21000	-21	100	254	200	67.2	215	305	215	304	213	303
22000	-23	100	252	198	66.6	214	309	214	308	212	306
23000	-25	100	250	196	66.1	213	312	213	311	211	309
24000	-27	100	248	195	65.7	212	316	212	315	210	313
25000	-29	100	247	194	65.2	211	320	210	319	209	317
26000	-31	100	245	192	64.8	210	324	209	322	208	320
27000	-32	100	244	192	64.6	210	328	209	326	207	324
28000	-34	97	236	185	62.3	206	328	204	326	203	323
29000	-36	93	227	178	60.0	202	327	200	325	199	322
30000	-38	90	219	172	57.9	198	327	196	324	194	321
31000	-40	87	211	166	55.8	194	326	192	323	190	320

Figure 5.11.6 - Cruise performance
Maximum cruise / ISA + 5°C

Maximum cruise

Conditions :

- **ISA + 10°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Use preferably recommended cruise power.

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	336	264	88.9	236	245	235	244	235	244
5000	16	100	309	242	81.6	231	258	230	257	230	256
10000	6	100	287	225	75.7	226	272	225	271	224	270
15000	-4	100	274	215	72.3	221	287	220	286	219	285
18000	-10	100	264	207	69.7	218	297	217	296	216	294
20000	-14	100	258	203	68.3	216	303	215	302	214	301
21000	-16	100	256	201	67.6	215	307	214	306	213	304
22000	-18	100	254	199	67.0	214	311	213	309	211	308
23000	-20	100	252	197	66.5	212	314	212	313	210	311
24000	-22	100	250	196	66.0	212	318	211	317	209	315
25000	-24	100	248	195	65.5	211	322	210	320	208	319
26000	-26	100	246	193	65.1	210	326	209	325	207	323
27000	-27	97	238	187	62.8	206	325	204	324	203	321
28000	-29	93	229	180	60.5	202	325	200	323	198	320
29000	-31	90	221	173	58.3	198	325	196	322	194	319
30000	-33	86	213	167	56.2	194	324	192	321	190	317
31000	-35	83	205	161	54.1	190	323	188	320	186	316

Figure 5.11.7 - Cruise performance
Maximum cruise / ISA + 10°C

Maximum cruise

Conditions :

- **ISA + 20°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- NOTE ● : Use preferably recommended cruise power.
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	100	340	267	89.8	234	247	234	247	233	246
5000	26	100	312	245	82.5	229	261	229	260	228	259
10000	16	100	290	227	76.5	224	275	224	274	223	273
15000	6	100	276	217	73.0	219	290	218	289	217	288
18000	0	100	266	209	70.4	216	300	215	299	214	298
20000	-4	100	261	205	69.0	214	307	213	306	212	304
21000	-6	100	258	203	68.3	213	311	212	309	211	308
22000	-8	100	256	201	67.6	212	314	211	313	210	311
23000	-10	100	254	200	67.1	211	318	210	317	209	315
24000	-12	98	246	193	65.0	208	319	206	317	205	314
25000	-14	95	238	187	62.8	204	319	203	317	201	314
26000	-16	92	230	180	60.7	200	318	199	316	197	314
27000	-17	88	222	174	58.6	197	318	195	316	193	313
28000	-19	85	214	168	56.6	193	318	192	316	189	312
29000	-21	82	207	162	54.6	190	318	188	315	185	311
30000	-23	79	199	156	52.7	186	317	184	314	181	309
31000	-25	76	192	151	50.7	182	316	180	313	177	307

Figure 5.11.8 - Cruise performance
Maximum cruise / ISA + 20°C

Normal cruise (Recommended)

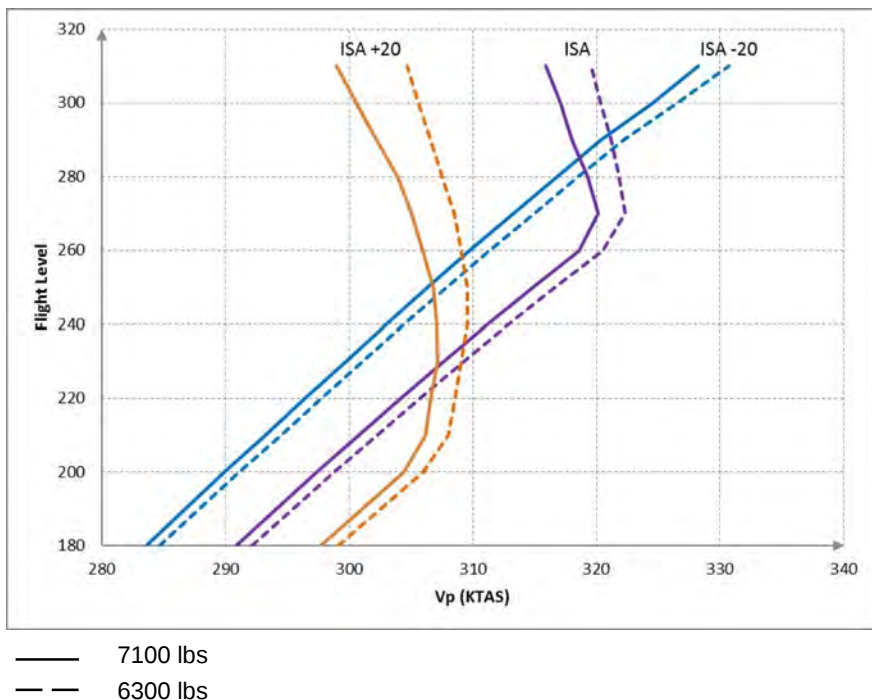


Figure 5.11.9 - Cruise performance (Recommended cruise)

Normal cruise (Recommended)

Conditions :

- **ISA - 20°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

- **NOTE** ● : Power recommended by PRATT & WHITNEY CANADA
If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	100	325	255	85.9	240	236	239	236	239	235
5000	-14	100	299	234	78.9	235	248	235	248	234	247
10000	-24	100	278	218	73.3	230	262	230	261	229	260
15000	-34	100	265	208	70.1	226	276	225	275	224	275
18000	-40	100	256	201	67.7	223	285	222	285	221	284
20000	-44	100	251	197	66.2	221	292	220	291	219	290
21000	-46	100	248	195	65.6	220	295	219	294	218	293
22000	-48	100	246	193	65.0	219	299	218	298	217	296
23000	-50	100	244	192	64.5	218	302	217	301	216	300
24000	-52	100	243	190	64.1	217	306	216	304	215	303
25000	-54	100	241	189	63.7	216	309	215	308	214	306
26000	-56	100	240	188	63.3	215	313	214	311	213	310
27000	-57	100	239	188	63.2	214	316	213	315	212	313
28000	-59	100	238	187	63.0	213	320	212	318	211	317
29000	-61	100	238	187	62.9	212	324	211	322	209	320
30000	-63	100	238	187	62.8	211	328	210	326	209	324
31000	-65	100	238	187	62.9	210	332	209	331	208	328

Figure 5.11.10 - Cruise performance
Normal cruise / ISA - 20°C

Normal cruise (Recommended)

Conditions :

- **ISA - 10°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Power recommended by PRATT & WHITNEY CANADA

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	100	329	258	86.9	238	239	238	239	237	238
5000	-4	100	302	237	79.7	234	252	233	251	233	250
10000	-14	100	281	220	74.2	229	265	228	265	228	264
15000	-24	100	268	210	70.8	224	280	223	279	222	278
18000	-30	100	259	203	68.4	221	289	220	288	219	287
20000	-34	100	253	199	66.9	219	296	218	295	217	294
21000	-36	100	251	197	66.2	218	299	217	298	216	297
22000	-38	100	249	195	65.7	217	303	216	302	215	300
23000	-40	100	247	194	65.1	216	306	215	305	214	304
24000	-42	100	245	192	64.7	215	310	214	309	213	307
25000	-44	100	243	191	64.3	214	314	213	312	212	311
26000	-46	100	242	190	63.9	213	317	212	316	211	314
27000	-47	100	242	190	63.8	212	321	211	320	210	318
28000	-49	100	241	189	63.6	211	325	210	323	209	322
29000	-51	100	238	187	62.9	210	328	209	327	207	324
30000	-53	96	230	180	60.7	206	328	204	326	203	323
31000	-55	93	222	174	58.6	202	328	200	325	198	322

Figure 5.11.11 - Cruise performance
Normal cruise / ISA - 10°C

Normal cruise (Recommended)

Conditions :

- **ISA - 5°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Power recommended by PRATT & WHITNEY CANADA

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	100	331	259	87.3	238	240	237	240	237	240
5000	1	100	304	238	80.2	233	253	232	253	232	252
10000	-9	100	282	221	74.5	228	267	227	266	227	265
15000	-19	100	269	211	71.2	223	282	222	281	222	280
18000	-25	100	260	204	68.7	220	291	219	290	218	289
20000	-29	100	254	200	67.2	218	298	217	297	216	296
21000	-31	100	252	198	66.5	217	301	216	300	215	299
22000	-33	100	250	196	66.0	216	305	215	304	214	302
23000	-35	100	248	195	65.5	215	308	214	307	213	306
24000	-37	100	246	193	65.0	214	312	213	311	212	309
25000	-39	100	244	192	64.6	213	316	212	315	211	313
26000	-41	100	243	191	64.2	212	320	211	318	210	316
27000	-42	100	243	191	64.1	211	323	210	322	209	320
28000	-44	100	239	188	63.2	210	326	208	324	207	322
29000	-46	96	231	181	61.0	206	326	204	324	202	321
30000	-48	93	223	175	58.9	202	325	200	323	198	320
31000	-50	89	215	169	56.8	198	325	196	322	194	319

Figure 5.11.12 - Cruise performance
Normal cruise / ISA - 5°C

Normal cruise (Recommended)

Conditions :

- **ISA**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Power recommended by PRATT & WHITNEY CANADA

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	100	333	261	87.9	237	242	237	242	236	241
5000	6	100	305	240	80.7	232	255	232	254	231	253
10000	-4	100	284	223	74.9	227	268	227	268	226	267
15000	-14	100	271	213	71.5	222	283	222	283	221	282
18000	-20	100	261	205	69.0	219	293	219	292	218	291
20000	-24	100	256	201	67.6	217	300	216	299	215	297
21000	-26	100	253	199	66.9	216	303	215	302	214	301
22000	-28	100	251	197	66.3	215	307	214	306	213	304
23000	-30	100	249	195	65.8	214	310	213	309	212	308
24000	-32	100	247	194	65.3	213	314	212	313	211	311
25000	-34	100	246	193	64.9	212	318	211	317	210	315
26000	-36	100	244	192	64.5	211	322	210	320	209	319
27000	-37	99	241	189	63.6	209	324	208	322	207	320
28000	-39	96	232	182	61.4	205	324	204	322	202	319
29000	-41	92	224	176	59.2	201	323	200	321	198	318
30000	-43	89	216	170	57.0	198	323	196	320	194	317
31000	-45	86	208	164	55.0	194	322	192	320	190	316

Figure 5.11.13 - Cruise performance
Normal cruise / ISA

Normal cruise (Recommended)

Conditions :

- **ISA + 5°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Power recommended by PRATT & WHITNEY CANADA

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 5 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	334	263	88.4	236	243	236	243	235	242
5000	11	100	307	241	81.1	231	256	231	256	230	255
10000	1	100	285	224	75.3	226	270	226	269	225	269
15000	-9	100	272	214	72.0	221	285	221	284	220	283
18000	-15	100	263	206	69.4	218	295	218	294	217	293
20000	-19	100	257	202	67.9	216	302	216	301	215	299
21000	-21	100	254	200	67.2	215	305	215	304	213	303
22000	-23	100	252	198	66.6	214	309	214	308	212	306
23000	-25	100	250	196	66.1	213	312	213	311	211	309
24000	-27	100	248	195	65.7	212	316	212	315	210	313
25000	-29	100	247	194	65.2	211	320	210	319	209	317
26000	-31	99	242	190	64.0	209	322	208	320	207	318
27000	-32	96	234	184	61.8	205	322	204	320	202	317
28000	-34	92	226	177	59.6	202	321	200	319	198	316
29000	-36	89	217	171	57.4	198	321	196	319	194	315
30000	-38	85	209	164	55.3	194	320	192	318	190	314
31000	-40	82	202	158	53.3	190	320	188	317	186	313

Figure 5.11.14 - Cruise performance
Normal cruise / ISA + 5°C

Normal cruise (Recommended)

Conditions :

- **ISA + 10°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Power recommended by PRATT & WHITNEY CANADA

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	336	264	88.9	236	245	235	244	235	244
5000	16	100	309	242	81.6	231	258	230	257	230	256
10000	6	100	287	225	75.7	226	272	225	271	224	270
15000	-4	100	274	215	72.3	221	287	220	286	219	285
18000	-10	100	264	207	69.7	218	297	217	296	216	294
20000	-14	100	258	203	68.3	216	303	215	302	214	301
21000	-16	100	256	201	67.6	215	307	214	306	213	304
22000	-18	100	254	199	67.0	214	311	213	309	211	308
23000	-20	100	252	197	66.5	212	314	212	313	210	311
24000	-22	100	250	196	66.0	212	318	211	317	209	315
25000	-24	99	244	192	64.6	209	320	208	318	207	316
26000	-26	96	236	185	62.3	205	320	204	318	203	316
27000	-27	92	227	178	60.1	202	319	200	317	198	315
28000	-29	89	219	172	57.9	198	319	196	317	194	313
29000	-31	85	211	166	55.8	194	318	192	316	190	312
30000	-33	82	203	160	53.7	190	318	188	315	186	311
31000	-35	79	196	154	51.7	186	317	184	313	182	309

Figure 5.11.15 - Cruise performance
Normal cruise / ISA + 10°C

Normal cruise (Recommended)

Conditions :

- **ISA + 20°C**
- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

● NOTE ● : Power recommended by PRATT & WHITNEY CANADA

If BLEED HI msg ON, reduce TRQ by 5 %. This TRQ reduction will result in an airspeed reduction of up to 6 KIAS.

Pressure altitude (feet)	OAT (°C)	TRQ (%)	Fuel flow			Airspeeds (kt)					
						5500 lbs (2495 kg)		6300 lbs (2858 kg)		7100 lbs (3220 kg)	
			l / h	kg / h	USG / h	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	100	340	267	89.8	234	247	234	247	233	246
5000	26	100	312	245	82.5	229	261	229	260	228	259
10000	16	100	290	227	76.5	224	275	224	274	223	273
15000	6	100	276	217	73.0	219	290	218	289	217	288
18000	0	100	266	209	70.4	216	300	215	299	214	298
20000	-4	100	261	205	69.0	214	307	213	306	212	304
21000	-6	100	256	201	67.6	212	309	211	308	210	306
22000	-8	97	248	195	65.6	209	310	208	309	206	307
23000	-10	95	241	189	63.7	206	311	205	309	203	307
24000	-12	92	234	184	61.8	203	311	201	310	200	307
25000	-14	89	226	178	59.8	199	312	198	310	196	307
26000	-16	86	219	172	57.7	196	311	194	309	192	306
27000	-17	83	211	166	55.7	192	311	190	308	188	305
28000	-19	80	203	160	53.7	188	310	187	308	184	304
29000	-21	77	196	154	51.8	185	310	183	307	180	302
30000	-23	74	189	148	50.0	181	309	179	306	176	301
31000	-25	72	183	143	48.2	178	309	175	305	172	299

Figure 5.11.16 - Cruise performance
Normal cruise / ISA + 20°C

Long range cruise (5500 lbs - 2495 kg)

Conditions :

- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

Legend :

OAT : °C IAS : KIAS
FF : USG/h
FF : kg/h TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
15000	38	-34 153 40.7 121 189	-24 152 41.2 122 192	-14 150 41.4 123 193	-4 148 41.6 124 194	6 147 42.2 125 197
18000	39	-40 150 38.2 113 194	-30 149 38.7 115 197	-20 148 39.2 116 200	-10 147 39.7 118 203	0 146 40.2 119 205
19000	39	-42 149 37.4 111 196	-32 148 37.9 113 199	-22 147 38.4 114 202	-12 145 38.7 115 203	-2 143 38.9 116 204
20000	39	-44 150 37.0 110 201	-34 148 37.3 111 202	-24 147 37.9 112 205	-14 146 38.4 114 208	-4 144 38.7 115 209
21000	39	-46 148 36.0 107 201	-36 147 36.6 109 204	-26 146 37.1 110 207	-16 145 37.6 112 210	-6 144 38.2 113 213
22000	39	-48 147 35.3 105 203	-38 146 35.8 106 206	-28 145 36.4 108 209	-18 143 36.6 109 211	-8 142 37.2 111 214
23000	39	-50 146 34.5 103 205	-40 145 35.1 104 209	-30 144 35.6 106 212	-20 142 35.9 107 213	-10 141 36.4 108 216
24000	40	-52 146 34.1 101 209	-42 145 34.6 103 212	-32 144 35.2 104 215	-22 142 35.4 105 217	-12 141 36.0 107 219

Figure 5.11.17 (1/2) - Cruise performance
Long range cruise (5500 lbs - 2495 kg) (Altitude < 24000 ft)

Long range cruise (5500 lbs - 2495 kg)

Conditions :

- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

Legend :

OAT : °C IAS : KIAS
FF : USG/h
FF : kg/h TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
24 000	40	-52 146 34.1 101 209	-42 145 34.6 103 212	-32 144 35.2 104 215	-22 142 35.4 105 217	-12 141 36.0 107 219
25 000	41	-54 148 34.1 101 215	-44 146 34.4 102 217	-34 145 34.9 104 220	-24 144 35.5 105 223	-14 142 35.8 106 225
26 000	43	-56 151 34.6 103 223	-46 150 35.1 104 226	-36 148 35.4 105 228	-26 146 35.6 106 230	-16 145 36.2 108 233
27 000	45	-57 152 34.6 103 228	-47 151 35.1 104 232	-37 150 35.7 106 235	-27 148 36.0 107 237	-17 147 36.5 108 241
28 000	46	-59 153 34.5 103 233	-49 152 35.1 104 237	-39 151 35.7 106 241	-29 149 36.0 107 243	-19 147 36.3 108 245
29 000	46	-61 153 34.3 102 237	-51 151 34.6 103 240	-41 150 35.2 104 244	-31 148 35.5 105 246	-21 146 35.7 106 248
30 000	46	-63 153 34.2 101 241	-53 151 34.4 102 244	-43 149 34.7 103 246	-33 148 35.3 105 250	-23 146 35.6 106 252
31 000	46	-65 152 33.7 100 244	-55 150 34.0 101 247	-45 148 34.3 102 249	-35 147 34.8 103 253	-25 145 35.1 104 255

Figure 5.11.17 (2/2) - Cruise performance
Long range cruise (5500 lbs - 2495 kg) (Altitude > 24000 ft)

Long range cruise (6300 lbs - 2858 kg)

Conditions :

- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

Legend :

OAT : °C IAS : KIAS
FF : USG/h
FF : kg/h TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
15 000	42	-34 156 42.3 126 193	-24 155 42.9 128 195	-14 154 43.5 129 198	-4 153 44.0 131 201	6 152 44.6 133 203
18 000	42	-40 154 40.0 119 199	-30 152 40.4 120 201	-20 151 41.0 122 204	-10 150 41.6 124 207	0 149 42.1 125 209
19 000	43	-42 156 40.0 119 205	-32 154 40.3 120 207	-22 152 40.7 121 209	-12 151 41.3 123 211	-2 150 41.9 124 214
20 000	43	-44 154 38.9 116 206	-34 153 39.5 117 209	-24 151 39.9 118 211	-14 150 40.5 120 214	-4 149 41.1 122 216
21 000	44	-46 153 38.2 113 208	-36 152 38.7 115 211	-26 151 39.4 117 214	-16 150 39.9 119 217	-6 149 40.6 121 220
22 000	44	-48 152 37.4 111 210	-38 151 38.0 113 213	-28 150 38.6 115 216	-18 149 39.2 117 219	-8 148 39.8 118 222
23 000	44	-50 152 36.9 110 213	-40 151 37.5 111 217	-30 149 37.9 113 219	-20 148 38.5 114 222	-10 147 39.1 116 225
24 000	44	-52 150 36.0 107 214	-42 149 36.6 109 218	-32 148 37.2 111 221	-22 147 37.8 112 224	-12 146 38.4 114 227

Figure 5.11.18 (1/2) - Cruise performance
Long range cruise (6300 lbs - 2858 kg) (Altitude < 24000 ft)

Long range cruise (6300 lbs - 2858 kg)

Conditions :

- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

Legend :

OAT : °C IAS : KIAS
FF : USG/h
FF : kg/h TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
24 000	44	-52 150 36.0 107 214	-42 149 36.6 109 218	-32 148 37.2 111 221	-22 147 37.8 112 224	-12 146 38.4 114 227
25 000	44	-54 149 35.4 105 216	-44 148 36.0 107 220	-34 147 36.6 109 223	-24 145 36.9 110 225	-14 143 37.2 111 226
26 000	45	-56 152 35.9 107 224	-46 150 36.2 108 226	-36 148 36.6 109 228	-26 147 37.2 111 232	-16 146 37.8 112 235
27 000	47	-57 154 36.2 107 231	-47 152 36.5 108 233	-37 150 36.9 109 235	-27 148 37.2 111 237	-17 147 37.8 112 241
28 000	49	-59 156 36.5 108 238	-49 154 36.8 109 240	-39 152 37.2 111 243	-29 151 37.8 112 246	-19 149 38.2 113 248
29 000	49	-61 155 36.1 107 240	-51 153 36.4 108 243	-41 151 36.8 109 245	-31 149 37.1 110 247	-21 147 37.4 111 249
30 000	50	-63 155 35.9 107 244	-53 153 36.2 108 247	-43 151 36.6 109 250	-33 149 37.0 110 252	-23 147 37.3 111 254
31 000	50	-65 154 35.5 105 247	-55 152 35.8 106 250	-45 150 36.2 108 252	-35 148 36.6 109 255	-25 146 37.0 110 257

Figure 5.11.18 (2/2) - Cruise performance
Long range cruise (6300 lbs - 2858 kg) (Altitude > 24000 ft)

Pilot's Operating Handbook

Long range cruise (7100 lbs - 3220 kg)

Conditions :

- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

Legend :

OAT : °C IAS : KIAS
 FF : USG/h
 FF : kg/h TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
15 000	48	-34 164 45.4 135 202	-24 163 46.0 137 205	-14 162 46.7 139 208	-4 161 47.4 141 211	6 160 48.0 143 213
18 000	49	-40 161 42.7 127 208	-30 160 43.5 129 211	-20 159 43.9 130 214	-10 158 44.8 133 217	0 157 45.5 135 220
19 000	49	-42 160 42.0 125 210	-32 159 42.6 127 213	-22 158 43.3 129 217	-12 157 44.0 131 219	-2 156 44.6 133 222
20 000	49	-44 160 41.4 123 214	-34 159 42.1 125 217	-24 157 42.5 126 219	-14 156 43.2 128 222	-4 155 43.9 130 225
21 000	49	-46 158 40.4 120 214	-36 157 41.1 122 218	-26 156 41.8 124 221	-16 155 42.4 126 224	-6 154 43.1 128 227
22 000	49	-48 157 39.8 118 217	-38 156 40.4 120 220	-28 155 41.0 122 223	-18 153 41.4 123 225	-8 152 42.1 125 228
23 000	49	-50 155 38.9 116 217	-40 154 39.5 117 221	-30 153 40.1 119 224	-20 150 40.3 120 225	-10 148 40.7 121 226
24 000	49	-52 154 38.3 114 220	-42 153 38.9 116 223	-32 152 39.6 118 227	-22 150 40.0 119 228	-12 149 40.6 121 231

Figure 5.11.19 (1/2) - Cruise performance
 Long range cruise (7100 lbs - 3220 kg) (Altitude < 24000 ft)

Long range cruise (7100 lbs - 3220 kg)

Conditions :

- Landing gear and flaps UP
- BLEED switch on AUTO and BLEED HI msg OFF

Legend :

OAT : °C IAS : KIAS
FF : USG/h
FF : kg/h TAS : KTAS

Pressure altitude (feet)	TRQ (%)	ISA - 20°C	ISA - 10°C	ISA	ISA + 10°C	ISA + 20°C
24 000	49	-52 154 38.3 114 220	-42 153 38.9 116 223	-32 152 39.6 118 227	-22 150 40.0 119 228	-12 149 40.6 121 231
25 000	49	-54 153 37.7 112 222	-44 152 38.3 114 226	-34 151 39.0 116 229	-24 149 39.4 117 231	-14 147 39.8 118 232
26 000	51	-56 153 37.4 111 226	-46 151 37.9 113 228	-36 150 38.5 114 231	-26 149 39.2 117 235	-16 148 39.8 118 238
27 000	52	-57 155 37.7 112 232	-47 153 38.1 113 235	-37 151 38.5 114 237	-27 149 39.0 116 239	-17 148 39.6 118 242
28 000	53	-59 157 38.1 113 239	-49 154 38.2 114 240	-39 152 38.7 115 243	-29 150 39.1 116 245	-19 149 39.8 118 248
29 000	53	-61 156 37.7 112 242	-51 154 38.1 113 244	-41 152 38.6 115 247	-31 150 39.0 116 249	-21 148 39.5 117 251
30 000	53	-63 155 37.3 111 244	-53 153 37.8 112 247	-43 151 38.2 113 250	-33 149 38.7 115 252	-23 147 39.1 116 254
31 000	49	-65 155 37.3 111 249	-55 153 37.7 112 251	-45 150 37.9 113 252	-35 148 38.3 114 255	-25 146 38.8 115 257

Figure 5.11.19 (2/2) - Cruise performance
Long range cruise (7100 lbs - 3220 kg) (Altitude > 24000 ft)

5.12 - Time, consumption and descent distance

Conditions :

- Power as required to maintain constant Vz
- Landing gear and flaps UP
- CAS = 230 KCAS - BLEED switch on AUTO

Pressure altitude (feet)	Vz = 1500 ft/min					Vz = 2000 ft/min					Vz = 2500 ft/min				
	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)	Time (min. s)	Consump.			Dist. (NM)
		l	kg	us gal			l	kg	us gal			l	kg	us gal	
31000	20:40	70	55	18.5	101	15:30	47	37	12.4	75	12:25	34	27	9.0	60
30000	20:00	68	53	17.9	97	15:00	45	36	12.0	72	12:00	33	26	8.8	58
28000	18:40	64	50	16.8	89	14:00	43	34	11.3	66	11:10	31	25	8.3	53
26000	17:20	59	47	15.7	81	13:00	40	31	10.6	61	10:25	29	23	7.8	48
24000	16:00	55	43	14.5	73	12:00	37	29	9.8	55	09:35	28	22	7.3	44
22000	14:40	51	40	13.4	66	11:00	34	27	9.1	50	08:50	26	20	6.8	40
20000	13:20	47	37	12.3	59	10:00	32	25	8.4	44	08:00	24	19	6.3	35
18000	12:00	42	33	11.1	53	09:00	29	23	7.6	39	07:10	22	17	5.8	31
16000	10:40	38	30	10.0	46	08:00	26	20	6.8	34	06:25	20	15	5.2	27
14000	09:20	33	26	8.8	40	07:00	23	18	6.1	30	05:35	18	14	4.6	24
12000	08:00	29	23	7.6	33	06:00	20	16	5.3	25	04:50	15	12	4.1	20
10000	06:40	24	19	6.4	27	05:00	17	13	4.5	21	04:00	13	10	3.4	16
8000	05:20	20	15	5.2	22	04:00	14	11	3.7	16	03:10	11	8	2.8	13
6000	04:00	15	12	3.9	16	03:00	11	8	2.8	12	02:25	8	6	2.2	10
4000	02:40	10	8	2.7	10	02:00	7	6	1.9	8	01:35	6	4	1.5	6
2000	01:20	5	4	1.4	5	01:00	4	3	1.0	4	00:50	3	2	0.8	3
SL	00:00	0	0	0	0	00:00	0	0	0	0	00:00	0	0	0	0

Figure 5.12.1 - Time, consumption and descent distance

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5.13 - Holding time

Conditions :

- Landing gear and flaps UP
- IAS = 120 KIAS - BLEED switch on AUTO
- TRQ $\approx$ 26 %

Pressure altitude (feet)	Fuel used during holding time											
	Weight 5500 lbs (2495 kg)						Weight 6300 lbs (2858 kg)					
	10 min			30 min			10 min			30 min		
	l	kg	USG	l	kg	USG	l	kg	USG	l	kg	USG
SL	30	23	7.8	89	70	23.5	30	24	8.0	91	71	24.1
5000	26	21	6.9	79	62	20.8	27	21	7.1	81	64	21.4
10000	24	18	6.2	71	55	18.7	24	19	6.5	73	58	19.4
15000	22	17	5.8	66	51	17.3	23	18	6.0	69	54	18.1
20000	20	16	5.3	60	47	15.9	21	17	5.6	63	50	16.7

Figure 5.13.1 - Holding time

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5.14 - Landing distances

The following tables give the landing distances for several weight configurations.

All common information applicable to tables (pages 5.14.2 to 5.14.4) are listed below.

Associated conditions :

- Landing gear DN and flaps LDG
- Maximum braking without reverse
- Hard, dry and level runway

In table headings :

- GR = Ground roll (in ft)
- D₅₀ = Landing distance (clear to 50 ft) (in ft)

Corrections :

- In case of wind, apply the following corrections :
 - Reduce total distances by 10 % every 10 kts of headwind
 - Increase total distances by 30 % every 10 kts of tail wind
- Other runway surfaces :

Landing distances given in the tables are for landing on hard, dry and level runway. Other runway surfaces require the following correction factors.

Increase distances by :

7 % on hard grass

10 % on short grass

15 % on wet runway

25 % on high grass

30 % on slippery runway

Weight : 7024 lbs (3186 kg)

Associated conditions :

- Approach speed IAS = 85 KIAS
- Touch-down speed IAS = 78 KIAS

Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1575	2135	1675	2265	1740	2330	1840	2430
2000	1675	2265	1805	2395	1870	2495	1970	2590
4000	1805	2395	1940	2560	2035	2660	2135	2790
6000	1940	2560	2100	2725	2200	2855	2300	2955
8000	2100	2725	2265	2920	2360	3020	2495	3180
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1905	2530	2000	2625	2070	2690	2135	2790
2000	2070	2690	2135	2790	2230	2890	2300	2955
4000	2230	2890	2330	2985	2430	3085	2495	3185
6000	2395	3050	2530	3215	2625	3315	2690	3380
8000	2590	3280	2725	3410	2855	3570	2920	3640

Figure 5.14.1 - Landing distances - 7024 lbs (3186 kg)

▲ CAUTION ▲

Refer to page 5.14.1 for correction factors.



Weight : 6250 lbs (2835 kg)

Associated conditions :

- Approach speed IAS = 80 KIAS
- Touch-down speed IAS = 65 KIAS

Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1050	1900	1115	2000	1180	2070	1215	2135
2000	1115	2000	1215	2100	1245	2200	1310	2265
4000	1180	2100	1280	2230	1345	2330	1410	2395
6000	1280	2230	1380	2360	1445	2460	1510	2525
8000	1380	2360	1475	2490	1540	2590	1610	2690
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1280	2200	1310	2300	1380	2360	1445	2430
2000	1345	2330	1410	2430	1475	2495	1540	2560
4000	1445	2460	1510	2560	1575	2655	1640	2755
6000	1575	2645	1640	2720	1705	2820	1770	2920
8000	1705	2790	1770	2885	1835	2985	1900	3085

Figure 5.14.2 - Landing distances - 6250 lbs (2835 kg)

▲ **CAUTION** ▲

Refer to page 5.14.1 for correction factors.



Weight : 5071 lbs (2300 kg)

Associated conditions :

- Approach speed IAS = 80 KIAS
- Touch-down speed IAS = 60 KIAS

Pressure altitude ft	ISA - 35°C		ISA - 20°C		ISA - 10°C		ISA	
	GR	D50	GR	D50	GR	D50	GR	D50
0	885	1900	950	2000	1000	2070	1030	2135
2000	950	2000	1030	2100	1065	2200	1115	2265
4000	1000	2100	1080	2230	1150	2330	1200	2395
6000	1080	2230	1180	2360	1230	2460	1280	2525
8000	1180	2360	1245	2490	1310	2590	1360	2690
Pressure altitude ft	ISA + 10°C		ISA + 20°C		ISA + 30°C		ISA + 37°C	
	GR	D50	GR	D50	GR	D50	GR	D50
0	1080	2200	1115	2300	1180	2360	1230	2430
2000	1150	2330	1200	2430	1245	2495	1310	2560
4000	1230	2460	1280	2560	1345	2655	1395	2755
6000	1345	2645	1395	2720	1445	2820	1510	2920
8000	1445	2790	1510	2885	1560	2985	1610	3085

Figure 5.14.3 - Landing distances - 5071 lbs (2300 kg)

▲ CAUTION ▲

Refer to page 5.14.1 for correction factors.



Section 6

Weight and balance

Table of contents

6.1	-	General	6.1.1
6.2	-	Airplane weighing procedures	6.2.1
6.3	-	Baggage loading	6.3.1
6.4	-	Determining weight and balance	6.4.1
		General	6.4.1
		Utilization of weight and balance graph	6.4.2
		Airplane loading form (m, kg)	6.4.4
		Example of airplane weight and balance report	6.4.8
		Weight and balance form and diagram (m, kg)	6.4.10
		Weight and balance form and diagram (in, lbs)	6.4.13
		Weight and balance samples (m, kg)	6.4.17
		Weight and balance samples (in, lbs)	6.4.12
		Determining empty airplane characteristics	6.4.24
6.5	-	List of equipment	6.5.1

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6.1 - General

This section is intended to provide the pilot with the procedure to determine the weight and balance of the airplane.

▲ WARNING ▲

It is the pilot's responsibility to ensure that the airplane is properly loaded and the weight and balance limits are adhered to.



■ This airplane allows multiple cabin seat configurations between 2 seats and 6 seats, as required by the operator - refer to chapter 7.3.

A list of equipment available for this airplane is referenced at the end of this POH - refer to chapter 6.5.

The list of specific optional equipment installed on your airplane as delivered from the factory can be found in the records carried in the airplane.

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6.2 - Airplane weighing procedures

Refer to maintenance manual for the procedures to use.

• NOTE •

Weighing carried out at the factory takes into account all equipment installed on the airplane. The list of this equipment and the total weight is noted in the individual inspection record.

•

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6.3 - Baggage loading

There are two baggage compartments :

- one in fuselage non pressurized forward section, between firewall and cockpit with maximum baggage capacity of 110 lbs (50 kg),
- one located in the rear of the pressurized cabin with following characteristics :

>> *With 6-seat configuration*

- in the baggage compartment, behind the rear seats, with maximum loading capacity of 220 lbs (100 kg).
- stowing straps are provided for securing parcels and baggage on compartment floor. A partition net separating the cabin from the baggage compartment is attached to frame C14.

>> *With other allowed seat accommodations*

There are two loading areas :

- one in place of the 2 removed rear seats, with maximum loading capacity of 176 lbs (80 kg),
- one, in the baggage compartment, behind the rear seats area, with maximum loading capacity of 220 lbs (100 kg).

Two types of baggage securing nets can be used :

- the small cargo net is attached through nine anchoring points on seat rails, between frame C11 and frame C13bis - refer to section 2 for limitations, Figure 7.2.1B.
- the large cargo net is attached through seven anchoring points on seat rails, between frame C11 and frame C13bis and six anchoring points on fuselage sides, at frame C14 - refer to section 2 for limitations, Figure 7.2.1A.

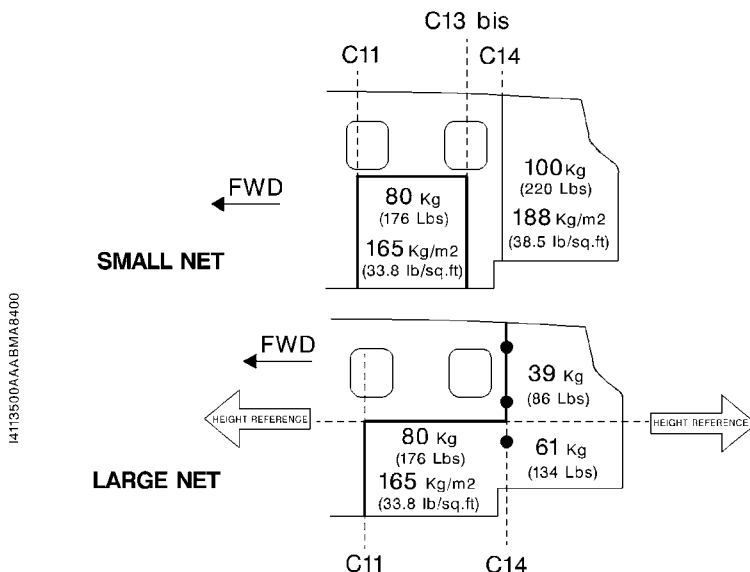


Figure 6.3.1 - Baggage limits

Authorized anchoring points are identified with green self-adhesive labels affixed to the inside of the rail.

A placard indicates loading limits for each securing net.

Evenly distribute the load within the cargo zone and ensure that overall weight is centered.

When using the large net, distribute the weight in each zone, delineated by the step in the floor, according to the zone limits.

>> All

▲ WARNING ▲

It is the pilot's responsibility to check that all parcels and baggages are properly secured in the cabin.

Transport of dangerous product is normally prohibited, however if transport of such product is necessary, it must be performed in compliance with regulations concerning transport of dangerous product and any other applicable regulation.



Baggage compartments loading must be done in accordance with the weight and balance limits of the airplane - refer to section 2 for limitations.

Generally, if rear seats are not used or are removed, first load AFT compartment, then, if required, FWD compartment. If rear seats are used, first load FWD compartment, then, if required, AFT compartment.

Compute and check the weight and balance diagram to ensure the airplane is within the allowable limits.

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6.4 - Determining weight and balance

General

This section is intended to provide the pilot with the procedure to determine the weight and balance of the airplane.

▲ WARNING ▲

It is the pilot's responsibility to ensure that the airplane is properly loaded and that the weight and balance limits are adhered to.



The procedure requires the following data related to the basic characteristics of the empty airplane to be obtained from the last airplane weight and balance report :

- the empty weight, expressed in kg or lbs,
- the moment, expressed in m.kg or in.lbs,
- the CG, expressed in MAC %

If the airplane empty weight has varied since last weight and balance report (for example, due to installation of optional equipment), refer to paragraph Determining empty airplane characteristics to determine new empty weight and the corresponding moment.

Utilization of weight and balance graph

This procedure determines the airplane weight and balance characteristics for flight.

Select the units for the weight and balance determination, either m and kg, or lb and in, and use the dedicated form - see figures 6.4.3 or 6.4.4, appropriate to the chosen units.

- 1) Record the basic empty weight (1a), moment (1b) and CG (MAC %) (1c) from the last weight and balance report - see sample of weight and balance report, figures 6.4.1 and 6.4.2.
- 2) Record the expected loading (2a) and compute each associated moment (2b).
- 3) Compute zero fuel weight (3a) and moment (3b) as sum of all the above weights (1a)+(2a) and moments (1b) + (2b).
- 4) Check value (3a) to be below maximum zero fuel weight.
- 5) Compute zero fuel weight arm (5) and CG (MAC %) (5c) using given formulas.
- 6) Record the loaded fuel (6a) and compute associated moment (6b).
- 7) Compute ramp weight (7a) and moment (7b) as sum of zero fuel weight (3a) + loaded fuel (6a) and moments (3b) + (6b).
- 8) Check value (7a) to be below maximum ramp weight.
- 9) Compute ramp weight arm (9) and CG (MAC %) (9c) using given formulas.
- 10) Record the expected taxi fuel (negative value) (10a) and compute associated moment (10b).
- 11) Compute takeoff weight (11a) and moment (11b) as sum of ramp weight (7a) + taxi fuel (10a) and moments (7b) + (10b).
- 12) Check value (11a) to be below maximum takeoff weight.
- 13) Compute takeoff weight arm (13) and CG (MAC %) (13c) using given formulas.
- 14) Record the expected trip fuel (negative value) (14a) and compute associated moment (14b).
- 15) Compute landing weight (15a) and moment (15b) as sum of takeoff weight (11a) + trip fuel (14a) and moments (11b) + (14b).
- 16) Check value (15a) to be below maximum landing weight.
- 17) Compute landing weight arm (17) and CG (MAC %) (17c) using given formulas.
- 18) Plot zero fuel weight, takeoff weight and landing weight on weight and balance diagram.

- 19) Check that all points are within the weight and balance limits and check that they are vertically aligned.
- 20) Record these data on your navigation log.

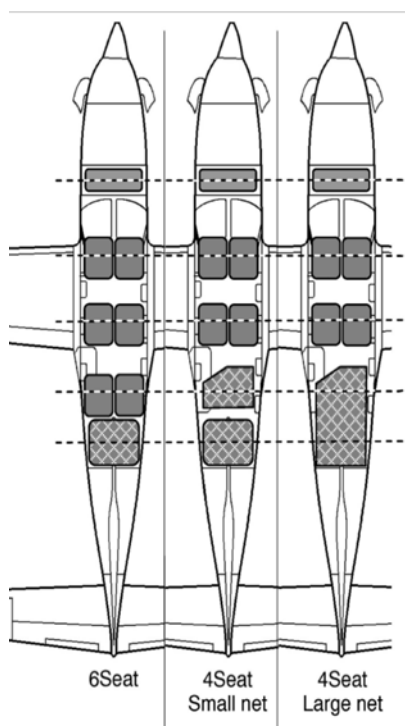
Airplane loading form (m, kg)

$$\text{Moment} = \text{Weight} \times \text{Arm} \qquad \text{CG (MAC \%)} = \frac{(\text{Arm (m)} - 4.392)}{1.51} \times 100$$

>> Up to S/N 1159

Item		Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty weight (kg)		(1a)		(1b)	(1c)
Baggage FWD (< 50 kg)		(2a)	3.250	(2b)	
Front seats (kg)		(2a)	4.534	(2b)	
Inter. seats	-17.5 kg per seat removed	(2a)	5.710	(2b)	
	Pax	(2a)		(2b)	
Rear bench/net	-24 kg per seat removed	(2a)	6.785	(2b)	
	Pax	(2a)		(2b)	
	Cargo (< 80 kg)	(2a)		(2b)	
Baggage AFT (< 100 kg)		(2a)	7.695	(2b)	
Zero fuel weight (< 2736 kg)		(3a)	(5)	(3b)	(5c)
Fuel (kg)		(6a)	4.820	(6b)	
Ramp weight (< 3370 kg)		(7a)	(9)	(7b)	(9c)
Taxi fuel (kg)		(10a)	4.820	(10b)	
Takeoff weight (< 3354 kg)		(11a)	(13)	(11b)	(13c)
Trip fuel (kg)		(14a)	4.820	(14b)	
Landing weight (< 3186 kg)		(15a)	(17)	(17)	(17c)

■ >> Up to S/N 1159



Item		Weight (kg)
Empty weight		(1a)
Baggage FWD	(< 50 kg)	(2a)
Front seats		(2a)
Inter. seats	-17.5 kg per seat removed	(2a)
	Pax	(2a)
Rear bench/net	-24 kg per seat removed	(2a)
	Pax	(2a)
	Cargo (< 80 kg)	(2a)
Baggage AFT	(< 100 kg)	(2a)

6Seat 4Seat Small net 4Seat Large net

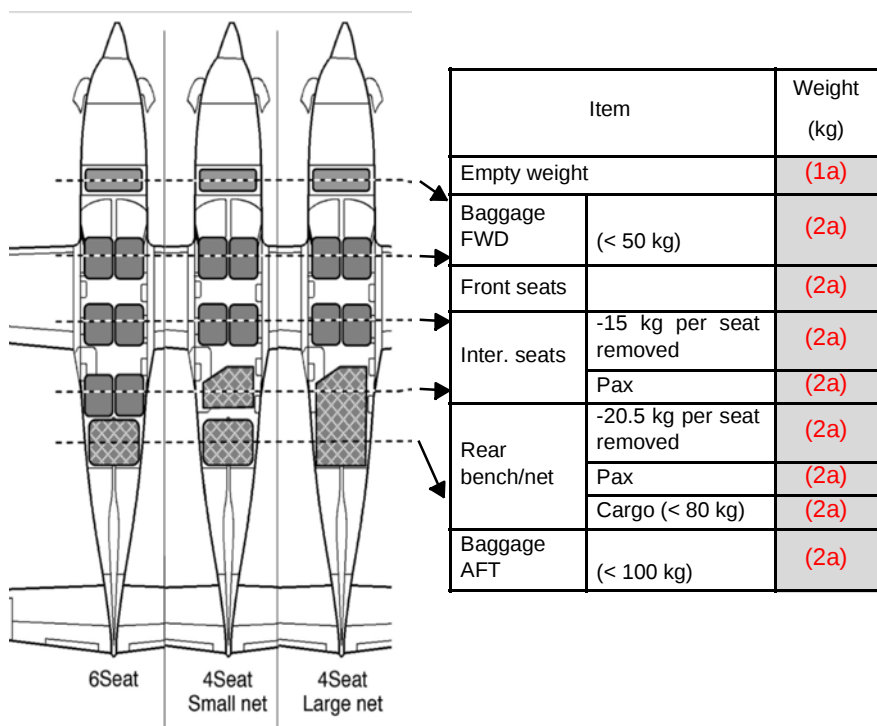
Moment = Weight x Arm

$$CG \text{ (MAC \%)} = \frac{(\text{Arm (m)} - 4.392)}{1.51} \times 100$$

>> From S/N 1160

Item		Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty weight (kg)		(1a)		(1b)	(1c)
Baggage FWD (< 50 kg)		(2a)	3.250	(2b)	
Front seats (kg)		(2a)	4.534	(2b)	
Inter. seats	-15 kg per seat removed	(2a)	5.710	(2b)	
	Pax	(2a)		(2b)	
Rear bench/net	-20.5 kg per seat removed	(2a)	6.785	(2b)	
	Pax	(2a)		(2b)	
	Cargo (< 80 kg)	(2a)		(2b)	
Baggage AFT (< 100 kg)		(2a)	7.695	(2b)	
Zero fuel weight (< 2736 kg)		(3a)	(5)	(3b)	(5c)
Fuel (kg)		(6a)	4.820	(6b)	
Ramp weight (< 3370 kg)		(7a)	(9)	(7b)	(9c)
Taxi fuel (kg)		(10a)	4.820	(10b)	
Takeoff weight (< 3354 kg)		(11a)	(13)	(11b)	(13c)
Trip fuel (kg)		(14a)	4.820	(14b)	
Landing weight (< 3186 kg)		(15a)	(17)	(17)	(17c)

■ >> From S/N 1160



Example of airplane weight and balance report

• NOTE •

Airplane original report shall be kept with airplane POH

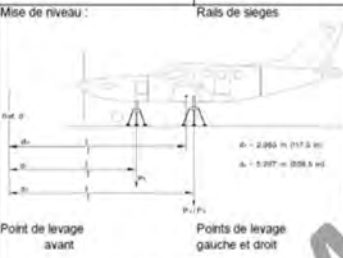
REGISTRE INDIVIDUEL DE CONTROLE INDIVIDUAL INSPECTION RECORD		TBM 700																					
FICHE DE PESEE CONFIGURATION 6 PLACES		S/N : F : 8																					
Mise de niveau : Rats de sieges  Point de levage avant Points de levage gauche et droit		SEULEMENT POUR INFORMATION, SE REFERER A LA LIMITATION DU MANUEL DE VOL SECTION 2 LIMITATION Masse maxi au décollage : 3354 Kg H Masse maxi à l'atterrissage : 3186 Kg H Centrage (trains sortis et volets rentrés) <table border="1"> <tr> <td>2000 Kg</td> <td>14 à 35,5 %</td> </tr> <tr> <td>2835 Kg</td> <td>18 à 35,5 %</td> </tr> <tr> <td>2984 Kg</td> <td>20 à 35,5 %</td> </tr> </table>		2000 Kg	14 à 35,5 %	2835 Kg	18 à 35,5 %	2984 Kg	20 à 35,5 %														
2000 Kg	14 à 35,5 %																						
2835 Kg	18 à 35,5 %																						
2984 Kg	20 à 35,5 %																						
PESEE EFFECTUEE SUR POINTS DE LEVAGE Avion non peint Sans huile moteur <table border="1"> <thead> <tr> <th></th> <th>Masse lue (Kg)</th> <th>Tare (Kg)</th> <th>Masse nette (Kg)</th> </tr> </thead> <tbody> <tr> <td>Point gauche</td> <td>793,5</td> <td></td> <td>P2</td> </tr> <tr> <td>Point droit</td> <td>825</td> <td></td> <td>P3</td> </tr> <tr> <td>Point avant</td> <td>499,5</td> <td></td> <td>P1</td> </tr> <tr> <td>Masse P0 (Kg) =</td> <td>2118,0</td> <td></td> <td></td> </tr> </tbody> </table> $d0 = \frac{(P1 \times d1) + (P2 + P3) \times d2}{P0}$ $d0 = \frac{(499,5 \times 2,985) + (793,5 + 825) \times 5,297}{2118,0} = 4,752$			Masse lue (Kg)	Tare (Kg)	Masse nette (Kg)	Point gauche	793,5		P2	Point droit	825		P3	Point avant	499,5		P1	Masse P0 (Kg) =	2118,0			DISTANCE DU C.G. A LA REFERENCE	
	Masse lue (Kg)	Tare (Kg)	Masse nette (Kg)																				
Point gauche	793,5		P2																				
Point droit	825		P3																				
Point avant	499,5		P1																				
Masse P0 (Kg) =	2118,0																						
CORRECTION <table border="1"> <thead> <tr> <th></th> <th>Masse (Kg)</th> <th>Bras Lever (m)</th> <th>Moment (m * Kg)</th> </tr> </thead> <tbody> <tr> <td>Masse P0</td> <td>2118,0</td> <td>4,752</td> <td>10064,74</td> </tr> <tr> <td>Peinture (2)</td> <td>30</td> <td>4,873</td> <td>146,19</td> </tr> <tr> <td>Huile moteur (3)</td> <td>11,2</td> <td>2,09</td> <td>23,41</td> </tr> <tr> <td>Carburant inconnu. (1a)</td> <td>27,2</td> <td>4,7</td> <td>127,84</td> </tr> </tbody> </table>			Masse (Kg)	Bras Lever (m)	Moment (m * Kg)	Masse P0	2118,0	4,752	10064,74	Peinture (2)	30	4,873	146,19	Huile moteur (3)	11,2	2,09	23,41	Carburant inconnu. (1a)	27,2	4,7	127,84	CENTRAGE A VIDE (EN % DE LA CMA) $CG = \frac{D0 - 4,392}{1,51} \times 100$ $CG = \frac{4,751 - 4,392}{1,51} \times 100 = 23,8$	
	Masse (Kg)	Bras Lever (m)	Moment (m * Kg)																				
Masse P0	2118,0	4,752	10064,74																				
Peinture (2)	30	4,873	146,19																				
Huile moteur (3)	11,2	2,09	23,41																				
Carburant inconnu. (1a)	27,2	4,7	127,84																				
RESULTATS W: 2145,2 D0: 4,751 M: 10192,58 (1b)																							
CALCUL DE L'INDEX DE BASE Cf section 6 du manuel de vol Masse à vide (W) 2145,2 Kg (1a) Centrage à Vide (CG) 23,8 % (1c) Moment (M) : 10192,58																							
1 - Rayer la mention inutile. 2 - Valeur non prise en compte si l'avion était peint lors de la pesée. 3 - Valeur non prise en compte si l'avion a été pesé avec huile.																							
DATE :		VISA DE CONTROLE :																					

Figure 6.4.1 - Example of weight and balance report and basic airplane characteristics, in kg and m

• NOTE •

Airplane original report shall be kept with airplane POH

REGISTRE INDIVIDUEL DE CONTROLE INDIVIDUAL INSPECTION RECORD		TBM 700																																	
WEIGHT AND BALANCE REPORT		S/N :																																	
6-SEAT CONFIGURATION		F : 6																																	
Leveling : Seat rails Front wheel Left and right Wheel points <u>WEIGHING CARRIED OUT ON JACK POINTS</u> Not painted airplane Without engine oil <table border="1"> <thead> <tr> <th></th> <th>Gross Weight (lb)</th> <th>Tare (lb)</th> <th>Net Weight (lb)</th> </tr> </thead> <tbody> <tr> <td>Left point</td> <td>1749.4</td> <td></td> <td>P2</td> </tr> <tr> <td>Right point</td> <td>1818.8</td> <td></td> <td>P3</td> </tr> <tr> <td>Front point</td> <td>1101.2</td> <td></td> <td>P1</td> </tr> <tr> <td colspan="2">Weight P0 (lbs) =</td> <td>4669.4</td> <td></td> </tr> </tbody> </table> $d0 = \frac{(P1 \times d1) + (P2 \times P3) \times d2}{P0}$ $d0 = \frac{(1101.2 \times 117.5) + (1749.4 + 1818.8) \times 208.5}{4669.4} = 187.0$			Gross Weight (lb)	Tare (lb)	Net Weight (lb)	Left point	1749.4		P2	Right point	1818.8		P3	Front point	1101.2		P1	Weight P0 (lbs) =		4669.4		ONLY FOR INFORMATION, REFER TO LIMITATIONS SECTION 2 OF POH <u>LIMITATIONS</u> Maximum take off weight : 7384.3 lbs H Maximum landing weight : 7024 lbs H <u>Balance</u> (landing gears down and flaps up) <table border="1"> <thead> <tr> <th>Weight (lbs)</th> <th>Distance (in)</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>4400</td> <td>14</td> <td>35.5 %</td> </tr> <tr> <td>6250</td> <td>18</td> <td>35.5 %</td> </tr> <tr> <td>6579</td> <td>20</td> <td>35.5 %</td> </tr> </tbody> </table> DISTANCE FROM C.G. TO REFERENCE $CG = \frac{D0 - 173}{59.5} \times 100$ $CG = \frac{187 - 173}{59.5} \times 100 = 23.8$		Weight (lbs)	Distance (in)	%	4400	14	35.5 %	6250	18	35.5 %	6579	20	35.5 %
	Gross Weight (lb)	Tare (lb)	Net Weight (lb)																																
Left point	1749.4		P2																																
Right point	1818.8		P3																																
Front point	1101.2		P1																																
Weight P0 (lbs) =		4669.4																																	
Weight (lbs)	Distance (in)	%																																	
4400	14	35.5 %																																	
6250	18	35.5 %																																	
6579	20	35.5 %																																	
<u>CORRECTIONS</u> <table border="1"> <thead> <tr> <th></th> <th>Weight (lb)</th> <th>Arm (in)</th> <th>Moment (in * lb)</th> </tr> </thead> <tbody> <tr> <td>Weight P0</td> <td>4669.4</td> <td>187.0</td> <td>873360.7</td> </tr> <tr> <td>Paint (2)</td> <td>66.2</td> <td>191.8</td> <td>12697.2</td> </tr> <tr> <td>Engine oil (3)</td> <td>28.7</td> <td>82.3</td> <td>2032.8</td> </tr> <tr> <td>Unusable fuel</td> <td>(1a) 60</td> <td>185</td> <td>11100.0</td> </tr> </tbody> </table> RESULTS: W: 4729.4 (1a) D0: 187 M: 884460.7 (1b)			Weight (lb)	Arm (in)	Moment (in * lb)	Weight P0	4669.4	187.0	873360.7	Paint (2)	66.2	191.8	12697.2	Engine oil (3)	28.7	82.3	2032.8	Unusable fuel	(1a) 60	185	11100.0	<u>BALANCE</u> MAC (%) $CG = \frac{D0 - 173}{59.5} \times 100$ $CG = \frac{187 - 173}{59.5} \times 100 = 23.8$													
	Weight (lb)	Arm (in)	Moment (in * lb)																																
Weight P0	4669.4	187.0	873360.7																																
Paint (2)	66.2	191.8	12697.2																																
Engine oil (3)	28.7	82.3	2032.8																																
Unusable fuel	(1a) 60	185	11100.0																																
<u>BASIC INDEX CALCULATION</u> See section 6 of Pilot's Operating Handbook Empty weight (W) : 4729.4 lb (1a) Balance (CG) : 23.8 % (1c) Moment (M) : 884460.7																																			
1 - Scratch useless mention. 2 - Values not taken into account if the airplane was painted when weighed. 3 - Values not taken into account if the oil tank was full when the airplane was weighed. DATE : INSPECTION VISA :																																			

Figure 6.4.2 - Example of weight and balance report and basic airplane characteristics, in lb and in

Weight and balance form and diagram (m, kg)

Moment = Weight x Arm

$$CG \text{ (MAC \%)} = \frac{(\text{Arm (m)} - 4.392)}{1.51} \times 100$$

■ >> Up to S/N 1159

Item		Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty weight (kg)					
Baggage FWD (< 50 kg)			3.250		
Front seats (kg)			4.534		
Inter. seats	- 17.5 kg per seat removed		5.710		
	Pax				
Rear bench/net	- 24 kg per seat removed		6.785		
	Pax				
	Cargo (< 80 kg)				
Baggage AFT (< 100 kg)			7.695		
Zero fuel weight (< 2736 kg)					
Fuel (kg)			4.820		
Ramp weight (< 3370 kg)					
Taxi fuel (kg)			4.820		
Takeoff weight (< 3354 kg)					
Trip fuel (kg)			4.820		
Landing weight (< 3186 kg)					

Moment = Weight x Arm

$$CG \text{ (MAC \%)} = \frac{(\text{Arm (m)} - 4.392)}{1.51} \times 100$$

■ >> From S/N 1160

Item		Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty weight (kg)					
Baggage FWD (< 50 kg)			3.250		
Front seats (kg)			4.534		
Inter. seats	- 15 kg per seat removed		5.710		
	Pax				
Rear bench/net	- 20.5 kg per seat removed		6.785		
	Pax				
	Cargo (< 80 kg)				
Baggage AFT (< 100 kg)			7.695		
Zero fuel weight (< 2736 kg)					
Fuel (kg)			4.820		
Ramp weight (< 3370 kg)					
Taxi fuel (kg)			4.820		
Takeoff weight (< 3354 kg)					
Trip fuel (kg)			4.820		
Landing weight (< 3186 kg)					

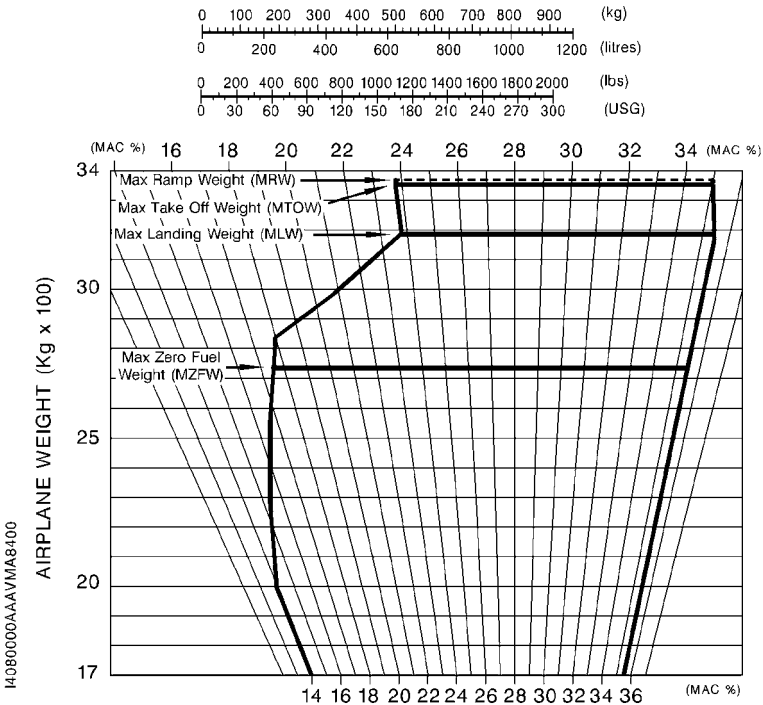


Figure 6.4.3 - Weight and balance diagram

Weight and balance form and diagram (in, lbs)

$$\text{Moment} = \text{Weight} \times \text{Arm} \qquad \text{CG (MAC \%)} = \frac{(\text{Arm (in)} - 172.93)}{59.45} \times 100$$

■ >> Up to S/N 1159

Item		Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (MAC %)
Empty weight (lbs)					
Baggage FWD (< 110 lbs)			128.0		
Front seats (lbs)			178.5		
Inter. seats	- 38.6 lbs per seat removed		224.8		
	Pax				
Rear bench/net	- 52.9 lbs per seat removed		267.1		
	Pax				
	Cargo (< 176 lbs)				
Baggage AFT (< 220 lbs)			303.0		
Zero fuel weight (< 6032 lbs)					
Fuel (lbs)			189.8		
Ramp weight (< 7430 lbs)					
Taxi fuel (lbs)			189.8		
Takeoff weight (< 7394 lbs)					
Trip fuel (lbs)			189.8		
Landing weight (< 7024 lbs)					

Moment = Weight x Arm

$$CG \text{ (MAC \%)} = \frac{(Arm \text{ (in)} - 172.93)}{59.45} \times 100$$

>> From S/N 1160

Item		Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (MAC %)
Empty weight (lbs)					
Baggage FWD	(< 110 lbs)		128.0		
Front seats (lbs)			178.5		
Inter. seats	- 33.1 lbs per seat removed		224.8		
	Pax				
Rear bench/net	- 45.2 lbs per seat removed		267.1		
	Pax				
	Cargo (< 176 lbs)				
Baggage AFT (< 220 lbs)			303.0		
Zero fuel weight (< 6032 lbs)					
Fuel (lbs)			189.8		
Ramp weight (< 7430 lbs)					
Taxi fuel (lbs)			189.8		
Takeoff weight (< 7394 lbs)					
Trip fuel (lbs)			189.8		
Landing weight (< 7024 lbs)					

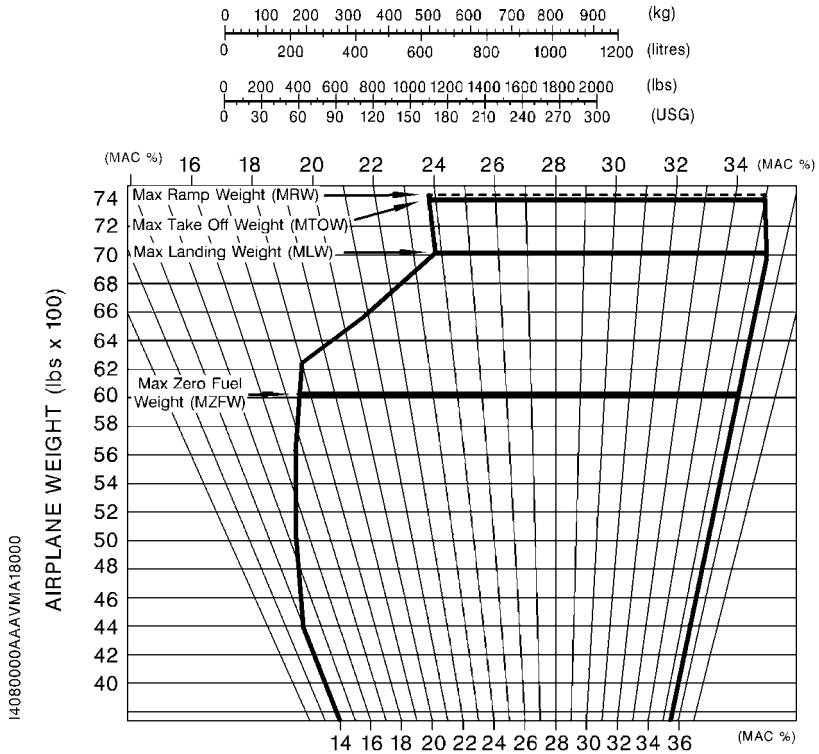


Figure 6.4.4 - Weight and balance diagram

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Weight and balance samples (m, kg)

>> Up to S/N 1159

▲ CAUTION ▲

Loading samples - see figure 6.4.5 or 6.4.6 - are only given as an example ; for calculation concerning your airplane, refer to the diagram corresponding to its validity.



	Fig. 6.4.5
1 - Airplane basic characteristics :	
W = Empty weight	2 126 kg
Moment	10 073 m.kg
Balance arm	4.738 m
CG (MAC %)	22.9 %
2 - Foreseen loading :	
1 Pilot and 1 front passenger	200 kg
2 Rear passengers	160 kg
AFT Cargo in baggage compartment	50 kg
Fuel	820 kg
3 - Foreseen fuel :	
Taxi fuel	- 16 kg
Trip fuel	- 600 kg

Moment = Weight x Arm

$$CG \text{ (MAC \%)} = \frac{(\text{Arm (m)} - 4.392)}{1.51} \times 100$$

■ >> Up to S/N 1159

Item		Weight (kg)	Arm (m)	Moment (m.kg)	CG (MAC %)
Empty weight (kg)		2 126	4.738	10 073	22.9
Baggage FWD (< 50 kg)		0	3.250	0	
Front seats (kg)		200	4.534	907	
Inter. seats	- 17.5 kg per seat removed	0	5.710	0	
	Pax	0		0	
Rear bench/net	- 24 kg per seat removed	0	6.785	0	
	Pax	160		1 086	
	Cargo (< 80 kg)	0		0	
Baggage AFT (< 100 kg)		50	7.695	385	
Zero fuel weight (< 2736 kg)		2 536	4.910	12 451	34.3
Fuel (kg)		820	4.820	3 952	
Ramp weight (< 3370 kg)		3 356	4.888	16 403	32.8
Taxi fuel (kg)		- 16	4.820	- 77	
Takeoff weight (< 3354 kg)		3 340	4.888	16 326	32.8
Trip fuel (kg)		- 600	4.820	- 2 892	
Landing weight (< 3186 kg)		2 740	4.903	13 434	33.8

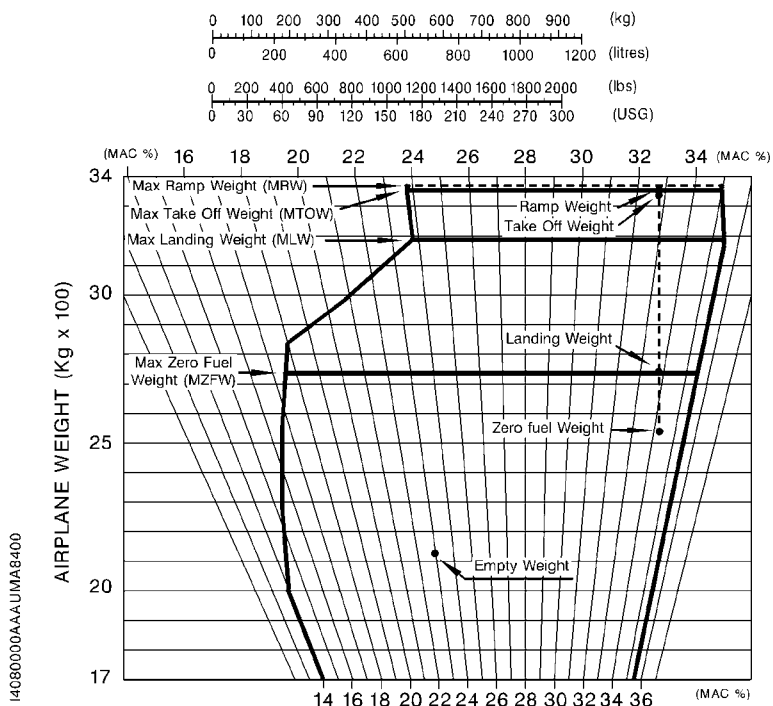


Figure 6.4.5 - Loading sample (in kg and m)

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Weight and balance samples (in, lbs)

>> From S/N 1160

▲ CAUTION ▲

Loading samples - see figure 6.4.5 or 6.4.6 - are only given as an example ; for calculation concerning your airplane, refer to the diagram corresponding to its validity.



	Fig. 6.4.6
1 - Airplane basic characteristics :	
W = Empty weight	4 638 lbs
Moment	864 173 in.lbs
Balance arm	186.3 in
CG (MAC %)	22.6 %
2 - Foreseen loading :	
FWD compartment	0 lbs
1 Pilot and 1 front passenger	400 lbs
1 Intermediate passenger	220 lbs
2 Rear seats removed	- 90.4 lbs
Rear cargo	176 lbs
AFT Cargo in baggage compartment	220 lbs
Fuel	1 850 lbs
3 - Foreseen fuel :	
Taxi fuel	- 36 lbs
Trip fuel	- 1 400 lbs

Moment = Weight x Arm

$$CG \text{ (MAC \%)} = \frac{(\text{Arm (in)} - 172.93)}{59.45} \times 100$$

>> From S/N 1160

Item		Weight (lbs)	Arm (in)	Moment (in.lbs)	CG (MAC %)
Empty weight (lbs)		4 638	186.3	864 173	22.6
Baggage FWD (< 110 lbs)		0	128.0	0	
Front seats (lbs)		400	178.5	71 400	
Inter. seats	- 33.1 lbs per seat removed	0	224.8	0	
	Pax	220		49 456	
Rear bench/net	- 45.2 lbs per seat removed	- 90.4	267.1	- 24 680	
	Pax	0		0	
	Cargo (< 176 lbs)	176		47 010	
Baggage AFT (< 220 lbs)		220	303.0	66 660	
Zero fuel weight (< 6032 lbs)		5 564	193.0	1 074 019	33.8
Fuel (lbs)		1 850	189.8	351 130	
Ramp weight (< 7430 lbs)		7 414	192.3	1 425 149	32.6
Taxi fuel (lbs)		- 36	189.8	- 6 833	
Takeoff weight (< 7394 lbs)		7 378	192.3	1 418 316	32.6
Trip fuel (lbs)		- 1 400	189.8	- 265 720	
Landing weight (< 7024 lbs)		5 978	192.9	1 152 596	33.6

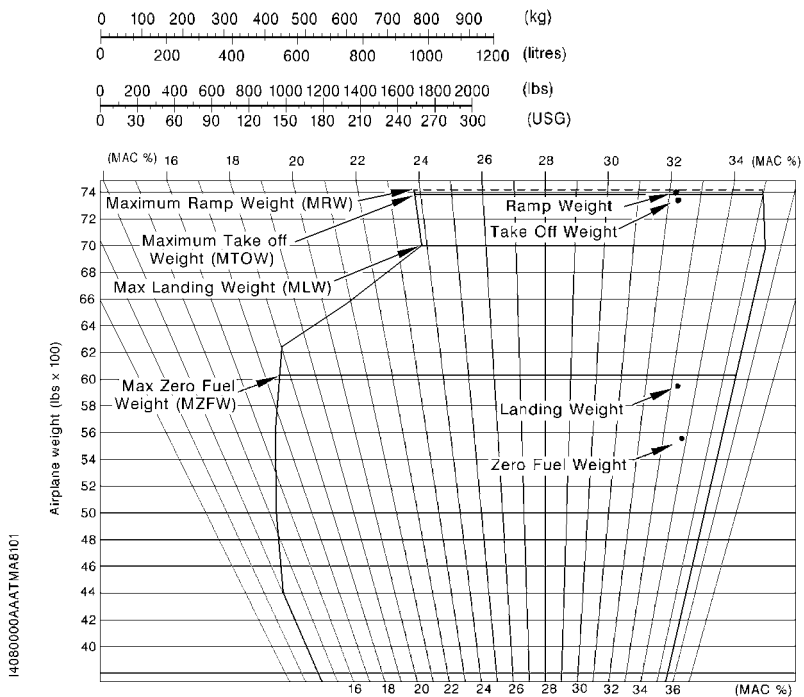


Figure 6.4.6 - Loading samples (in lbs and in)

Determining empty airplane characteristics

Empty airplane characteristics (weight and balance) may vary with regard to those indicated on weighing form according to installed optional equipment and installed seats.

List of equipment (refer to chapter 6.5) contains the standard and optional equipment, as well as their characteristics (weight, arm), except those listed in this Chapter.

Use the chart below to compute new empty weight and corresponding balance if necessary.

Date	Equipment or modification description	(+) (-)	Weight modification			Basic empty weight		
			Weight lb	Arm in.	Moment lb.in/1000	Weight W	Arm "d ₀ "	Moment
	According to delivery							

Figure 6.4.7 - Sample weight and balance record

$$\text{CG m.a.c.\%} = \frac{(\text{d}_0 - 172.93)}{59.45} \times 100$$

Use the above formula to express arm "d₀" in % of mean aerodynamic chord.

• NOTE •

Arm expressed in inches with regard to reference.

•

FWD baggage compartment :	128.0 in. (3.250 m)
Baggage compartment in pressurized cabin :	303.0 in. (7.695 m)
Fuel :	189.8 in. (4.820 m)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		10 - Parking, mooring, storage and return to service		
		Board kit		
S		- Blanking caps bag	8.31 (3.77)	128.00 (3.250)
S		- Towing bar	8.77 (3.98)	128.00 (3.250)
S		- Control lock device	0.90 (0.41)	133.86 (3.400)
		25 - Equipment and furnishings (partial)		
S	0500-25A	- Upholstery 2016 - Carbon finishing 2016	/	/
S	0503-25A	- Upholstery Version 2016, of which :	$\Delta + 2.73$ ($\Delta + 1.24$)	228.30 (5.799)
		· Carpets for 6-place configuration	26.68 (12.100)	/
		· Carpets for 4-place configuration	20.59 (9.340)	/
A	0503-25A	- Generation 2008 cabinets :		
		· L.H. low storage	9.48 (4.300)	203.74 (5.175)
		· R.H. low storage	9.48 (4.300)	203.74 (5.175)
		· L.H. low + high storage	17.20 (7.800)	203.74 (5.175)
		· R.H. low + high storage	17.20 (7.800)	203.74 (5.175)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S	0557-25A	· L.H. low + top pilot case support	9.70 (4.400)	203.74 (5.175)
		· R.H. low + top pilot case support	9.70 (4.400)	203.74 (5.175)
		- Upholstery Version 2017, of which :	Δ Neglig.	/
		· Carpets for 6-place configuration	26.68 (12.100)	/
		· Carpets for 4-place configuration	20.59 (9.340)	/
A	0557-25A	- Generation 2008 cabinets :		
		· L.H. low storage	9.48 (4.300)	203.74 (5.175)
		· R.H. low storage	9.48 (4.300)	203.74 (5.175)
		· L.H. low + high storage	17.20 (7.800)	203.74 (5.175)
		· R.H. low + high storage	17.20 (7.800)	203.74 (5.175)
		· L.H. low + top pilot case support	9.70 (4.400)	203.74 (5.175)
		· R.H. low + top pilot case support	9.70 (4.400)	203.74 (5.175)
S	0207-00	Carpet	35.27 (16.000)	211.42 (5.370)
		- Cabin furnishings	302.45 (137.19)	211.42 (5.370)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		Leather seats		
		>> Up to S/N 1159		
S		- L.H. intermediate seat (back to or in flight direction)	38.58 (17.50)	224.80 (5.710)
		>> From S/N 1160 to S/N 1214		
S	0553-25A	- L.H. intermediate seat (back to or in flight direction)	33.07 (15.00)	224.80 (5.710)
		>> Up to S/N 1159		
S		- RH. intermediate seat (back to or in flight direction)	38.58 (17.50)	224.80 (5.710)
		>> From S/N 1160 to S/N 1214		
S	0553-25A	- R.H. intermediate seat (back to or in flight direction)	33.07 (15.00)	224.80 (5.710)
		>> Up to S/N 1159		
S		- Double chair		
		. L.H. Seat	52.91 (24.00)	278.19 (7.066)
		. R.H. Seat	52.91 (24.00)	278.19 (7.066)
		>> From S/N 1160 to S/N 1214		
S	0553-25	- Double chair		
		. L.H. Seat	45.20 (20.50)	278.62 (7.077)
		. R.H. Seat	45.20 (20.50)	278.62 (7.077)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		Nets		
S	0315-25	- Small cargo net GP SOCT704CC-10	15.00 (7.00)	/
S	0315-25	- Large cargo net GP SOCT704CS-10	13.00 (6.00)	/
S	25026B	- Partition net at Frame 14 (between the cabin and the baggage compartment) T700B2590001, of which	3.638 (1.650)	289.53 (7.354)
S		. Partition net	1.698 (0.770)	289.53 (7.354)

6.5 - List of equipment

■ The list of equipment is available in Report reference NAV No.34/90-RJ-App 4, located at the end of this POH.

A separate list of equipment of items installed at the factory in your specific airplane is provided in your airplane file.

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Section 7

Description

Table of contents

7.1	-	General	7.1.1
7.2	-	Airframe	7.2.1
		Wings	7.2.5
		Ailerons, spoilers and pitch trim tab	7.2.5
		Wing flaps	7.2.5
		Empennages	7.2.5
7.3	-	Accommodations	7.3.1
		Instrument panel	7.3.1
		Doors, windows and emergency exit	7.3.20
		Seats, belts and harnesses	7.3.28
		Baggage compartments	7.3.31
		Use of cargo nets	7.3.34
7.4	-	Flight controls	7.4.1
		Roll	7.4.1
		Roll trim	7.4.1
		Elevator	7.4.6
		Pitch trim	7.4.6
		Rudder	7.4.11
		Rudder trim	7.4.11
7.5	-	Landing gear	7.5.1
		Hydraulic pressure	7.5.1
		Landing gear lever	7.5.1
		Landing gear position indicator	7.5.2
		Safety	7.5.4
		Ground maneuvers	7.5.6
		Brake system	7.5.9
		Parking brake	7.5.9

7.6	-	Powerplant	7.6.1
		Turboprop engine operation	7.6.1
		Engine control levers	7.6.4
		Engine instruments	7.6.7
		Engine lubrication	7.6.7
		Engine starting	7.6.8
		Engine air inlet	7.6.10
		Exhaust system	7.6.10
		Engine accessories	7.6.10
		Propeller	7.6.12
7.7	-	Fuel system	7.7.1
		Fuel tanks	7.7.1
		Fuel unit	7.7.1
		Tank manual selector	7.7.1
		Automatic tank selector	7.7.4
		Electric boost pump (AUX BP)	7.7.5
		Main mechanical boost pump	7.7.8
		Engine fuel system	7.7.8
		Fuel gaging installation	7.7.8
		Fuel system draining and clogging indicator	7.7.9
7.8	-	Electrical system	7.8.1
		Starter generator	7.8.1
		Stand-by generator	7.8.2
		Battery	7.8.2
		Ground power receptacle	7.8.2
		Distribution	7.8.3
		Emergency use	7.8.4
		Indicating	7.8.15
		Protection - safety	7.8.15
		Exterior lighting	7.8.17
		Interior lighting	7.8.20
7.9	-	Air conditioning and pressurization	7.9.1
		Engine bleed air system	7.9.2
		Cabin pressurization control system	7.9.3
		Dual zones environmental control system	7.9.6

Pilot's Operating Handbook

7.10	-	Emergency oxygen system	7.10.1
		Flight above 15000 ft with possible emergency descent	7.10.4
		When required to remain above 15000 ft due to minimum enroute altitude	7.10.5
		Flight between 15000 ft and 10000 ft	7.10.6
		O ₂ smart mike mask, if installed	7.10.7
7.11	-	Air data system and instruments	7.11.1
		Static pressure systems	7.11.1
		Dynamic pressure system	7.11.2
7.12	-	Vacuum system and instruments	7.12.1
		Standby attitude module (MD302)	7.12.1
7.13	-	Ice protection equipment	7.13.1
		Wing and empennage deicing	7.13.1
		Propeller deicing	7.13.2
		Windshield deicing	7.13.2
		Heating of pitots and stall warning sensor (PITOT L HTR and PITOT R & STALL HTR)	7.13.3
		Turbine air inlet protection	7.13.3
7.14	-	Miscellaneous equipment	7.14.1
		Stall warning system	7.14.1
		Static dischargers	7.14.2
		Cabin fire extinguisher	7.14.2
		Autopilot	7.14.2
		GPS	7.14.2
		Weather radar GWX 70	7.14.3
		Emergency locator transmitter	7.14.6
		Lightweight data recorder (LDR 1000), if installed	7.14.7
		ADS-B OUT function	7.14.8
		Flight deck information system (FS 210), if installed	7.14.8
		GARMIN Integrated Flight Deck (GIFD) approaches	7.14.9
		Optional equipment	7.14.11

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7.1 - General

This section provides description and operation of the airplane and its systems.

Some of the equipment described herein is optional and may not be installed in the airplane.

Complete description and operation of the GARMIN integrated flight deck are detailed in the GARMIN Integrated Flight Deck Pilot's Guide. References to this guide are often made all along this section to get more details about some systems.

Details of other optional systems and equipment are presented in section 9 Supplements of the POH.

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7.2 - Airframe - see figures 7.2.1, 7.2.1A and 7.2.1B

This airplane is a six-place, low wing airplane.

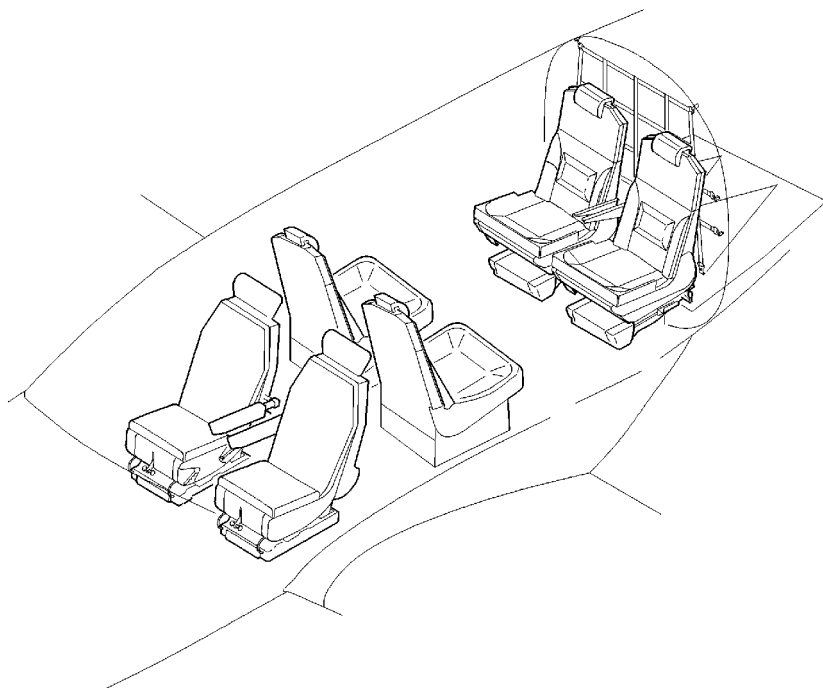
The airplane can be changed into 2, 3, 4 or 5-seat accommodation.

The structure is a semi-monocoque all-metal construction and is equipped with a retractable tricycle landing gear.

The pressurized cabin is equipped, on the left side of fuselage, with a one-piece access door and folding stairs comprising a hand rail allowing pilot and passengers boarding. The occupants have access to cockpit and to rear seats through a central aisle.

An optional pilot door located forward of the cabin on the left side allows access to the cockpit by means of folding stairs.

The aft cabin section is a baggage compartment.



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Figure 7.2.1 - Cabin arrangement
6-seat accommodation

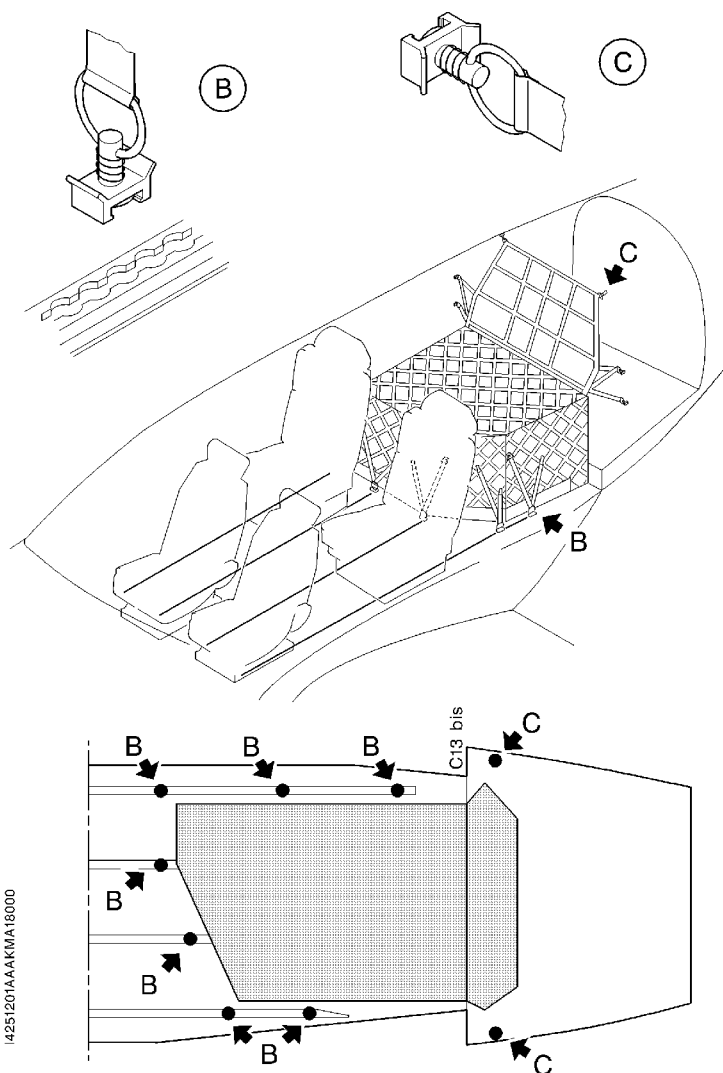


Figure 7.2.1A - Cabin arrangement
4-seat accommodation with large securing net

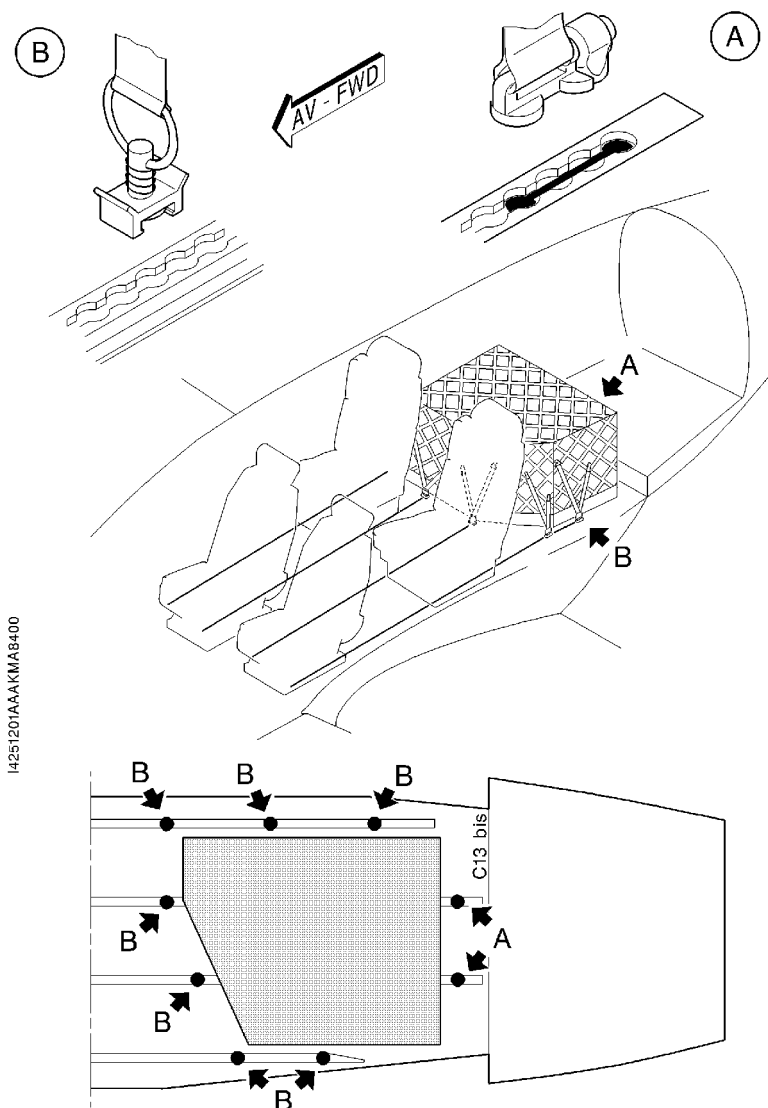


Figure 7.2.1B - Cabin arrangement
4-seat accommodation with small securing net

Wings

The wings are monocoque, bi-spar structures. Main spars of each wing are linked to the fuselage by two integral attach fittings. Each wing contains a main landing gear well and sealed casings forming the fuel tank. The wing leading edge is equipped with a deicing system.

Each wing extremity is equipped with a winglet.

Ailerons, spoilers and pitch trim tab

The ailerons located on external trailing edge of each wing are hinged on two attach fittings fixed on the rear spar. They allow airplane lateral control and are controlled mechanically through control wheel rotation.

The spoilers located in front of flaps, on top skin side, are mechanically linked to the ailerons.

Trim tab attached on the trailing edge of L.H. aileron is electrically activated by a trim knob, through an actuator.

Wing flaps - see figure 7.2.2

The wing flaps are large span slotted flaps with a single rotation point. They are activated by actuating rod-controlled screw jacks linked to an electric motor located under the floor, inside the fuselage.

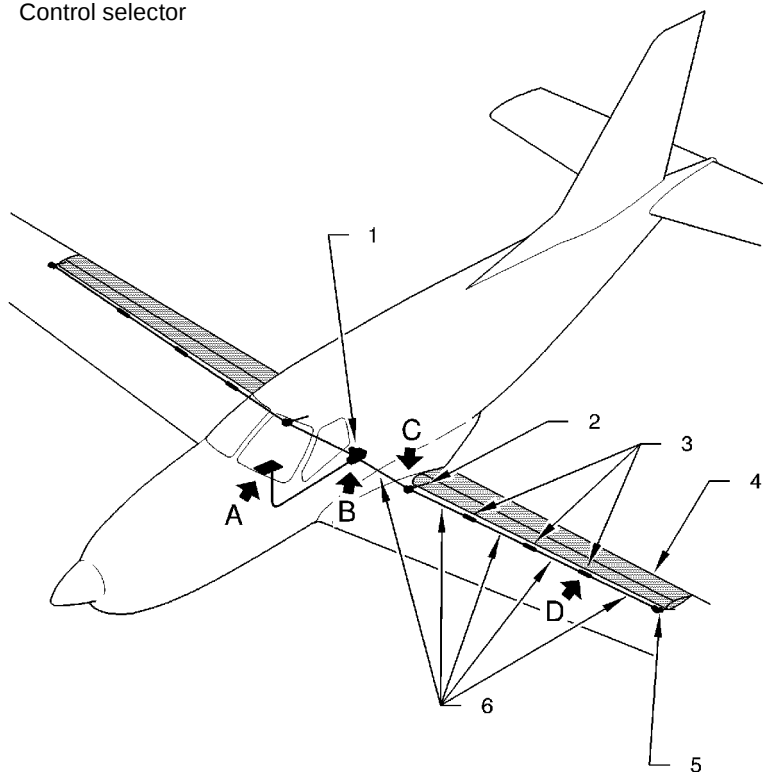
A preselection control located on the right side of pedestal console allows the pilot to select one of the three positions (UP - TO - LDG). For each control position, a deflection angle is defined (0°, 10°, 34°).

A monitoring device interrupts flaps movement as soon as a deflection dissymmetry is detected.

Empennages

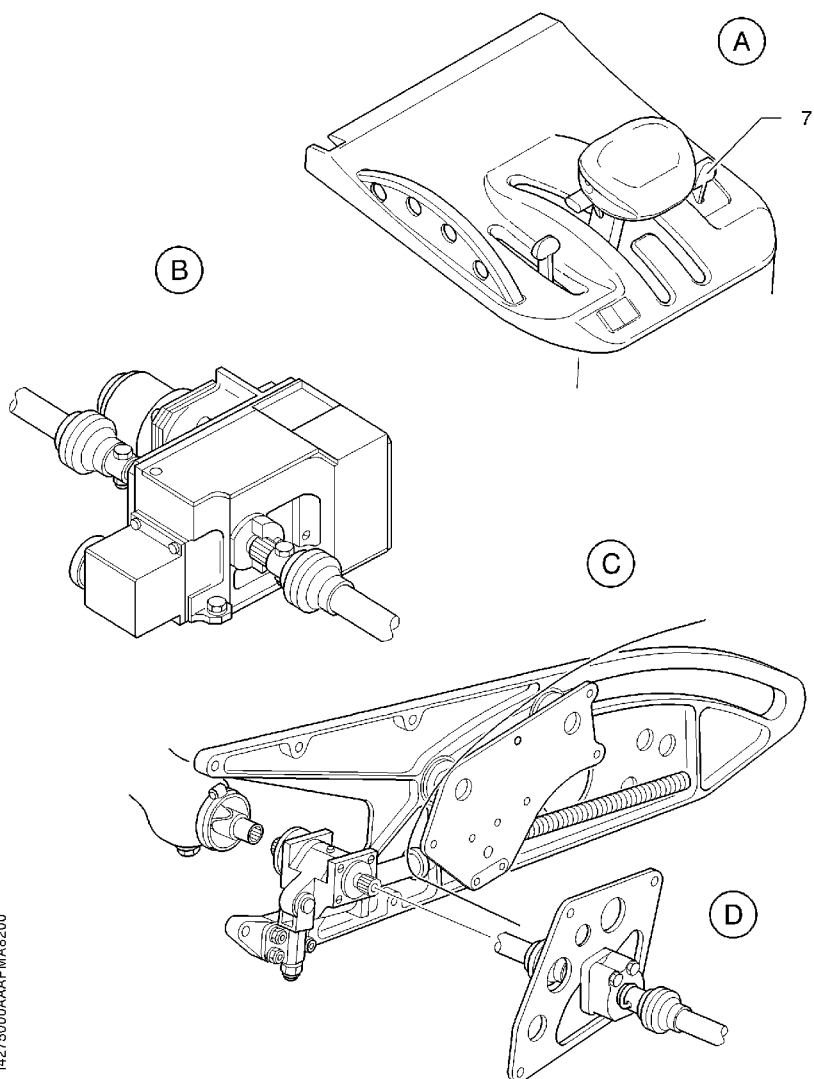
Empennages are composite structures. The horizontal empennage consists of a horizontal stabilizer (PHF), control surfaces and elevator trim tabs ; the vertical empennage consists of a vertical stabilizer, the rudder and the rudder trim tab. The empennage leading edge is equipped with a deicing system.

- 1) Geared motor
- 2) Internal actuator
- 3) Intermediate bearings
- 4) Wing flap
- 5) External actuator
- 6) Rods
- 7) Control selector



14275000/AAAAA/MA8003

Figure 7.2.2 (1/2) - Wing flaps



14275000AAAPMA8200

Figure 7.2.2 (2/2) - Wing flaps

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7.3 - Accomodations

Instrument panel

The instrument panel contains instruments and controls necessary for flight monitoring. The typical instrument panel consists of all standard equipment, as well as additional optional equipment.

Upper panel - see figure 7.3.2

The upper panel located at the top part of the windshield, contains electrical generation control panels, engine starting, ancillary electrical systems, AP/TRIMS switch, ELT remote control switch and the FUEL control panel.

Rearwards of upper panel, the central part of cockpit overhead panel provides loud-speakers and cockpit floodlights.

Instrument panel - see figure 7.3.1

The instrument panel consists of the integrated flight deck composed of three screens [two primary flight displays (PFD) and one multi-function display (MFD)] - refer to the GARMIN pilot's guide for detailed description. Apart from the GARMIN flight deck system, equipment listed below complete the instrument panel.

- Left area instrument panel includes - see figure 7.3.3 :
 - . on top : MD302, MASTER CAUTION and MASTER WARNING,
 - . on the left : DISPLAY BACKUP push-button, and A/C CONTROL panel,
 - . at bottom : deicing controls and indicators, MICRO/MASK switch, hourmeter (Post-MOD70-0533-31A), landing gear control panel, parking brake control and left station control wheel.
- Central area instrument panel includes - see figure 7.3.4 :
 - . on top : surmounted by the stand-by compass, AFCS control unit, BARO knobs and the LVL push-button
 - . at bottom : touchscreen controllers and PRESSURIZATION panel.
- Right area instrument panel includes - see figure 7.3.5 :
 - . on top : locations for optional equipment,
 - . on the right: DISPLAY BACKUP push-button,
 - . at bottom : alternate static source selector and the right station control wheel.

- Emergency air control is located under the right area instrument panel.

>> *Before digital hourmeter installation (Pre-MOD70-0533-31A)*

An hourmeter is located above circuit breakers panel.

>> *All*

An adjustable air outlet is located on both sides of instrument panel lower part.

Reception-micro jacks are located inside the recess under the arm-rest on both lateral sides of the cockpit, on R.H. side of intermediate R.H. passenger's seat and on the arm-rest of rear R.H. passenger's seat.

Pedestal console - see figure 7.3.6

The pedestal console, under the touchscreen controllers, comprises flaps controls, pitch trim tab control wheel, aileron trim switch, engine controls and fuel tank selector.

Circuit breakers panel - see figures 7.3.7 and 7.8.4

Circuit breakers for all electrical equipment supplied by bus bars are located on a separate panel installed on the right side of cockpit.

General alarms warning lights and CAS messages

WARNING and **CAUTION** messages appear on the MFD CAS window to alert crew about monitored systems discrepancies. As a message appears, a chime is heard. Refer to the GARMIN pilot's guide to know all possible CAS messages.

A **MASTER WARNING** red flashing indicator and a **MASTER CAUTION** amber indicator located on instrument panel - see figure 7.3.8, in front of the pilot, illuminate as soon as one or several messages of same color light on.

To cancel and reset a general alarm, press on the red or amber indicator. A pressure on the red indicator also stops red message associated chimes.

Aural warnings - see figure 7.3.2

The aural warnings are intended to alert the pilot during some configurations. The aural signals are heard through the loud-speakers installed in cockpit overhead panel and through the pilot's and R.H. station headsets.

The aural warnings consist of :

- the GARMIN flight deck system (GIA and GMA),
- the loud-speaker.

The system uses :

- the stall warning system,

Pilot's Operating Handbook

- the airspeed indicator,
- the landing gear control unit,
- the flap geared motor,
- the idle position sensor.

Aural warning alerts

According to the airplane configuration, different aural warning alerts sound :

- gear up and idle → landing gear / landing gear
- gear up and extended flaps → landing gear / landing gear
- stall → stall / stall
- gear up, idle and stall → stall / landing gear
- gear up, extended flaps and stall → stall / landing gear
- IAS > 269 ± 3 KIAS → overspeed / overspeed

Refer to the GARMIN pilot's guide for description of the other aural warning alerts.

Cockpit overhead panel - see figure 7.3.2

This panel includes following elements :

- the loud-speaker of GMA,
- the TEST push-button,
- the emergency lighting rheostat.

It is attached to the cabin upper part between frames C6 and C7.

The emergency lighting rheostat is electrically supplied by BATT BUS bar and protected by PANEL EMER circuit breaker.

The TEST push-button allows to test :

- the autopilot control panel backlighting,
- the MASTER WARNING and MASTER CAUTION indicators,
- the deicing panel led,
- the stick shaker system,
- the fire detection system, if installed,
- the stall aural warning alert,
- the DISPLAY BACKUP push-buttons backlighting,
- the LVL push-button.

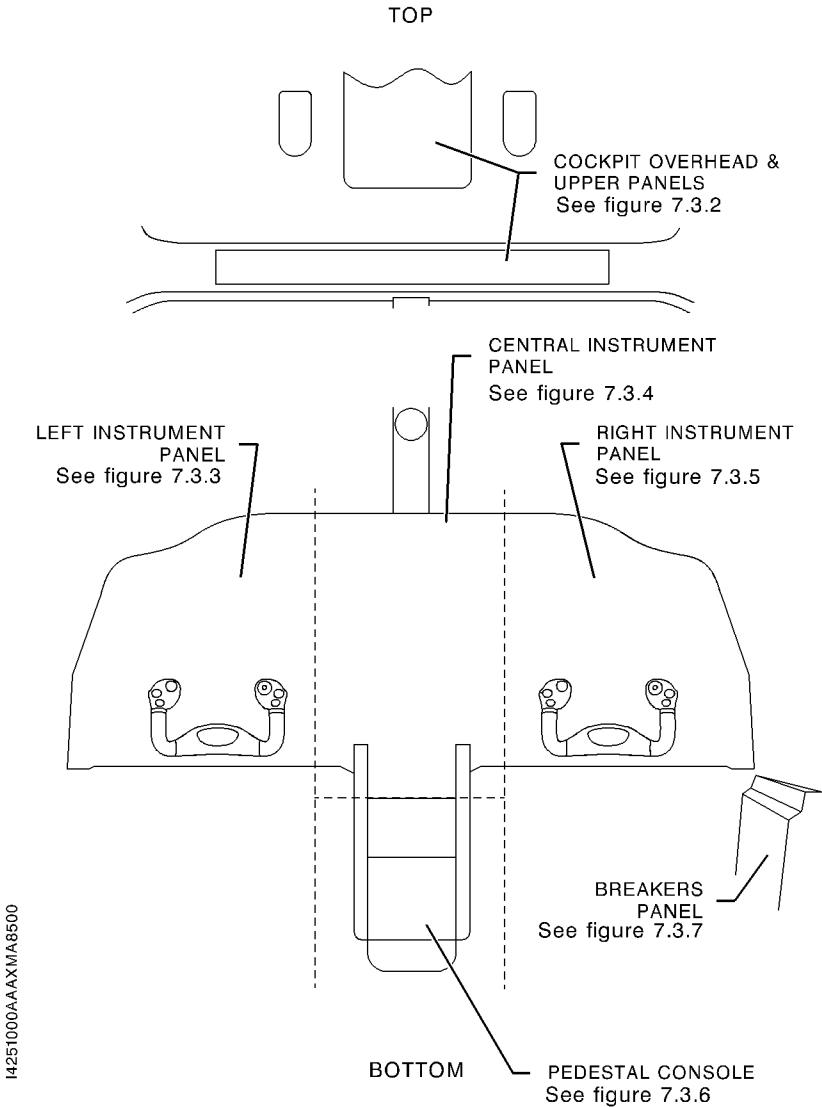


Figure 7.3.1 - Instrument panel assembly
(Typical arrangement)

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- 1) L.H. instrument panel emergency lighting
- 2) Loud-speaker of GMA
- 3) R.H. instrument panel emergency lighting
- 4) Instrument panel emergency lighting switches (rheostats)
- 5) R.H. cockpit floodlight
- 6) ELT remote control switch
- 7) AP/TRIMS switch
- 8) FUEL control panel - see figure 7.7.3
- 9) ENGINE START switches - see figure 7.6.4
- 10) ELECTRIC POWER switches - see figure 7.8.5
- 11) INT LIGHTS internal lighting switches - see figure 7.8.7
- 12) EXT LIGHTS external lighting switches - see figure 7.8.6
- 13) L.H. cockpit floodlight
- 14) TEST push-button

Figure 7.3.2 (1/2) - Upper panel and cockpit overhead panel

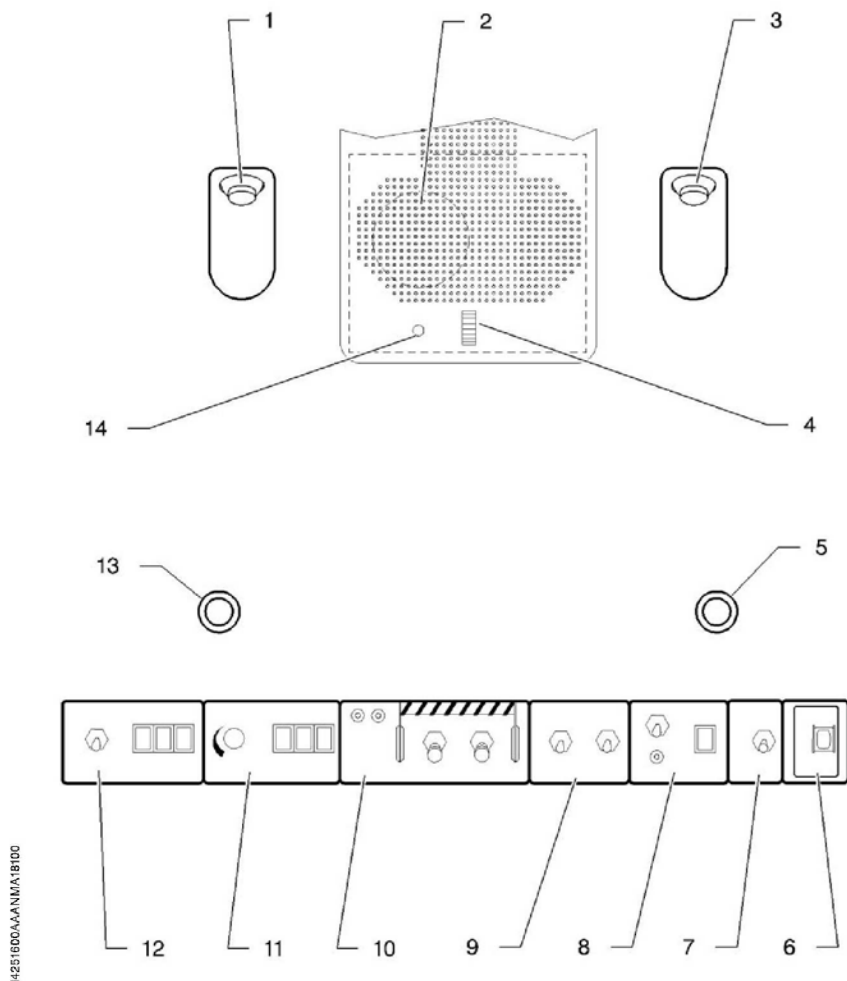


Figure 7.3.2 (2/2) - Upper panel and cockpit overhead panel

- 1) DISPLAY BACKUP and A/C CONTROL panels - see figure 7.9.2
- 2) General alarm red and amber indicators
- 3) PFD 1
- 4) MD302
- 5) Landing gear configuration and control panel - see figure 7.5.1
- 6) Parking brake control - see figure 7.5.6
- 7) Left station control wheel tube
- 8) Deicing control and check panel - see figure 7.13.1
- 9) L.H. station rudder pedals adjusting handle
- 10) Left station reception-micro jacks
- 11) Pitch & Yaw trim setting management
- 12) Push To Talk button (PTT)
- 13) AP / TRIM DISC push-button
- 14) CWS
- 15) Paper clip
- 16) Chronometer management
- 17) Transponder Ident sequence
- 18) Stormscope clear
- 19) COM 2 (Stand-by / active)
- 20) Flight conditions and instruction placard
- 21) Adjustable air outlet
- 22) Circuit breaker panel lighting switch
- 23) MICRO / MASK switch - see figure 7.10.1
- >> *After digital hourmeter installation (Post-MOD70-0533-31A)*
- 24) Hourmeter
- >> *After servicing plugs installation (Post-MOD70-0531-25)*
- 25) USB servicing plug

Figure 7.3.3 (1/2) - Left instrument panel



Figure 7.3.3 (2/2) - Left instrument panel
(Typical arrangement)

- 1) Stand-by compass
- 2) BARO knobs
- 3) Registration
- 4) AFCS control unit
- 5) Touchscreen controllers
- 6) PRESSURIZATION panel - see figure 7.9.1
- 7) MFD
- 8) Micro LDR
- 9) LVL push-button

Figure 7.3.4 (1/2) - Central instrument panel



Figure 7.3.4 (2/2) - Central instrument panel
(Typical arrangement)

>> Up to S/N 1159

- 1) PFD 2
- 2) DISPLAY BACKUP push-button
- 3) Right station control wheel tube
- 4) Crew music
- 5) Adjustable air outlet
- 6) Right station reception-micro jacks
- 7) Hourmeter
- 8) R. H. station rudder pedals adjusting handle
- 9) Circuit breakers panel postlight
- 10) Cigar lighter and two USB servicing plugs
- 11) Cabin emergency air control (EMERGENCY RAM AIR control knob)
- 12) Static source selector
- 13) COM 2 (Stand-by / active)
- 14) Stormscope clear
- 15) Transponder Ident sequence
- 16) Chronometer management
- 17) Paper clip
- 18) CWS
- 19) AP / TRIM DISC push-button
- 20) Push To Talk button (PTT)
- 21) Pitch & Yaw trim setting management

Figure 7.3.5 (1/2) - Right instrument panel



Figure 7.3.5 (2/2) - Right instrument panel
(Typical arrangement) - Up to S/N1159

>> From S/N 1160

- 1) PFD 2
- 2) DISPLAY BACKUP push-button
- 3) Right station control wheel tube
- 4) Crew music
- 5) Adjustable air outlet
- 6) Right station reception-micro jacks
- 7) R. H. station rudder pedals adjusting handle
- 8) Circuit breakers panel postlight
- 9) USB servicing plugs
- 10) Cabin emergency air control (EMERGENCY RAM AIR control knob)
- 11) Static source selector
- 12) COM 2 (Stand-by / active)
- 13) Stormscope clear
- 14) Transponder Ident sequence
- 15) Chronometer management
- 16) Paper clip
- 17) CWS
- 18) AP / TRIM DISC push-button
- 19) Push To Talk button (PTT)
- 20) Pitch & Yaw trim setting management

Figure 7.3.5A (1/2) - Right instrument panel



Figure 7.3.5A (2/2) - Right instrument panel
(Typical arrangement) - From S/N1160

- 1) THROTTLE
- 2) FLAPS lever
- 3) THROTTLE friction adjustment
- 4) Manual FUEL TANK SELECTOR - see figure 7.7.2
- 5) Roll trim tab control
- 6) MAN OVRD emergency fuel regulation lever
- 7) Pitch trim tab control
- 8) Lock for access door to landing gear emergency pump - see figure 7.5.2

Figure 7.3.6 (1/2) - Pedestal console

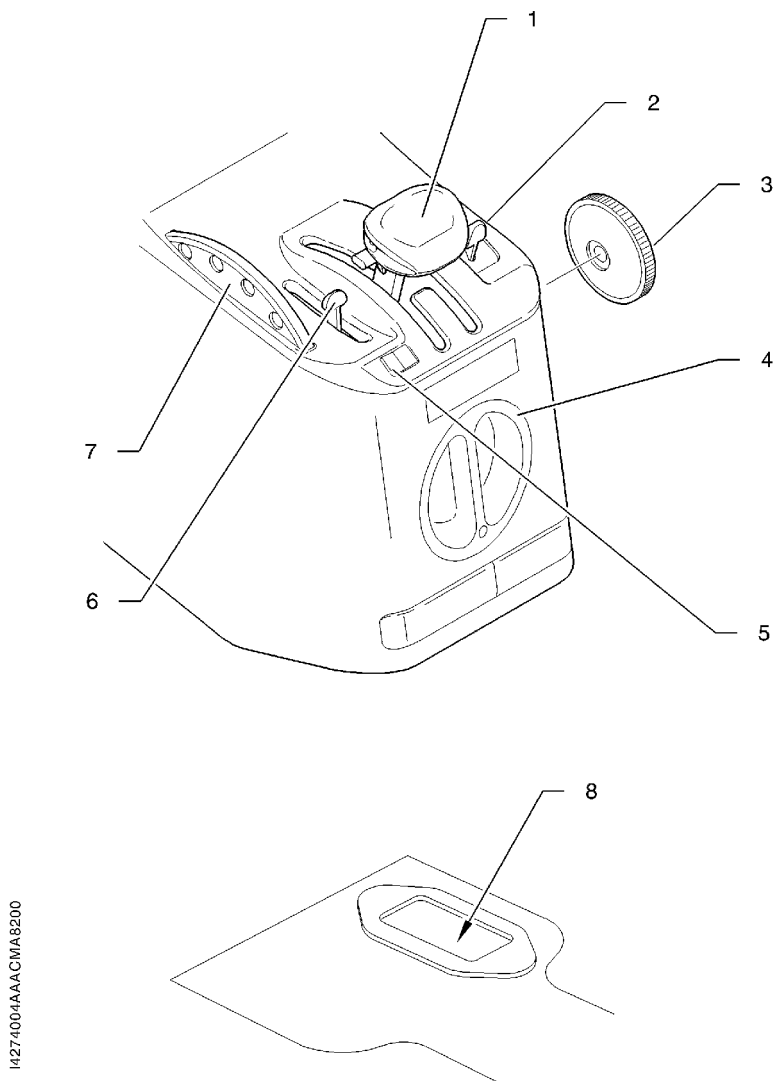
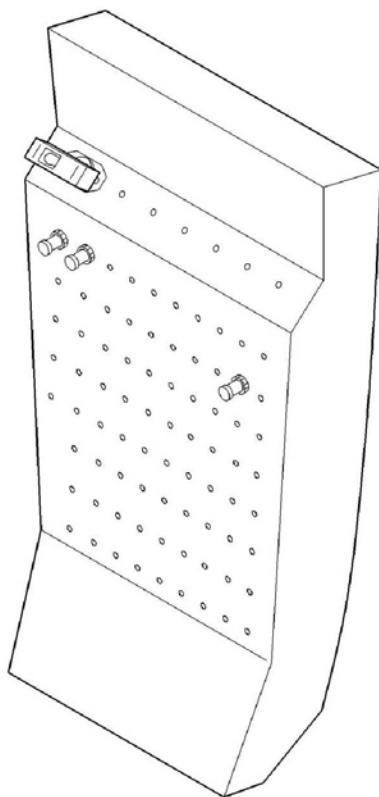
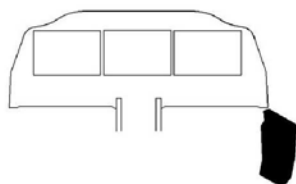


Figure 7.3.6 (2/2) - Pedestal console
(Typical arrangement)



14255004AAAPMA8200

Figure 7.3.7 - Circuit breakers panel



Figure 7.3.8 - General alarms warning lights

Doors, windows and emergency exit

Cabin access door - see figure 7.3.9

The cabin one-piece access door, located on the left side of fuselage aft of the wings, opens outside. The retractable stairs and hand rail make boarding easier.

To open the door from outside the airplane (make sure the door is not locked), press on front end of the handle embedded in door (this pressure disengages the handle from its recess), then turn the handle upwards. Raise the door helping it to open. Two compensation actuators bring and maintain the door at its maximum opening position.

After door opening, tilt stairs downwards. Stairs down movement is damped by means of two gas struts and leads the hand rail to extend.

▲ CAUTION ▲

Retract stairs before closing access door and make sure door deflection area is clear.



To retract stairs, press on locking pin located on stairs front string board (see detail 1), raise retractable handle - see detail 2 and pull stairs inside cabin. While stairs are retracted, the hand rail folds up.

To close the door from inside the airplane, press on knob inside cabin forward of the door. The door driven by a geared motor tilts downwards up to a position near the complete closing. Pull the door until it aligns with fuselage and lock it by moving inside handle downwards. Check that all latch pins and hooks are correctly engaged (visible green marks).

DOOR lights on as long as cabin access door and pilot access door, if installed, are not correctly locked.

▲ CAUTION ▲

Before opening access door, make sure door deflection area is clear.



To open door from inside the cabin, unlock the handle by pressing on knob located on its left side, pull the handle toward inside and move it upwards. Open the door by pushing it upwards.

After door opening, tilt stairs downwards which leads the hand rail to extend.

▲ CAUTION ▲

Retract stairs before closing access door and make sure door deflection area is clear.

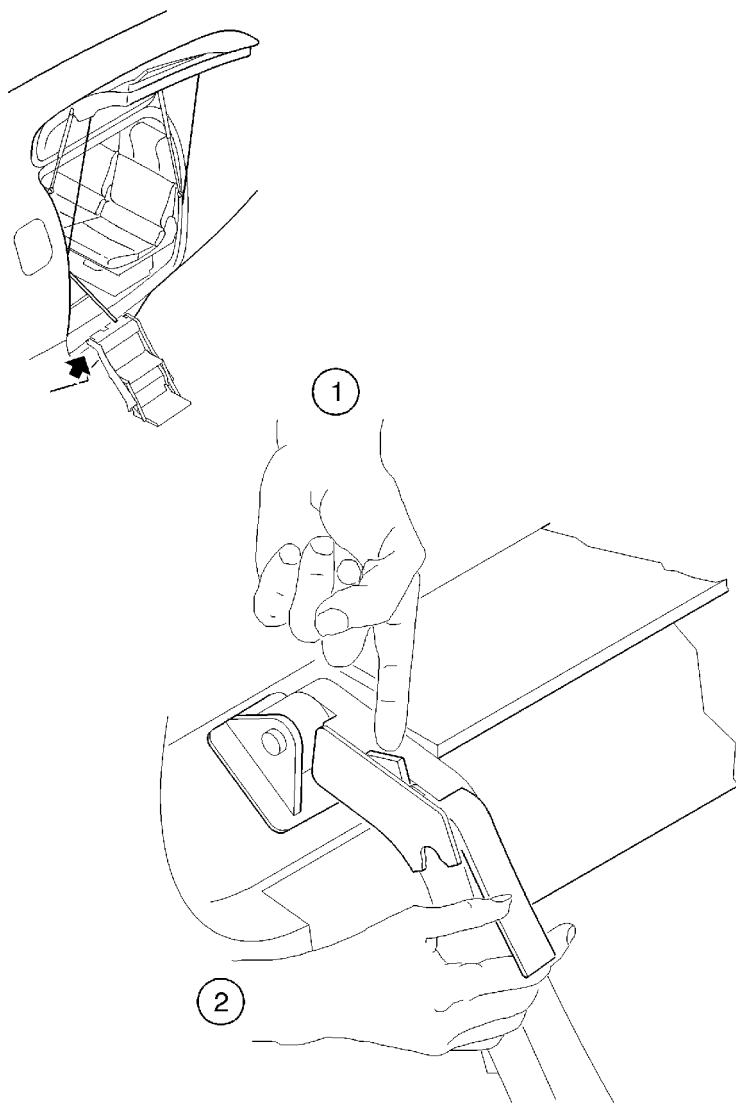


To retract stairs from outside the airplane, raise stairs by pushing them upwards from the lower part and fold them inside cabin. While stairs are retracted, the hand rail folds up.

To close the door from outside the airplane, press on knob on outside fuselage at the right side of the door. The door driven by a geared motor tilts downwards up to a position near the complete closing. Push the door until it aligns with fuselage and lock it by moving outside handle downwards, then fold handle in its recess.

Check that all latch pins and hooks are correctly engaged, with green marks visible.

In case of geared motor failure, the door can be manually tilted downwards by pulling sufficiently to override action of compensating struts.



14523000AAA FMA8001

Figure 7.3.9 - Cabin access door

Cockpit access door - see figure 7.3.9A

The cockpit access door, so-called pilot door, if installed located on the left side of fuselage forward of the wings, opens outside. Retractable footstep makes boarding easier.

▲ WARNING ▲

As the pilot door is located in a dangerous area, wait for complete engine stop before operating this door.



To open the door from outside the airplane (make sure the door is not locked), press on front end of the handle embedded in door (this pressure disengages the handle from its recess), then turn the handle downwards. Pull the door helping it to open until it reaches its maximum opening position.

After door opening, tilt and unfold footstep.

▲ CAUTION ▲

Retract footstep before closing access door.



Fold and tilt footstep upwards.

To close the door from inside the airplane, pull the door until it aligns with fuselage and lock it by moving inside handle downwards. Check that each latch is correctly engaged in its recess, with green marks visible.

DOOR lights on as long as cabin access door and pilot access door, if installed, are not correctly locked.

To open door from inside the cockpit, unlock the handle by pressing on knob located on its right side, pull the handle inwards and move it upwards. Open the door helping it to open until it reaches its maximum opening position.

After door opening, tilt and unfold footstep.

▲ CAUTION ▲

Retract footstep before closing access door.



Fold and tilt footstep upwards.

To close the door from outside the airplane, push the door until it aligns with fuselage and lock it by moving outside handle upwards, then fold handle in its recess.

FWD compartment door

The FWD compartment door is located on the airplane left side between the firewall and the front pressure bulkhead. It is hinged at the top. It is maintained in the up position by a compensation rod. Two interlocking-type latches ensure its closing and it is equipped with a lock (same key as for the access door and the pilot door, if installed). When the door is closed, latches are flush with the fuselage profile.

FRONT CARGO DOOR lights on as long as FWD compartment door is not locked.

Windows

Windows do not open. The windshield consists of two parts electrically deiced.

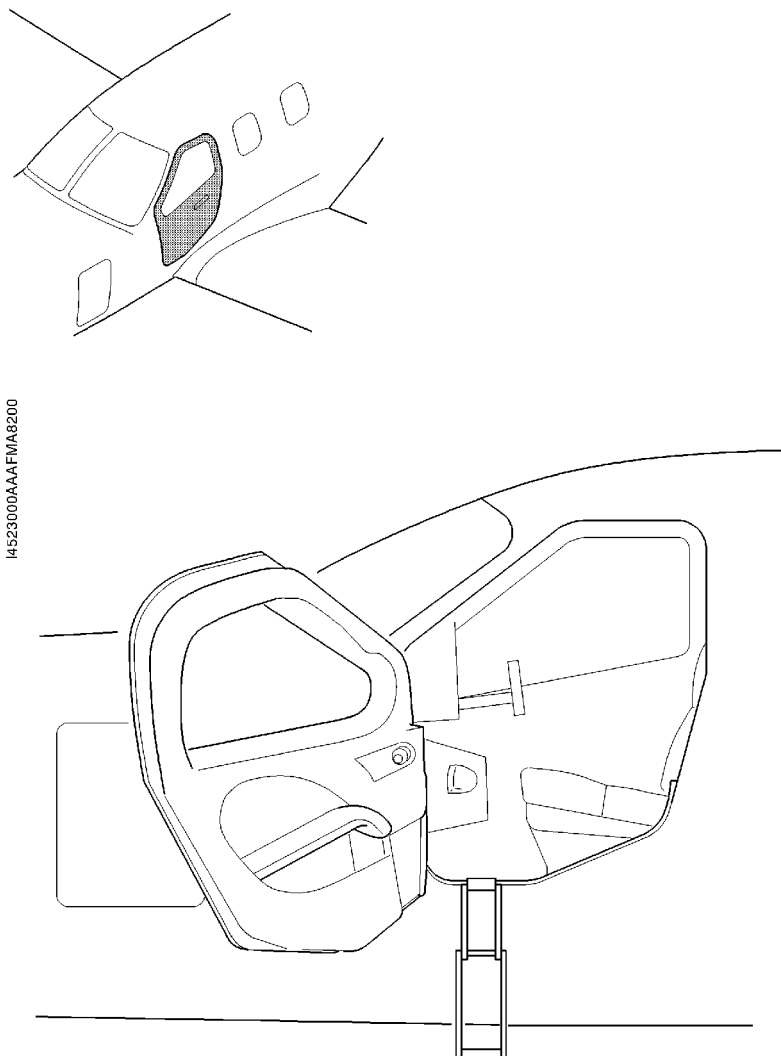


Figure 7.3.9A - Cockpit access door (pilot door)

Emergency exit - see figure 7.3.10

The emergency exit is installed on the right side of the fuselage and opens towards the inside. It is equipped with two handles, one inside and the other outside, each located on the upper frame.

When the airplane is parked, the closing system may be locked by a safety pin provided with a flag marker. The handle is then inoperable.

▲ WARNING ▲

Taxiing and flying with thief-proof safety pin installed is forbidden.



To open the emergency exit, pull one of the two handles and tilt the emergency exit from top to bottom towards inside of airplane.

>> Pre-MOD70-0793-25

▲ CAUTION ▲

Before opening the emergency exit from the inside of the airplane, remove the upholstery panel of the emergency exit.

Using the two hands, pull firmly the upholstery panel through the access area to the opening handle - see figure 7.3.10A.



>> All

Emergency exit - see figure 7.3.10

The emergency exit is installed on the right side of the fuselage and opens towards the inside. It is equipped with two handles, one inside and the other outside, each located on the upper frame.

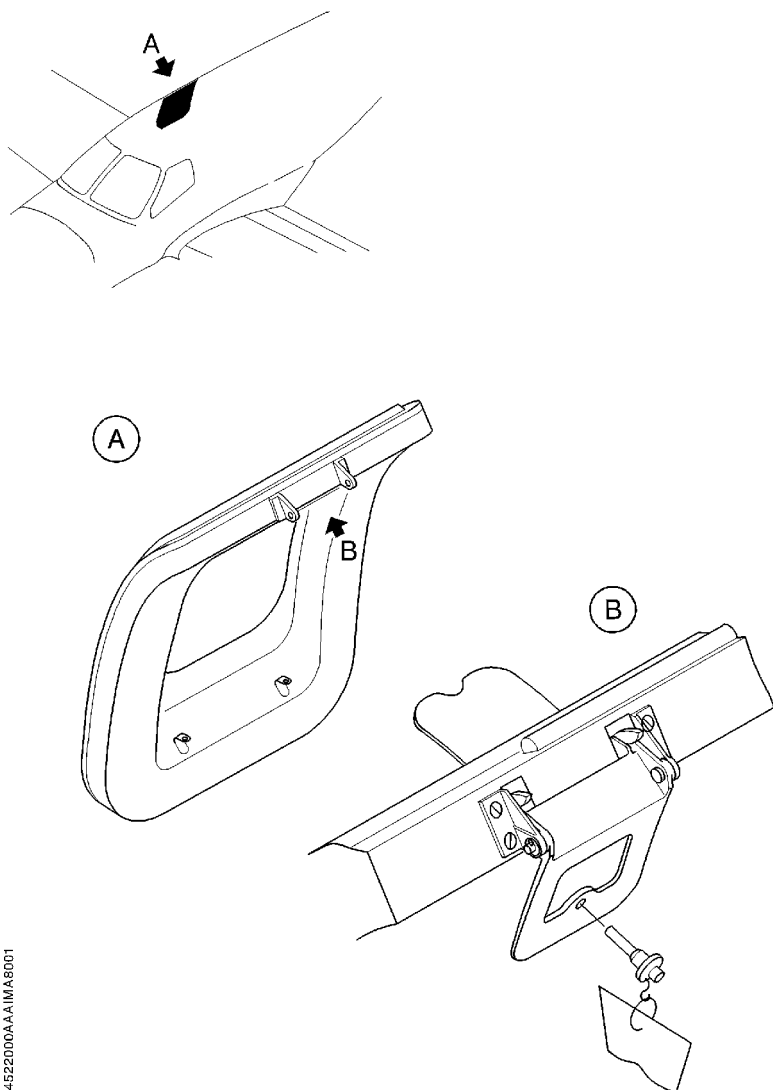
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To open the emergency exit, pull one of the two handles and tilt the emergency exit from top to bottom towards inside of airplane.

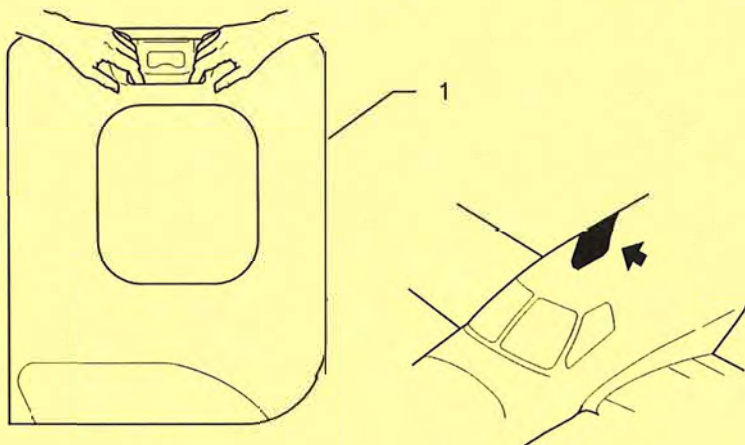


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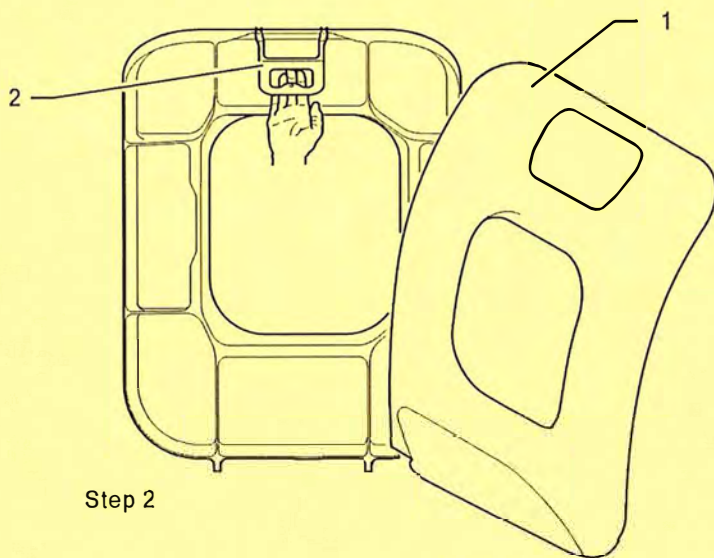
Figure 7.3.10 - Emergency exit

>> Pre-MOD70-0793-25

- 1) Upholstery panel
- 2) Opening handle



Step 1



Step 2

Figure 7.3.10A - Removal of the upholstery panel of the emergency exit



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■ >> **All**

Seats, belts and harnesses

Cockpit seats - see figure 7.3.11

L.H. and R.H. front seats are mounted on rails attached to the structure. Longitudinal position, height and back-rest tilting of each seat can be adjusted and the arm-rest is hinged.

Pull up the handle located forward for longitudinal setting.

The seat height is adjusted by pulling up side forward handle while relieving the seat from the body weight.

The seat back angle is adjusted by pulling up side rearward handle.

Passenger seats - see figures 7.3.11 and 7.3.11A

>> With 6-seat accommodation

The accommodation consists of :

- two individual seats, installed back to the flight direction, mounted on the same rails as the front seats.
The seat back angle is adjusted by pulling up side handle.
- two rear seats arranged as a bench, mounted on the same rails as the front seats.
The seat back-rests tilt forward by pulling up the handle located forward on L.H. side of each seat which may tilt forwards by pulling up a rear handle to ease baggage loading in baggage compartment.
For longitudinal setting pull up the handle located forward, on R.H. side.

>> With 4-seat accommodation

The accommodation consists of :

- two individual seats, installed facing flight direction, mounted on the same rails as the front seats.
The seat back angle is adjusted by pulling up side handle.

Many accommodations are possible. They are described hereafter

Seats, belts and harnesses

Cockpit seats - see figure 7.3.11

L.H. and R.H. front seats are mounted on rails attached to the structure. Longitudinal position, height and back-rest tilting of each seat can be adjusted and the arm-rest is hinged.

Pull up the handle located forward for longitudinal setting.

The seat height is adjusted by pulling up side forward handle while relieving the seat from the body weight.

The seat back angle is adjusted by pulling up side rearward handle.

Passenger seats - see figures 7.3.11 and 7.3.11A

>> *With 6-seat accommodation*

The accommodation consists of :

- two individual seats, installed back to the flight direction, mounted on the same rails as the front seats.
The seat back angle is adjusted by pulling up side handle.
- two rear seats arranged as a bench, mounted on the same rails as the front seats.
The seat back-rests tilt forward by pulling up the handle located forward on L.H. side of each seat which may tilt forwards by pulling up a rear handle to ease baggage loading in baggage compartment.
For longitudinal setting pull up the handle located forward, on R.H. side.

>> *With 4-seat accommodation*

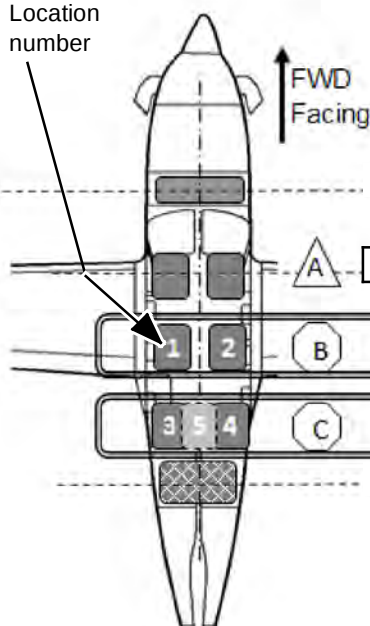
The accommodation consists of :

- two individual seats, installed facing flight direction, mounted on the same rails as the front seats.
The seat back angle is adjusted by pulling up side handle.

Many accommodations are possible. They are described hereafter

ONLY zone **B** and zone **C** can be modified for seat configurations

Location
number



For all configurations, verify that your luggages are stowed and attached in the appropriate areas

Fwd baggage zone

Pilot zone: No modification allowed

MID Seat Zone = Possibility of seat configuration

REAR Seat Zone = Possibility of seat configuration if no net installations

Cargo zone

If installed, cabinets can be removed or added by Service Center

For the MID Seat zone **B**

ONLY the Middle Seats can be installed in MID Seat Zone.

This zone accepts Fwd and Aft Facing Mid Seat when rear seats are installed

The zone **B** accepts zero or 1 or 2 seats.

(The zone **B** is not a luggage area).

Location number	FWD Facing	AFT Facing	Number of seat can be installed
1	YES	YES	1 or 0
2	YES	YES	1 or 0

For the REAR Seat zone **C**

ONLY the Rear Seat can be installed in Rear Seat Zone.

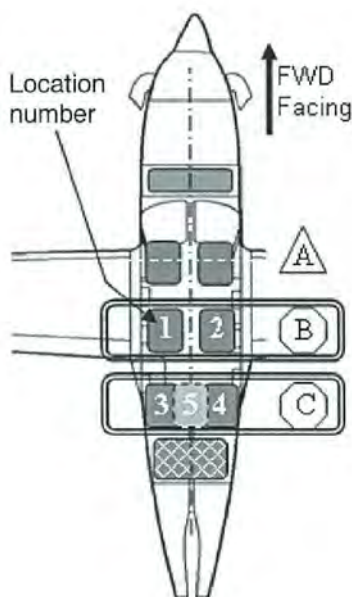
The Zone **C** accepts zero or 1 or 2 seats.

Location number	FWD Facing	Number of seat can be installed
3	YES	1 or 0
4	YES	1 or 0
5 *(1)	YES *(1)	1 or 0 *(1)

*(1) Centered on the fuselage axis

Here are all the configurations possibilities

Configuration name	Location number				
	1	2	3	4	5
C1	X	X	X	X	
C2	X	X			X
C3	X	X		X	
C4 ⁽¹⁾	X	X			
C5	X	X	X		
C6	X		X	X	
C7	X		X		
C8	X			X	
C9	X				X
C10 ⁽¹⁾	X				
C11		X	X	X	
C12		X			X
C13		X	X		
C14		X		X	
C15 ⁽¹⁾		X			
C16			X	X	
C17			X		
C18				X	
C19					X
C20 ⁽¹⁾					
	Zone (B)		Zone (C)		



(1) This configuration accepts small net or large net

Each cross indicates that you have a seat at the correspondent location number.

Belts and harnesses - see figure 7.3.12

▲ WARNING ▲

Incorrect closure of the safety belt may introduce a risk. Make sure it is tightened when buckled. To be most efficient, the belt must not be twisted. Check that there is no constraint when operated. After a serious accident, replace all belts.



Each cockpit seat is equipped with a four-point restraint system consisting of an adjustable lap belt and a dual-strap inertia reel-type shoulder harness with airbags, if installed.

Each passenger seat is equipped with a three-point restraint system consisting of an adjustable lap belt and an inertia reel-type shoulder harness.

Airbags, if installed, are inflated by two inflators located under the backrest fairing, which are activated by an accelerometer fixed under the floor panel in front of the seat.

Baggage compartments

>> *With 6-seat accommodation*

There are two baggage compartments :

- An AFT compartment located in the pressurized cabin between rear passenger seats and rear pressure bulkhead.
- A FWD compartment (non-pressurized) located between firewall and fwd pressure bulkhead.

The AFT compartment is accessible through the cabin by tilting forward the L.H. rear seat and / or L.H. or R.H. rear seat back-rests. Rings fitted with lashing straps are provided for securing parcels and baggage on compartment floor.

The FWD compartment is accessible by opening the external door located on the left side of the airplane.

These locations are designed for the carrying of low density loads ; loading and unloading must be carried out with caution to avoid any damage to airplane.

The cabin is separated from the baggage compartment by a partition net intended to protect the passengers from injuries that could be caused by improper tie-down of a content.

The partition net is mounted at frame C14 - see figure 7.2.1, it is secured at the bottom to 4 points of the floor and on the sides to 6 points of the structure.

Maximum loads allowable in the baggage compartments depend on airplane equipment, refer to section 6 Weight and balance.

▲ **WARNING** ▲

Any parcel or baggage must be stowed by straps.

It is the pilot's responsibility to check that all the parcels and baggage are properly secured in the cabin.

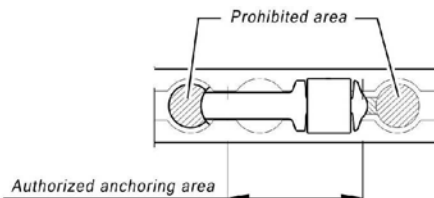
In case of transport of dangerous materials, respect the law concerning transport of dangerous materials and any other applicable regulation.



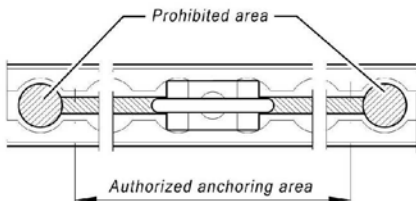
>> *With 4-seat accommodation*

Two cargo nets are available for the pilot to safely secure and transport baggage :

- the small cargo net is attached through nine anchoring points on seat rails, between frame C11 and frame C13bis - see figure 7.2.1B.



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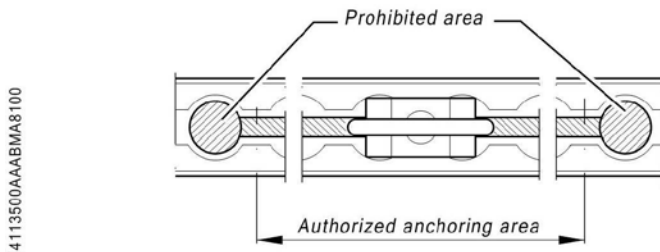


- the large cargo net is attached through seven anchoring points on seat rails, between frame C11 and frame C13bis and six anchoring points on fuselage sides, at frame C14 - see figure 7.2.1A.

● **NOTE** ●

Original partition net must be disconnected from side walls and placed on the floor.





Authorized anchoring points are identified with green self-adhesive labels affixed to the inside of the seat rail.

A placard indicates loading limits for each cargo net :

- for the small cargo net, it is affixed on frame C13bis,
- for the large cargo net, it is affixed on R.H. side upholstery panel, in the rear baggage compartment.

Maximum loads allowable in the baggage compartments depend on airplane equipment, refer to section 6 Weight and balance.

▲ WARNING ▲

Any parcel or baggage in cabin must be stowed by cargo net and straps.

It is the pilot's responsibility to check that all the parcels and baggage are properly secured.

In case of transport of dangerous materials, respect the law concerning transport of dangerous materials and any other applicable regulation.



Use of cargo nets

Net inspection

Before each use, visually inspect net for :

- webbing condition,
- seam condition of tensioning strap,
- metallic part condition.

Installation instructions

Tensioning straps must be installed so that they make a V with a minimum angle of 40° between both strands attached on the net. The net must be properly tight.

Damage acceptance criteria

If any damage is detected, such as :

- damage or absence of hook, buckle or stud on tensioning strap : strap must **mandatorily** be discarded and replaced,
- webbing frayed or cut on less than 30 % of its surface : reduce maximum load by 50 %,
- seam of vertical net tensioning straps damaged on less than 30 % of its length : reduce maximum load by 50 %,
- seam of tensioning straps attached on the rails damaged on less than 30 % of its length : reduce maximum load by 50 %,
- beyond 30% damage for above-mentioned cases, defective element must mandatorily be discarded and replaced,
- netting cut or torn on less than 3.9 in (100 mm) : still serviceable, no impact,
- netting cut or torn on more than 3.9 in (100 mm) : do not carry small objects which dimensions are smaller than 4.9 x 4.9 x 4.9 in (125 x 125 x 125 mm).

>> *With 6-seat accommodation*

- 1) Front passenger seat
- 2) L. H. pilot seat
- 3) R. H. intermediate passenger seat, back to flight direction
- 4) L. H. intermediate passenger seat, back to flight direction
- 5) R. H. rear passenger seat
- 6) L. H. rear passenger seat
- 7) Front seat(s) longitudinal shift control
- 8) Front seat(s) height control
- 9) Front seat(s) back-rest tilt control
- 10) Drawer for pilot's piddle pak, if installed
(front side : new bags, rear side : used bags)
- 11) Intermediate seat(s) back-rest tilt control
- 12) Rear bench seat(s) back-rest tilt control
- 13) Rear bench L.H. seat tilt control
- 14) Rear bench seat(s) adjustment control handle

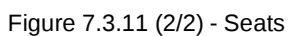
• NOTE •

To have access to the baggage compartment, pull forwards the back-rest of rear bench L.H. seat, then pull forwards control (Item 13) to tilt L.H. seat assembly forwards.

If necessary, pull forwards the back-rest of rear bench R.H. seat.

•

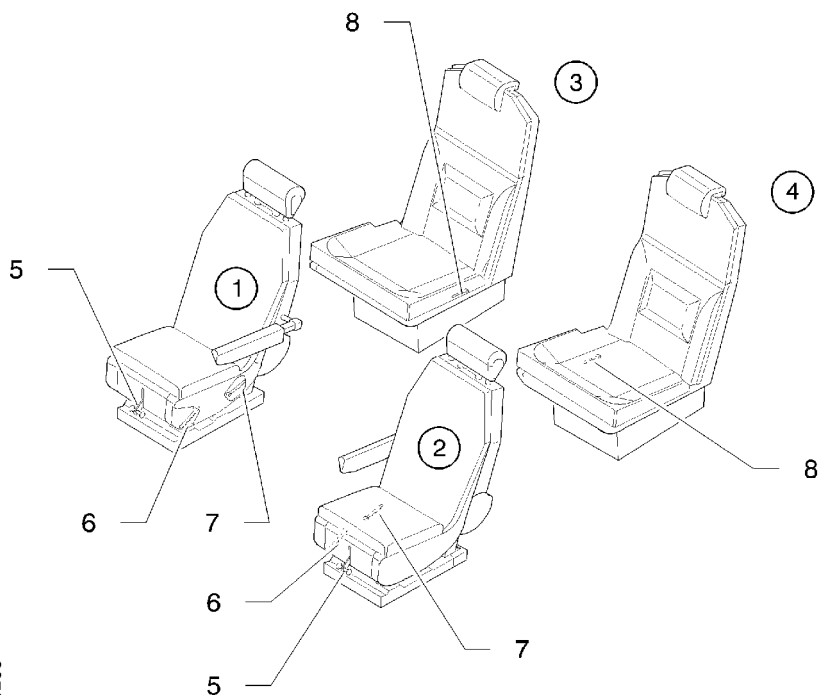
Figure 7.3.11 (1/2) - Seats



>> *With 4-seat accommodation*

- 1) Front passenger seat
- 2) L. H. pilot seat
- 3) R. H. intermediate passenger seat, facing flight direction
- 4) L. H. intermediate passenger seat, facing flight direction
- 5) Front seat(s) longitudinal shift control
- 6) Front seat(s) height control
- 7) Front seat(s) back-rest tilt control
- 8) Intermediate seat(s) back-rest tilt control

Figure 7.3.11A (1/2) - Seats



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Figure 7.3.11A (2/2) - Seats

>> All

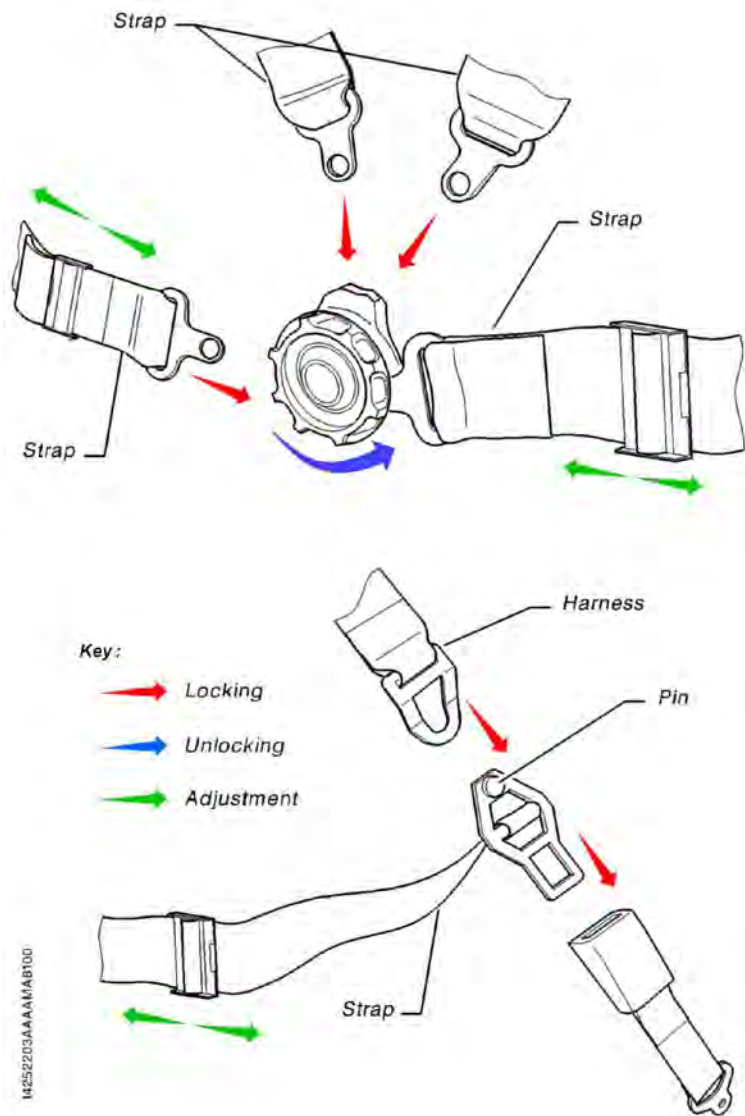


Figure 7.3.12 - Front and rear seat belts, with movable straps, and harnesses

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7.4 - Flight controls

Flight controls consist of roll, pitch and rudder controls, as well as roll trim tab, pitch trim tab and rudder trim tab controls.

• NOTE •

During airplane parking, it is recommended to lock flight controls -
see figure 8.6.2

•

Roll - see figure 7.4.1

The roll control is activated by an assembly of rods and cables which links control wheels with the ailerons and the spoilers.

Aileron displacement is combined with that of spoilers, located at upper surface of each wing forward of flaps.

The spoiler rises from wing upper surface profile, when the aileron is deflected upwards and remains in wing profile, when the aileron is deflected downwards.

Control wheel movement is transmitted through rods to fuselage roll lever located under the floor. The movement is then transmitted through cables to the spoiler mechanism and from the spoiler mechanism to wing roll lever which activates the aileron through a rod.

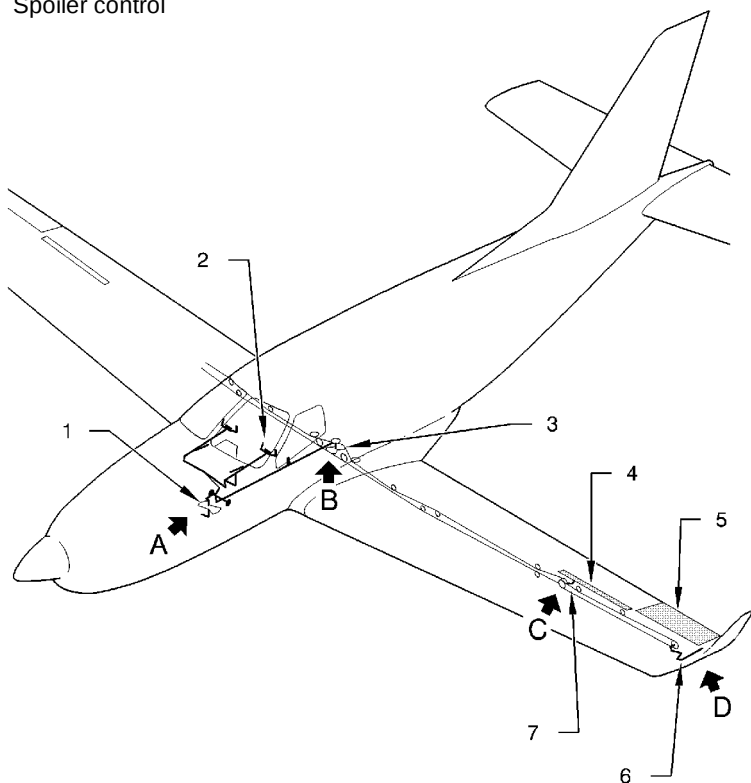
A rudder / roll combination spring-type system induces roll deflection at the time of pedals movement and vice versa.

Roll trim - see figure 7.4.2

The roll trim is controlled by a trim tab attached at trailing edge of the L.H. aileron. The trim tab is connected through two links to an electric actuator located in the aileron. A trim switch located on pedestal controls the roll trim tab maneuver.

Roll trim tab electrical circuit is protected by the AIL TRIM breaker.

- 1) Pedestal assembly
- 2) Control wheels
- 3) Fuselage roll lever
- 4) Spoiler
- 5) Aileron
- 6) Aileron control in wing
- 7) Spoiler control



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Figure 7.4.1 (1/2) - Roll

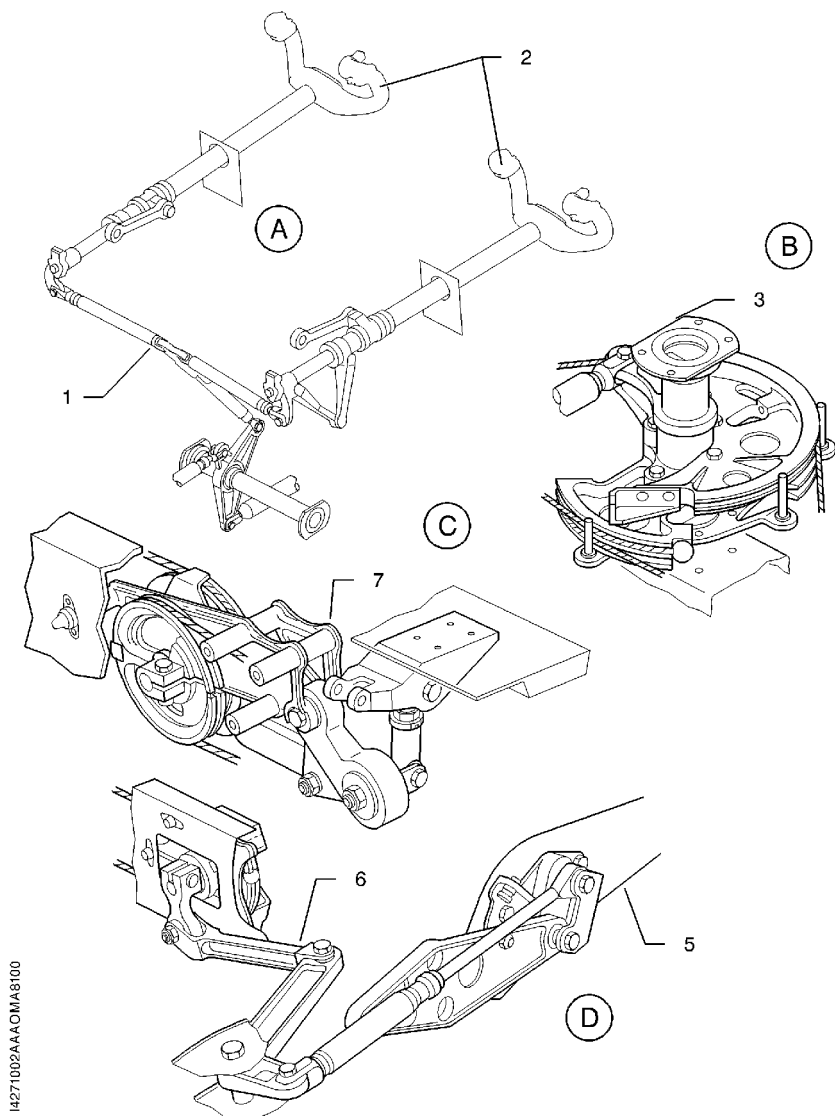
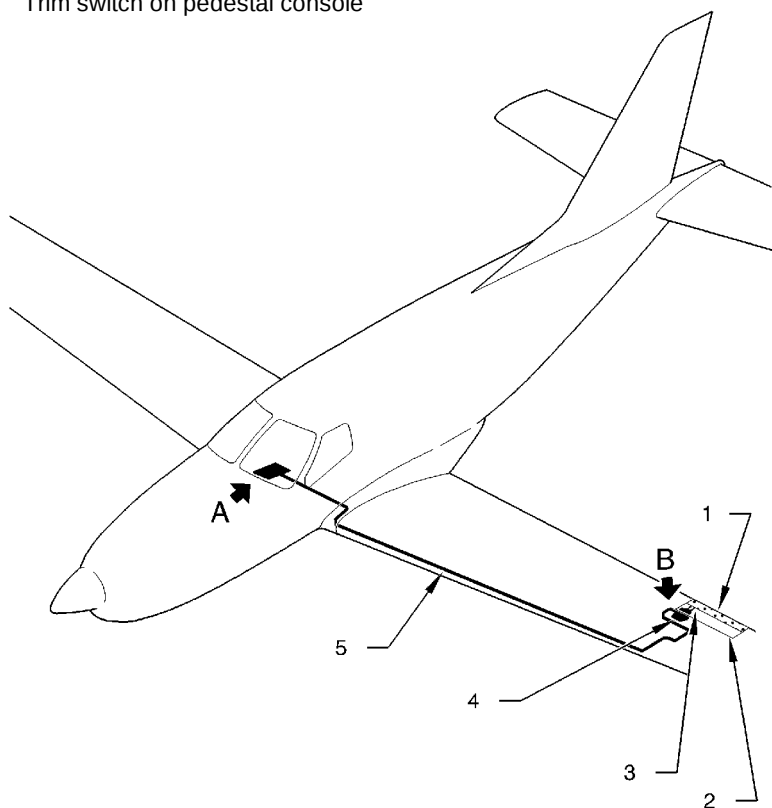


Figure 7.4.1 (2/2) - Roll

- 1) Roll trim tab
- 2) Aileron
- 3) Adjustable rods
- 4) Actuator
- 5) Trim tab control wiring
- 6) Trim switch on pedestal console



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Figure 7.4.2 (1/2) - Lateral trim

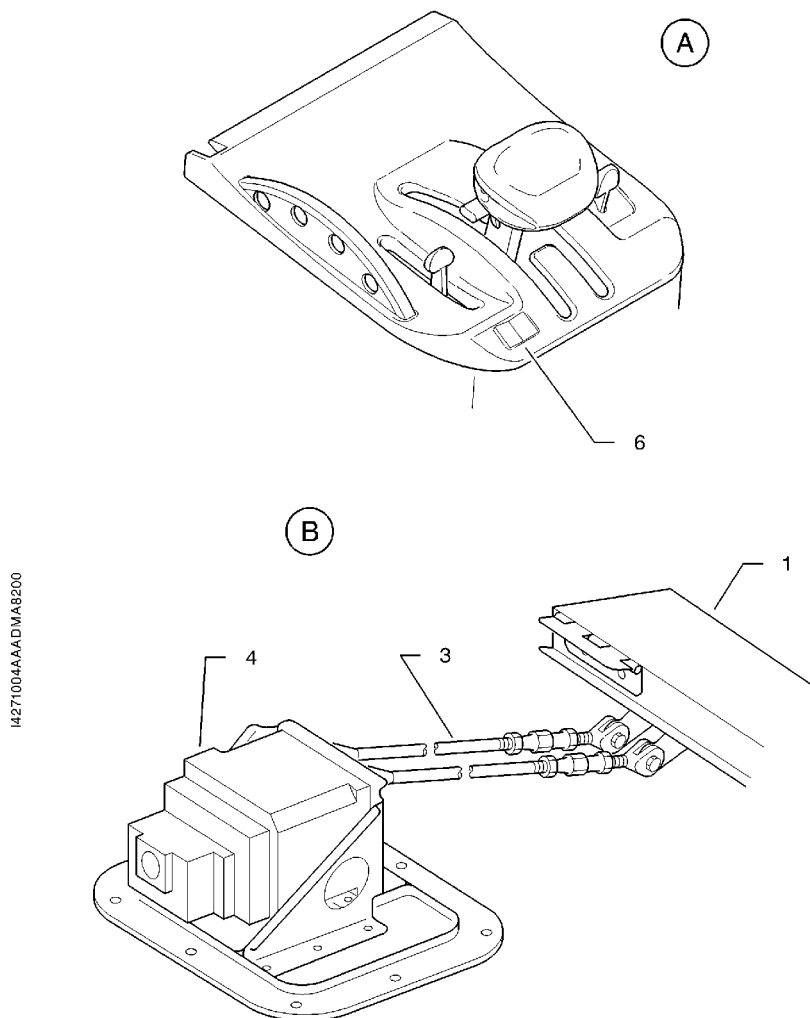


Figure 7.4.2 (2/2) - Lateral trim

Elevator - see figure 7.4.3

Both elevators are activated simultaneously by the same control. Each control surface is hinged at three points to the rear part of horizontal stabilizer.

The control wheel controls the two elevators through rods, bearings and bellcranks.

A stick shaker is fixed on the pitch lever linked to the pilot control column lever. This is a mechanical device to vibrate the control wheel to warn the pilot in case of an imminent stall. When the data received from the AoA (angle of attack) sensor indicates an imminent stall, the AoA computer actuates both the stick shaker and the stall warning.

A spring actuator creates a nose-down artificial force which allows a better static stability.

Each control surface is provided with an automatic anti-tab (automaticity about 0.3), which is also used as trim tab.

Pitch trim - see figure 7.4.4

The pitch trim is accomplished through the two anti-tabs located on left and right elevators.

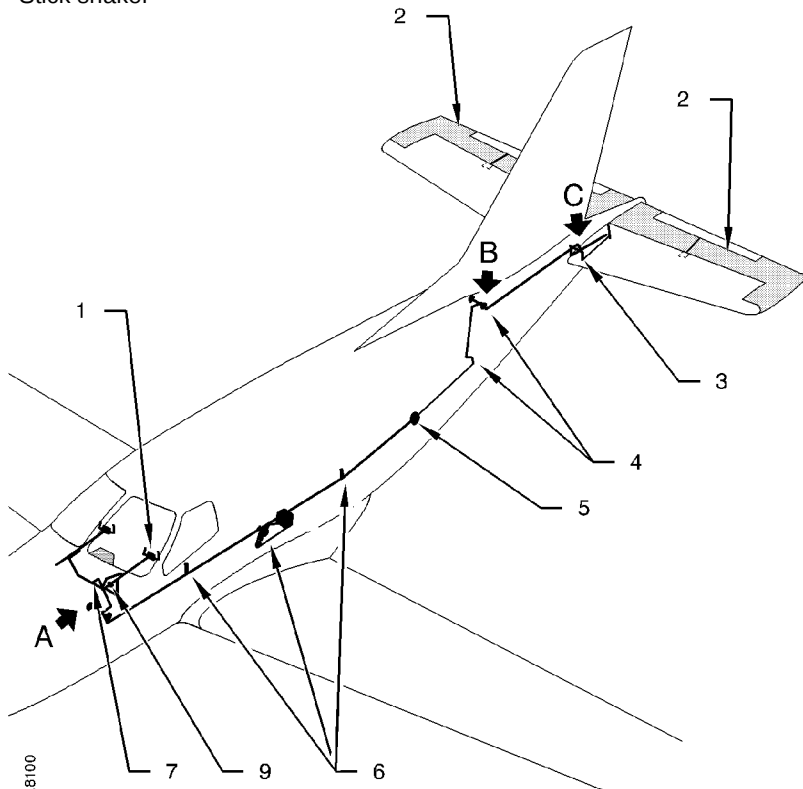
The trim tab can be controlled electrically or manually. It is activated through cables and a chain on two screw actuators attached to the horizontal empennage.

The electrical control consists of a switch (NOSE UP - NOSE DOWN) located on the pilot control wheel and a servo-motor attached under the pedestal.

The electrical circuit for pitch trims is protected by the AP SERVOS breaker.

Manual control wheel is installed vertically on left side of pedestal console.

- 1) Control wheel assembly
- 2) Elevators
- 3) Lever assembly, fuselage rear part
- 4) Elevator bellcrank
- 5) Rod with presseal connection
- 6) Lever assembly under floor
- 7) Pedestal assembly
- 8) Actuator
- 9) Stick shaker



14273000A.AA.MA8100

Figure 7.4.3 (1/2) - Elevator

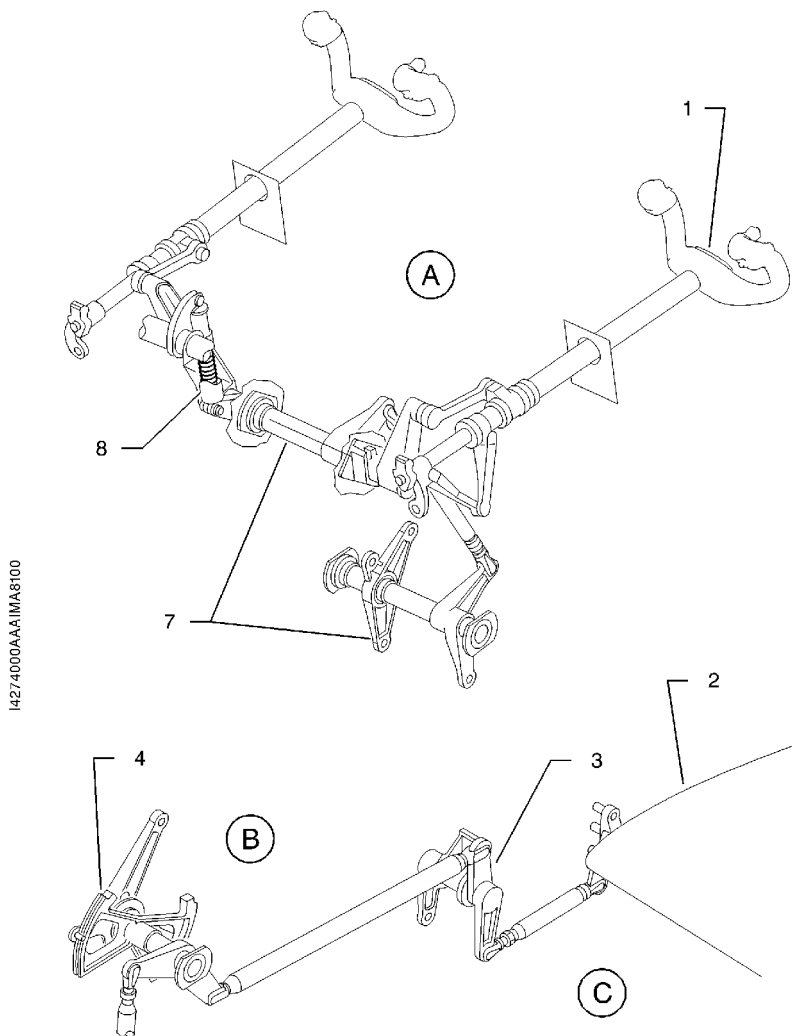
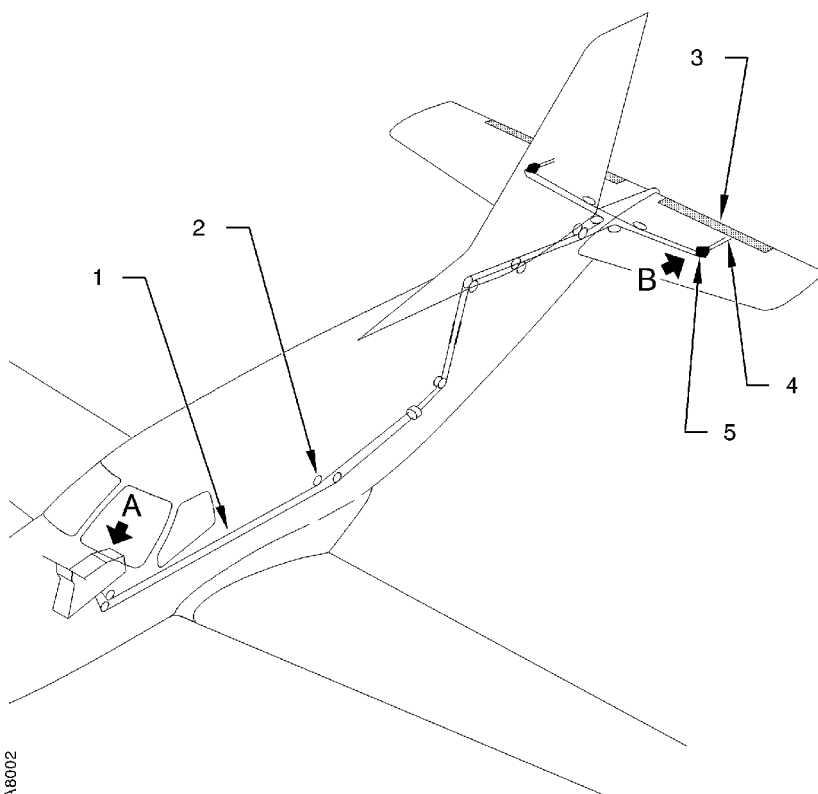


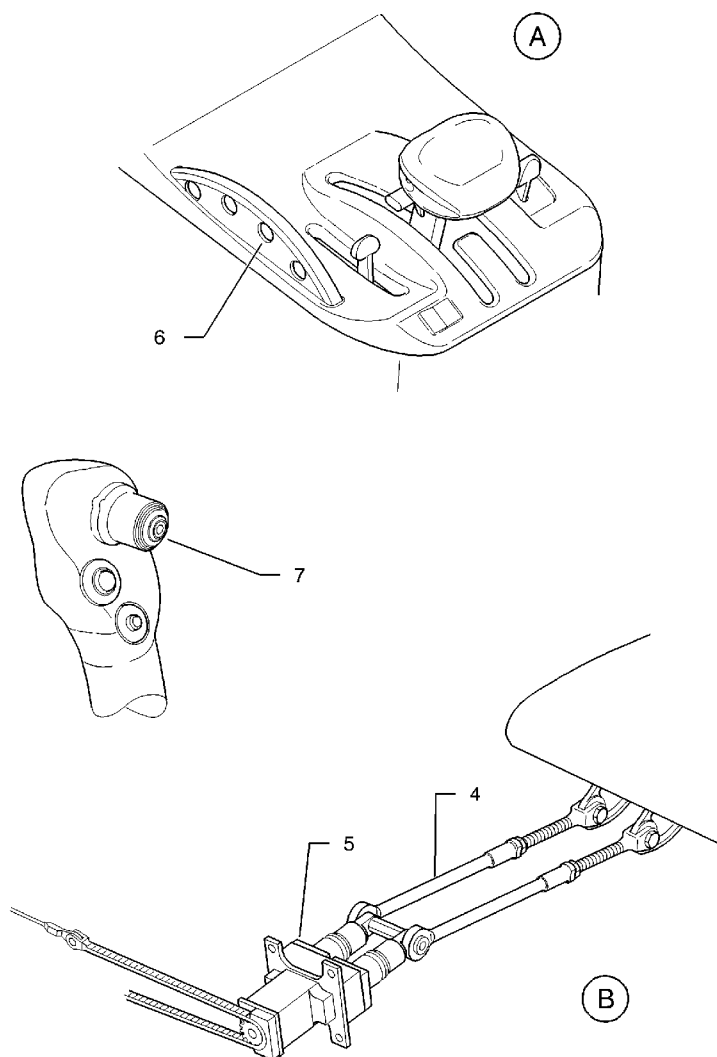
Figure 7.4.3 (2/2) - Elevator

- 1) Cables
- 2) Pulleys
- 3) Pitch trim tabs
- 4) Actuating rods
- 5) Actuator
- 6) Pitch trim manual control wheel
- 7) Electric pitch trim control



14274000AA\BMA8002

Figure 7.4.4 (1/2) - Pitch trim



14274000AAJIMAB100

Figure 7.4.4 (2/2) - Pitch trim

Rudder - see figure 7.4.5

The rudder is hinged on three fittings attached to the vertical stabilizer rear spar.

The rudder pedals / rudder linkage is ensured through cables and a rod.

Pilot and R.H. station rudder pedal positions are adjustable at each station. The rudder pedal adjustment mechanism (for piloting comfort purposes) includes a manual control located against the external bulkhead beneath the instrument panel and a locking device on the rudder pedals. This ball locking device allows selecting six different positions.

When landing gear is down, rudder pedals are linked to nose gear steering system.

Spring system of rudder / roll combination induces aileron deflection at the time of pedal displacement and vice versa.

Rudder trim - see figure 7.4.6

A trim tab hinged at two points located at rudder trailing edge provides rudder trim.

Trim tab is linked by two rods to an electric actuator attached to rudder. It is controlled by rudder trim switch (Y L / Y R) located on pilot control wheel.

Electrical circuit of rudder trim tab is protected by RUD TRIM breaker.

- 1) Roll / rudder combination bellcrank installation
- 2) Rudder pedals assembly
- 3) Control cables
- 4) Pulleys
- 5) Rudder lever assembly
- 6) Rod
- 7) Rudder
- 8) Nose gear steering rod

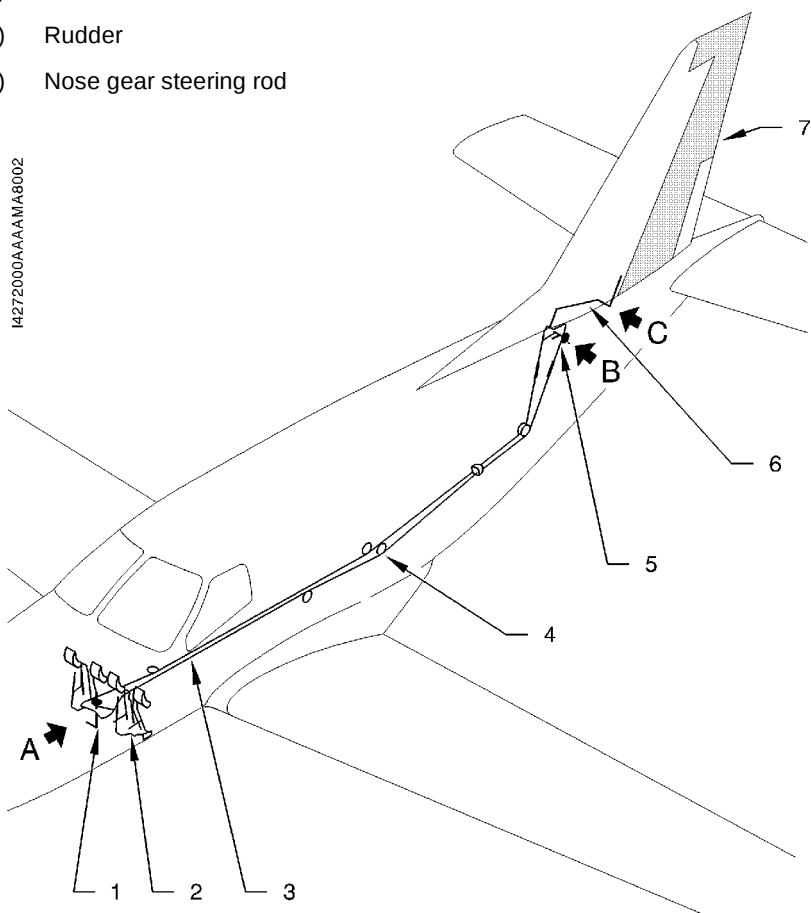
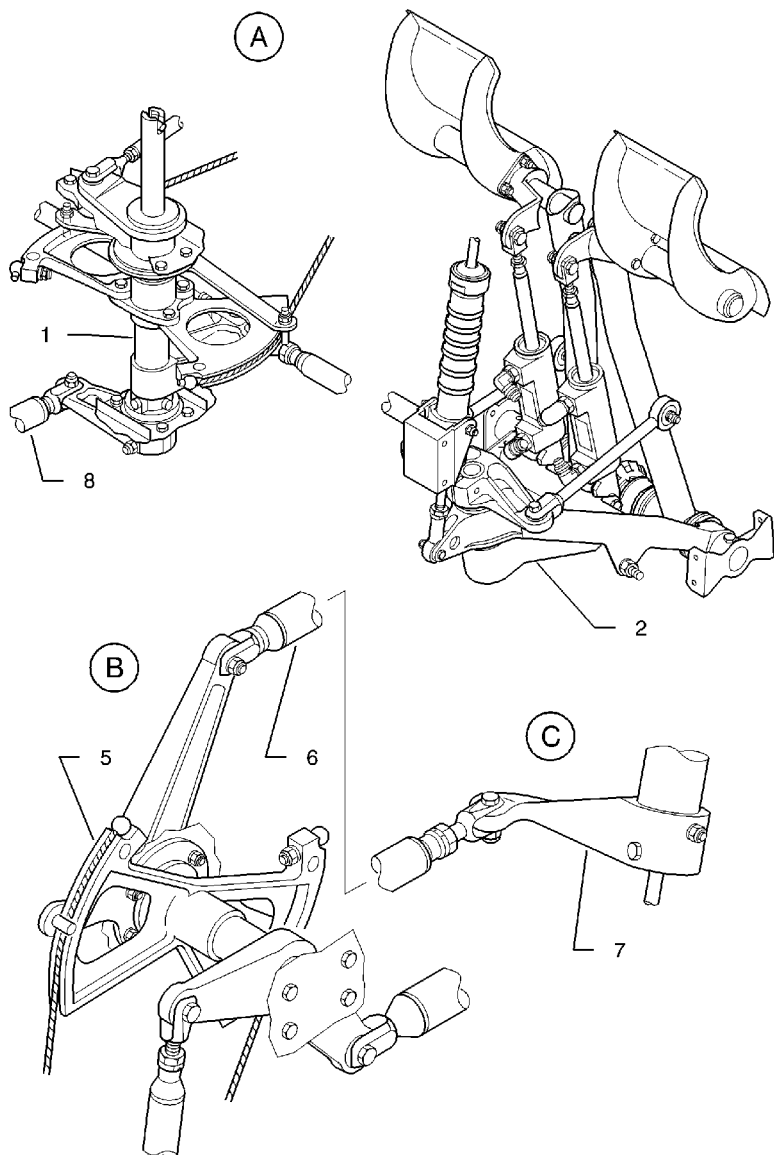


Figure 7.4.5 (1/2) - Rudder



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Figure 7.4.5 (2/2) - Rudder

- 1) Trim switch on control wheel
- 2) Actuator
- 3) Rudder trim tab
- 4) Rods
- 5) Rudder trim control wiring

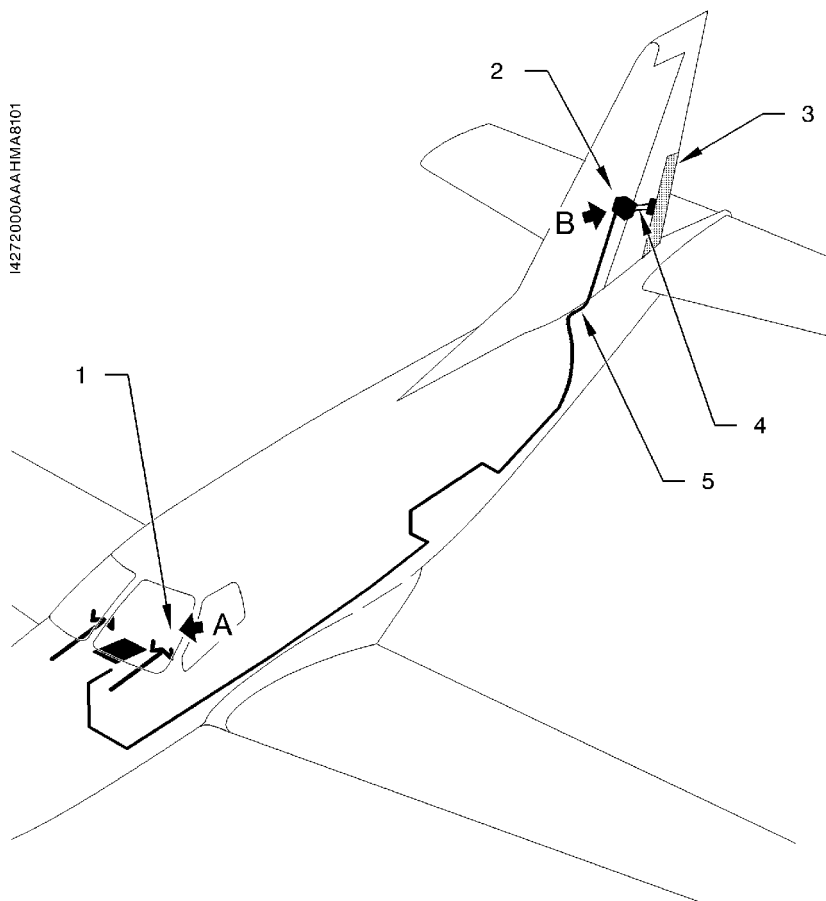


Figure 7.4.6 (1/2) - Rudder trim

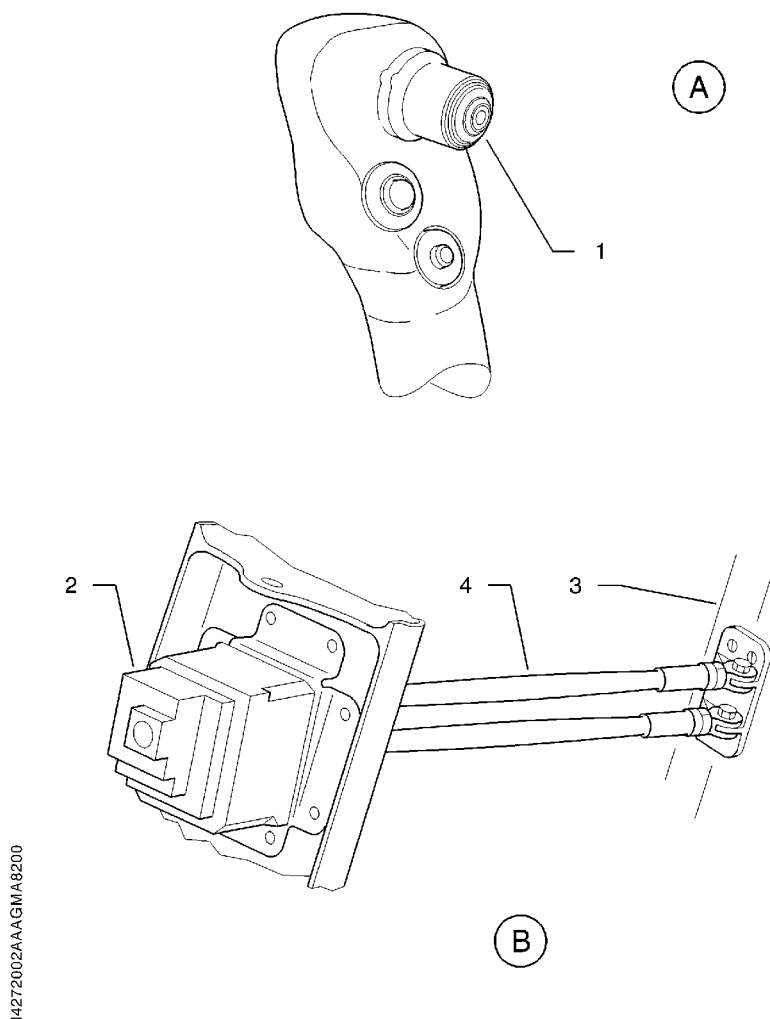


Figure 7.4.6 (2/2) - Rudder trim

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7.5 - Landing gear

The airplane is equipped with electro-hydraulically actuated, fully retractable tricycle landing gear.

Each landing gear is equipped with one wheel and an oil-air shock absorber integrated in the strut.

Main landing gears swivel on two ball joints installed on wing spars. Each landing gear retracts toward airplane centerline. The operation is accomplished by a hydraulic actuating cylinder which also provides up and down locking.

Nose gear swivels on two ball joints installed on a tubular steel mount frame. Its operation is accomplished by a hydraulic actuating cylinder which also provides up and down locking. The nose wheel is steerable. It is connected to pedals through a spring rod and is provided with a shimmy damper. In UP position, nose wheel is automatically disconnected.

Actuating cylinders have a locking device integrated at both ends. This device maintains landing gear in up or down position.

Landing gear doors, two on the nose gear, two on each main landing gear, are driven and kept in UP position by the landing gear itself.

All doors are mechanically kept in down position.

Hydraulic pressure

Hydraulic pressure required for landing gear operation is provided :

- during normal operation, by an electro-hydraulic generator with integrated reservoir,
- during emergency extension operation by a hand pump supplied with an auxiliary reservoir.

Landing gear lever - see figure 7.5.1

LANDING GEAR lever, located on LANDING GEAR panel at the bottom of instrument panel left part, is accomplished by an electric selector actuated through a lever ending with a knob representing a wheel. Operation is carried out by pulling on lever and by putting it in the desired UP (retracted) or DN (extended) position. This selector controls hydraulic generator.

Landing gear position indicator - see figure 7.5.1

Landing gear position indication is accomplished by 5 lights :

- On LANDING GEAR control panel
 - . 3 green indicator lights (one per landing gear),
 - . 1 red warning light GEAR UNSAFE
 - . 1 amber light in the LANDING GEAR lever.
- On MFD CAS window :
 - . 

• NOTE •

The amber light flashes while the hydraulic pump is operating to extend or retract the landing gear.

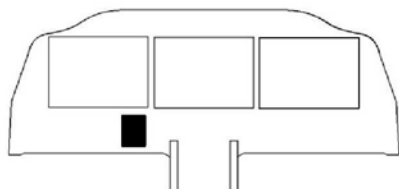


When landing gear is correctly retracted, all lights are OFF.

Down-locked correct indication is when there are 3 green indicator lights ON, the GEAR UNSAFE red warning light is OFF, the  is OFF and the amber caution light is OFF. All other cases mean the gear is not down-locked.

In case of doubt about landing gear down-locked position, an independent electrical circuit provides a countercheck capability of the indication system. Pressing the CHECK DOWN push-button, located on the landing gear panel, checks the down-lock of the gear making twinkle, at 16 hertz, the green indicator lights corresponding to the down-locked gear.

Pressing the LIGHT TEST push-button allows testing all landing gear panel lights making them flash at 1 hertz.



- 1) Green indicator light
- 2) Red warning light
- 3) LANDING GEAR lever
- 4) CHECK DOWN push-button
- 5) LIGHT TEST push-button
- 6) Amber light

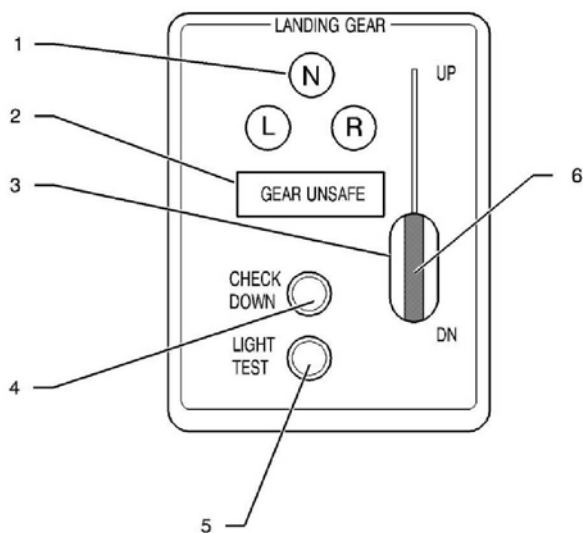


Figure 7.5.1 - Control panel and landing gear indicating

Safety

Safety switch - landing gear retraction

A safety switch installed on each main landing gear prevents, by detecting shock strut compression, landing gear accidental retraction when airplane is on ground.

Landing gear aural warning

Landing gear / Landing gear aural warning alert sounds when :

- THROTTLE is on IDLE position and landing gear is not down-locked,
- flaps are beyond TO position (Takeoff) and landing gear is not down-locked.

● NOTE ●

If one of above conditions exists and airplane is in stall configuration, the Stall/landing gear aural warning alert sounds and the control wheel vibrates.

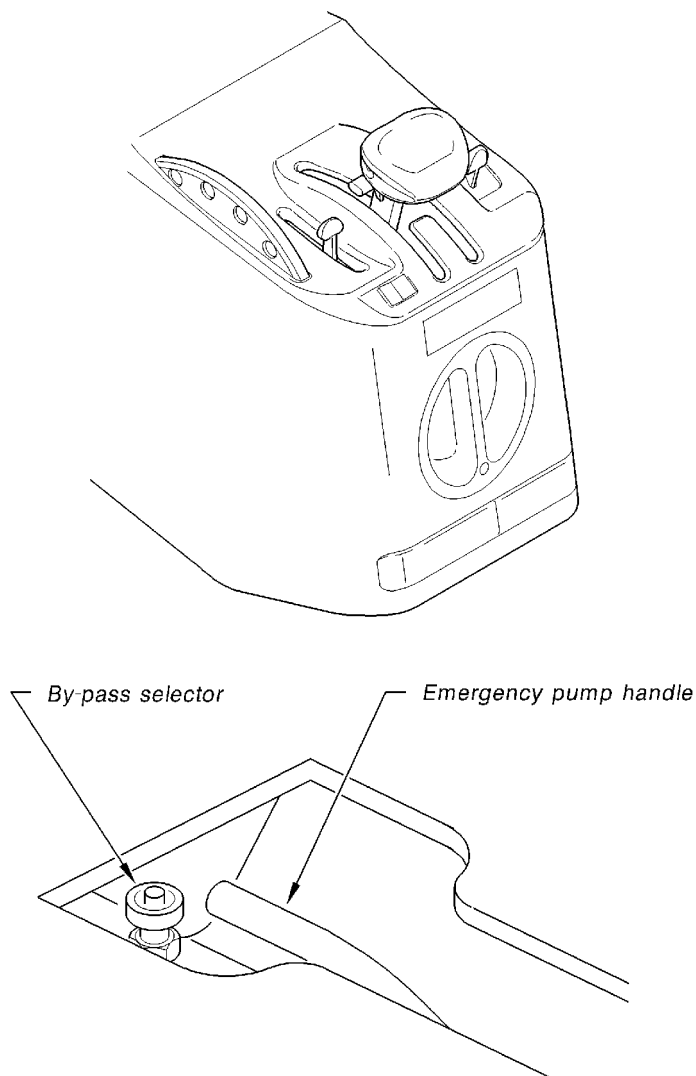
●

Emergency landing gear extension control - see figure 7.5.2

Emergency landing gear extension control consists of a hand pump and a by-pass selector.

This control is accessible by removing the floor panel located aft of the pedestal.

After bypass selector closing, hand pump operation sends hydraulic fluid directly into landing gear actuators ; landing gear full extension and locking requires up to 110 cycles.



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Figure 7.5.2 - Emergency landing gear extension control

Ground maneuvers

Nose gear steering control - see figures 7.5.3 and 7.5.4

Nose gear steering control is combined with rudder pedals and is fitted with a shimmy damper. When one of rudder pedals is fully pushed, nose wheel swivels about 20°. Steering may be increased up to 28° by applying differential braking to each side.

Airplane may be towed by attaching a steering or towing bar on nose gear, refer to chapter 8.6 for operation. In that case nose wheel steering angle is limited to $\pm 28^\circ$.

Minimum turn diameter

Minimum turn diameter, figure 7.5.4, is obtained by using nose gear steering and differential braking.

▲ CAUTION ▲

Since tight turns lead to untimely tire wear, turns should be made using the largest possible turning radius.



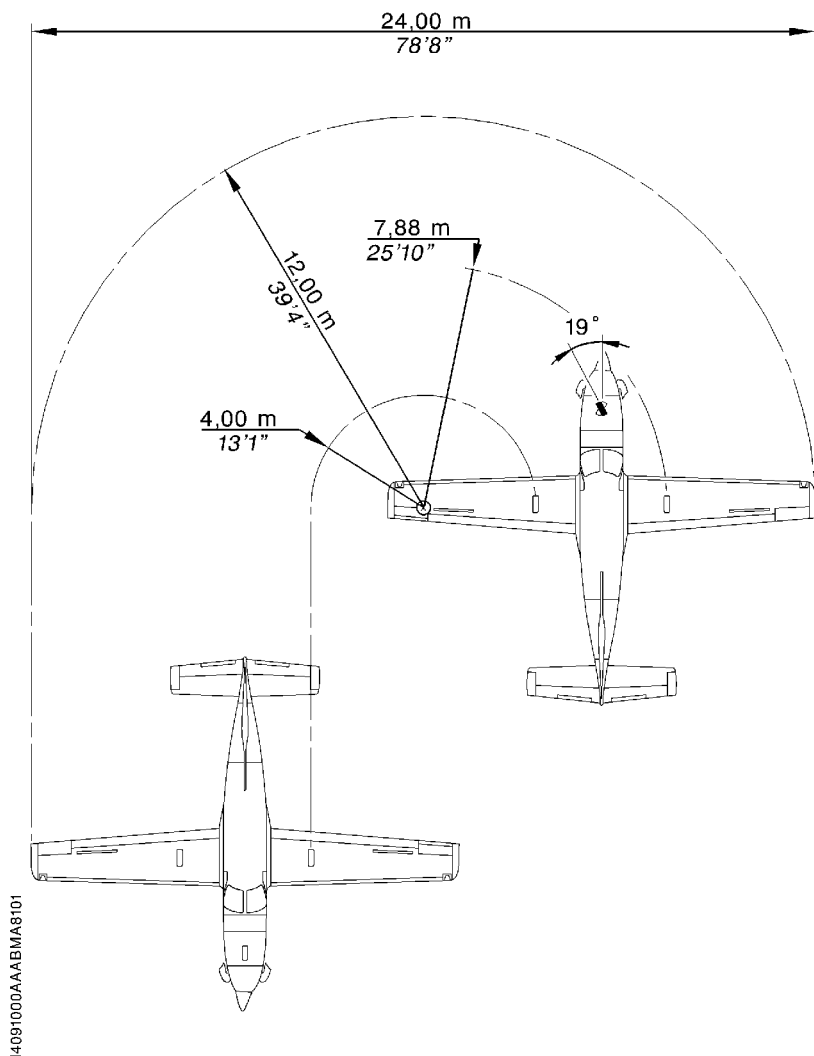


Figure 7.5.3 - Minimum turn diameter
(Full rudder pedals travel without using differential braking)

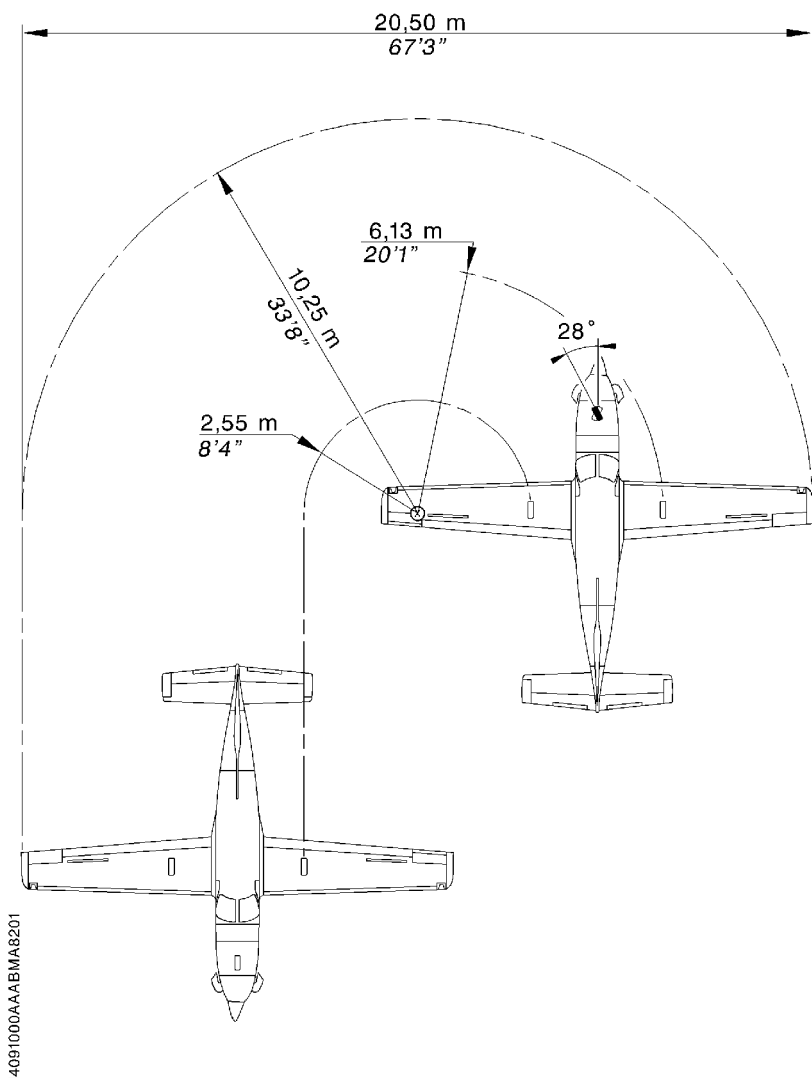


Figure 7.5.4 - Minimum turn diameter
(Full rudder pedals travel by using differential braking)

Brake system - see figure 7.5.5

Airplane is equipped with a hydraulically actuated disc braking system installed on the main landing gear wheels.

Each toe brake at L.H. and R.H. stations is equipped with a master cylinder which sends hydraulic pressure to the corresponding disc brake : L.H. pedals L.H. brake ; R.H. pedals R.H. brake. This differential braking helps maneuvering during taxiing.

Parking brake - see figures 7.5.5 and 7.5.6

Parking brake control consists of a control knob located on pilot's side lower instrument panel and a valve which regulates brake pressure.

To apply the parking brake, press on toe brake of rudder pedals and set the control knob to ON.

PARK BRAKE lights on when the control knob is set to ON.

• NOTE •

Operating the parking brake knob without applying pressure on rudder pedals does not cause the wheels to be braked.

•

▲ CAUTION ▲

Failure to apply brake pressure while releasing the parking brake can damage the parking brake valve. This damage can cause the parking brake valve to not release the pressure.

▲

To release the parking brake, press on toe brake of rudder pedals and set the control knob to OFF. Check at the same time that **PARK BRAKE** disappears.

- 1) Reservoir
- 2) Vent
- 3) R.H. station master cylinders
- 4) PARK BRAKE control knob
- 5) PARK BRAKE valve
- 6) Drain
- 7) Pilot's station master cylinders
- 8) L.H. brake assembly
- 9) R.H. brake assembly

Figure 7.5.5 (1/2) - Brake system

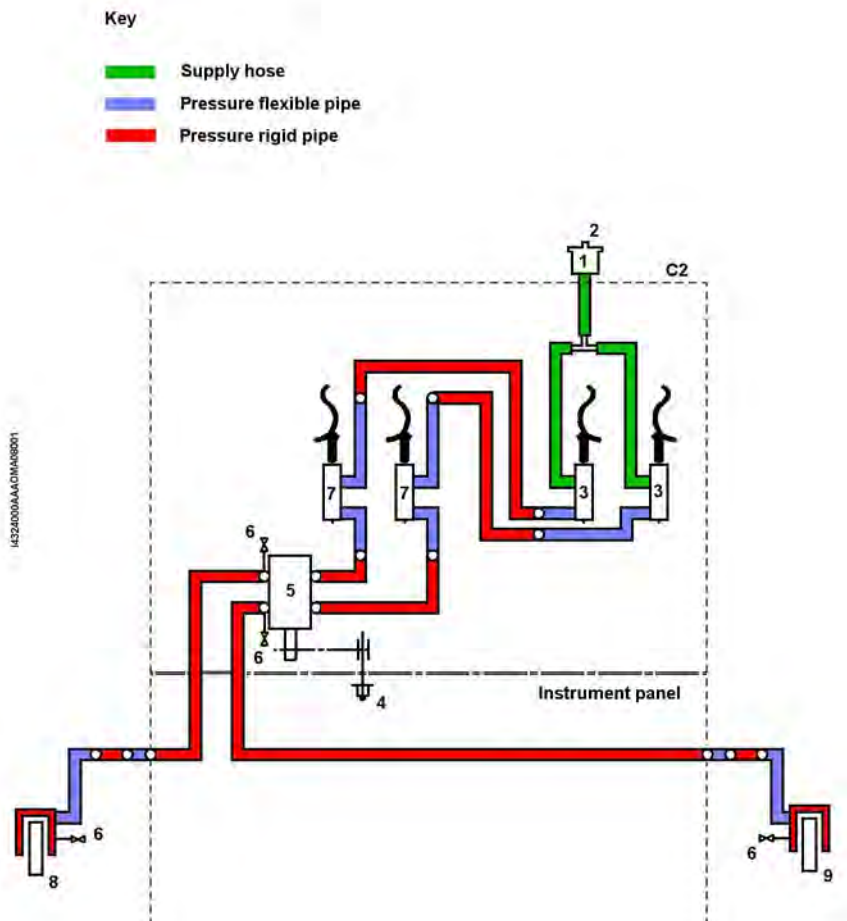
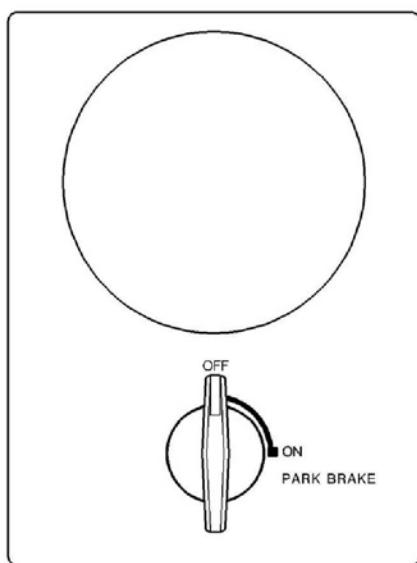
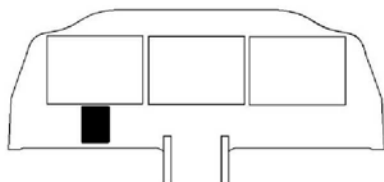


Figure 7.5.5 (2/2) - Brake system



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Figure 7.5.6 - Brake system

7.6 - Powerplant

Turboprop engine operation - see figure 7.6.1

The PRATT & WHITNEY CANADA turboprop engine (PT6A-66D model) is a free turbine engine rated at 850 SHP and developing a thermodynamic power of 1825 ESHP.

Intake air enters engine through an annular casing and is then ducted toward compressor. The latter consists of four axial stages and one single centrifugal stage assembly to form a whole assembly. Compressed air and fuel are mixed and sprayed into combustion chamber by fuel nozzles. The mixture is first ignited by two spark igniter plugs, then combustion continues as a result of air-fuel mixture flow. Gases resulting from combustion expand through a series of turbines. The first one (gas generator turbine) drives compressor assembly and accessories, the two other ones (power turbines), independant from the first one, drive propeller shaft through a reduction gear box. Hot gases are evacuated through two exhaust stubs located laterally on both sides forward of engine cowling.

All engine driven accessories, except power turbine tachometer, propeller governor and overspeed governor are installed on accessory gearbox located rearward of engine.

- 1) Propeller governor
- 2) Exhaust stub
- 3) Axial compressors
- 4) Accessory gearbox
- 5) FCU Fuel Control Unit
- 6) Oil to fuel heater
- 7) Input coupling shaft
- 8) Air intake
- 9) Centrifugal impeller
- 10) Combustion chamber
- 11) Compressor turbine
- 12) Power turbine 1st stage
- 13) Power turbine 2nd stage
- 14) Power turbine shaft

Figure 7.6.1 (1/2) - Powerplant

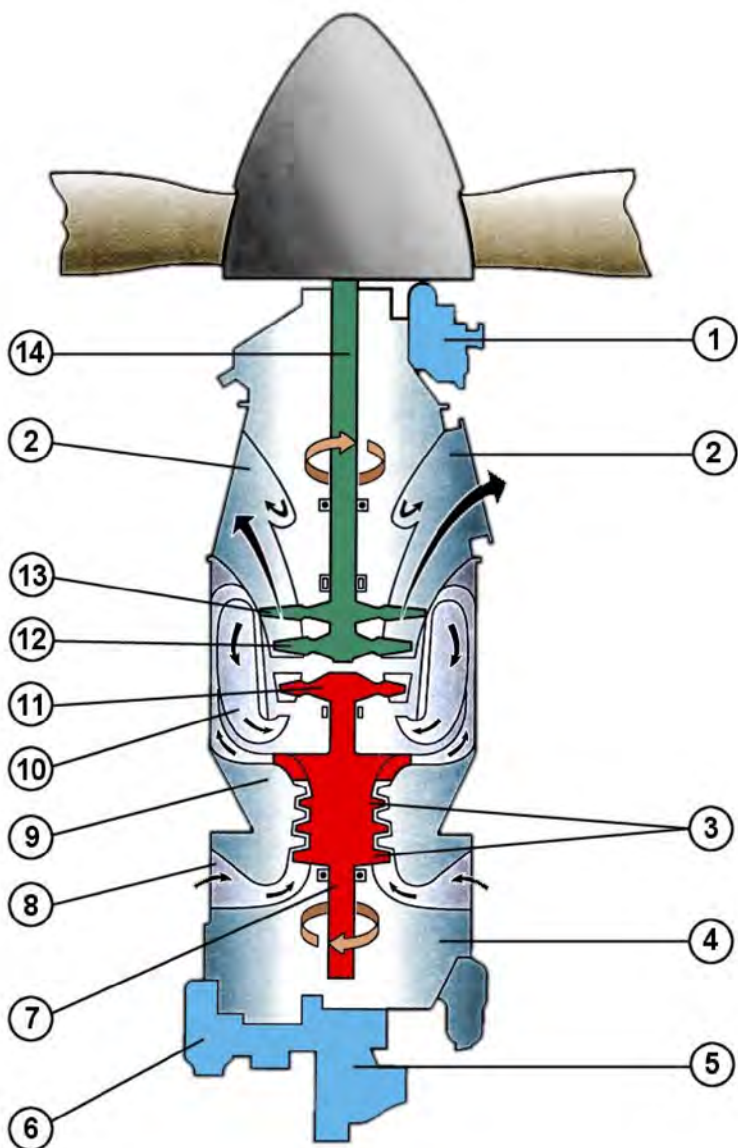


Figure 7.6.1 (2/2) - Powerplant

Engine control levers - see figure 7.6.2

Engine operation requires use of two levers located on pedestal console in cabin :

- THROTTLE (Item 1), and its detent for reverse (Item 4)
- MAN OVRD control for emergency fuel regulation (Item 3).

• NOTE •

Thumbwheel for lever friction (Item 2).

•

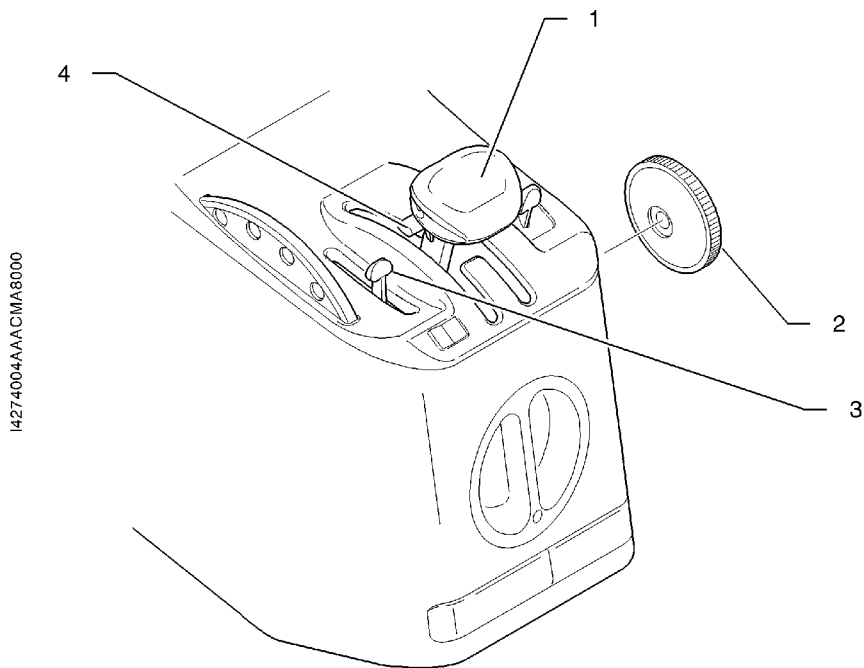


Figure 7.6.2 - Engine control levers

THROTTLE - see figure 7.6.3

The THROTTLE has two operating modes : thrust mode and condition mode.

- Thrust mode

The THROTTLE is in vertical position. It modulates engine power from full reverse to max power.

Engine running, the throttle rearward displacement, past the lock using the detent, allows to control :

- the engine power in the Beta range from idle to maximum reverse,
- the Beta valve to select the propeller pitch in reverse.

Return to idle position is accomplished by pushing the THROTTLE forward.

▲ **CAUTION** ▲

Do not move the cockpit THROTTLE into the propeller reverse position or damage to the linkage will result.

Reverse may only be selected with engine running and propeller turning.

Any rearward effort on the THROTTLE, past the idle stop, may damage or break the flexible control cable.



When engine is shutdown, there is no oil pressure in the propeller and the feathering spring locks the Beta ring and the propeller reversing interconnect linkage on the engine.

- Condition mode

The THROTTLE is moved to the condition side by lifting the knob.

As long as the THROTTLE is in condition mode, the propeller is in feather position. The THROTTLE can be positioned to CUT OFF, idle LO-IDLE or idle HI-IDLE.

Change from idle HI-IDLE to LO-IDLE position requires moving the THROTTLE rearwards.

Change from idle LO-IDLE to CUT OFF position is only possible after having overridden the idle gate. To override idle gate, raise the THROTTLE and move it rearwards.

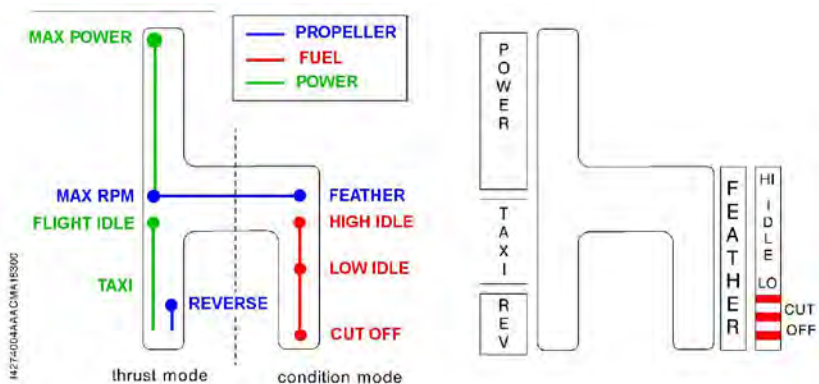


Figure 7.6.3 - THROTTLE

MAN OVRD control - see figure 7.6.2

MAN OVRD control (3) is normally notched in full backward position. In case of FCU or THROTTLE failure, it allows setting engine power manually.

To quit full backward position (notched), move the MAN OVRD control forward overriding the indexation.

• NOTE •

The power available if the THROTTLE fails will be limited by the position of the lever.

•

Lever friction - see figure 7.6.2

A thumbwheel (Item 2) located on right side of pedestal console increases friction to avoid control slip of the THROTTLE after setting.

Engine instruments

Engine indicating consists of :

- engine torque expressed in percent (%), TRQ
- propeller speed in RPM, PROP RPM
- generator rotation speed expressed in percent (%), Ng
- ITT expressed in °C,
- oil pressure expressed in PSI.
- oil temperature expressed in °C.

• NOTE •

Engine monitoring is ensured by **ITT** and **OIL PRESS**.

Refer to the GARMIN pilot's Guide for further details.

•

Engine lubrication

Engine oil is in a tank incorporated into the powerplant. It ensures lubrication and engine cooling. A cooler located on left side in engine compartment maintains oil temperature within limits. Oil flow into the cooler is metered by a thermostatic valve. Engine oil also supplies propeller governor and engine torquemeter.

A chip detection system enables the monitoring of engine oil system. The system includes one chip detector installed on propeller reduction gear box and a second chip detector installed on engine accessory gear box. In case of chip detection, **CHIP** will appear on integrated flight deck system screen.

Lubrication system content, cooler included, is 12.7 quarts (12 litres). A graduated dipstick allows checking oil quantity in system. A visual oil sight glass, located on engine left side, allows a rapid checking of oil level.

• NOTE •

For checking and oil filling-up, refer to section 8.

•

Engine starting - see figure 7.6.4

Ignition function

Ignition system consists of an ignition unit and two spark igniter plugs in powerplant, a three-position IGNITION switch OFF - AUTO - ON located on ENGINE START panel at upper panel.

Ignition unit supplies, from 28-volt source, high voltage current necessary to spark igniter plugs. When IGNITION switch is positioned to AUTO, ignition unit supply is ensured during the engine start.

IGNITION lights on as long as ignition unit is supplied.

Starter function

Starting system consists of STARTER switch located on ENGINE START panel, starter generator and ignition circuit (Refer to paragraph Ignition function).

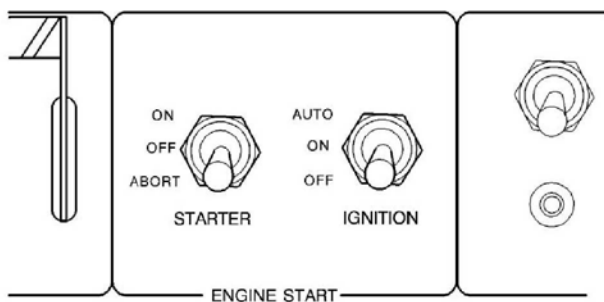
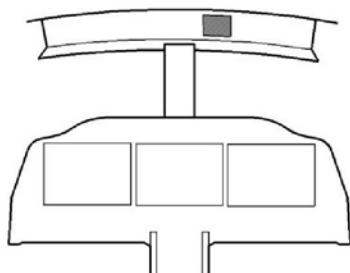
Starting procedure is semi-automatic. Setting STARTER switch to ON connects the starter generator which drives powerplant. **STARTER** lights on indicating that the starter generator is operating.

Starter operation is stopped automatically by the electrical power system once a sufficient starter-generator speed is reached or after 60 s. The pilot has the capability to interrupt the start process anytime by setting momentarily the STARTER switch to the ABORT position.

▲ WARNING ▲

Powerplant starting must be performed by qualified personnel and following procedures and parameters described in section 4 Normal procedures.





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Figure 7.6.4 - Engine starting

Engine air inlet

Engine air inlet is located at front lower section of engine cowling. Air inlet port is protected against icing by a hot air flux provided by engine. Air is driven throughout a duct in engine casing before entering engine through a protective screen. An inertial separator system inside the air duct protects the engine from ingesting dense particles (water, ice, fine gravels, sand).

Separator consists of two movable vanes. During normal operation, air is conducted directly towards engine air inlet. To separate particles suspended in the air, vanes are positioned to force engine induction air to execute a sharp turn : under the effect of centrifugal force denser particles separate from the air and are discharged overboard through two apertures located under engine cowling.

Operation of inertial separator vanes is electrically controlled by INERT SEP switch located on DE-ICE SYSTEM panel. When INERT SEP switch is set to ON, an electric actuator activates vanes ; **INERT SEP ON** lights on when vanes have reached their maximum deflection and remains visible as long as switch remains ON. Full deflection takes about 40 seconds. If the vanes do not reach the full deflection 50 seconds after activation or are not retracted 50 seconds after deactivation,

INERT SEP FAIL is displayed in CAS window.

Exhaust system

Exhaust gases are evacuated through exhaust stubs located on sides of engine cowlings.

Engine accessories

All engine driven accessories, except power turbine tachogenerator (Np), propeller governor and overspeed governor, are installed on accessory gearbox located rearwards of engine.

Oil pump

Oil pump is a self-controlled gear pump located at the bottom of oil casing.

Fuel high pressure pump (HP)

Fuel high pressure pump is installed on accessory gearbox. It supplies fuel nozzles, flow being controlled by fuel regulator (FCU). Fuel provided by engine driven main pump (mechanical) enters high pressure pump through a filter, then it is discharged under pressure into fuel regulator (FCU) through a second filter. In case of contamination of this second filter, a by-pass valve allows fuel to go directly from high pressure pump to the regulator.

Compressor turbine tacho-generator (Ng)

Compressor turbine tacho-generator (Ng) is attached on accessory gearbox. It supplies a voltage which is transmitted to the GARMIN system for display on the MFD, under normal display conditions.

Power turbine tacho-generator (Np)

Power turbine tacho-generator is attached on the right side of the reduction gearbox. It supplies a voltage which is transmitted to the GARMIN system for display on the MFD, under normal display conditions.

Torque transmitter

Torque transmitter is attached on the torque limiter, it measures torque produced by the power turbine by comparing oil pressures (reduction gear and power turbine) and converts pressure difference into a voltage. This voltage is transmitted to the GARMIN system for display on the MFD, under normal display conditions.

Propeller overspeed limiter

Propeller overspeed limiter is installed on left side of the reduction gear box. It prevents a propeller overspeed in case of main propeller governor failure.

Propeller overspeed limiter is equipped with a solenoid which makes feather the propeller when the THROTTLE is in condition mode.

Torque limiter

Torque limiter is located on right side of the reduction gear box. It is rated to limit engine torque to 109-110 % at sea level.

Propeller

Airplane is equipped with a composite five-bladed, constant-speed and full-feathering propeller.

Regulation

Propeller governor located on engine maintains rotation speed to the nominal value of 2000 RPM. Regulation is obtained through propeller blade pitch variation : counterweights drive propeller blades toward high pitch (low RPM) whereas oil pressure delivered by governor drives back blades toward low pitch (high RPM).

Propeller governor allows feathering either by voluntary pilot action via THROTTLE (Condition mode) or automatically in case of engine failure or shutdown.

Propeller reverse pitch allows reduced taxiing speed or landing roll. Change from idle to reverse position is performed with THROTTLE (Thrust mode) - refer to paragraph Engine controls.

7.7 - Fuel system - see figure 7.7.1

The fuel system comprises fuel tanks, fuel unit, selectors, manual and automatic, electric and mechanical boost pumps, engine fuel system, gaging installation, monitoring installation and drains.

Fuel tanks

Fuel tanks are formed by sealed casings in each wing. Each fuel tank comprises a filling port located at the end of wing upper surface, two drain valves located at the lower surface (one near main landing gear, at trailing edge side, the second one near wing root side, at leading edge), a vent valve located on the lower surface, a suction strainer and three level gages.

Fuel unit

The fuel unit combines shut-off valve, tank selector and filter functions. It is connected to the manual selector through a mechanical control. The fuel filter is located in a bowl at the lower part of the unit. It is fitted with a by-pass valve, a clogging indicator and a drain valve.

Tank manual selector - see figure 7.7.2

The FUEL TANK SELECTOR is located on the pedestal rear face. It allows selecting manually the tank (R or L) to be used and setting unit to OFF. To change from L position to OFF position, turn the selector clockwise (L → R → OFF) ; change from R position to OFF position requires a voluntary action from the pilot (pull and turn). The pull and turn maneuver prevents involuntary operation. When the unit is set to OFF,

FUEL OFF remains visible.

- | | |
|-----------------------------------|------------------------|
| 1) Flow divider | 14) Fuel unit |
| 2) Flowmeter | 15) Filter drain |
| 3) Collector tank | 16) Fuel return pipe |
| 4) Fuel regulator | 17) Filling port |
| 5) High pressure pump (HP) | 18) NACA scoop |
| 6) Oil to fuel heater | 19) Tank vent valve |
| 7) Low pressure switch | 20) Fuel level gages |
| 8) Fuel jet | 21) Tank drain valve |
| 9) Main mechanical boost pump | 22) Check-valve |
| 10) Electric boost pump | 23) Low level detector |
| 11) Fuel filter | 24) Suction strainer |
| 12) Filter clogging by-pass valve | 25) Fuel amplifier |
| 13) Filter clogging indicator | 26) Sequencer |

Figure 7.7.1 (1/2) - Fuel system

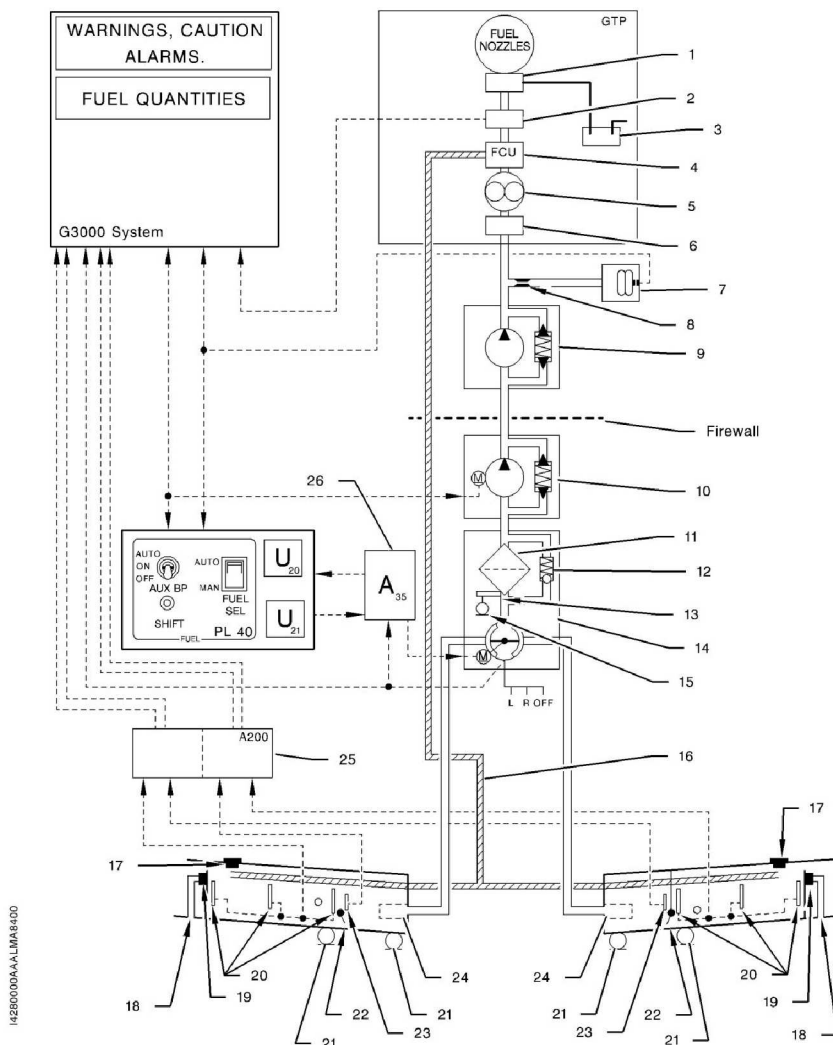


Figure 7.7.1 (2/2) - Fuel system

Automatic tank selector - see figures 7.7.2 and 7.7.3

Automatic tank selection allows, without pilot's intervention, feeding the engine from one tank or the other in predetermined sequences. These sequences depend on airplane configuration (ground, in-flight, fuel low level CAS messages appearance).

Automatic tank selection system comprises an electronic sequencer, an actuator attached on the fuel unit, FUEL SEL two-position selector (AUTO, MAN) and SHIFT push-knob located on FUEL panel.

To operate the automatic selector, set FUEL SEL switch to AUTO position and manual selector to R or L.

Selector operation

When the system is operated, **AUTO SEL** disappears ; the sequencer chooses a tank (R or L) and through the actuator, positions the fuel unit selector on the selected tank. The sequencer controls the time during which the selected tank will operate. This time varies, depending on airplane conditions.

Airplane on ground : tank is changed every minute and 15 seconds.

Airplane in flight : tank is changed every five minutes, as long as **FUEL LOW L** or **FUEL LOW R** does not appear. When the first low level lights on, the sequencer immediately selects the other tank. The selected tank will operate until the second low level lights on. When **FUEL LOW L-R** is visible, the sequencer changes tanks every minute and 15 seconds.

• NOTE •

The manual selector is driven by the fuel unit and is positioned on R or L mark corresponding to the tank selected by the sequencer. Therefore, the pilot continuously knows the tank which is operating.

•

Test for system proper operation

SHIFT push-button allows the pilot to test system proper operation anytime.

When the system operates, the fuel tank is changed when SHIFT push-button is pressed once.

If airplane is on ground or in flight, low level CAS messages not visible, the new selected tank remains operating and a new sequence is initiated.

• NOTE •

This procedure allows the pilot to preferably choose the tank from which he wants to take fuel.

•

In all cases, proper system operation is indicated by rotation of the manual selector.

Setting FUEL SEL switch to MAN position or setting FUEL TANK SELECTOR to OFF position leads to system de-activating and appearance of **AUTO SEL**.

AUTO SEL also lights on when order given by the sequencer has not been executed after 12 seconds.

Electric boost pump (AUX BP)

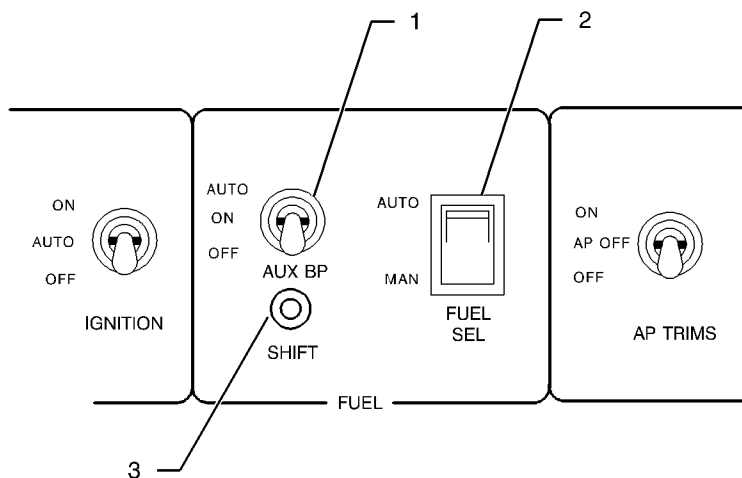
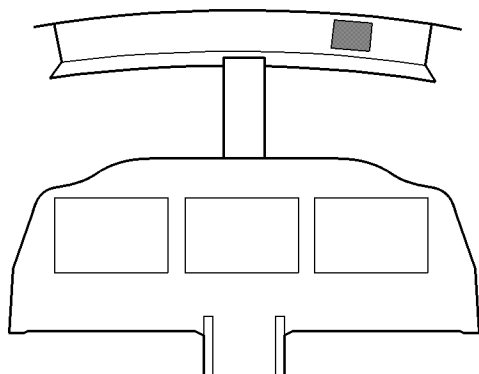
Electric boost pump is an auxiliary pump located between fuel unit and main mechanical boost pump. It is controlled through AUX BP switch located on FUEL panel. This switch allows stopping or selecting the two pump operating modes :

- when set to ON, electric boost pump operates permanently
- when set to AUTO, electric boost pump is automatically operated in case of fuel pressure drop at the mechanical boost pump outlet.



Figure 7.7.2 - Manual selector of fuel tanks

- 1) AUX BP switch
- 2) FUEL SEL switch
- 3) SHIFT push-button



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Figure 7.7.3 - Fuel control panel

Main mechanical boost pump

The mechanical boost pump is attached to accessory gearbox and supplies fuel necessary for engine operation.

Engine fuel system

The engine fuel system consists of a fuel regulator, pumps, filters, a fuel divider and fuel nozzles. The system provides the fuel flow necessary to satisfy the engine power and rating needs.

The fuel coming from airplane system goes through a heater which is automatically controlled by a thermostatic valve.

Fuel gaging installation

Fuel gaging installation is a capacitive type. Fuel data are displayed in us gallons. Three fuel level gages are installed in each tank. The wing root side fuel level gage is equipped with a low level detector which leads to fuel low level CAS messages appearance, when usable fuel quantity remaining in the concerned fuel tank is under about 9 USG (34 Litres).

Fuel system monitoring

Fuel system monitoring is ensured by CAS messages :

- **FUEL OFF** : Fuel tank selector set to OFF
- **FUEL PRESS** : Fuel pressure at mechanic pump outlet under 10 psi (± 2 psi)
- **AUX BOOST PMP ON** : Electric fuel pump running (manual or automatic mode)
- **FUEL LOW L-R** * : Fuel quantity less than or equal to 9 USG (34 Litres) of usable fuel in specified tank
- **AUTO SEL** : Sequencer inactive or operating defect
- **FUEL IMBALANCE** : Fuel tanks imbalanced by more than 15 USG (57 Litres) for more than 30 seconds

* Only affected side (L, R or L-R) displayed in CAS message

Fuel system draining and clogging indicator - see figure 7.7.4

The fuel system comprises five drain points, a drain on the filter bowl, two drain valves on each tank, located on wing lower surface, one at wing root and the other past main landing gear well.

These drains allow draining water or sediments contained in fuel.

Fuel tank drain valves are provided with a slot which allows opening them with a screwdriver.

▲ CAUTION ▲

Fuel system draining shall be performed prior to the first flight of the day and after each tank refueling, using a sampler to pick off fuel at the two drain valves of each tank and at the filter vent valve.

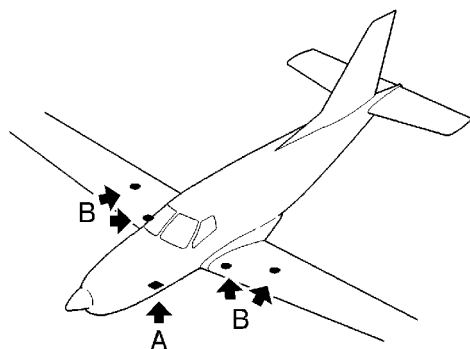


A red filter bypass flag on the fuel unit and visible from outside, when an inspection door located on L.H. side under front baggage compartment is open, indicates filter clogging. A push-button, adjacent to the inspection door, controls the illumination of a light provided to improve visibility of the clogging indicator. This indicator shall be observed during preflight inspection.

● NOTE ●

When filter gets clogged in flight, the filter is by-passed in order not to deprive powerplant from fuel. The powerplant is then supplied with non-filtered fuel.





- 1) Lighting switch
- 2) Mirror door
- 3) Clogging indicator
- 4) Central access door
- 5) Filter drain
- 6) Tank drain
- 7) Drain bowl

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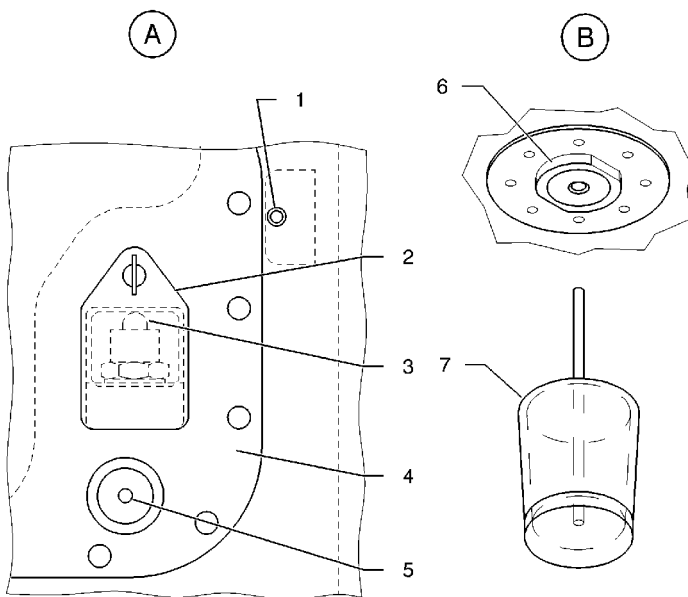


Figure 7.7.4 - Fuel system draining points and clogging indicator

7.8 - Electrical system - see figures 7.8.1, 7.8.2 and 7.8.5

The airplane is fitted with a 28-volt direct-current electrical system.

Electrical supply is obtained from various power supplies :

- a starter generator
- a stand-by generator
- a battery
- a ground power unit, via a plug, located on L.H. side.

Connection relays, main bus bar, generator regulation and protection systems and control logic systems are grouped in electrical power system box located in front baggage compartment upper section.

Electrical system indicating is displayed on the MFD and monitoring is ensured by CAS messages.

On ground, when the crash lever is positioned in the UP position (SOURCE selector in the OFF position), the battery supplies the electrical power system through the BATT BUS. A Power Up Built In Test (P-BIT) of the EPS internal functions is performed to verify the operating status. In case of failure detection, a white message EPS SERVICE REQUIRED appears in the message window on the PFD.

Starter generator

The starter generator is the main electrical power source. It only performs its generator function when starting sequence is completed.

Generator connection with main bus bar is controlled through GENERATOR selector set to MAIN position. It will be effective when connection conditions are met.

Generator connection is indicated by **MAIN GEN** disappearance.

• NOTE •

Starter generator will not supply airplane if source switch is on GPU.

On ground, generator load should be maintained below 200 AMP.

•

Stand-by generator

Stand-by generator supplies a 28-volt stand-by direct current which may be used in case of main generator failure.

Generator connection with main bus bar is controlled through GENERATOR selector set to ST-BY, it will be effective when connection conditions are met.

• NOTE •

Stand-by generator will not supply airplane if source switch is on GPU.

In order to prevent possible errors during flight, access to ST-BY position requires a double action from the pilot (pull to unlock). On ground, avoid using stand-by generator at full load.

•

Battery

The battery provides the power required for starting when no ground power unit is available and is a power supply source when engine driven generators are stopped.

The battery is always connected to BATT BUS bus bar except when crash lever is pulled down.

Battery connection to main bus bar is controlled through SOURCE selector set to BATT position.

BAT OFF lights on when battery is isolated from the main bus and when main bus is supplied through another source.

Ground power receptacle

The ground power receptacle allows connection to a ground power unit.

Ground power receptacle connection with main bus bar is controlled through SOURCE selector when set to GPU position, it will be effective when connection conditions are met.

When SOURCE selector is set to GPU position, the battery and ground power unit are connected simultaneously on main bus bar.

Ground power receptacle door opening is indicated by **GPU DOOR** appearance.

● NOTE ●

Before connecting a GPU to the airplane, ensure that the voltage of the GPU is regulated between 27.5 volts and 28.5 volts.

The amperage output needs to be consistent with the airplane placard in front of compartment door : GPU shall provide a current limiting function, and current limit shall be set per placard.

Do not use batteries pack as GPU sources.



▲ CAUTION ▲

Use of a ground power source with voltage in excess of 28.5 volts or current exceeding current limit indicated on placard may damage the airplane electrical system.



Distribution

Airplane electrical systems are connected to bus bars and protected by pull-off type breakers located on R.H. side panel - see figure 7.8.4. In case of overload of a system, the breaker triggers and switches the system off.

▲ CAUTION ▲

If a breaker corresponding to a non essential system trips, do not reset in flight.



If a breaker corresponding to an essential system trips:

- allow it to cool for about three minutes, then the breaker may be reengaged (pressed down)
- if the breaker trips again, do not reset.

BUS 1, BUS 2, BUS 3 and BUS 4 bus bars are directly connected to main bus bar and protected by fuses located in electrical power system.

The ESS BUS 1 and ESS BUS 2 essential bus bars are connected to main bus bar through ESS BUS TIE switch set to NORM position. ESS BUS TIE switch is attached to breaker panel ; NORM position is protected and locked by a cover. Common power supply to both essential bus bars is protected by a fuse, located in EPS box, and a breaker, located in the front cargo compartment on C2 frame right side, each bar being individually protected by a breaker.

BATT BUS bar is directly connected to the battery ; it is protected by a fuse, located in EPS box, and a breaker, located in the front cargo compartment on C2 frame left side.

• NOTE •

The electrical distribution of bus bars is described in figure 7.8.3.

•

Emergency use

With both generators de-activated in flight, it is still possible to use battery power to supply all airplane systems maintaining SOURCE selector on BATT position.

In order to save battery power, it is possible to shed the charges which are not essential for flight safety, for that set :

- ESS BUS TIE switch to EMER position

In this configuration, only ESS BUS 1, ESS BUS 2 and BATT BUS bars are supplied.

• NOTE •

Supplying BUS 1, BUS 2, BUS 3 and BUS 4 bars is always possible, resetting temporarily ESS BUS TIE switch to NORM position.

•

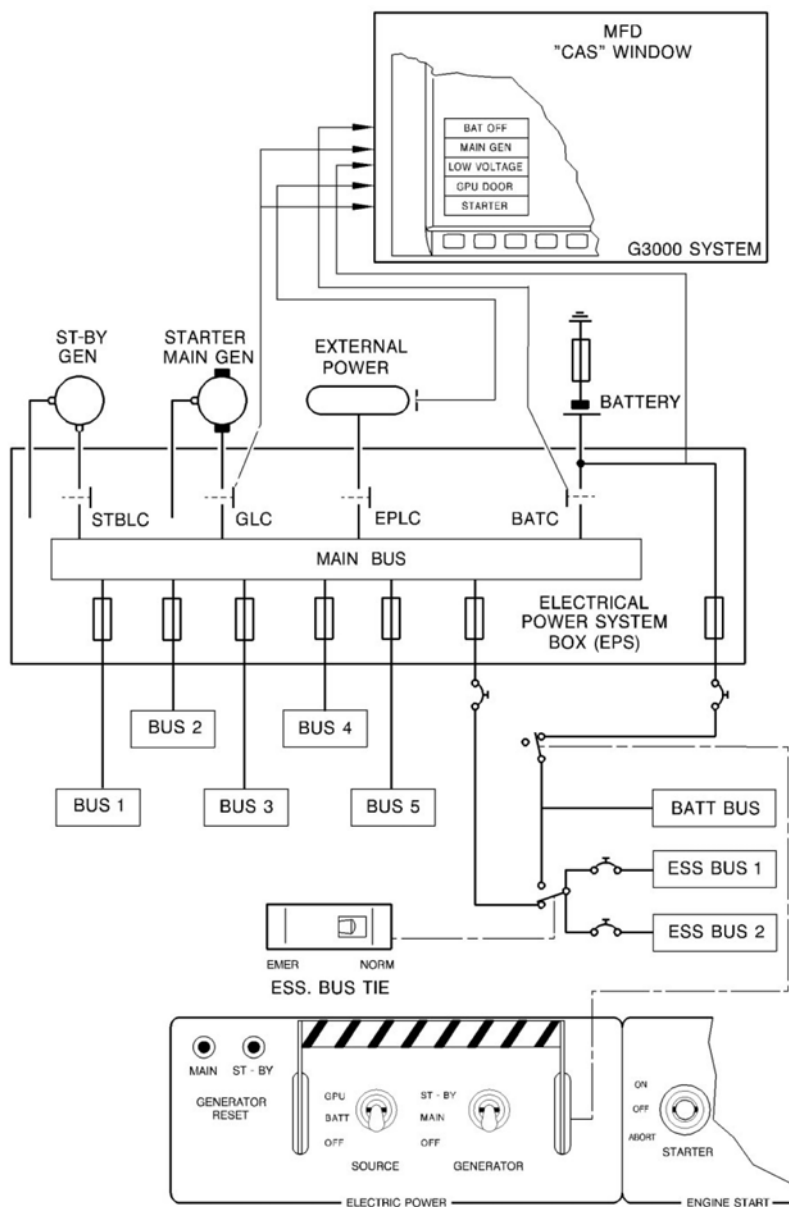
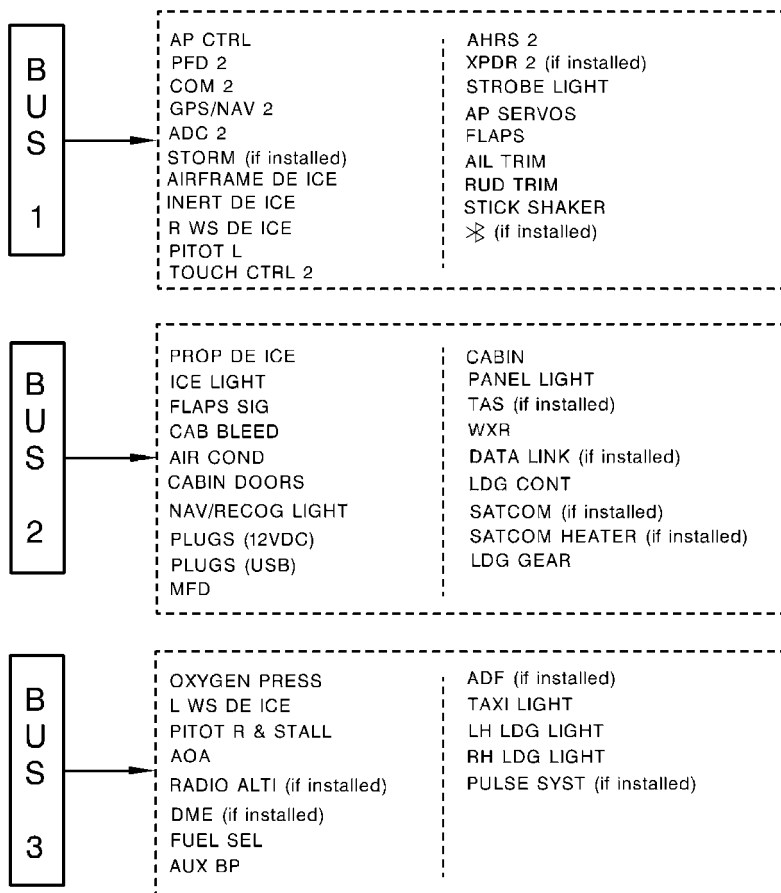


Figure 7.8.1 - Electrical diagram

Switches				Buses are powered by				
Crash lever	Source	Generator	ESS BUS TIE	BATT BUS	ESS BUS 1	ESS BUS 2	BUS 1 TO 5	
UP	BATT	OFF	NORM	Battery	Battery	Battery	Battery	
UP	BATT	MAIN	NORM	Battery & MAIN	Battery & MAIN	Battery & MAIN	Battery & MAIN	
UP	BATT	ST-BY	NORM	Battery & ST-BY	Battery & ST-BY	Battery & ST-BY	Battery & ST-BY	
UP	OFF	MAIN	NORM	MAIN	MAIN	MAIN	MAIN	
UP	OFF	ST-BY	NORM	ST-BY	ST-BY	ST-BY	ST-BY	
UP	BATT	OFF	EMER	Battery	Battery	Battery	None	

(*) In that case, power is done by MAIN or ST-BY and battery is used as a floated battery.

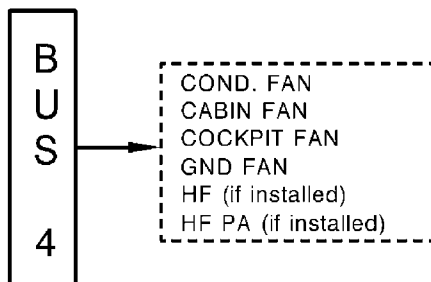
Figure 7.8.2 - Bus bars supply configurations



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Figure 7.8.3 - (1/3) - Electrical distribution of bus bars

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NOTE: BREAKERS ON C13 BIS FRAME

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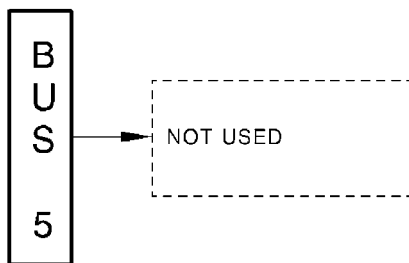
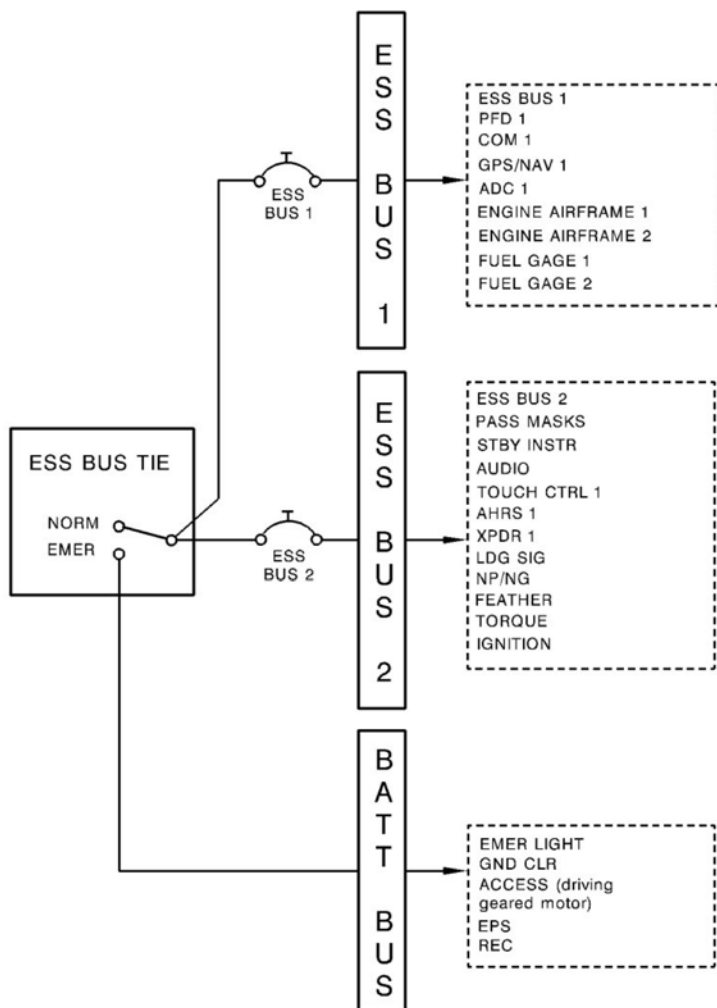


Figure 7.8.3 (2/3) - Electrical distribution of bus bars



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Figure 7.8.3 (3/3) - Electrical distribution of bus bars

ESS BUS TIE	Essential bus NORM & EMER switch
BUS 1	
AP SERVOS	Autopilot servo protection
FLAPS	Flaps protection
AIL TRIM	Aileron trim protection
RUD TRIM	Pitch trim protection
BUS 2	
LDG GEAR	Landing gear general supply protection
ESS BUS 1	
ESS BUS 1	Essential bus 1 circuit protection
PFD 1	Primary Flight Display 1 protection
COM 1	VHF 1 protection
GPS/NAV 1	GPS NAV 1 protection
ADC 1	Air Data Computer 1 protection
ENGINE	Powerplant cont. protec. : Oil temp. & pres., torque, propeller
AIRFRAME 1	
ENGINE	Powerplant cont. protection : Ng, flowmeter & ITT
AIRFRAME 2	
FUEL GAGE 1	L.H. fuel gage protection
FUEL GAGE 2	R.H fuel gage protection
ESS BUS 2	
ESS BUS 2	Essential bus 2 circuit protection
PASS MASKS	Passengers' oxygen masks protection
STBY INSTR	Standby Attitude Module (MD302) protection
AUDIO	Audio control panel protection
TOUCH CTRL 1	Touchscreen controller 1 protection
AHRS 1	Attitude and Heading Reference System 1 protection
XPDR 1	Transponder 1 protection
LDG SIG	Landing gear indicating system protection
NP/NG	Tachometer signal conditioner protection
FEATHER	Propeller feather protection
TORQUE	Torque control protection
IGNITION	Powerplant ignition protection
(Cont'd on next page)	

Figure 7.8.4 (1/5) - Breaker panel (Typical arrangement)

BUS 1	
AP CTRL	Flight controller protection
PFD 2	Primary Flight Display 2 protection
COM 2	VHF 2 & radio protection
GPS/NAV 2	GPS NAV 2 protection
ADC 2	Air Data Computer 2 protection
STORM	Stormscope protection, if installed
AIRFRAME DE ICE	Empennage and wing leading edges deicing
INERT DE ICE	Inertial separator protection
R WS DE ICE	R.H. windshield deicing protection
PITOT L	Pitot L heating protection
TOUCH CTRL 2	Touchscreen controller 2 protection
AHRS 2	Attitude and Heading Reference System 2 protection
XPDR 2	Transponder 2, if installed protection
STROBE LIGHT	Strobe lights protection
SHAKER	Stick shaker protection
BLUETOOTH	Flight Stream (FS210) protection, if installed
BUS 2	
PROP DE ICE	Propeller deicing protection
ICE LIGHT	L.H. wing leading edge lighting and lighting test protection
FLAPS SIG	Trim and flaps regulator protection
CAB BLEED	Cabin pressurization protection
AIR COND	Cabin ventilation and vapor cycle system protection
CABIN DOORS	Cabin doors opening protection
NAV/RECOG LIGHT	Navigation and recognition lights protection
PLUGS	12 VDC plugs protection
PLUGS	USB plugs protection
MFD	Multifunction display protection
CABIN	Passenger's reading lamps protection
PANEL LIGHT	Instruments lighting protection
TAS	TAS, if installed protection
WXR	Weather radar protection
DATA LINK	Data Link, if installed protection
LDG CONT	Landing gear control protection
SATCOM	SATCOM protection, if installed
SATCOM HEATER	SATCOM heater protection, if installed
(Cont'd on next page)	

Figure 7.8.4 (2/5) - Breaker panel (Typical arrangement)

BUS 3

OXYGEN PRESS	Oxygen/Pressure indication protection
L WS DE ICE	L.H. windshield deicing protection
PITOT R & STALL	Pitot R and stall warning heating protection
AOA	Angle of Attack protection
RADIO ALTI	RADIO ALTI, if installed protection
DME	DME protection, if installed
FUEL SEL	Tank selector timer protection
AUX BP	Electrical fuel pump protection
ADF	ADF protection, if installed
TAXI LIGHT	Taxi light protection
LH LDG LIGHT	L.H. landing light protection
RH LDG LIGHT	R.H. landing light protection
PULSE SYST	Pulse lite system protection, if installed

BATT BUS

EMER LIGHT	Instrument panel emergency lighting protection
GND CLR	Ground clearance protection
ACCESS	Cabin access lighting protection
EPS	Electrical power system protection
REC	Lightweight Data Recorder protection

Figure 7.8.4 (3/5) - Breaker panel (Typical arrangement)

>> Up to S/N 1159

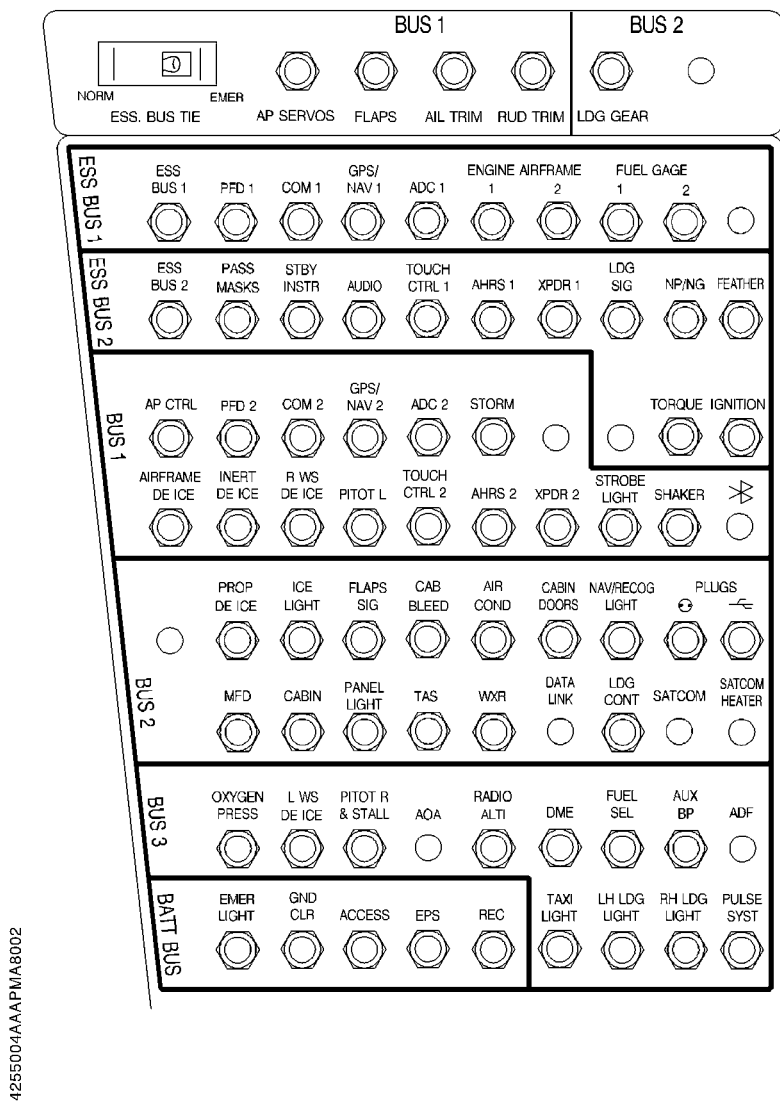


Figure 7.8.4 (4/5) - Breaker panel (Typical arrangement)

>> From S/N 1160

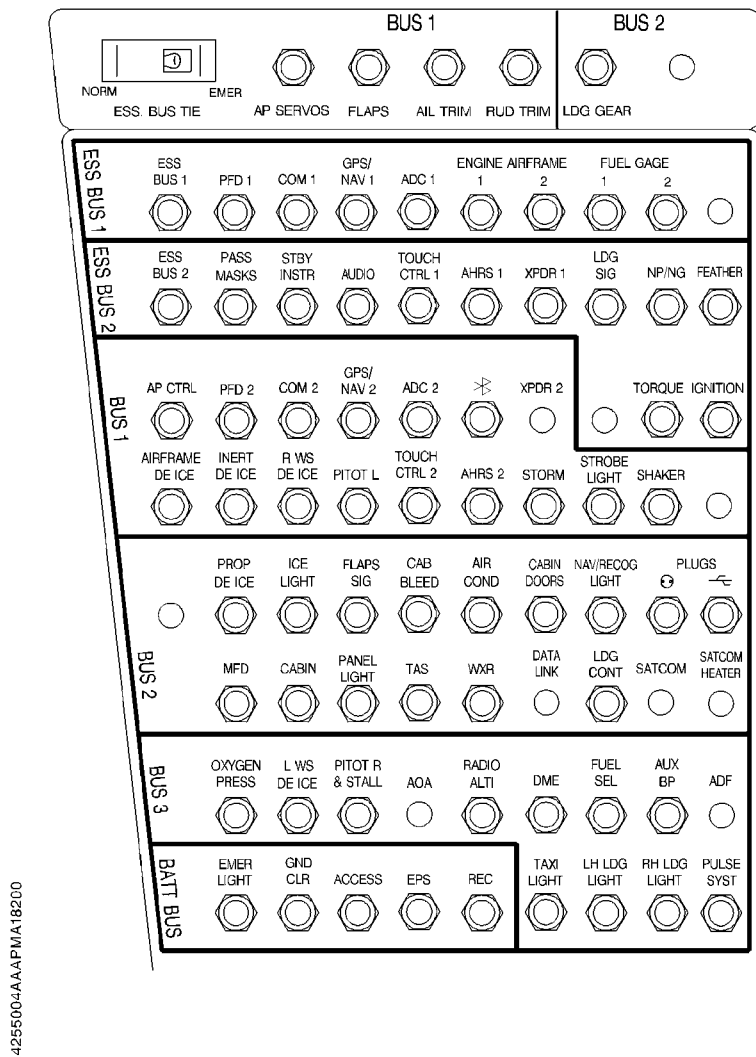


Figure 7.8.4 (5/5) - Breaker panel (Typical arrangement)

Indicating

Electrical system indicating consists of voltage and ampere indicating - refer to GARMIN pilot's guide for further details.

Following CAS messages may appear on the MFD CAS window :

BAT OFF

: Battery is not connected to main bus bar

MAIN GEN

: Starter generator is not connected to main bus bar

LOW VOLTAGE

: Battery voltage is below the minimum value

GPU DOOR

: Ground power receptacle access door is not closed

Protection - safety - see figures 7.8.2 and 7.8.5

The electrical power system provides systems protection in case of :

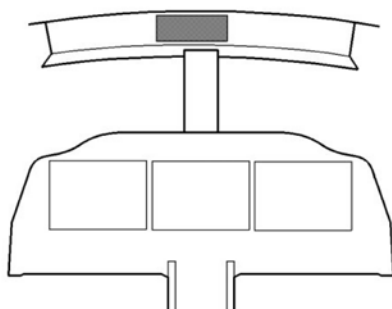
- overvoltage
- short-circuits

In case of disconnection of starter generator or stand-by generator following a failure, MAIN or ST-BY reset can be done by pressing corresponding GENERATOR RESET MAIN or ST-BY push-button.

A battery reset is done by setting the SOURCE selector to OFF and back to BATT.

In case of disconnection of ground power unit following a failure, it is possible to re-activate the system by turning the SOURCE selector to OFF and setting it again to GPU position to reset the protection.

A crash lever located on upper panel center part allows isolating simultaneously BATT BUS bar and setting to OFF the SOURCE and GENERATOR selectors when lowered. In this case all bus bars are isolated from generators.



- 1) MAIN reset knob
- 2) ST-BY reset knob
- 3) Crash lever
- 4) SOURCE selector
- 5) GENERATOR selector

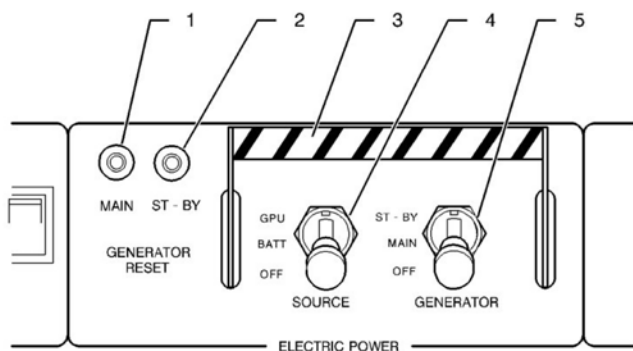


Figure 7.8.5 - Electrical control

Exterior lighting - see figure 7.8.6

■ The airplane is equipped with three strobe and navigation lights, two landing lights, two taxi lights, two recognition lights and a wing leading edge icing inspection light.

Landing lights

Landing lights are embedded in the winglets and located in leading edges. Lights illumination is controlled by setting to LDG, a switch located on upper panel.

The Pulse lite system, if installed, enables the pilot to control landing light flashing to be seen by the control tower or in heavy traffic areas.

Taxi lights

The taxi lights are embedded in the winglets and located in leading edges. They are controlled by setting to TAXI, a switch located on upper panel.

Navigation lights and strobe lights

■ Two strobe and navigation lights are installed in the winglets and one on the tail cone. They are controlled by NAV and STROBE switches located on upper panel.

● NOTE ●

By night, do not use anticollision lights in fog, clouds or mist as light beam reflexion may lead to dizziness and loss of sense of orientation.

●

Recognition lights

Recognition lights are embedded in the winglets.

They are automatically switched on when the airplane is on ground.

Leading edge icing inspection light

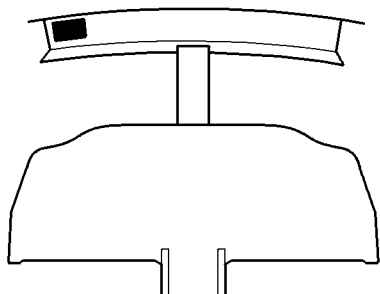
The leading edge icing inspection light is installed on fuselage L.H. side, its beam illuminates the wing leading edge. It is controlled by the ICE LIGHT switch installed on DE ICE SYSTEM panel - see figure 7.13.1.

FWD compartment light

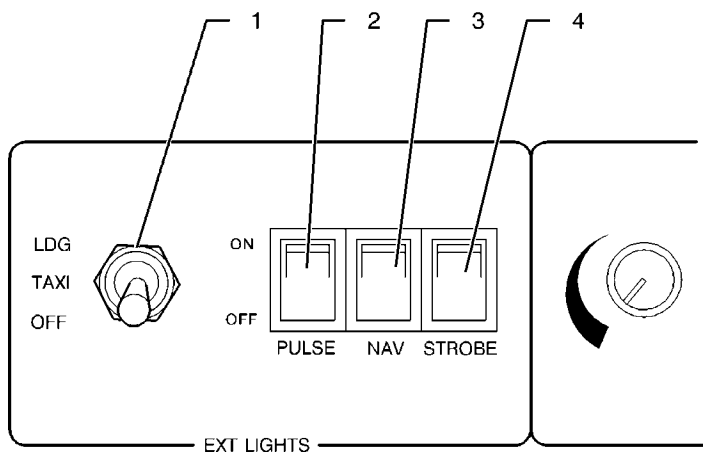
The dome light illumination of the FWD compartment is controlled by the switch located in the upper section of the door frame.

Fuel unit compartment light

The lighting of the fuel unit compartment allows improving the visibility of the clogging indicator by pressing the push-button located besides the inspection door.



- 1) Taxi and landing light switch
- 2) Pulselite system switch
- 3) Navigation lights switch
- 4) Strobe lights switch



14240000AAVMA8400

Figure 7.8.6 - External lighting controls

Interior lighting - see Figure 7.8.7

Interior lighting consists of access, cabin, instrument panel, instruments, baggage compartment and emergency lighting.

Access lighting

Access lighting consists of two floodlights located on the ceiling upholstery (one at the level of the access door, the other at the level of the storage cabinet) and the L.H. dome light of baggage compartment. ACCESS push-button on INT LIGHTS panel and the push-button located on access door rear frame control these 3 lights via a delayed breaker.

If the crash lever is down, access lighting is automatically cut out after 3 minutes.

If the crash lever is up, there is no access lighting automatic cut out.

Cabin lighting

Cabin lighting consists of two individual floodlights for front seats, six individual floodlights for rear passenger seats and the baggage compartment R.H. dome light.

Each floodlight is controlled by a push-button located near. The pilot can switch off the cabin floodlights and the baggage compartment dome light with the CABIN switch.

Instrument panel lighting

Instrument panel lighting is controlled by the PANEL rheostat located on INT LIGHTS panel. This lighting consists of backlighted panels and a led lighting for the pedestal.

Breaker panel lighting

Breaker panel lighting is controlled by a switch located on the instrument panel near the pilot's control wheel.

Emergency lighting

Emergency lighting consists of two swiveling floodlights located on both sides of the cockpit overhead panel above front seats. It illuminates instrument panel assembly in case of visor lighting tubes and / or instrument integrated lighting failure.

A rheostat located on the cockpit overhead panel controls emergency lighting operation and intensity. Forward rotation of control knob allows changing from OFF position to minimum lighting then increasing lighting to maximum brightness.

- 1) Instrument panel lighting switch (rheostat)
- 2) DIMMER switch
- 3) Cabin lighting switch (rear seats reading light)
- 4) Access door, baggage compartment and FWD dome light (delayed breaker) push-button
- 5) Emergency lighting switch
- 6) Breaker panel lighting switch

Figure 7.8.7 (1/2) - Internal lighting controls

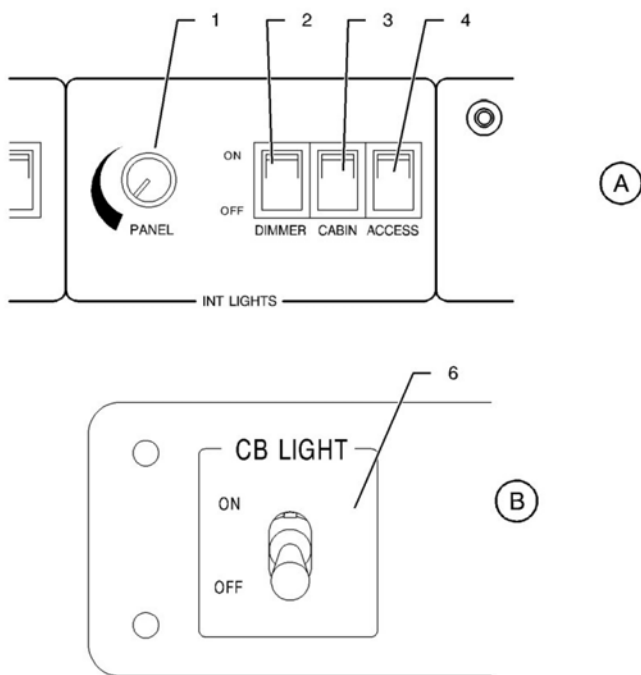
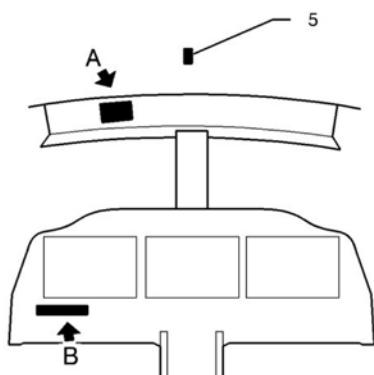


Figure 7.8.7 (2/2) - Internal lighting controls

7.9 - Air conditioning and pressurization

• NOTE •

A list of abbreviations used in this chapter is given in figure 7.9.1A.

The airplane is equipped with a Global Air System (GAS), which ensures air conditioning and pressurization control - see figure 7.9.1A.

- Air conditioning corresponds to the cockpit / cabin air temperature management.
- Pressurization corresponds to the cabin altitude / rate of change management.

The GAS is composed of 3 sub-systems :

- Engine bleed air system,
- Cabin pressurization control system,
- Dual zones Environmental Control System, which includes heating and cooling functions.

These sub-systems are managed by a single digital controller, the GASC, which receives information from :

- the sensors within the sub-systems,
- the human interfaces set in the airplane.

The GASC elaborates the proper commands to the sub-systems actuators and indication or warning elements.

GAS controls are located on :

- the A/C panel on the left side of the left control wheel,
- the PRESSURIZATION panel on the right side of the left control wheel,
- a control panel above the arm rest of the L.H. side passenger's seat.

The pilot monitors the system through gauges and CAS messages appearing on the MFD. These indications are independent of the GASC controls and internal sensors.

Engine bleed air system

The engine bleed air system is designed to ensure the following functions :

- to regulate the bleed air from the engine,
- to ensure a controlled airflow in the cabin,
- to adjust the bleed air temperature for cabin heating.

To regulate the bleed air from the engine

The engine bleed air system operates from either P2.5 or P3 engine bleed ports.

The system normally operates on the P2.5 port as long as the pressure or temperature demands are met by this port.

If one of these conditions is not met, the system automatically switches to the P3 port.

When the pressure or temperature demand can be met by the P2.5 port, the system automatically returns to using the P2.5 port.

The Inlet Pressure Port Sensor (IPPS) measures the pressure at the P2.5 port and sends the value to the GASC which manages the ports switching on condition with the Shut Off Valve (SOV).

A Non Return Valve (NRV) prevents P3 air from entering the P2.5 port when the P3 port is opened.

To ensure a controlled airflow in the cabin

The bleed air flow is controlled by the Flow Control and Shut Off Valve (FCSOV) driven by the GASC.

To adjust the temperature of the bleed air

The bleed air outlet temperature control is ensured by the By-Pass Valve (BPV) in association with the Main Heat Exchanger (MHX).

Based on pilot's or passengers' TEMP selector position, the GASC computes the appropriate cabin air inlet temperature target and compares it to the actual measured inlet temperature in order to set the BPV position. The BPV derives a part of the bleed air through the MHX to cool it and mixes it to the remaining cabin air.

System operation

See figure 7.9.2.

The BLEED switch allows selection of the engine bleed air system provided that the engine is running.

The Ground Fan (GF) operates until takeoff, when BLEED switch is set to AUTO, and **MAIN GEN** is OFF.

The BLEED switch is fitted with a blocking device between AUTO, MAX DIFF and OFF positions. This prevents the operator from inadvertently setting the BLEED switch to OFF position.

To reset the system, set BLEED switch to OFF, then back to AUTO.

System protection

Power for the engine bleed air system is supplied by the BUS 2 bar and is protected by the CAB BLEED breaker.

Cabin pressurization control system

In flight, the GASC controls the modulation of the Outflow Valve (OFV) in order to reach the computed cabin altitude.

System operation

See figure 7.9.2.

The BLEED switch allows to activate the pressurization system.

Either one of two pressurization modes can be selected : AUTO or MAX DIFF

- When BLEED switch is set to AUTO, the GASC controls the cabin altitude rate of change in order to :
 - . optimize comfort,
 - . avoid reaching maximum or negative cabin differential pressure.
- MAX DIFF mode controls the cabin pressure to assist passengers that might require the lowest cabin altitude possible. When selecting this mode :
 - . flights below 13500 ft will result in cabin altitudes as low as 0 ft,
 - . for flights above 13500 ft, the cabin altitude is minimized throughout the flight while maintaining cabin differential pressure below 6.0 PSI.

The GASC controls the OFV through a torque motor on the valve.

Cabin altitude management

In order to maximize comfort during all phases of flight, the cabin altitude is automatically computed by the GASC using flight parameters (such as aircraft altitude, altitude rate of change) sent by the avionics.

During descent, the GASC uses the Landing Field Elevation (LFE) to manage the optimal cabin altitude rate of change in order to land with a cabin altitude equal to LFE minus 200 ft.

The pilot selects LFE on the touchscreen controller :

- automatically, by setting a destination airport in the flight plan,
- manually, by pressing "MFD Home", "Aircraft Systems", "Landing Field Elev" and then "Manual".

System monitoring

The pilot monitors information related to the pressurization system through gauges and information displayed on the MFD :

- landing field altitude,
- cabin altitude in ft,
- cabin climb speed in ft/min,
- cabin differential pressure (ΔP) in PSI.

These gauges are independent of the GASC controls and internal sensors.



Figure 7.9.1 - Cabin altitude monitoring

CAS messages are displayed in the MFD CAS window :

- **BLEED TEMP** indicates that an overtemperature was detected by either the Bleed Temperature Switch (BTSW) or the Overheat Thermal Switch (OTSW).
- **BLEED OFF** indicates that either the BLEED switch is in OFF position or that a system malfunction was detected by the GASC. The Flow Control and Shut Off Valve (FCSOV) is automatically closed in flight if either a cabin inlet overtemperature, or a BDPS or FCSOV failure is detected.
- **BLEED OFF** is displayed 45 seconds after landing if a fault on the Overheat Thermal Switch was detected by the GASC during flight.
- **CABIN ALTITUDE** indicates that the cabin altitude is over 10000 ft.
- **CABIN DIFF PRESS** indicates that the cabin differential pressure is over 6.4 psi (441 mb). The DUMP switch could be used in case of necessity to depressurize the cabin.
- **CPCS BACKUP MODE** indicates that the GASC cannot compute optimal cabin altitude due to a system malfunction. Under this condition, the GASC will control the cabin altitude to 9800 ft default value.
- **MAX DIFF MODE** indicates that the BLEED switch is set to MAX DIFF.

Protection - Safety

Cabin is automatically depressurized as soon as the airplane is on ground through landing gear switches (airplane on ground) or, if necessary, by actuating DUMP switch located on PRESSURIZATION panel (in normal operation, this switch is protected and locked by a cover).

Overpressure and negative relief safety are managed by both OFV and SFV. The safety functions are ensured by independent pneumatic modules fitted on both valves, which override the GASC control when necessary.

The DUMP switch allows the pilot to open the OFV in order to depressurize the cabin.

The OFV is fitted with a cabin altitude limitation device which overrides the DUMP function and forces the closure of the OFV if the cabin altitude reaches 14500 ft.

Dual zones Environmental Control System (ECS)

The ECS ensures both Cockpit and Cabin heating and cooling functions.

The ECS consists of two independent air circuits :

- Heating circuit, controlled by Temperature Conditioning System (TCS)
- Cooling circuit, controlled by Vapor Cycle Cooling System (VCCS)

Heating circuit

The TCS regulates hot air coming from the bleed air system (also used for pressurization) and mixes it with the recirculating cabin air at the Mixing Ejector (MIXEJ) in order to lower the delivered air temperature.

The resultant air flow enters the Hot Air Distributor (HAD) and is distributed in the cockpit / cabin zones depending on the demand.

The air is distributed :

- into the cockpit zone through :
 - . ports located on pedestal sides,
 - . ports under each seat or
 - . the demisting outlets.
- into the cabin zone through :
 - . ports located on the lower section of the L.H. side and R.H. side cabin upholstery.

Cooling circuit

The VCCS is selected on only when the GASC receives a cooling request. It is composed of two independent circuits :

- one for the cockpit zone
- one for the cabin zone

For each circuit, air is sucked by means of a variable speed electrical fan and then blown through an evaporator and ducted to the different zones :

- cockpit circuit, by passing through :
 - . the upper panel equipped with swivelling and adjustable air outlets,
 - . air outlets located on arm rests of pilot and R.H. side front passenger stations and
 - . ports located under instrument panel.

- cabin circuit, by passing through :
 - the overhead duct equipped with swivelling and adjustable air outlets,
 - ports located on the floor between the cabinets and the intermediate passenger's seats.

System operation

See figure 7.9.2 and paragraph Air temperature management.

A/C control panel selection :

If the A/C switch is set to OFF :

>> *Before GASC software evolution (Pre-MOD70-0689-21)*

- Temperature is set by default by the GASC to 23°C,

>> *After GASC software evolution (Post-MOD70-0689-21)*

- The system maintains the cabin air inlet temperature previously selected. The pilot can modulate this temperature by using the TEMP selector on A/C panel,

>> *All*

- Cockpit / Cabin evaporator fans are OFF,
- VCCS is inhibited.

If the A/C switch is set to PILOT :

- Controls located in the cabin zone are inhibited.

If the A/C switch is set to PLT+PAX :

- Each zone is controlled by its own settings.

FAN speed selectors positions :

- OFF : prevents recirculation of cold air through the cold air circuit (VCCS).
- 1 - 4 : Cockpit / Cabin fan speeds are selectable.

TEMP selectors :

- Allow adjustment of the temperature for the cockpit and cabin zones.

>> *After GASC software evolution (Post-MOD70-0689-21)*

- If the pilot or passengers set the TEMP selector to the maximum heat position, the bleed air system automatically switches from the P2.5 to the P3 bleed port to increase the temperature and flow rate of the incoming bleed air. Except in the case of very cold environmental conditions, this switching is inhibited below 25000 ft.

>> *All*

HOT AIR FLOW distributor :

The HOT AIR FLOW distributor selects between windshield defog or cabin heating.

• NOTE •

For maximum efficiency, the HOT AIR FLOW distributor should be set either in defog position (fully turned to the left) or in cabin position (fully turned to the right).

•

>> *After GASC software evolution (Post-MOD70-0689-21)*

When the HOT AIR FLOW distributor is set in defog position (fully turned to the left), the bleed air system automatically switches from the P2.5 to the P3 bleed port to increase the temperature and flow rate of the incoming bleed air. Except in the case of very cold environmental conditions, this switching is inhibited below 25000 ft.

>> *All*

Emergency air system :

An emergency ventilation valve allows outside air to enter the cabin when the EMERGENCY RAM AIR control knob is pulled out. The EMERGENCY RAM AIR control knob is located under the right side of instrument panel near the right control wheel.

- In NORMAL position, the valve is closed and the control is locked.
- To open the emergency ventilation valve, press the locking button on the knob and pull out.

• NOTE •

Reduce the cabin differential pressure, if necessary by depressurizing the cabin, to be able to operate the EMERGENCY RAM AIR control knob.

•

System protection

Power for the ECS is supplied by the BUS 2 bar and is protected by the AIR COND breaker.

Four fans are supplied by BUS 4 bar and protected respectively by following breakers : COND FAN, CABIN FAN, COCKPIT FAN and GND FAN.

The system includes an automatic load shedding feature which :

- when **MAIN GEN** is ON :
 - . turns off the Ground Fan (GF),
 - . turns off the Condenser Fan (COND FAN),
 - . opens compressor clutch.
- during engine start :
 - . turns off all the Vapor Cycle Cooling System (VCCS)

Air temperature management

Cockpit and cabin heating / cooling

Cockpit and cabin air temperature management is operated by selecting :



For optimal air temperature management, select :



Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Warm				
Cabin area	Hot				

Results

Mixed Bleed Air Circuit :

Warm air is distributed to both cockpit and cabin. More warm air is directed to cabin due to the greater temperature demand.

Cold Air Circuit :

Not active, as no TEMP selector is set in the blue arc.

FANS select 0. Selecting a FAN speed will reduce cabin air temperature.

Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Warm				
Cabin area	Warm				
<u>Results</u> <u>Mixed Bleed Air Circuit</u> : Warm air is distributed to both cockpit and cabin equally due to equal temperature demand. <u>Cold Air Circuit</u> : Not active, as no TEMP selector is set in the blue arc. <u>FANS</u> select 0. Selecting a FAN speed will reduce cabin air temperature.					
Cockpit area	Warm				
Cabin area	Cool				
<u>Results</u> <u>Mixed Bleed Air Circuit</u> : Warm air is distributed to both cockpit and cabin. More warm air is directed to cockpit due to the greater temperature demand. <u>Cold Air Circuit</u> : Cabin TEMP selector is set in the blue arc resulting in cabin air conditioning system supplying the cabin area. <u>Cockpit FAN</u> : select 0. <u>Cabin FAN</u> : select 1 or more to circulate the cooled air.					

Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Cool				
Cabin area	Cool				

Results

Mixed Bleed Air Circuit :

With the cockpit and cabin TEMP selectors set in the blue arc, the Hot Air Distributor discharges the mixed bleed air below the floor towards the cold air circuit fans and evaporators to reduce the air to the desired temperature.

Cold Air Circuit :

Both cockpit and cabin TEMP selectors are set in the blue arc resulting in both cockpit and cabin air conditioning systems supplying their respective area.

Cockpit and cabin FANS :

Select 1 or more to circulate the cooled air.

Cockpit area	Cool				
Cabin area	Warm				

Results

Mixed Bleed Air Circuit :

Warm air is distributed to both cockpit and cabin. More warm air is directed to cabin due to the greater temperature demand.

Cold Air Circuit :

Cockpit TEMP selector is set in the blue arc resulting in cockpit air conditioning system supplying the cockpit area.

Cockpit FAN : select 1 or more to circulate the cooled air.

Cabin FAN : select 0.

• NOTE •

FANS selected to zero ensures that no cool air is recirculated when trying to maximize the heating of the cockpit and / or cabin zones.

Cabin override

Selecting the switch to PILOT position disables TEMP and FAN speed selectors in the cabin area.

The PILOT position also distributes warm air equally to the cockpit and cabin.

Only the cockpit TEMP and FAN selectors inputs are used by the GASC for air temperature management.



Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Warm				
Cabin area	/				

Results

Mixed Bleed Air Circuit :

Warm air is distributed equally to both cockpit and cabin. The temperature is selected by the cockpit TEMP selector.

Cold Air Circuit :

Not active, as the cockpit TEMP selector is set in the red zone and cabin TEMP selector is inhibited.

Cockpit FAN : select 0. Selecting a FAN speed will reduce cabin air temperature.

Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	Cool				
Cabin area	/				
<u>Results</u> <u>Mixed Bleed Air Circuit</u> : With the cockpit TEMP selector set in the blue arc, the Hot Air Distributor discharges the mixed bleed air below the floor towards the cold air circuit fans and evaporators to reduce the air to the desired temperature. <u>Cold Air Circuit</u> : Cockpit TEMP selector is set in the blue arc resulting in both cockpit and cabin air conditioning systems to supply their respective area. <u>Cockpit FAN</u> : select 1 or more to circulate the cooled air. Cockpit FAN speed selector determines cabin FAN speed.					

Windshield DEFOG

Windshield defog is operated by selecting :



or



Air temperature expectations		Cockpit panel selection		Cabin panel selection	
Cockpit area	/				
Cabin area	/				

Results

Mixed Bleed Air Circuit :

Air is distributed to the windshields and cockpit side windows at a fixed temperature regardless of TEMP selector settings.

Cold Air Circuit :

Inhibited when DEFOG is selected.

FANS will continue to operate if selected to 1 or more for air circulation.

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- 1) Demisting outlets
- 2) Front vents
- 3) Cockpit ventilated temperature sensor (CKVTS)
- 4) Cabin ventilated temperature sensor (CBVTS)
- 5) Air ports
- 6) Cabin control panel
- 7) Global air system controller (GASC)
- 8) Out-flow valve (OFV)
- 9) Safety valve (SFV)
- 10) Condenser fan
- 11) Condenser
- 12) High pressure switch
- 13) Drier filter
- 14) Cabin fan
- 15) Cabin evaporator
- 16) Cabin blown temperature sensor (CBBTS)
- 17) Cabin thermostatic valve
- 18) Low pressure switch
- 19) A/C and PRESSURIZATION panel
- 20) Cockpit thermostatic valve
- 21) Cockpit fan
- 22) Cockpit evaporator
- 23) Cockpit blown temperature sensor (CKBTS)

Figure 7.9.1A (1/3) - GAS items list and abbreviations

- 24) Demisting microswitch
- 25) Hot air distributor (HAD)
- 26) Cabin inlet temperature sensor (ITS)
- 27) Cabin bleed temperature switch (BTSW)
- 28) Mixing ejector (MIXEJ)
- 29) Check valve
- 30) MFD unit
- 31) Ground safety microswitch
- 32) Differential pressure switch
- 33) By-pass valve (BPV)
- 34) Cabin altitude alarm switch
- 35) Emergency air supply system
(EMERGENCY RAM AIR)
- 36) Main heat exchanger (MHX)
- 37) Ground fan (GF)
- 38) Flow control shut off valve (FCSOV)
- 39) Bleed differential pressure sensor (BDPS)
- 40) Compressor
- 41) Shut-off valve (SOV)
- 42) Overheat thermal switch (OTSW)
- 43) Non return valve (NRV)
- 44) Intermediate port pressure sensor (IPPS)
- 45) Cabin pressure sensor

Figure 7.9.1A (2/3) - GAS items list and abbreviations

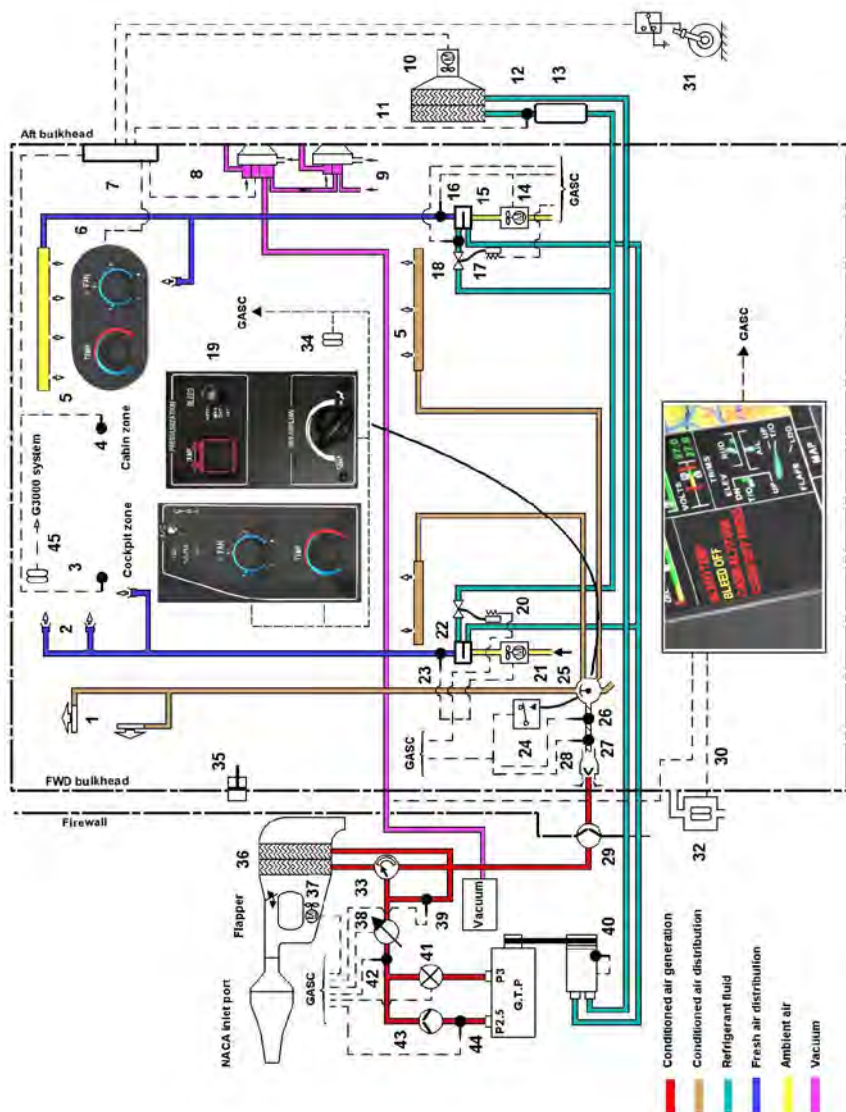


Figure 7.9.1A (3/3) - GAS

- 1) A/C switch
- 2) FAN speed selector (cockpit/cabin)
- 3) TEMP selector (cockpit/cabin)
- 4) DUMP switch
- 5) HOT AIR FLOW distributor
- 6) BLEED switch
- 7) FAN speed selector (cabin)
- 8) TEMP selector (cabin)

Figure 7.9.2 (1/2) - GAS controls

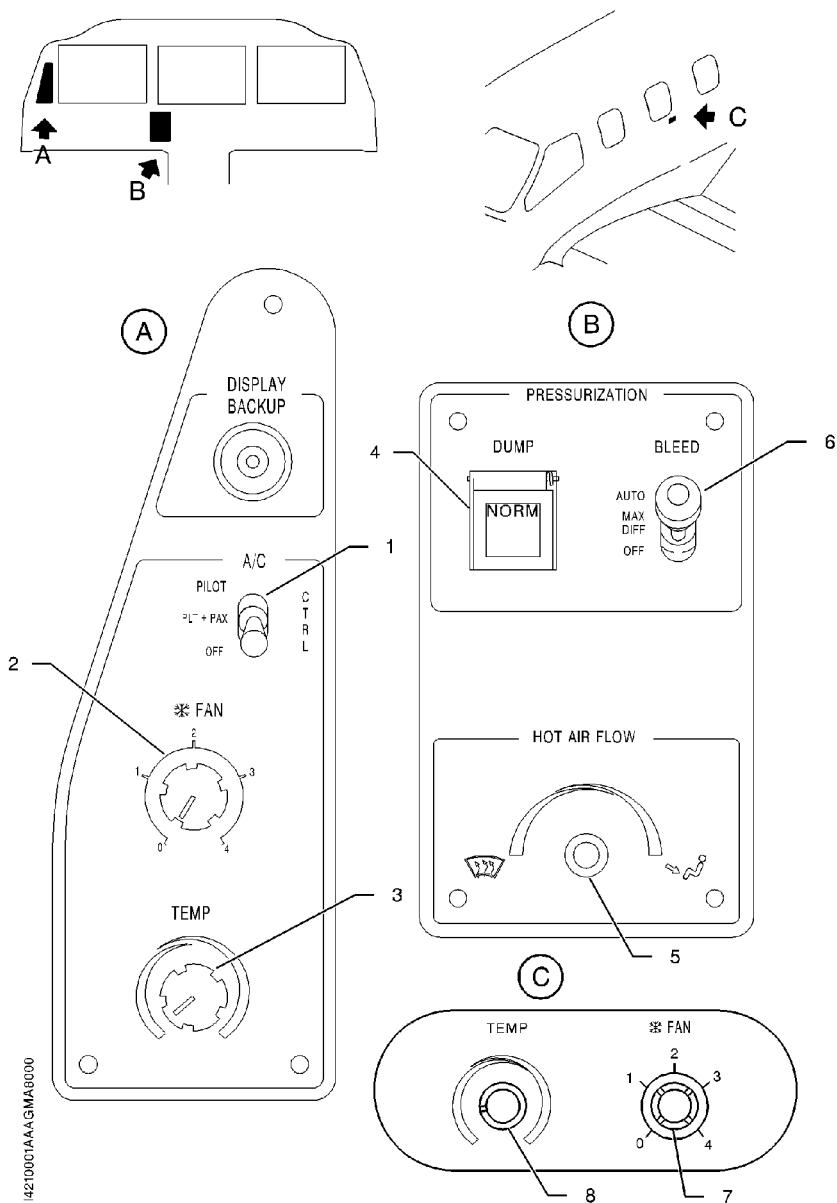


Figure 7.9.2 (2/2) - GAS controls

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7.10 - Emergency oxygen system - see figure 7.10.1

The gaseous oxygen system will be used by the crew and the passengers, when the cabin altitude is greater than 10000 ft following a loss of pressurization or in case of cabin air contamination.

USE OXYGEN MASK appears in the MFD CAS window (in normal conditions) and the USE OXYGEN MASK/USE OXYGEN MASK aural warning alert sounds when the cabin altitude is greater than 10000 ft.

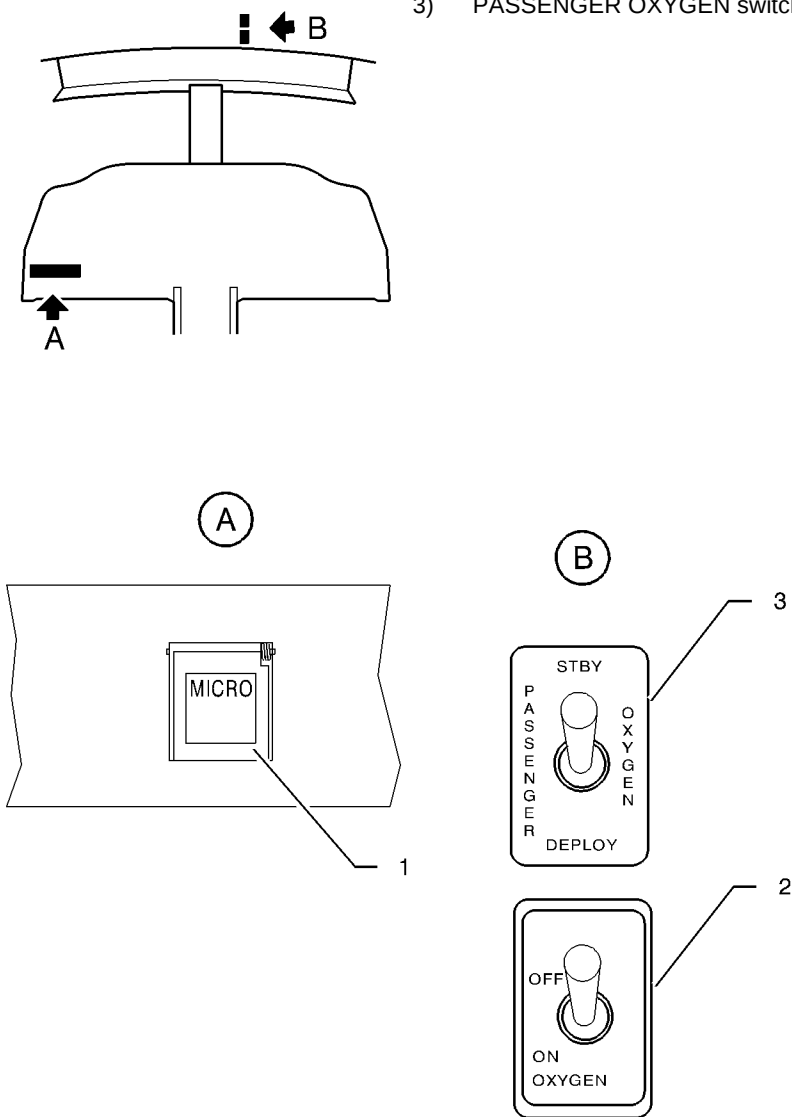
The oxygen reserve is contained in an oxygen cylinder made of composite material and located outside of the pressurized cabin into the R.H. karman. Its capacity is 50.3 cu.ft (1425 litres) STPD (Standard Temperature Pressure Dry) and use limit pressures are :

- maximum pressure 1850 PSIG (127 bars) at 70° F (21° C).
Evolution of this pressure according to the outside temperature is given in section 8, figure 8.7.4, as well as on a placard on the inside of the cylinder service door,
- minimum pressure 217 PSIG (15 bars).

The oxygen cylinder head is equipped with :

- a hand-controlled isolation valve to permit cylinder installation and removal,
- a microswitch causing **OXYGEN** to light on. This message lights on, when the isolation valve is closed,
- a graduated pressure gage,
- a charging valve - refer to the replenishment procedure in section 8,
- an overpressure system consisting of a safety disc. This disc is designed to rupture between 2500 and 2775 PSIG (172 and 191 bars) discharging the cylinder contents outboard,
- a pressure reducing valve adjusting utilization pressure to a value comprised between 64 and 85 PSIG (4.4 and 5.9 bars),
- a low pressure safety valve calibrated to 116 PSIG (8 bars).

- 1) MICRO / MASK switch
- 2) OXYGEN switch
- 3) PASSENGER OXYGEN switch



14231204AAAFMA8002

Figure 7.10.1 - Emergency oxygen system

Pilot's Operating Handbook

A control panel located in the cockpit overhead panel at the disposal of the pilot includes :

- a two-position valve ON/OFF (OXYGEN switch) to permit the supply of the front seats occupiers masks,
- a two-position valve DEPLOY/STBY (PASSENGER OXYGEN switch) with guard to permit the supply of the passengers four masks, when the first valve is open.

Oxygen pressure is displayed on the MFD.

An altimetric valve provides an automatic passengers masks actuation function at a cabin altitude between 13000 and 14000 ft when OXYGEN switch is set to ON.

Two pressure-demand type masks allowing quick donning with only one hand, covering the nose and the mouth, as well as two pairs of smoke goggles are at disposal of the pilot and of the R.H. front seat occupier. Masks are installed in cups on the cabin walls aft of the front seats. Permanently connected to the oxygen system, they are equipped with a micro controlled by the MICRO/MASK switch under cover located on the instrument panel near the pilot's control wheel. The cockpit masks are equipped with a microphone, a three-position selector NORMAL, 100 % and EMERGENCY and with a push-button PRESS TO TEST. The proper flow is signaled by a flow indicator (blinker) into the oxygen tubing.

The airplane is equipped with two smoke goggles.

Four passengers constant-flow type masks, covering the nose and the mouth and permanently connected, are installed in two containers on the cabin ceiling. The opening of these containers and the descent of the masks are controlled by the pilot, when OXYGEN switch is set to ON and PASSENGERS OXYGEN switch is set to DEPLOY, or automatically at a cabin altitude between 13000 and 14000 ft with the OXYGEN switch set to ON. The oxygen flow is obtained by pulling on the mask bounded by a lanyard cord to a pin. A proper flow is signaled by the filling of the green bag located on each passenger mask.

▲ WARNING ▲

Do not smoke during oxygen system use.

Oil, grease, soap, make up, lipstick and any other greasy substances constitute a serious fire or burning hazard, when in contact with oxygen.



Flight above 15000 ft with possible emergency descent

Minimum oxygen pressure (PSIG) for following conditions :

- 4 minutes from 31000 to 15000 ft. All equipment used from 31000 ft.
- Plus 30 minutes usage by each pilot and passenger at 15000 ft.
- Plus 86 minutes usage by each pilot at 10000 ft.

Number of occupants		Outside temperature						
Cockpit	Cabin	110° F/ 43° C	90° F/ 32° C	70° F/ 21° C	50° F/ 10° C	30° F/ -1° C	10° F/ -12° C	-10° F/ -23° C
1	0	631	614	597	580	563	546	529
1	1	759	736	713	691	668	646	623
1	2	885	856	828	799	771	743	715
1	3	1010	976	941	907	873	839	806
1	4	1137	1096	1056	1015	975	935	897
2	0	1037	1001	965	930	894	859	825
2	1	1164	1122	1080	1038	997	956	916
2	2	1289	1241	1192	1144	1097	1050	1004
2	3	1416	1361	1306	1252	1198	1145	1093
2	4	1541	1480	1418	1357	1297	1238	1180

Figure 7.10.2 - Minimum oxygen pressure (PSIG)
[Flight above 15000 ft with possible emergency descent]

● NOTE ●

After a long parking time in the sunshine, increase pressures indicated in the table here above by 8 %.



When required to remain above 15000 ft due to minimum enroute altitude

Minimum oxygen pressure (PSIG) for following conditions :

- Flight above 15000 ft. All equipment used.
- 1 hour usage by each pilot and passenger.
- Plus 1 hour usage by each pilot under 15000 ft.

Number of occupants		Outside temperature						
Cockpit	Cabin	110° F/ 43° C	90° F/ 32° C	70° F/ 21° C	50° F/ 10° C	30° F/ -1° C	10° F/ -12° C	-10° F/ -23° C
1	0	618	602	585	569	552	536	520
1	1	842	816	789	763	736	710	685
1	2	1067	1029	992	955	918	882	846
1	3	1513	1240	1192	1144	1097	1050	1004
1	4	1513	1452	1392	1333	1275	1217	1161
2	0	992	958	925	891	858	825	793
2	1	1215	1170	1125	1081	1037	994	952
2	2	1439	1382	1326	1270	1215	1161	1108
2	3	1662	1593	1525	1457	1391	1326	1262
2	4	1888	1807	1725	1645	1567	1490	1415

Figure 7.10.3 - Minimum oxygen pressure (PSIG)
[When required to remain above 15000 ft due to minimum enroute altitude]

• NOTE •

After a long parking time in the sunshine, increase pressures indicated in the table here above by 8 %.

•

Flight between 15000 ft and 10000 ft

Minimum oxygen pressure (PSIG) for following conditions :

- Flight under 15000 ft.
- 90 minutes usage by each pilot and **one** passenger.
- Plus 30 minutes usage by each pilot at 10000 ft.

Number of occupants		Outside temperature						
Cockpit	Cabin	110° F/ 43° C	90° F/ 32° C	70° F/ 21° C	50° F/ 10° C	30° F/ -1° C	10° F/ -12° C	-10° F/ -23° C
1	0	618	602	585	569	552	536	520
1	1	961	929	896	864	833	801	770
1	2	961	929	896	864	833	801	770
1	3	961	929	896	864	833	801	770
1	4	961	929	896	864	833	801	770
2	0	992	958	925	891	858	825	793
2	1	1333	1282	1231	1181	1131	1083	1035
2	2	1333	1282	1231	1181	1131	1083	1035
2	3	1333	1282	1231	1181	1131	1083	1035
2	4	1333	1282	1231	1181	1131	1083	1035

Figure 7.10.4 - Minimum oxygen pressure (PSIG)
[Flight between 15000 ft and 10000 ft]

• NOTE •

After a long parking time in the sunshine, increase pressures indicated in the table here above by 8 %.

•

O₂ smart mike mask, if installed

The two cockpit masks, O₂ smart mike masks, are equipped with a system that detects when a communication is made operating one of the push-to-talk buttons. It activates a noise reduction system that attenuates the oxygen flow noise in the headsets.

Noise reduction function operates when the switch located on O₂ connecting line is set to ON.

14351100AAEMA8000

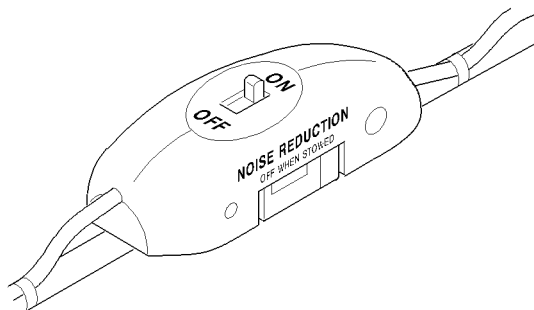


Figure 7.10.5 - Noise reduction switch

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7.11 - Air data system and instruments - see figure 7.11.1

Airplane air data system consists of :

- two separate static pressure systems supplying the standby attitude module and air data computers (ADC).

A part of system 1 is backed up by an alternate system which operation is controlled by a switching valve (normal / alternate) attached to instrument panel under R.H. control wheel. In case of obstruction or icing of ports, this selector isolates airplane normal static system. When selector is on alternate position (pulled rearwards), static pressure is picked from a port located in airplane rear fuselage.

- two separate dynamic pressure systems supplying the standby attitude module and air data computers.

Static pressure systems**Primary systems**

Two dual static ports (one on either side of the fuselage tail part) supply a dual system routed towards the cockpit.

System 1 part, which is connected to the switching valve (normal / alternate), supplies the ΔP cabin and the electronic standby indicator. The system remainder directly supplies one of the air data computers.

System 2 is directly connected to the second ADC.

Systems feature a drain valve located under the instrument panel on R.H. side.

Alternate static source

The alternate static port located in the rear fuselage supplies a system routed to the switching valve (normal / alternate) in order to replace static system 1.

The alternate line incorporates a drain plug located under the instrument panel on R.H. side.

- Static pressure from alternate line is only provided to standby instrument.

Dynamic pressure system

One heated pitot probe is installed under the L.H. wing. The second one is installed under the R.H. wing. The first one supplies the standby attitude module and one ADC.

The second one supplies the other ADC.

Both lines incorporate a drain plug located in the root of L.H. and R.H. wings.

Pitot heating

Pitot heating is controlled by PITOT L HTR and PITOT R & STALL HTR switches, installed on DE-ICE SYSTEM panel. Refer to chapter 7.13 for further details.

▲ CAUTION ▲

Do not use heating during prolonged periods on ground to avoid pitot
overheat.



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- 1) Pitot L
- 2) Dynamic system drain
- 3) Standby Attitude Module (MD302)
- 4) ADC
- 5) ADC
- 6) FWD pressure bulkhead
- 7) Static system drain
- 8) Static system drain
- 9) Static system drain
- 10) Emergency static system drain
- 11) Emergency static valve (Normal / alternate)
- 12) Instrument panel
- 13) Dynamic system drain
- 14) Pitot R
- 15) Rear pressure bulkhead
- 16) Static port
- 17) Emergency static port
- 18) Static port

Figure 7.11.1 (1/2) - Air data system

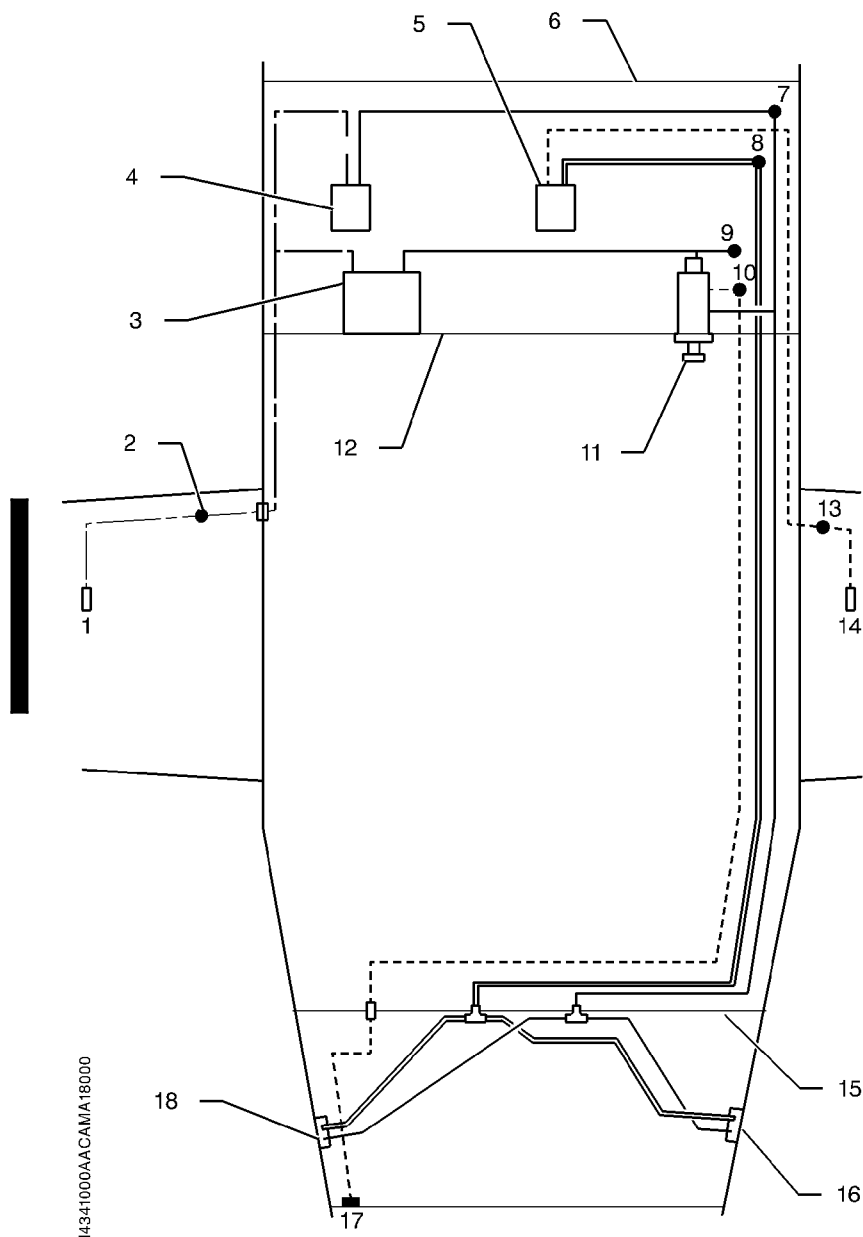


Figure 7.11.1 (2/2) - Air data system

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7.12 - Vacuum system and instruments - see figure 7.12.1

The airplane is fitted with a vacuum system providing the suction necessary to operate the cabin pressurization and the leading edge deicing.

Vacuum system includes :

- A pressure regulator
- An ejector
- A regulating and relief valve
- A pressure switch

Compressed air necessary for the ejector to create decompressed air is taken from the powerplant. The air flow is regulated before going into the ejector which creates necessary vacuum by venturi effect.

A relief valve fixed in cabin to frame C2, maintains the vacuum for pressurization system. In case of pressure drop, a pressure switch, installed in the system, indicates the failure by causing **VACUUM LOW** to light on.

Standby attitude module (MD302)

The Mid-Continent Instrument and Avionics MD302 Standby Attitude Module consists of two LCD screens. The first screen displays the airplane attitude (pitch and roll) and the second screen displays the airplane altitude and airspeed. The MD302 is powered from the ESSENTIAL BUS 2 or internal replaceable battery ensuring that the airplane can continue safe flight and landing in the event of a loss of primary attitude and air data displays. Pitot and static pressures are provided to the MD302 solid state electronic sensors using the airplane pitot probe and static sources.

The standby attitude module is located in the top left hand corner of the instrument panel.

- 1) Pressure regulator
- 2) Ejector
- 3) Valve
- 4) Regulating and relief valve
- 5) Pressure switch
- 6) Failure CAS message

Figure 7.12.1 (1/2) - Vacuum system

14370000AAA/PMA18000

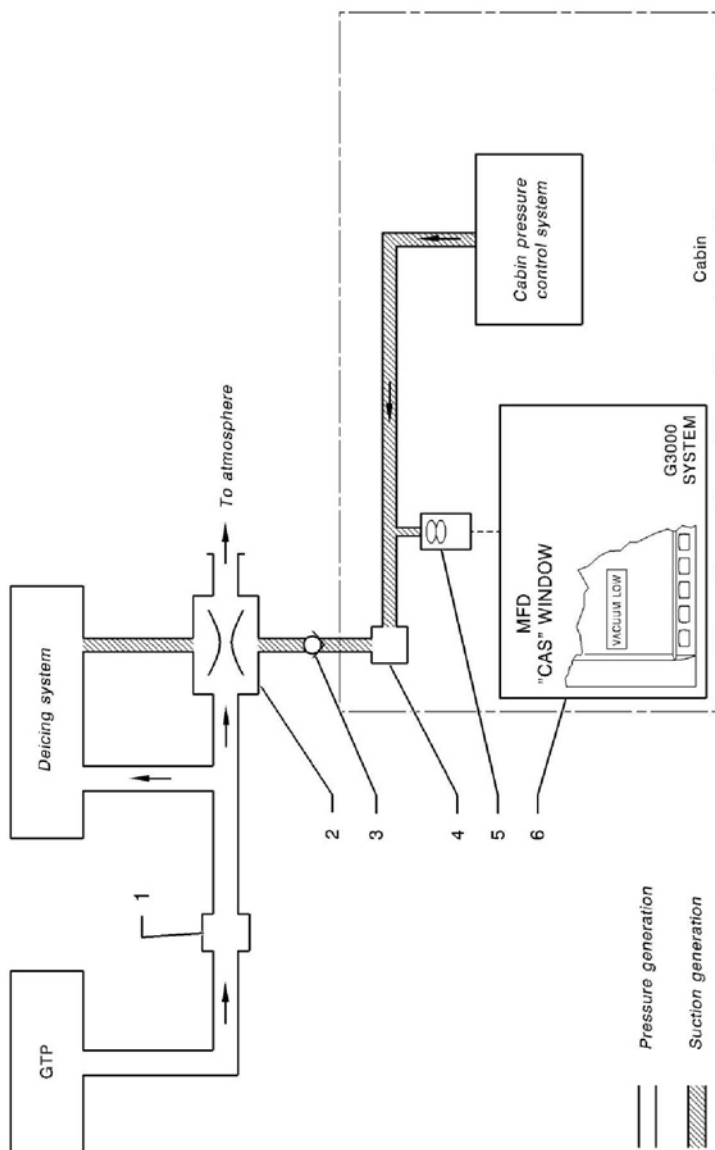


Figure 7.12.1 (2/2) - Vacuum system

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7.13 - Ice protection equipment - see figure 7.13.1

Ice protection equipment is as follows :

- Pneumatic deice system for inboard, central and outboard wing and for stabilizers : AIRFRAME DE ICE
- Propeller electrical deice system : PROP DE ICE
- Windshield electrical deice system : WINDSHIELD
- Electrical heating system for both pitots and for the stall warning sensor : PITOT L HTR and PITOT R & STALL HTR
- Turbine air inlet deice systems : INERT SEP

Deicing check and control panel is located on the lower L.H. side of the instrument panel.

Wing and empennage deicing

A pneumatic deice system assures protection of wing leading edges, horizontal stabilizer, elevator horns and vertical stabilizer. The system automatically cycles when AIRFRAME DE ICE switch is set to ON. The 67-second cycle breaks down in two inflation cycles :

- a first cycle induces inflation of leading edges deicer boots in wing central and outboard sections.
- the second cycle induces inflation of leading edges deicer boots in horizontal stabilizer, elevator horns, vertical stabilizer and wing inboard section,

During each inflation cycle, one of the two corresponding warning lights located above AIRFRAME DE ICE switch, remains illuminated.

Wing leading edge icing inspection light - see chapter 7.8 paragraph Exterior lighting.

Propeller deicing

Propeller deicing is accomplished through electrical heating of blade roots. This system operates cyclically and alternately on the inboard and outboard zones of all blades. Each cycle is 180 seconds long. The system operation is correct when green warning light located above PROP DE ICE switch illuminates. The cycles continue as long as the switch remains set to ON.

PROP DE ICE ON illuminates if the engine is shut down with PROP DE ICE switch still ON.

▲ CAUTION ▲

When engine is shutdown, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.



Windshield deicing

The windshields are deiced electrically by integrated heating resistors. The system includes a controller and two heat probes embedded in each windshield. They are operated by the WINDSHIELD switch.

When the switch is positioned to ON, the controller supplies the heating resistors, the windshield temperature is monitored by probe 1. When the temperature reaches 45°C (113°F), the controller cuts the electrical supply to the heating resistors and resumes supply when the temperature falls below 30°C (86°F). The cycle continues as long as the switch remains set to ON.

In the event of failure of probe 1, the controller receives the temperature data from probe 2. The electrical supply to the heating resistors is cut when the windshield temperature reaches 56°C (133°F). In that case, the windshield is no longer heated, the pilot can reset the system by setting the switch to OFF, then to ON.

Two green lights located above the WINDSHIELD switch go on when the corresponding heating resistors are being supplied.

Heating of pitots and stall warning sensor (PITOT L HTR and PITOT R & STALL HTR)

The two pitots, which supply ADCs, the airspeed indicator and the stall warning sensor are electrically heated. This deice equipment must be used even during flight into non-icing conditions.

The system condition messages **PITOT NO HT L** or **PITOT NO HT R**, **PITOT HT ON L** or **PITOT HT ON R**, **STALL HEAT ON** or **STALL NO HEAT** are displayed on the MFD CAS window. Refer to the GARMIN Pilot's guide for further details.

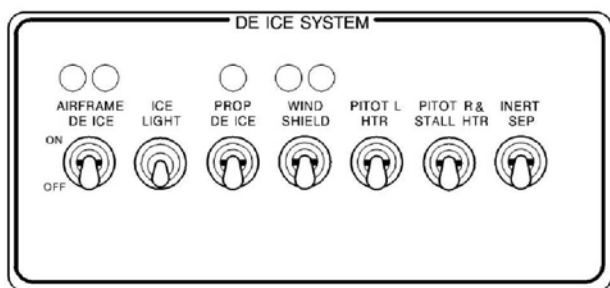
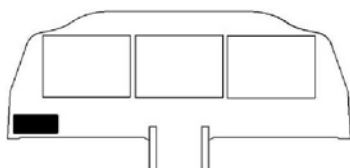
• NOTE •

Correct operation of the audible stall warning may be altered by severe or prolonged icing.

•

Turbine air inlet protection

Operation and description are set forth in chapter 7.6 paragraph Engine air inlet.



14300001AAAAGMAB100

Figure 7.13.1 - Deicing control and check panel

7.14 - Miscellaneous equipment

Stall warning system

The airplane is equipped with an electrically deiced stall sensor in the leading edge of the right wing. This sensor fitted with a vane is electrically connected to an audible warning. The vane senses the change in airflow over the wing and operates the warning unit, which produces an aural warning alert. This warning alert begins no later than 5 knots above the stall in all configurations.

Simultaneously, the control wheel vibrates through the stick shaker.

The stall warning system should be checked during the preflight inspection by momentarily turning on the SOURCE selector and by manipulating the vane in the wing.

The stall warning system should also be checked during the preflight inspection by momentarily turning on the SOURCE selector and by depressing the TEST push-button on cockpit overhead panel.

The system is operational if a stall / stall aural warning alert is heard on the alarms speaker.

• NOTE •

The audible stall warning may be altered by severe or prolonged icing.

•

Static dischargers

As an aid in flight, static dischargers are installed to improve radio communications during flight by reducing interference from dust or various forms of precipitations (rain, snow or ice crystals).

Under these conditions, the build-up and discharge of static electricity from the trailing edges of the wings (flaps and ailerons), rudder, stabilator, propeller tips and radio antennas can result in loss of usable radio signals on all communications and navigation radio equipment. Usually, the ADF is first and VHF communication equipment is the last to be affected.

Installation of static dischargers reduces interference from precipitation static, but it is possible to encounter severe precipitation static conditions which might cause the loss of radio signals, even with static dischargers installed. Whenever possible, avoid known severe precipitation areas to prevent loss of dependable radio signals. If avoidance is impractical, minimize airspeed and anticipate temporary loss of radio signals while in these areas.

Cabin fire extinguisher

The fire extinguisher is located on R.H. front station side panel.

A pressure gage allows checking the fire extinguisher condition. Follow the recommendations indicated on the extinguisher.

Autopilot

Autopilot control panel is located above the MFD. Refer to section 2 Limitations of this POH and to GARMIN Pilot's Guide for further details.

GPS

GPS navigation is performed through the GARMIN system. Refer to section 2 Limitations and section 4 Normal procedures of this POH and to GARMIN Pilot's Guide for further details.

Weather radar GWX 70

The weather information can be displayed on PFD1, PFD2 and MFD.

■ Refer to section 2 Limitations of this POH and to GARMIN Pilot's Guide for further details.

The controls for the weather radar are located on the touchscreen controllers.

- 1) MFD
- 2) Radar mode
- 3) Area of weather display
- 4) Antenna stabilization status
- 5) Touchscreen controllers
- 6) Scale for weather display

Figure 7.14.1 (1/2) - GWX 70 Weather radar display and controls

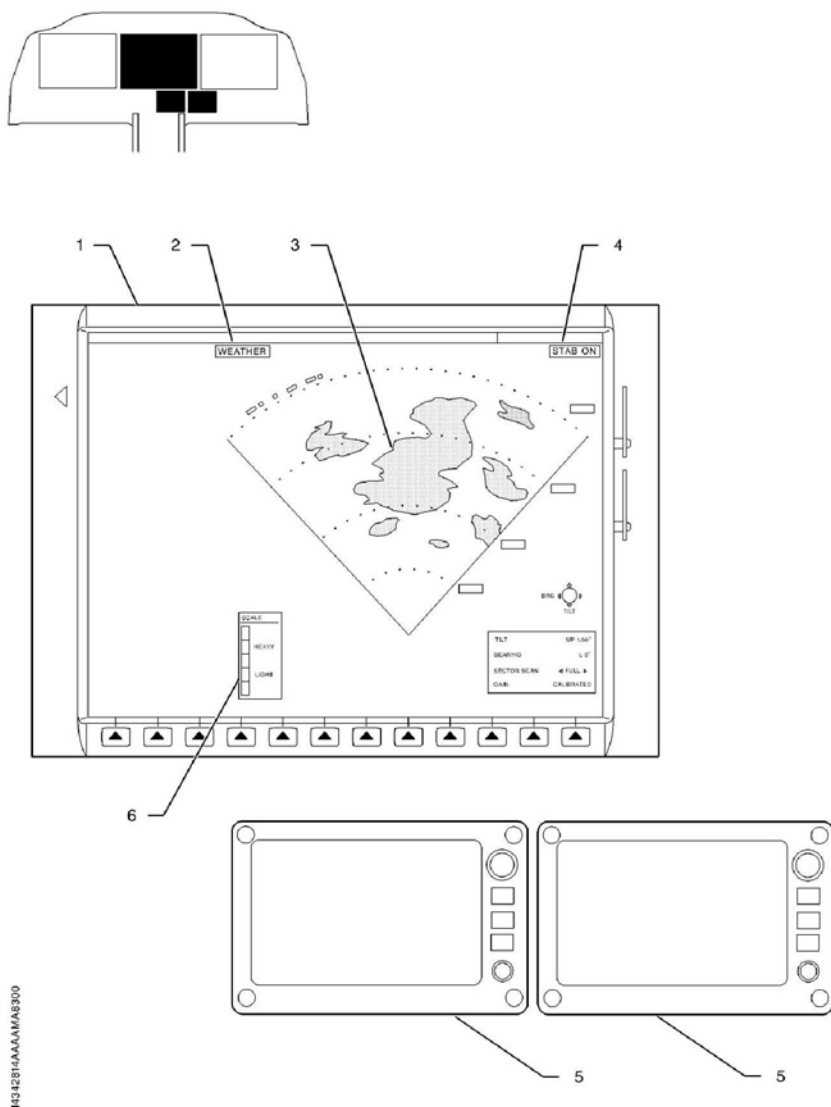


Figure 7.14.1 (2/2) - GWX 70 Weather radar display and controls

Emergency locator transmitter

The airplane is equipped with an ELT ARTEX 1000 emergency locator transmitter which enables to locate it in case of distress. It is located in fuselage rear section with a service door on fuselage R.H. side.

The emergency locator transmitter assembly is constituted of a transmitter supplied by a battery, of an antenna attached on upper fuselage and of a remote control located on the upper panel.

● NOTE ●

For test sequences, refer to manufacturer manual.

●

Operation of the emergency locator transmitter is obtained as follows :

- from the instrument panel by setting ELT remote control switch to ON (locator transmitter ARM/OFF switch set to ARM/OFF),
- from the locator transmitter by setting its ARM/OFF control switch to ON,
- automatically in case of shock, when remote control switch is set to ARM/OFF and locator transmitter switch is set to ARM/OFF.

A red indicator light located on ELT remote control switch in the cockpit indicates to the pilot the emergency locator transmitter is transmitting.

A red indicator light located above locator transmitter switch and a buzzer located in the fuselage rear section indicate the emergency locator transmitter is transmitting.

▲ CAUTION ▲

Reset the ELT after an inadvertent activation.



● NOTE ●

The ELT cannot be reset if either the remote control switch or ELT switch is ON.

●

Reset procedure :

- 1) Set remote control switch or ELT switch to ON.
 - a) The ELT keeps on transmitting emergency signal.
 - b) On remote control box, red indicator light flashes.
 - c) On ELT, red indicator light flashes.
 - d) Near ELT, the buzzer sounds.
- 2) Wait approximately for 1 second.

- 3) Set remote control switch to ARM/OFF or ELT switch to ARM/OFF.
 - a) The ELT does not transmit emergency signal any longer.
 - b) On remote control box, red indicator light illuminates for about 1 second, then goes off.

or
 - c) On ELT, red indicator light goes off.
 - d) Near ELT, the buzzer does no more sound.

Then ELT is reset.

End of procedure.

Lightweight data recorder (LDR 1000), if installed

The airplane is equipped with a lightweight data recorder which is a crash-survivable system, recording both cockpit voices and flight data. These data are intended to be used after an accident or an incident.

The lightweight data recorder system includes a cockpit microphone located on instrument panel, between the standby instrument and the autopilot control panel.

The lightweight data recorder simultaneously records audio from the GMA audio control panel, audio from the cockpit microphone, data from the GASC, and data from the GIA integrated avionics unit 1 (GARMIN flight deck system).

The lightweight data recorder is powered from the BATT BUS and controlled by a printed circuit as follows :

- If the crash lever is set upward, the lightweight data recorder starts recording.
- If the crash lever is set downward, the lightweight data recorder goes on recording for 10 minutes (audio only) and then automatically stops recording.

ADS-B OUT function

The ADS-B OUT function enables the airplane to broadcast data, such as position information, to ground stations and to other airplanes equipped with ADS-B IN system.

The loss of an interfaced input to the selected extended squitter transponder may cause the transponder to stop transmitting ADS-B OUT data. Depending on the nature of the fault or failure, the transponder may no longer be transmitting all of the required data in the ADS-B OUT messages.

>> Airplane equipped with one extended squitter transponder

ADS-B OUT data is only transmitted via transponder 1. Use of transponder 2 results in a loss of the ADS-B OUT data transmission.

If the transponder 1 detects any internal fault or failure with the ADS-B OUT functionality, the following advisory message XPDR1 ADS-B FAIL will be displayed on the PFDs.

After being informed of ADS-B OUT failure either by the advisory message XPDR1 ADS-B FAIL, or by Air Traffic Control, it is possible to disable ADS-B OUT function by selecting transponder 2, if installed.

>> Airplane equipped with two extended squitter transponders

ADS-B OUT data can be transmitted from any transponder upon pilot selection.

If the transponder 1 [2] detects any internal fault or failure with the ADS-B OUT functionality, the following advisory message XPDR1 ADS-B FAIL [XPDR2 ADS-B FAIL] will be displayed on the PFDs.

After being informed of ADS-B OUT failure either by the advisory message XPDR1 ADS-B FAIL [XPDR2 ADS-B FAIL] or by Air Traffic Control, it is possible to restore ADS-B OUT function by selecting transponder 2 [1].

Flight deck information system (FS 210), if installed

The airplane is equipped with a flight deck information system allowing portable electronics devices to stream data to and from the GARMIN system.

For the system description and its utilization, refer to GARMIN Pilot's Guide.

GARMIN Integrated Flight Deck (GIFD) approaches

The purpose of this section is to provide an overview of the GIFD capabilities and operation related to GIFD Approaches.

Detailed descriptions as well as operating instructions of these approaches are provided in the applicable Pilot's Guide and Cockpit Reference Guide.

RNP approaches operation

The GIFD is capable of performing approaches with GNSS guidance also designated as RNP approaches.

RNAV (GPS) or RNAV (GNSS) – LNAV, LNAV+V

LNAV approaches provide lateral GPS-based guidance to legs defined by the navigation database.

Vertical deviations may be available if the necessary information to construct a vertical path is contained in the database.

Any vertical path information for LNAV approaches is strictly advisory.

There is no guarantee that stepdown fix altitudes will be honored and the crew must level off at the MDA if the runway is not visible.

LNAV approaches may be executed with or without SBAS, and advisory vertical guidance is dependent on sufficient GPS vertical error estimates rather than SBAS vertical integrity.

LNAV+V approaches do not downgrade in general because they do not require SBAS, although high GPS vertical error estimate anomalies could result in loss of advisory vertical guidance.

If GPS is lost the LNAV approach will be aborted.

RNAV (GPS) or RNAV (GNSS) – L/VNAV

LNAV/VNAV approaches add published vertical guidance in addition to LNAV guidance. They are different from LNAV+V in that the vertical deviations are not advisory, but rather published guidance.

The minimums of an LNAV/VNAV approach represent a DA rather than an MDA.

Execution of an LNAV/VNAV approach does not require SBAS integrity, as long as a system is configured to support barometric VNAV for approach.

If SBAS integrity is available, it will be used to provide vertical guidance.

During execution of a GPS approach with LNAV/VNAV service levels, while the aircraft is between the FAF and MAP, excessive deviation indicators appear as white vertical lines to indicate an area where the vertical deviation exceeds ± 75 feet.

If the glide-path indicator is within an area of excessive deviation, the glide-path indicator becomes yellow and the vertical lines also become yellow.

RNAV (GPS) or RNAV (GNSS) – LPV

LPV approaches provide both localizer precision lateral guidance and a vertical path definition.

SBAS integrity is required to execute the approach.

Approach level downgrade

Some automatic approach service downgrade may be performed automatically upon loss of SBAS or GPS approach alarm limits being exceeded, depending on the approach service level that has been loaded in the flight plan and activated.

This automatic downgrade is annunciated to the pilot through an APR DWNGRADE advisory message and a change in the annunciated service level in the HSI.

As the APR DWNGRADE advisory message may not be triggered under certain circumstances, the HSI annunciation shall be considered as the primary mean to annunciate any approach downgrade.

Under certain circumstances, when the GNSS integrity requirement are not met nor approach level is available the approach may be aborted.

This is annunciated through an ABORT APR advisory message and the service level annunciation being removed from the HSI.

If SBAS becomes unavailable on an RNAV LNAV/VNAV approach, **L/VNAV** is shown in yellow, the system will downgrade to LNAV service level (**LNAV** shown in magenta) and the APR DWNGRADE advisory message will be generated. The VDI will be flagged NO GP.

If SBAS becomes unavailable on an RNAV LPV approach, **LPV** will be shown in yellow, but the CDI and VDI will continue to be shown. At one minute to the FAF, an APR DWNGRADE advisory message will be generated.

The VDI will be flagged NO GP. Depending on the available lines of minima for the approach, the system will switch to either LNAV/VNAV or LNAV service level.

Optional equipment

For optional equipment such as stormscope, SVS or TAWS, refer to section 9 Supplements.

Other optional equipment such as radio altimeter or chartview system or TAS are described in the GARMIN Pilot's Guide.

• NOTE •

Refer to section 2 Limitations for chartview system operating limitations.

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Section 8**Handling, servicing and maintenance****Table of contents**

8.1	-	General	8.1.1
8.2	-	Identification plate	8.2.1
8.3	-	Publications	8.3.1
8.4	-	Inspection periods	8.4.1
8.5	-	Alterations or repairs	8.5.1
8.6	-	Ground handling	8.6.1
		Towing	8.6.1
		Parking	8.6.1
		Tie-down	8.6.2
		Jacking	8.6.4
		Leveling	8.6.4
		Flyable storage	8.6.4
		Long term storage without flying	8.6.4
8.7	-	Servicing	8.7.1
		Maintenance	8.7.1
		Engine oil	8.7.1
		Fuel	8.7.2
		Landing gear	8.7.7
		Oxygen	8.7.8
8.8	-	Airplane cleaning and care	8.8.1
		Windshield and windows	8.8.1
		Painted surfaces	8.8.1
		Propeller care	8.8.2
		Engine care	8.8.2
		Interior care	8.8.2
8.9	-	Preparation of the airplane (equipment and furnishings)	8.9.1

8.10	- Utilization by cold weather (- 0°C to - 25°C) or very cold weather (- 25°C to - 40°C)	8.10.1
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8.1 - General

This section contains the procedures recommended by the manufacturer for the proper ground handling and routine care and servicing of airplane. Also included in this section are the inspection and maintenance requirements which must be followed if your airplane is to retain its performance and dependability.

It is recommended that a planned schedule of lubrication and preventive maintenance be followed, and that this schedule be tailored to the climatic or flying conditions to which the airplane is subjected.

For this, see manufacturer maintenance manual.

Intentionally left blank

8.2 - Identification plate

Any correspondence regarding your airplane should include its serial number. This number together with the model number, type certificate number and production certificate number are stamped on the identification plate attached to the left side of the fuselage beneath the horizontal stabilizer.

Intentionally left blank

8.3 - Publications

When the airplane is delivered from the factory, it is supplied with a POH, the GARMIN Integrated Flight Deck Pilot's Guide and supplemental data covering optional equipment installed in the airplane (refer to section 9 Supplements and pilot guides).

In addition, the owner may get access to the following publications online :

- Maintenance Manual
- Illustrated Parts Catalog
- Catalog of Service Bulletins, Service Letters

▲ **CAUTION** ▲

POH must always be in the airplane.



Intentionally left blank

8.4 - Inspection periods

Refer to regulations in force in the certification country for information concerning preventive maintenance to be carried out.

A maintenance manual must be obtained prior to performing any preventive maintenance to make sure that proper procedures are followed. Maintenance must be accomplished by licensed personnel.

Intentionally left blank

8.5 - Alterations or repairs

It is essential that the airworthiness authorities be contacted prior to any alterations or repairs on the airplane to make sure that airworthiness of the airplane is not violated. Alterations or repairs must be accomplished by licensed personnel.

Intentionally left blank

8.6 - Ground handling

▲ CAUTION ▲

Only move or tow the airplane with someone in the cockpit.



Towing

▲ CAUTION ▲

Using the propeller for ground handling could result in serious damage, especially if pressure or pull is exerted on blade tips.



The airplane should be moved on the ground with a towing bar and a suitable vehicle in order not to damage the nose gear steering mechanism. Nose gear fork is equipped with an integrated towing fitting.

▲ CAUTION ▲

Do not tow the airplane when controls are secured.

When towing with a vehicle, do not exceed the nose gear turning angle, as this may result in damage to the gear and steering mechanism
- see figure 8.6.1



Parking

When parking the airplane, head it into the wind. Do not set the parking brake when brakes are overheated or during cold weather when accumulated moisture may freeze the brakes. Care should be taken when using the parking brake for an extended period of time during which an air temperature rise or drop could cause difficulty in releasing the parking brake or damage the brake system.

Make sure that the FUEL TANK SELECTOR is set to OFF.

● NOTE ●

Do not use solar screens or shields installed on the airplane inside, or leave sun visors down against windshield when airplane on ground. The reflected heat from these items causes a temperature increase which accelerates the crack growth or crazing and may cause the formation of bubbles in the inner layer of multilayer windshields.



Beyond 24 hours parking, use windshield protection screen provided with lateral and underside straps.

For long term parking, blanking covers (static ports, pitot, engine air inlet, NACAs, exhaust stubs), cockpit cover, tie-downs, wheel chocks, propeller lock and control lock are recommended.

In severe weather and high wind conditions, tie the airplane down as outlined in the following paragraph.

Tie-down

Proper tie-down procedure is the best protection against damage to the airplane by gusty or strong winds. To tiedown the airplane securely, proceed as follows :

- Install control lock - see figure 8.6.2.
- Chock all wheels.
- Tie sufficiently strong ropes or chains to hold airplane down ; insert a rope in each tie-down hole located on flap hinge arm ; secure each rope to a ramp tie-down or to mooring rod.
- Check that doors are closed and locked.



Figure 8.6.1 - Turning angle limits

Jacking

When it is necessary to jack the airplane off the ground, refer to maintenance manual for specific procedures and equipment required.

Leveling

Level the airplane as described in maintenance manual.

Flyable storage (below 28 days)

Airplanes placed in storage for a maximum of 28 days are considered in flyable storage.

Storage from 0 to 7 days :

- Engine : according to maintenance manual P & W C.

Airplane fueling :

- Keep fuel tanks full to minimize condensation in the tanks. Keep the battery fully charged to prevent the electrolyte from freezing in cold weather.
Close oxygen cylinder isolation valve.

Storage from 8 to 28 days :

- Engine : according to maintenance manual P & W C.

Airplane fueling :

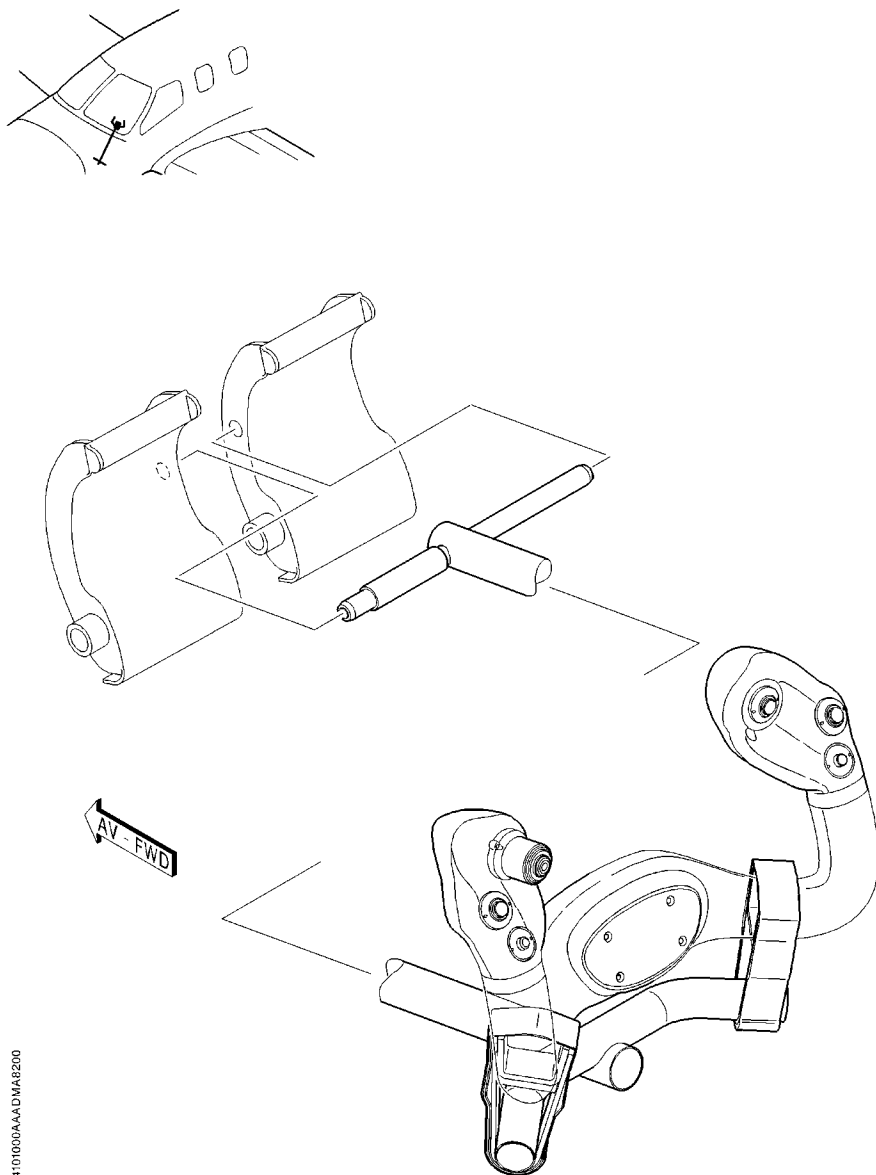
- Keep fuel tanks full to minimize condensation in the tanks. Keep the battery fully charged to prevent the electrolyte from freezing in cold weather.
Close oxygen cylinder isolation valve.

Battery, remaining in the airplane or removed :

- Disconnect battery and check its charge level at regular intervals.

Long term storage without flying (over 28 days)

Refer to maintenance manual for the procedures to follow.



14101000A44D MAB200

Figure 8.6.2 - Control lock device

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8.7 - Servicing

Maintenance

In addition to the preflight inspection, refer to section 4, Normal procedures, servicing, inspection and test requirements for the airplane are detailed in the maintenance manual.

Maintenance manual outlines all items which require servicing, inspection, testing or overhaul.

Engine oil

Type of oil

▲ **CAUTION** ▲

Do not mix different viscosities or specifications of oil as their different chemical structure can make them incompatible.



Specification

Nominal Viscosity	Specification	NATO Code
5cSt	MIL-PRF-23699G	O-156 (STD) O-154 (HTS)

Figure 8.7.1 - Recommended engine oil types

Reference : Service Bulletin P & W C. No. 14001 at the latest revision

Oil capacity

System total capacity :

12.7 Quarts (12 Litres) (oil cooler included)

Usable capacity :

6 Quarts (5.7 Litres)

Servicing

The engine oil should be changed and the oil filter cleaned/replaced at intervals recommended in Pratt & Whitney Canada Engine Maintenance Manual (EMM) (Ref. chapter 72-00-00, table 601, periodic inspection).

Oil level check

To avoid overfilling of oil tank, and high oil consumption, an oil level check is recommended within 30 minutes after engine shutdown. Ideal interval is 15 to 20 minutes. If more than 30 minutes have passed and the dipstick indicates that oil is needed, start the engine and run at LO-IDLE for five minutes, and recheck oil level.

Check oil level against marking on dipstick and top-up as required. Normal oil level is between MAX HOT and one US quart (0.83 Imp. Quart, 0.95 litres) below MAX HOT, with engine in horizontal attitude.

• NOTE •

Filling the oil to the maximum level may result in high consumption rate, with the oil exiting through the accessory gearbox breather.

•

▲ CAUTION ▲

When filler cap assembly is installed and locked, no movement is allowed.

▲

Fuel

Total capacity each tank : 150.5 USG (570 l).

• NOTE •

To minimize condensation, it is recommended that airplane be refueled after each flight, respecting weight and balance limits.

•

▲ CAUTION ▲

Never fly the airplane with contaminated (water, sand, rust, dust...) or unapproved fuel

▲

Before each flight and after each fueling, use a sampler to bleed off some fuel through each tank and fuel filter drain to detect possible contamination and be sure that fuel used is the proper quality. If contamination is present, continue draining through all draining points until fuel is free of contamination. If quality of fuel used is not correct, defuel airplane completely and refuel with proper quality fuel.

▲ WARNING ▲

During all fueling operations, fire fighting equipment must be available ; attach grounding wire to an unpainted metallic part of the airplane.

Do not operate any avionics or electrical equipment on the airplane during fueling. Do not allow open flame or smoking in the vicinity of the airplane while fueling.



▲ CAUTION ▲

During fueling operations, take care not to damage pneumatic deicer boots located on wing leading edge.

The use of aviation gasoline (AVGAS) must be restricted to emergencies only. AVGAS will not be used for more than 150 cumulative hours during any period between engine overhaul.



● NOTE ●

Use of AVGAS must be recorded in engine module logbook.



US Specification (US)	French Specification (FR)	English Specification (UK)	NATO Code
ASTM-D1655 JET A ASTM-D1655 JET A1 ASTM-D1655 JET B	AIR 3405C Grade F35	DERD 2494 Issue 9	F35 without additive
MIL-DTL-5624 Grade JP-4	AIR 3407B	DERD 2454 Issue 4 Amdt 1	F40 with additive
MIL-DTL-5624 Grade JP-5	AIR 3404C Grade F44	DERD 2452 Issue 2 Amdt 1	F44 with additive when utilization
MIL-DTL-83133 Grade JP-8	AIR 3405C Grade F34	DERD 2453 Issue 4 Amdt 1	F34 with additive S748
	AIR 3404C Grade F43	DERD 2498 Issue 7	F43 without additive

Figure 8.7.2 - Recommended fuel types
Reference : Service Bulletin P & W C. No. 14004

Fuel additives

Fuel used must contain an anti-ice additive conforming to MIL-I-27686 or MIL-I-85470 specification.

Strict adherence to recommended preflight draining instructions as called for in Section 4 will eliminate any free water accumulations from the tank sumps. While small amounts of water may still remain emulsified in the gasoline, it will normally be consumed and go unnoticed in the operation of the engine.

One exception to this can be encountered when operating under the combined effect of use of certain fuels, with high humidity conditions on the ground followed by flight at high altitude and low temperature. Under these unusual conditions, small amounts of water emulsified can precipitate from the fuel stream and freeze in sufficient quantities to induce partial icing of the engine fuel system.

While these conditions are quite rare and will not normally be a problem to owners and operators, they do exist in certain areas of the world and consequently must be dealt with, when encountered.

Therefore, to alleviate the possibility of fuel icing occurring under these unusual conditions, it is required to add an ethylene glycol monomethyl ether (EGME or DIEGME) compound to the fuel supply.

The introduction of an EGME or DIEGME compound into the fuel provides two distinct effects :

- it absorbs the dissolved water from the fuel
- alcohol has a freezing temperature depressant effect.

EGME or DIEGME must be carefully mixed with the fuel in concentration, it must be between a minimum of 0.06 % and a maximum of 0.15 % by volume. Figure 8.7.3 provides EGME or DIEGME / fuel mixing ratio information.

▲ CAUTION ▲

Do not permit the concentrate of EGME or DIEGME to come in contact with the airplane finish or fuel tank

Mixing of the EGME or DIEGME with the fuel is extremely important. An excessive concentration (greater than 0.15 % by volume maximum) will result in detrimental effects to the fuel tanks by deterioration of protective primer, sealants and seals of system and engine components. Use only blending equipment recommended by the manufacturer to obtain proper proportioning.



Prolonged storage of the airplane will result in a water buildup in the fuel which leeches out the additive. An indication of this is when an excessive amount of water accumulates in the fuel tank sumps. The concentration can be checked using a differential refractometer. It is imperative that the technical manual for the differential refractometer be followed explicitly when checking the additive concentration.

Fuel and fuel additives in Ukraine and CIS countries

It is possible to use kerosene GOST 10227 RT with addition of anti-icing liquid :

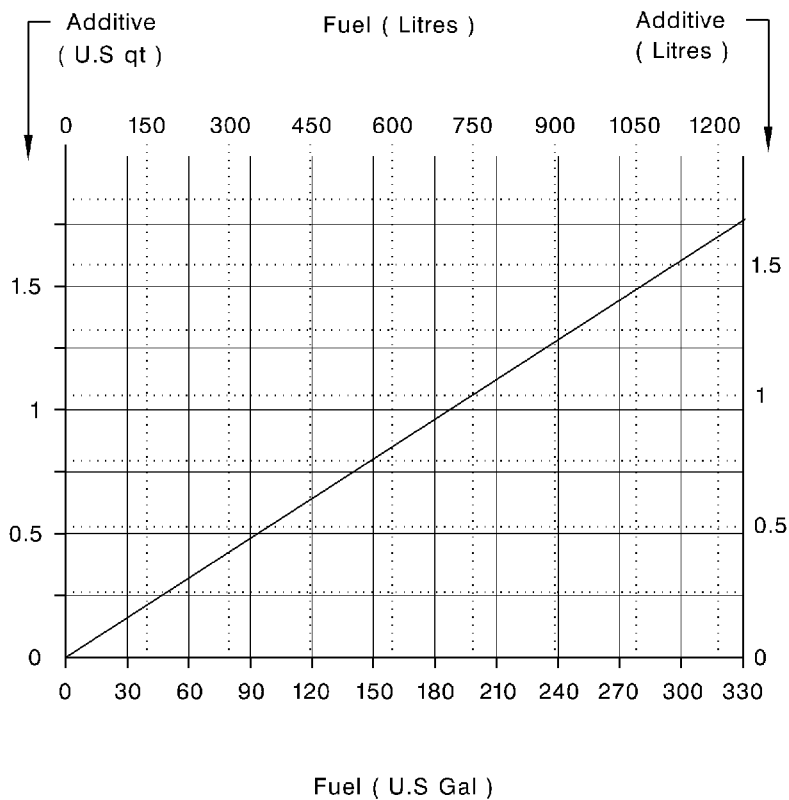
- liquid И - GOST 8313-88

Above-mentioned liquid is added in the quantity equal to 0.3 percent per volume.

▲ **CAUTION** ▲

Refer to Service Bulletin P & WC No. 14004 at its latest revision for appropriate quantities.





I4284000AAEMA8000

Figure 8.7.3 - Additive mixing ratio (EGME or DIEGME)

Landing gear

Nose gear tire

5.00-5 10 PR - Inflation pressure : 98 psi (6.7 bars) *

Main gear tires

18 5.5 10 PR - Inflating pressure : 135 psi (9.32 bars) *

Nose gear shock absorber

Fill with hydraulic fluid AIR 3520 B (MIL.H5606E) ; inflate with nitrogen to 87 psi (6 bars).

Main gear shock absorbers

Fill with hydraulic fluid AIR 3520 B (MIL.H5606E) ; inflate with nitrogen to 160 psi (11 bars).

Hydraulic system

Check every 100 hours and service with AIR 3520 B (MIL.H5606E) hydraulic fluid.

Brakes

Service as required with AIR 3520 B (MIL.H5606E) hydraulic fluid.

• NOTE •

A higher inflation pressure has to be applied to tires and shock absorbers when in very cold conditions - refer to chapter 8.9.

•

- (*) Tire inflation pressures are given for an airplane on ground at 21° C.
An ambient temperature change of 3° C produces approximately 1 % pressure change.

Oxygen

The replenishment device of the oxygen cylinder is installed directly on the cylinder head. It consists of a charging valve and of a pressure gage graduated from 0 to 2000 PSIG. A chart - see figure 8.7.4, located on the inside of the cylinder service door, gives the cylinder charge maximum pressure according to the environment temperature.

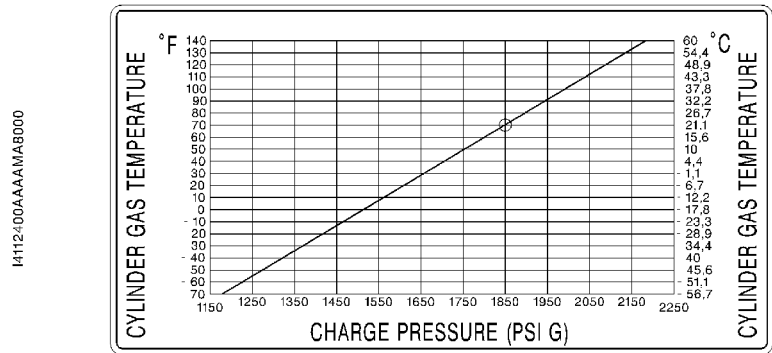


Figure 8.7.4 - Charge pressure chart

Replenishment procedure**▲ WARNING ▲**

Make sure that the airplane is fitted with a grounding cable and is properly grounded.

The oxygen cart must be electrically bonded to the airplane.

Do not operate the airplane electrical switches or connect/disconnect ground power during oxygen system replenishment.

Do not operate the oxygen system during refueling/defueling or perform any other servicing procedure that could cause ignition.

Introduction of petroleum based substances such as grease or oil to oxygen creates a serious fire hazard. Use no oil or grease with the oxygen replenishment equipment.

Always open shut-off valve slowly to avoid generating heat and replenish the system slowly at a rate not exceeding 200 PSIG (13.7 bars) per minute.

**▲ CAUTION ▲**

Replenishment of the oxygen system should only be carried out by qualified personnel.

**● NOTE ●**

The cylinder full charge is assured for a pressure of 1850 PSIG (127 bars) at a temperature of 70° F (21° C). If the cylinder temperature differs from 70° F (21° C), refer to figure 8.7.4 which lists the required pressures according to the cylinder temperature.



- 1 - Open the oxygen service door on the R.H. rear karman.
- 2 - Measure the oxygen cylinder temperature.
- 3 - Make sure the thermometer indication is constant. Note the indication.
- 4 - Refer to the temperature/pressure chart for the correct oxygen cylinder pressure.

If the pressure on the oxygen cylinder gage is low :

Fill the oxygen cylinder

- 5 - Make sure the area around the oxygen cylinder charging valve is clean. Remove the cap from the charging valve.
- 6 - Make sure the oxygen supply hose is clean and connect it to the charging valve.
- 7 - Slowly pressurize the oxygen cylinder to the correct pressure.
- 8 - Close the oxygen supply and let the cylinder temperature become stable.
- 9 - Monitor the oxygen pressure on the gage and fill to the correct pressure if necessary.
- 10 - Release the pressure in the oxygen supply hose and disconnect from the charging valve.
- 11 - Install the cap on the charging valve.
- 12 - Make sure all the tools and materials are removed and the work area is clean and free from debris.
- 13 - Close the oxygen service door.

Passenger masks repacking instructions**▲ CAUTION ▲**

Do not use oil or other petroleum based lubricants on passenger oxygen mask or deployment container. Oil based lubricants are a fire hazard in oxygen-rich environments.

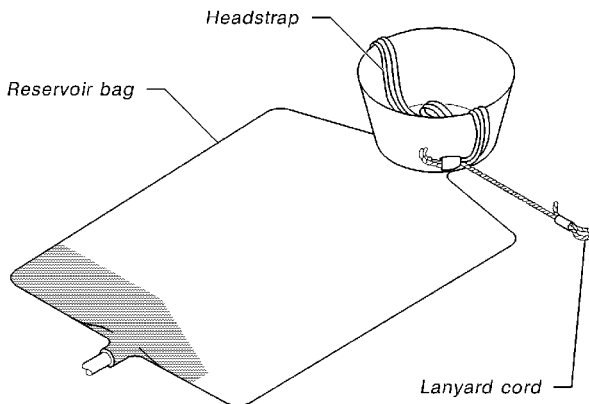
Repacking procedures shall be performed by personnel familiar with the instructions and warnings in this document. Improperly packed masks can damage the masks or result in failure of the masks to deploy.

**▲ WARNING ▲**

Masks shall be repacked in an area free of oil, grease, flammable solvents or other contaminants.

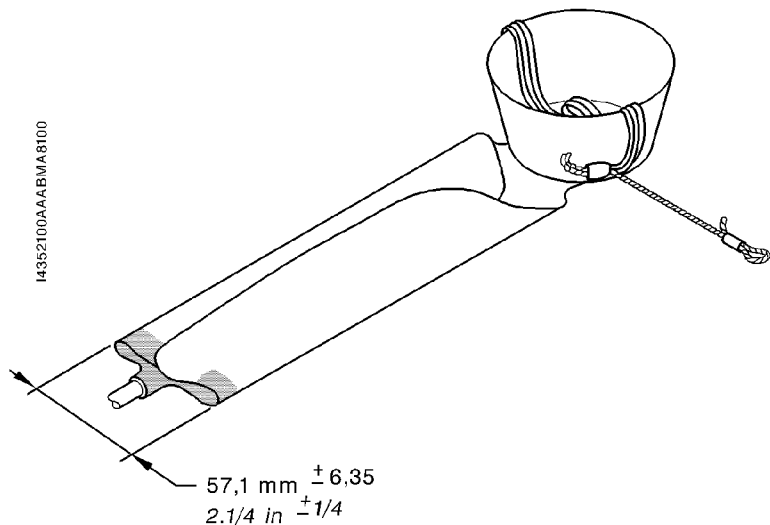


- 1 - Inspect and disinfect mask and deployment container with an aqueous solution of Zephiran Chloride (Scott Aviation P/N 00-2572) or with disinfection cleaners (EROS P/N SAN50). After disinfecting and thoroughly drying the mask, lightly dust the outside of the facepiece with Neo-Novacite powder (Scott Aviation P/N 00-736). Contamination can be removed with mild soap and water solution.
- 2 - Fold headstrap into facepiece. Pull lanyard cord out to side of facepiece so that it does not interfere with repacking.
- 3 - Lay reservoir bag on flat surface and smooth out wrinkles.



14352100AAABMA8300

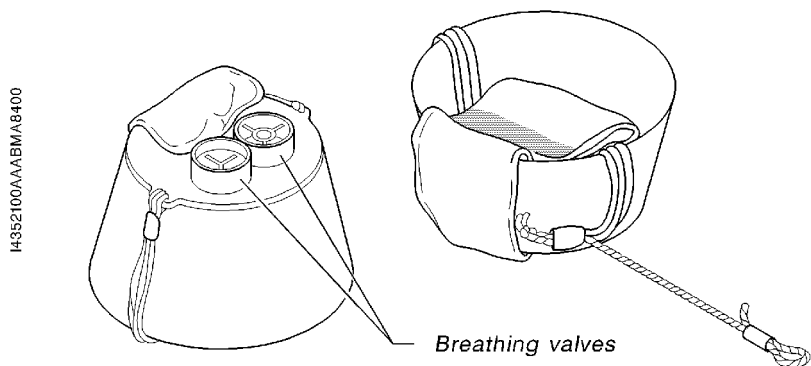
- 4 - Gently fold reservoir bag lengthwise into thirds (outside edges folded inward over center of bag). Do not crease bag.



- 5 - Fold reservoir bag away from breathing valves and into facepiece. Make sure bag does not cover breathing valves.

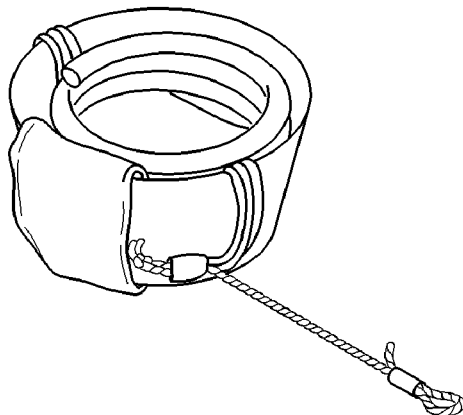
Top view

Bottom view



- 6 - Coil oxygen tubing inside facepiece over reservoir bag.

I4352100AAABMA18000



- 7 - Connect oxygen tubing to manifold oxygen fitting.

▲ WARNING ▲

Make sure lanyard pin is inserted into correct check valve for mask being installed. Cross connected pins will result in passengers pulling lanyard cords only to initiate oxygen flow to another mask.



- 8 - Insert lanyard pin into corresponding check valve.
- 9 - Place mask facepiece - first in deployment container. Make sure that oxygen tubing and lanyard cord are free to deploy and are not caught between the container and lid.
- 10 - Close and latch deployment container lid.

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8.8 - Airplane cleaning and care

Windshield and windows

The windshield and windows should be cleaned with an airplane windshield cleaner.

● **NOTE** ●

Refer to the maintenance manual for products and procedures to apply.



Apply the cleaner sparingly with soft cloths and rub with moderate pressure until all dirt, oil scum and bug stains are removed. Allow the cleaner to dry, then wipe it off with soft flannel cloth.

▲ **CAUTION** ▲

Do not use any of the following products on, or for cleaning windows :
methanol, methylated alcohol, gasoline, benzene, xylene,
methyl-ethyl-ketone, acetone, carbon tetrachloride, lacquer paint
thinners, commercial or household window cleaning sprays. In case of
doubt concerning a product, do not use it.

During cleaning operation, avoid wearing objects such as ring, watch,
bracelet and exercise care to prevent buttons, buckles and any hard
objects from touching the windshield and the windows.

Adhesive tapes other than Minnesota 3m type 670 shall not be used on
acrylic surfaces.

Never use buffing machines as excessive forces or speeds might
produce redhibitory defects.



Follow by carefully washing with a mild detergent and plenty of water. Rinse
thoroughly, then dry with a clean moist chamois. Do not rub the plastic with a dry cloth
since this builds up an electrostatic charge which attracts dust. Waxing will finish the
cleaning operation. A thin, even coat of wax polished out by hand with clean soft
flannel cloth will fill in minor scratches and help prevent further scratching.

Do not use a canvas cover on the windshield unless freezing rain or sleet is
anticipated since the cover may scratch the plastic surface.

Painted surfaces

Refer to maintenance manual for the products and procedures to apply.

Propeller care

Preflight inspection of propeller blades for nicks and cleaning them occasionally with a cloth soaked with soapy water to clean off grass and bug stains will assure long blade life. Never use an alkaline cleaner on the blades ; remove grease and dirt. Refer to maintenance manual for the procedures to follow.

Engine care

Refer to maintenance manual for the procedures to follow.

Interior care

To remove dust and loose dirt from the upholstery and carpet, clean the interior regularly with a vacuum cleaner.

For additional information, refer to maintenance manual.

8.9 - Preparation of the airplane (equipment and furnishings)**▲ WARNING ▲**

In any accommodation, make sure access to emergency exit is free.

**▲ CAUTION ▲**

Removed equipment items must be stowed in a place which ensures their integrity.



Many accommodations are authorized by airplane manufacturer. They are enumerated in section 7.

This procedure specifies how to change your 6-seat accommodation into 4-seat accommodation, and conversely. However, it can be used partly to remove or install an equipment item.

However, the pilot must ensure that he gets all necessary authorizations from his regulatory authority.

1 - Conversion of 6-seat accommodation into 4-seat accommodation - see figures 8.9.1, 8.9.2, 8.9.3 and 8.9.4

A - Tools and consumable materials

- Seat protective covers

B - Preparation

- 1) Make sure the SOURCE selector is set to OFF and the crash lever is down.

C - Removal of rear seats - see figure 8.9.1

- 1) To remove rear seats, perform the following operations

▲ CAUTION ▲

In order to prevent cushion covering damage, protective covers should be put on seats.



- a) Install protective covers.

- b) Unlock backrest using backrest tilting handle (6) and fold it forward.

• NOTE •

For the R.H. rear seat, backrest tilting handle is located behind backrest.



- c) Unlock seat using seat tilting handle (1) and tilt it forward.
- d) Clear the carpet from under the seat to facilitate moving in rails.
- e) Hold the seat in tilted position and unscrew quick links (7) of strap (9) located under L.H. seatpan.

• NOTE •

This operation is specific to L.H. seat.



- f) Pull up and hold L.H. and R.H. rings (2), and turn knobs (8) by 90° in order to release and keep locks (3) in up position.
- g) Move the seat in the rails to line up pads (4) with rail (5) apertures.
- h) Remove the seat.

• NOTE •

Ensure proper storage of strap (9) with L.H. rear seat to avoid losing part.



D - Removal of intermediate seats - see figures 8.9.2 and 8.9.3

- 1) To remove intermediate seats, perform the following operations
 - a) Install protective covers.
 - b) Pull backrest bottom upholstery (25) to remove it.
 - c) Clear the carpet from under the seat to facilitate moving in rails.
 - d) Pull up locking handle (21) located under the pan, on the seat rear side, to unlock it.
 - e) Move the seat in the rails to line up pads (23) with rail (24) apertures.
 - f) Remove the seat.
 - g) Install backrest bottom upholstery (25).

▲ CAUTION ▲

In order to prevent deflectors damage, it is necessary to remove them.



- 2) Remove deflector (34) maintained with Velcro-type strap.
- 3) If necessary, remove the cabin central carpet.

● NOTE ●

If one of two cargo nets must be installed, it is necessary to use the carpet with appropriate cuttings.



E - Removal of a cabinet

● NOTE ●

This operation must be carried out by a service center.



F - Cabin comfort - see figure 8.9.3

- 1) Blank off the hot air outlet, located forward the large door, with blanking device assy (33) stored in storage bag - see figure 8.9.3 detail A.
- 2) Remove blanking plugs (32) located forward the large door and store them into storage bag - see figure 8.9.3 detail B.
- 3) Remove blanking plugs (31) located in line with R.H. front side window - see figure 8.9.3 detail C, and install them on holes located in line with card table - see figure 8.9.3 detail D.

G - Installation of intermediate seats - see figures 8.9.2, 8.9.3 and 8.9.4

- 1) Install deflector (34), ensuring that both red marks (36) are aligned with the deflector holes (35) - see figure 8.9.4.

● NOTE ●

Position deflectors (34) as indicated on label, according to future position of intermediate seat.



- 2) Install intermediate seats.

● NOTE ●

If seats are installed facing flight direction (frontwards), the L.H. seat must be installed on the right and the R.H. seat on the left in order to have the armrest on aisle side.



- a) Pull backrest bottom upholstery (25) to remove it.

- b) Clear the carpet from seat area to facilitate moving in rails.
- c) Position the seat and put lock (22) near the color mark (37) made on rail bottom on aisle side.

● NOTE ●

The color mark (37) in the rail is aligned with red marks (36).



- d) Pull up locking handle (21), insert pads (23) into rail (24) apertures and then, move the seat so that lock (22) is in front of the color mark (37).
- e) Release locking handle (21) to lock the seat.

▲ **WARNING** ▲

Verify that lock (22) and all pads (23) are engaged and locked into rails, trying to move seat forward and backward.



- f) Install backrest bottom upholstery (25).

● NOTE ●

Adjust it properly; make sure not to obstruct deflector (34) outlet.



- g) Slide properly the carpet under the seat.
- h) Remove protective covers.

H - Final operations

- 1) If removed, install cabin central carpet suited to the intended use.

● NOTE ●

Slide properly the carpet under doorstep.



- 2) If necessary, remove the baggage compartment partition net and install the small or large cargo net - refer to section 7.
- 3) Make sure the work area is clean and free from debris.
- 4) Determine weight and balance - refer to section 6.

2 - Conversion of 4-seat accommodation into 6-seat accommodation - see figures 8.9.1, 8.9.2, 8.9.3 and 8.9.4**A - Tools and consumable materials**

- Seat protective covers

B - Preparation

- 1) Make sure the SOURCE selector is set to OFF and the crash lever is down.
- 2) If installed, remove the cargo net.
- 3) Remove intermediate seats – refer to paragraph 1.D.
- 4) Remove the deflectors (34) maintained with Velcro-type strap.
- 5) If necessary, remove the cabin central carpet.

C - Cabin comfort - see figure 8.9.3

- 1) Remove blanking plugs (32) from their storage bag and install them on holes located forward the large door - see figure 8.9.3 detail B.
- 2) Remove blanking device assy (33) from the hot air outlet, located forward the large door, and store it into storage bag - see figure 8.9.3 detail A.
- 3) Remove blanking plugs (31) located in line with card table - see figure 8.9.3 detail D, and install them on holes located in line with R.H. front side window - see figure 8.9.3 detail C.

D - Installation of cabinet**• NOTE •**

This operation must be carried out by a service center.

•

E - Installation of intermediate seats

- 1) Install intermediate seats – refer to paragraph 1 G.
- 2) If removed, install the baggage compartment partition net.
- 3) If removed, install cabin central carpet.

F - Installation of rear seats - see figure 8.9.1

- 1) Make sure the work area is clean and free from debris.
- 2) Clear the carpet from seat area to facilitate moving in rails.
- 3) Check that knobs (8) maintain locks (3) in up position.
- 4) Position the seat, fold it forward, refer to detail B, and insert pads (4) into rail (5) apertures.
- 5) Move the seat so that locks (3) are in front of the color mark made on rail bottom.
- 6) Pull up and hold L.H. and R.H. rings (2) and turn knobs (8) by 90° in order to insert locks (3) into rail (5) apertures.
- 7) Make sure the seat is correctly locked on rails (5).
- 8) Tilt seat forward, hold it and slip strap (9) around the locking control hinge pin. Screw quick links (7).
- 9) Tilt the seat rearward and lock it using seat tilting handle (1).
- 10) Fold up the backrest and lock it using backrest tilting handle (6).
- 11) Slide properly the carpet under the seat.
- 12) Remove protective covers.

G - Reconditioning

- 1) Make sure the work area is clean and free from debris.
- 2) Determine weight and balance - refer to section 6.

3 - **Additional configurations**

▲ WARNING ▲

**Removed seats can only be installed at their original location.
Rear seat (L.H. or R.H.) is the only one which can be installed in
cabin axis, on both central rails – refer to section 7.**



● NOTE ●

Many combinations of accommodations are authorized with seats (rear and intermediate) by pilot or service centers and cabinet(s) by service centers only. However, the pilot must ensure that he gets all necessary authorizations from his regulatory authority.



● NOTE ●

To remove or install these elements, use paragraph 1 or 2 – refer to table 1.

●

● NOTE ●

After these operations, determine weight and balance with the new C.G. -
refer to section 6.

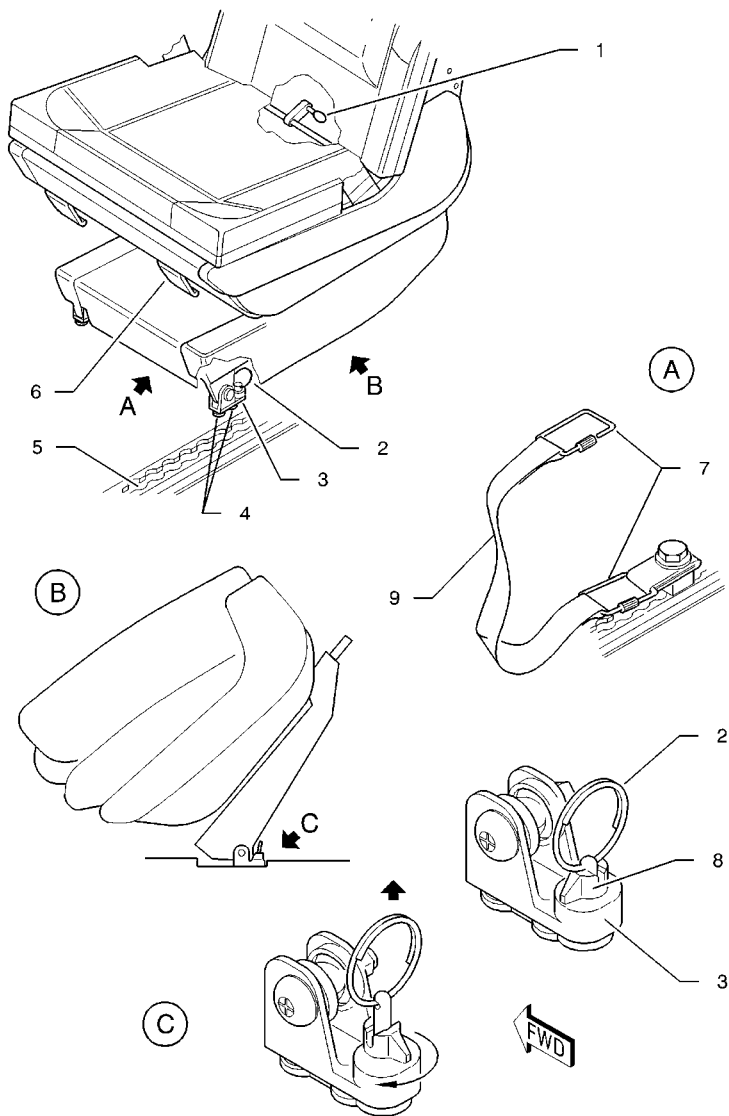
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Equipment	Action	Description operation
Rear seat	Removal	Paragraph 1.C.
	Installation	Paragraph 2. F.
Intermediate seat	Removal	Paragraph 1.D.
	Installation	Paragraph 1.G.
Cargo net	Installation	Section 7

Table 1

- 1) Seat tilting handle
- 2) Ring
- 3) Lock
- 4) Pad
- 5) Rail
- 6) Backrest tilting handle
- 7) Quick link
- 8) Knob
- 9) Strap

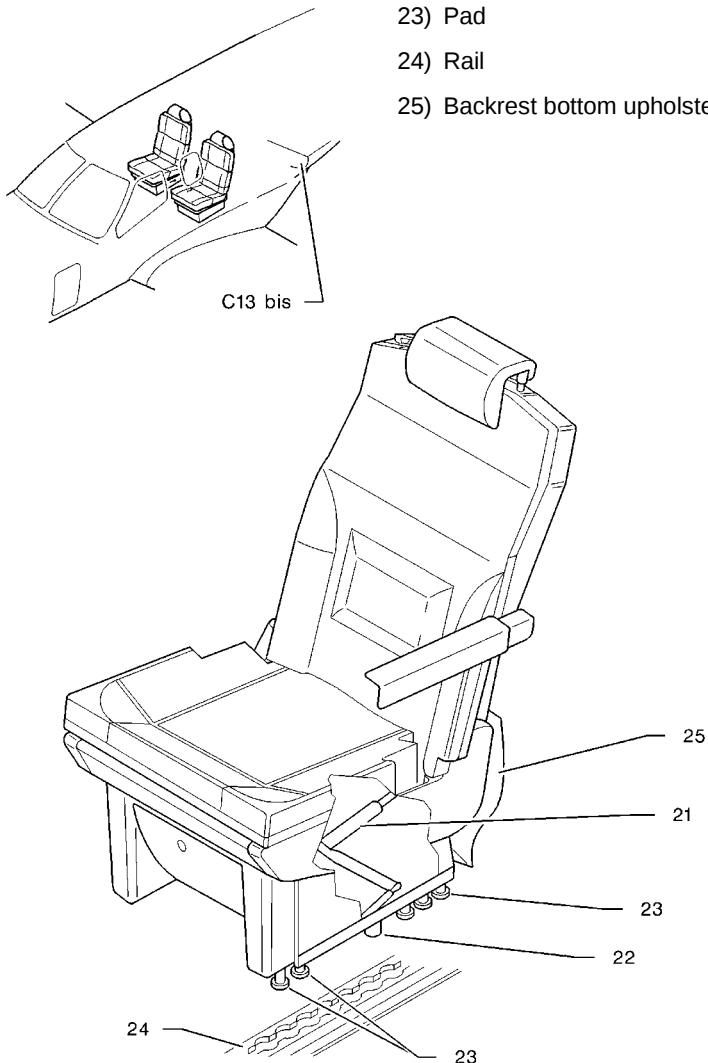
Figure 8.9.1 (1/2) - Removal / installation of rear seat



I42520202AAGM/A8000

Figure 8.9.1 (2/2) - Removal / installation of rear seat

- 21) Locking handle
- 22) Lock
- 23) Pad
- 24) Rail
- 25) Backrest bottom upholstery



14252201AAA/5MA8100

Figure 8.9.2 - Removal / installation of intermediate seat

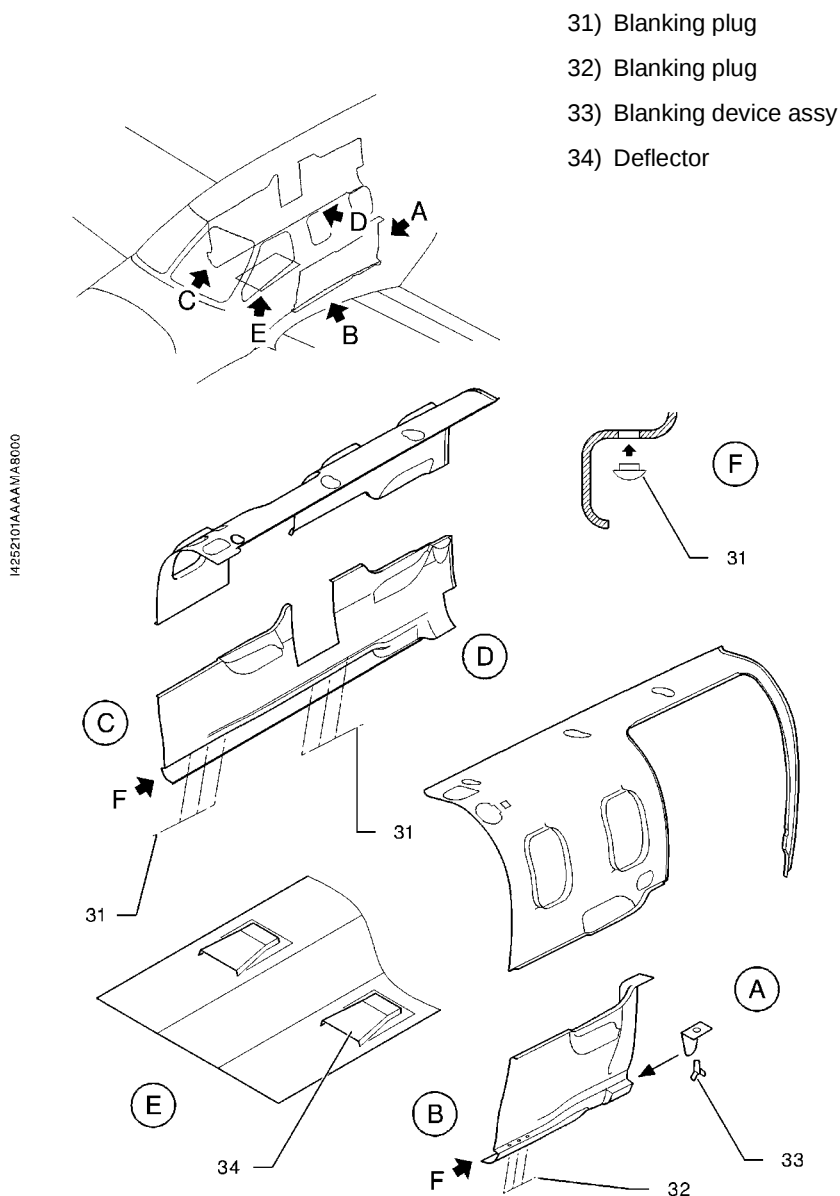


Figure 8.9.3 - Cabin comfort - Installation of blanking plugs and deflector

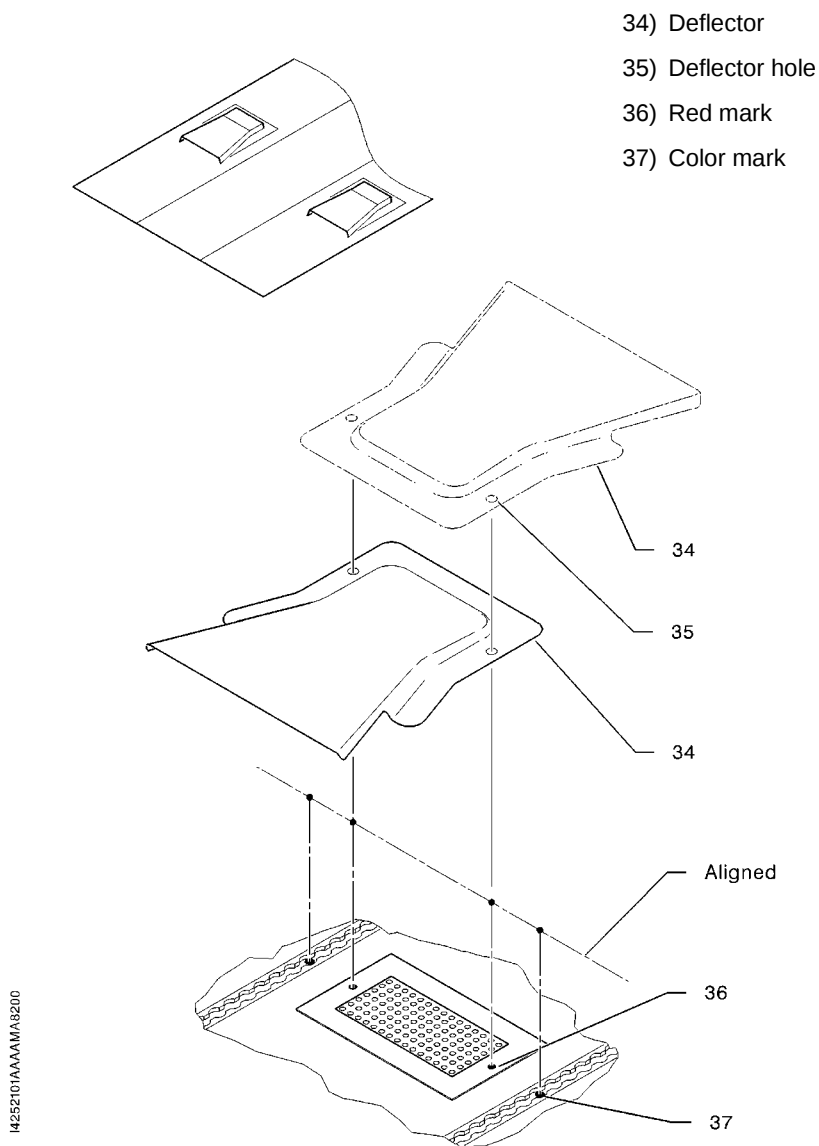


Figure 8.9.4 - Cabin comfort - Installation of deflector

8.10 - Utilization by cold weather (- 0°C to - 25°C) or very cold weather (- 25°C to - 40°C)

● NOTE ●

Check pressure values in a hangar heated at about 15°C with control equipment at room temperature.

●

If a landing is foreseen by cold or very cold weather or in case of airplane prolonged operation in such conditions, it is recommended to prepare the airplane as follows :

- 1 - Smear with silicone grease the door and engine cowlings seals, as well as the leading edge deicers.
- 2 - Apply engine oil on the engine cowlings latches.
- 3 - Inflate main landing gear shock absorbers to 247 psi (17 bars) at a room temperature of 15° C.
- 4 - Position a 0.59 in (15 mm) shim at the bottom of the piston tube and against forward landing gear half-fork to reduce shock absorber travel. Refill with hydraulic liquid. Remove the shim and inflate shock absorber to 138 psi (9.5 bars) at a room temperature of 15° C.
- 5 - Inflate main landing gear tires to 130 psi (8.96 bars) and nose tire to 102 psi (7 bars) at a room temperature of 15° C.

● NOTE ●

See table 1 hereafter to check pressure values and to inflate tires and shock absorbers.

●

Check pressure values and inflate, if necessary, according to following table 1 during operation in cold weather only :

	OAT (°C)	- 40°	- 30°	- 20°	- 10°	+ 15°
P r e s s u r e s psi (bars)	Main landing gear shock absorber	189 (13)	196 (13.5)	203 (14)	218 (15)	247 (17)
	Nose gear shock absorber	102 (7)	109 (7.5)	116 (8)	123 (8.5)	138 (9.5)
	Main landing gear tire	144 (9.96)	144 (9.96)	130 (8.96)	130 (8.96)	130 (8.96)
	Nose gear tire	94 (6.5)	94 (6.5)	102 (7)	102 (7)	102 (7)

Table 1



TBM 930

With MOD70-0476-00

List of equipment

Report reference NAV No. 34/90-RJ-App 4

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List of effective pages and validities**Edition 0 of December 31, 2015****Airplane equipped with MOD70-0476-00**

Page No.	Edit./Rev. No.	Rev. Date	Page No.	Edit./Rev. No.	Rev. Date
■ Title	0-3	APR 19	18	0-2	APR 18
			19	0-2	APR 18
■ 0A	0-3	APR 19	20	0-2	APR 18
0B	0-2	APR 18	21	0-2	APR 18
0C	0-2	APR 18	22	0-2	APR 18
0D	0-2	APR 18	23	0-2	APR 18
0E	0-2	APR 18	24	0-2	APR 18
■ 0F	0-3	APR 19	25	0-2	APR 18
			26	0-2	APR 18
1	0-2	APR 18	27	0-2	APR 18
2	0-2	APR 18	28	0-2	APR 18
■ 3	0-3	APR 19	29	0-2	APR 18
4	0-2	APR 18	30	0-2	APR 18
5	0-2	APR 18	31	0-2	APR 18
6	0-2	APR 18	32	0-2	APR 18
7	0-2	APR 18	33	0-2	APR 18
8	0-2	APR 18	34	0-2	APR 18
9	0-2	APR 18	35	0-2	APR 18
10	0-2	APR 18	36	0-2	APR 18
11	0-2	APR 18	37	0-2	APR 18
12	0-2	APR 18	38	0-2	APR 18
13	0-2	APR 18	39	0-2	APR 18
14	0-2	APR 18	40	0-2	APR 18
15	0-2	APR 18	41	0-2	APR 18
16	0-2	APR 18	42	0-2	APR 18
17	0-2	APR 18			

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List of amendments

Revision 1 dated December 15, 2016

Pages	Description
Title	Modification of the date of the copyright
0A	List of effective pages
0C and 0D	List of amendments
1	Modification of the table of contents
4	Modification of valves part number
8	Addition of MOD/OPT70-0526-23A
9	KHF-1050 HF Communication system option for G3000 (TR23)
12	Modification and/or addition of servicing plugs unit
13	Modification of weight value for upholstery version 2016
13	Addition of MOD/OPT70-0515-25
13	Addition of MOD/OPT70-0530-25A
13	Addition of MOD/OPT70-05341-25A
14	Addition of pilot's and front R.H. Seat for airplanes from S/N 1160
14	Addition of Seat - Belts optional equipment
16	Modification of portable fire extinguisher unit versions
17	Addition of control wheels part number
17	Addition of stick shaker (TR21)
19	Addition of windshield deicing

List of amendments

Revision 1 dated December 15, 2016 (Cont'd)

Pages	Description
21	Addition of MOD/OPT70-0455-31D
21	Addition of MOD/OPT70-0533-31A
24	Addition of L.H. Wing inspection light and Leading edge ice detection LED light
26	Addition of version number of lift transducer and AoA computer installation
28	Addition of MOD/OPT70-0541-23A
30, 31	Modification and addition of MOD/OPT related to transponders
40	Modification of compressor and power turbine tacho-generator part numbers
10, 11, 15, 18, 20, 22, 23, 25, 27, 29, 32 thru 39, 41, 42	Terminology, text moving and/or presentation

List of amendments

Revision 2 dated April 15, 2018

Pages	Description
Title	Copyright
0A	List of effective pages
0E	List of amendments
3	List of critical RVSM equipment Part Number correction
21	Addition of FASTBOX, and correction of LDR equipment
All pages	Presentation and/or text moving

List of amendments

Revision 3 dated April 8, 2019

Pages	Description
Title	Updating of the date on the copyright
0A	List of effective pages and validities
0F	List of amendments Revision 3
3	Terminology

Table of contents

	Page
ATA 01 - Specific optional equipment	4
ATA 21 - Environmental system	5
ATA 22 - Auto flight	8
ATA 23 - Communications	9
ATA 24 - Electrical power	11
ATA 25 - Equipment and furnishings	12
ATA 26 - Fire protection	16
ATA 27 - Flight controls	17
ATA 28 - Fuel system	18
ATA 30 - Ice and rain protection	19
ATA 31 - Indicating / recording systems	21
ATA 32 - Landing gears	22
ATA 33 - Lights	24
ATA 34 - Navigation	26
ATA 35 - Oxygen	33
ATA 37 - Vacuum	34
ATA 52 - Doors	35
ATA 56 - Windows	36
ATA 57 - Wings	37
ATA 61 - Propeller	38
ATA 71 - Power plant	39
ATA 77 - Engine indicating	40
ATA 79 - Lubrication	41

The following list contains standard equipment installed on each airplane and available optional equipment.

A separate list of equipment of items installed at the factory in your specific airplane is provided in your airplane file.

Columns showing weight (in pounds) and arm (in inches) provide the weight and center of gravity location for the equipment.

In the list of Required, Standard or Optional equipment (not restrictive), a letter "R", "S", "O" or "A" allows classifying the equipment :

- "R" : equipment items required for certification
- "S" : standard equipment items
- "A" : optional equipment items which are in addition to required or standard items
- "O" : optional equipment items replacing required or standard items

Pilot's Operating Handbook

List of critical RVSM equipment

Equipment listed hereafter, or later approved versions, is required for RVSM operation.

Equipment	*	**	P/N
Barometric altimeter :			
- GDC74B (Air data computer)	2	2	P/N 011-01110-01
- GDU1200W (Display)	3	2	P/N 011-02333-00
Autopilot Altitude Hold function :			
- GMC710 (AFCS mode controller)	1	1	P/N 011-01020-10
- GIA63W (Integrated Avionics Computer)	2	2	P/N 011-00105-40
- GRS77	2	2	P/N 011-00868-10
ATC transponder :			
- Altitude reporting transponder	1	1	TSO C-74c

(*) Quantity installed

(**) Quantity required

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		01 - Specific optional equipment		
S	01026A	Flight ceiling at 31000 ft	/	/

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		21 - Environmental system		
S	0454-21A	General Air System Controller (GASC) 82024A040701	1.98 (0.900)	311.02 (7.900)
		21-20 - Distribution		
S		Mixing unit 9723A010001	0.53 (0.240)	151.57 (3.850)
S		Hot Air Distributor 6044A010001	4.06 (0.840)	153.54 (3.900)
S		Bleed temperature switch 92244B010002	0.13 (0.060)	153.54 (3.900)
		21-30 - Pressurization control		
S		Cabin altitude warn switch 214 C40.3.261	0.077 (0.035)	153.94 (3.910)
S		Cabin differential pressure warn switch 17-600-01	0.143 (0.065)	139.76 (3.550)
S	0448-21	Outflow valve 81144A010101	2.976 (1.350)	317.32 (8.060)
S	0448-21	Safety valve 81145A010101	2.337 (1.060)	317.32 (8.060)
		21-50 - Temperature conditioning system		
S		Flow control shut-off valve 784A010001	4.74 (2.500)	114.17 (2.900)
S		Non-return valve 7085A010002	0.11 (0.050)	102.36 (2.600)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S		Shut-off valve 4589A010001	2.37 (1.075)	114.17 (2.900)
S		Intermediate pressure sensor 93557A010001	0.33 (0.150)	110.24 (2.800)
S		Overheat thermal switch A042010300-5	0.18 (0.080)	110.24 (2.800)
S		Main heat exchanger 81249A010001	7.72 (3.500)	108.27 (2.750)
S		Non-return valve 52704A010001	0.66 (0.300)	118.11 (3.000)
S		Ground Fan 8031A020	3.95 (1.790)	90.55 (2.300)
		21-55 - Vapor cycle cooling system		
S		Compressor 1377A010001	14.77 (6.700)	98.43 (2.500)
S		Cockpit Evaporator Assembly 14720A010001	9.06 (4.111)	200.79 (5.100)
S		Cabin Evaporator Assembly 14719A010001	12.90 (5.850)	311.02 (7.900)
S		Condenser Assembly 81250A010001	24.80 (11.250)	330.71 (8.400)
		21-60 - Temperature regulation		
S		By-pass valve 6043A010001	3.31 (1.500)	106.30 (2.700)
S		Bleed differential pressure sensor 93558A010001	0.44 (0.200)	114.17 (2.900)
S		Inlet temperature sensor 93276A010001	0.11 (0.050)	153.54 (3.900)

Pilot's Operating Handbook

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S		Cockpit ventilated sensor 92279A010002	0.18 (0.080)	182.09 (4.625)
S		Cabin ventilated sensor 92279A010002	0.18 (0.080)	250.00 (6.350)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S	0305-22	22 - Auto flight		
		Upgrading of AFCS GFC 700 composed of :		
		- Pitch servo GSA 81 + Servo mount GSM 86	4.08 (1.85)	247.40 (6.284)
		- Roll servo GSA 81 + Servo mount GSM 86	4.08 (1.85)	231.10 (5.870)
		- Yaw servo GSA 81 + Servo mount GSM 86	4.08 (1.85)	253.70 (6.444)
		- Pitch trim servo GSA 81 + Servo mount GSM 86	4.14 (1.88)	157.87 (4.010)
		- Trim adapter GTA 82	1.30 (0.59)	240.87 (6.118)
		- AFCS Control Unit GMC 710	0.91 (0.41)	156.61 (3.978)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		23 - Communications		
S		Static dischargers DSC 740049 (Qty : 4)	Neglig.	/
S		Static dischargers 2-5 SCY (Qty : 2)	Neglig.	/
S		Static dischargers 2-9 SCY (Qty : 3)	Neglig.	/
S	0526-23A	Static dischargers on winglets	Neglig.	/
		- Static dischargers DSC 740049 (Qty : 2)	Neglig.	/
		or		
		- Static dischargers 2-5 SCY (Qty : 2)	Neglig.	/
O	0287-23A	Radio stereo-headset A20 with bluetooth	Neglig.	/
O	0487-23A	Radio stereo-headset A20	Neglig.	/
O	0331-23	Weather Data Link and Satellite Phone GSR 56		
		Post-MOD70-0476-00 Version B with GDU SW 6.51		
		- Version J : with antenna CI 490-490 (GSR unit support pre-installed)	3.44 (1.561)	58.00 (1.474)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
A	0410-23B	HF Communication System KHF1050, of which	38.03 (17.250)	302.70 (7.689)
		- Control Display unit	1.56 (0.707)	155.43 (3.948)
		- Receiver/Exciter	5.90 (2.676)	123.07 (3.126)
		- Antenna coupler	16.20 (7.348)	342.28 (8.694)
		- Power amplifier	8.40 (3.810)	342.83 (8.708)
		- HF Antenna kit	1.74 (0.790)	324.80 (8.250)
A	0458-23B	GDL 69A SXM - XM Generation 4 interfaced with G3000 system	1.41 (0.640)	163.46 (4.152)
S	0564-00A	G3000 COM # 1 system		
		- Transceiver (integrated in GIA 64W Integrated Avionics Unit # 1 - refer to ATA 34-28)	7.03 (3.19)	147.77 (3.753)
		- VHF antenna (under fuselage) 16-21B-P3	0.86 (0.390)	271.65 (6.900)
S	0564-00A	G3000 COM # 2 system		
		- Transceiver (integrated in GIA 64W Integrated Avionics Unit # 2 - refer to ATA 34-28)	7.03 (3.19)	147.77 (3.753)
		- VHF antenna (above fuselage) 16-21B-P3	0.86 (0.390)	271.65 (6.900)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		24 - Electrical power		
		24-30 - DC generation		
R	0234-24	Electric power system (EPS) 1408-1-1	14.330 (6.500)	128.15 (3.255)
R		Stand-by alternator ES10024B-5	13.000 (5.897)	104.84 (2.663)
R		Starter generator MG94K-1	31.989 (14.510)	118.83 (2.815)
S	24002A	Lead-acid battery RG-380E/44	85.979 (39.000)	112.20 (2.850)
A	0303-24	Charger/Maintainer for lead acid battery	0.220 (0.100)	114.17 (2.900)
		24-40 - External power supply		
S		Ground power receptacle MS 3506-1	0.794 (0.360)	114.17 (2.900)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		25 - Equipment and furnishings		
A	25004D	Leather upholstery - version D "Autolux"	6.614 (3.000)	212.60 (5.400)
A	0386-25	Leather upholstery "Vulcain"	6.614 (3.000)	212.60 (5.400)
S		Smoke goggles MXP 210	0.855 (0.388)	200.00 (5.080)
A	25032	Front seats ease covers	2.756 (1.250)	183.78 (4.668)
A	25035	JetFly type cabin arrangement	/	/
A	25036	Cabin furnishings - "Loupe d'Orme" wood	/	/
A	0151-25	CD reader PCD 7100	2.20 (1.00)	205.04 (5.208)
A	0304-25	Cabin fitting out ("Autolux" leather upholstery variants)		
		- Version A : Heather-leather light blue-coloured seats	/	/
		- Version B : Blue jeans-coloured carpets	/	/
		- Version C : Sateen Chocolate-coloured seats and cabinets	/	/
		- Version D : Carbon-coloured Finishing	/	/
		- Version E : Grey-coloured seats and cabinets	/	/

Pilot's Operating Handbook

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S	0374-25B	Servicing plugs unit, of which : - 12 VDC servicing plugs unit (Qty : 2 - one in the cockpit, one in the cabin), of which : . 28-12 VDC Converter AK-551-18S - 5 VDC servicing plugs unit (USB type) (Qty : 4 - two in the cockpit, two in the cabin) with integrated charger	3.75 (1.700) 3.31 (1.500) 2.98 (1.350) 0.44 (0.200)	/ 195.28 (4.960) 195.28 (4.960) 187.99 (4.775)
S	0374-25C	Additional servicing plugs unit - 5 VDC servicing plugs unit (USB type) (Qty : 2 - on L.H. intermediate seat) with integrated charger	/ 0.20 (0.100)	/ 219.29 (5.570)
O	0374-25D	Servicing plugs unit, of which : - 12 VDC servicing plugs unit (Qty : 2 - one in the cockpit, one in the cabin), of which : . 28-12 VDC Converter 6430120-1 - 5 VDC servicing plugs unit (USB type) (Qty : 4 - two in the cockpit, two in the cabin) 6430102-1 . 28-12 VDC Converter 6430120-1	3.31 (0.800) 0.60 (0.270) 0.44 (0.200) 0.60 (0.270)	195.28 (4.960) 195.28 (4.960) 187.99 (4.775) 195.28 (4.960)
O	0531-25A	13.8 VDC servicing plug unit, of which : - 28-12 VDC Converter - 13.8 VDC servicing plug	0.74 (0.334) 0.60 (0.270) 0.14 (0.064)	193.00 (4.900) 193.00 (4.900) 288.00 (7.310)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
A	0417-25	Paper clips (one on each control wheel)	/	/
A	0503-25A	Upholstery Version 2016	$\Delta+2.73$ ($\Delta+1.240$)	228.30 (5.799)
O	0515-25	One piece cabin floor protection	$\Delta 0$	/
S	0530-25A	Hi-power USB servicing plugs, of which :	0.33 (0.15)	188.00 (4.775)
		- one 5 VDC servicing single plug (USB type) 6430202-9 - on instrument panel, pilot side	/	/
		- one 5 VDC servicing double plug unit (USB type) 6430202-5 - on instrument panel, front R.H.seat side	/	/
		- two 5 VDC servicing double plug units (USB type) 6430202-9 - in the cabin (R.H. and L.H. Intermediate seats)	/	/
S	0531-25A	13.8 VDC servicing plug unit, of which :	0.74 (0.334)	193.00 (4.900)
		- 28-12 VDC converter 6430120-1	0.360 (0.270)	193.00 (4.900)
		- 13-8 VDC servicing plug 77 00 808 844 - in the cabin (R.H. Rear seat)	0.14 (0.064)	288.00 (7.310)
		Seats - Belts		
		Belts		
S		Reels	1.79 (0.810)	192.91 or 287.40 (4.900 or 7.300)

Pilot's Operating Handbook

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
O	0516-25A	Airbag seat belts	15.08 (6.840)	/
O	0516-25A	Pilot's and passengers' seat belts	10.24 (4.640)	/
		Seats		
S		Pilot's seat T700C2500002	55.12 (25.00)	183.90 (4.671)
S		Pilot's seat T700J2500005 (From S/N 1160)	48.90 (22.20)	185.86 (4.671)
S		Front R.H. seat T700C2500002	55.12 (25.00)	183.90 (4.671)
S		Front R.H. seat T700J2500005 (From S/N 1160)	48.90 (22.20)	185.86 (4.721)
		25-61 - Emergency locator transmitter		
A	0437-25B	Emergency locator transmitter ELT 1000 (airplanes equipped with reinforcement), of which	2.385 (1.082)	340.91 (8.659)
		- ELT 1000 with base	1.764 (0.800)	354.72 (9.010)
		- Antenna 110-338	0.449 (0.204)	318.70 (8.095)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		26 - Fire protection		
A	0391-26	Portable fire extinguisher unit 74-00 - Version A (on R.H. Station R.H. Upholstering)	4.89 (2.220)	170.11 (4.321)
A	0496-26A	Engine fire detection system	1.464 (0.664)	96.06 (2.440)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		27 - Flight controls		
		27-10 - Roll control		
R		Roll trim actuator 145700.02	1.543 (0.700)	212.60 (5.400)
		27-20 - Yaw control		
R		Rudder trim actuator 145700.02	1.543 (0.700)	395.27 (10.040)
S	0348-27	New control wheels		
S		- L.H. equipped control wheel 83912112	2.535 (1.150)	157.48 (4.000)
S		- R.H. equipped control wheel 83912113	2.535 (1.150)	157.48 (4.000)
		27-30 - Pitch control		
S		Pitch trim actuator 145400-02	1.213 (0.550)	425.20 (10.800)
A	0510-27A	Stick shaker C-101702-1	1.053 (0.477)	144.00 (3.658)
		27-50 - Wing flaps (control)		
R		Flap control including :	15.520 (7.040)	218.50 (5.550)
		- Flap motor 6157-1	2.866 (1.300)	216.54 (5.500)
		- Flap actuator 1-5297 / 2-5297	1.830 (0.830)	220.47 (5.600)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		28 - Fuel system		
		28-20 - Fuel supply		
R		Electric boost pump 1B9-5	4.409 (2.000)	129.92 (3.300)
R		Engine driven fuel pump 1127-02	1.543 (0.700)	110.24 (2.800)
R		Fuel unit L88A15-651	4.586 (2.080)	133.07 (3.380)
R		A35 fuel sequencer unit	1.102 (0.500)	125.98 (3.200)
		28-40 - Fuel indication		
R	0158-28C	Fuel gage amplifier (in us gal) 738574-1-0	1.08 (0.49)	278.74 (7.080)
R		Inboard L.H. Gage 762 438.1.0	0.331 (0.150)	183.07 (4.650)
R		Inboard R.H. Gage 762 439.1.0	0.331 (0.150)	183.07 (4.650)
R		Intermediate gage 762 440.1.0	0.220 (0.100)	190.94 (4.850)
R		Outboard gage 762 441.1.0	0.220 (0.100)	190.94 (4.850)
R	0427-28A	Low level sensor 747-971-1-0	0.143 (0.065)	185.28 (4.706)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		30 - Ice and rain protection		
S		Deicer T700A3013003000, L.H. horizontal stabilizer	4.189 (1.900)	398.42 (10.120)
S		Deicer T700A3013003001, R.H. horizontal stabilizer	4.189 (1.900)	398.42 (10.120)
S		Deicer T700A3014003000, vertical stabilizer	3.968 (1.800)	374.02 (9.500)
S		Deicer T700A3010001002, inboard L.H. wing	5.732 (2.600)	173.23 (4.400)
S		Deicer T700A3010001003, inboard R.H. wing	5.732 (2.600)	173.23 (4.400)
S		Deicer T700A3010001004, middle L.H. wing	3.748 (1.700)	173.23 (4.400)
S		Deicer T700A3010001005, middle R.H. wing	3.748 (1.700)	173.23 (4.400)
S		Deicer T700A3010012000, outboard L.H. wing	2.65 (1.200)	173.23 (4.400)
S		Deicer T700A3010001007, outboard R.H. wing	3.307 (1.500)	173.23 (4.400)
S		Dual port distribution valve 1532-10C	2.425 (1.100)	125.98 (3.200)
S		Timer 42E25-2A	0.772 (0.350)	177.17 (4.500)
S		Water separator and filter 44E21-2A	1.102 (0.500)	125.98 (3.200)
		30-40 - Windshield deicing		
S		Windshield heater controllers (Qty 2 : L.H. + R.H. TWH 93-01	1.984 (0.900)	149.61 (3.800)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S		30-60 - Propeller deicing Timer 3E2311-4	0.44 (0.200)	200.79 (5.100)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		31 - Indicating/recording systems		
		31-20 - Independent instruments		
O	31002A	Hourmeter 56457-3 (engine running time)	0.551 (0.250)	156.30 (3.970)
S		Hourmeter 56457-3 (flying time)	0.551 (0.250)	156.30 (3.970)
S	0455-31	Light weight Flight Data Recorder (ADRS - CARS), of which :	5.659 (2.567)	256.50 (6.515)
		- Light Data Recorder	4.982 (2.260)	260.63 (6.620)
		- MK170 microphone	0.198 (0.090)	153.54 (3.900)
		- Support (pre-installed)	0.478 (0.217)	260.63 (6.620)
S	0533-31A	Digital hourmeter (flying time) (From S/N 1160)	0.412 (0.187)	148.62 (3.775)
A	0578-31B	Data collection and transmission system (FASTBOX A171bFAST-A-042-1)	3.62 (1.64)	125.2 (3.180)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		32 - Landing gears		
		32-10 - Main landing gear		
R	0190-32	L.H. main landing gear D23767001	53.79 (24.400)	200.39 (5.090)
R	0190-32	R.H. main landing gear D23768001	53.79 (24.400)	200.39 (5.090)
		32-20 - Nose landing gear		
R	0134-32	Nose gear D23766000	53.57 (24.300)	93.70 (2.380)
		32-30 - Extension and retraction		
O	0334-32	Main locking actuator VSTS 083560	13.228 (6.000)	208.07 (5.285)
O	0334-32	Nose locking actuator VSTS 083560	13.228 (6.000)	110.24 (2.800)
R		Hand pump 914-8D27	2.326 (1.055)	181.10 (4.600)
		32-35 - Hydraulic generation		
R	060-32	Hydraulic power pack 1118-04	10.362 (4.700)	84.65 (2.150)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		32-40 - Wheels and brakes		
R		Brake assembly 030-19100	14.991 (6.800)	204.33 (5.190)
R		Main tire 18x5.5-10PR	13.50 (6.123)	204.33 (5.190)
R	0409-32	Main tire 18x5.5-10PR	14.396 (6.530)	204.33 (5.190)
R		Master cylinder 010-07802	0.882 (0.400)	145.67 (3.700)
		>> <i>With MICHELIN tire</i>		
R		Nose tire 5.00-5-10PR TL	5.600 (2.540)	89.57 (2.275)
		>> <i>With GOOD YEAR tire</i>		
		Nose tire 5.00-5-10PR TL	6.300 (2.858)	89.57 (2.275)
R	0408-32	Nose tire 5.00-5-10PR	6.834 (3.100)	89.57 (2.275)
R		Nose wheel 40-262A	2.976 (1.350)	89.57 (2.275)
R		Main wheel (Model 40-434)	11.28 (5.120)	204.33 (5.190)
R		Parking brake valve T700A3240010 or T700B3240001	0.331 (0.150)	157.48 (4.000)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		33 - Lights		
		33-10 - Instrument panel lighting		
S		Instruments emergency lighting 2240-3	0.110 (0.050)	181.10 (4.600)
S	0322-00	PULSELITE unit	Neglig.	/
		33-40 - External lighting		
S		L.H. wing inspection light (icing detection) T700G3340020	0.20 (0.090)	151.57 (3.850)
S	0509-33	Leading edge ice detection LED light 01-0771904-00	0.25 (0.113)	172.00 (4.371)
S	0322-00	LED L.H. taxi and landing lights 01-0771674-01	1.400 (0.635)	181.10 (4.600)
S	0322-00	LED R.H. taxi and landing lights 01-0771674-01	1.400 (0.635)	181.10 (4.600)
S	0322-00	NAV/Anticollision system (LED lights) :		
S		Central units :		
S		- L.H. strobe light power supply 01-0771234-07	0.609 (0.277)	191.38 (4.861)
S		- R.H. strobe light power supply 01-0771234-07	0.609 (0.277)	191.38 (4.861)
S		- Rear strobe light power supply	0.609 (0.277)	397.87 (10.106)

Pilot's Operating Handbook

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S		Lights :		
S		- L.H. navigation/strobe/recognition lights 01-0771170-02	0.499 (0.227)	184.29 (4.681)
S		- R.H. navigation/strobe/recognition lights 01-0771170-01	0.499 (0.227)	184.29 (4.681)
S		- Rear tail navigation/strobe lights 01-0790667-00	0.499 (0.227)	444.21 (11.283)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		34 - Navigation		
		34-11 - Air data systems		
S		Pitot L heated probe AN 5812-1	0.750 (0.340)	200.79 (5.100)
S		Pitot R heated probe AN 5812-1	0.750 (0.340)	200.79 (5.100)
R		Static reference plug T700A3415017A	Neglig.	/
S		Static reference selector TB30 77010000	0.220 (0.100)	157.48 (4.000)
S	0160-34A	Authorization to operate in RVSM area	/	/
S	0423-34A	Lift transducer and AoA computer installation, of which :	1.66 (0.752)	242.01 (6.147)
R		- Lift transducer P/N C-101-707-1 or P/N C-101-707-2	0.50 (0.226)	173.23 (4.400)
S		- AoA computer P/N C-101-706-1	0.74 (0.336)	273.62 (6.950)
S		- K59 and K590 relays	0.25 (0.115)	265.55 (6.745)
S	0544-00A	Air Data Computer # 1 GDC 74B	1.83 (0.83)	148.11 (3.762)
S	0544-00A	Air Data Computer # 2 GDC 74B	1.83 (0.83)	148.11 (3.762)
S	0462-34	Standby Attitude Module MD302	1.61 (0.730)	154.53 (3.925)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		34-21 - Heading reference system		
S	0543-00A	Attitude and Heading Reference System # 1 GRS 77	3.46 (1.57)	171.77 (4.363)
S	0543-00A	Attitude and Heading Reference System # 2 GRS 77	3.46 (1.57)	171.77 (4.363)
S	0476-00A	Magnetometer # 1 GMU 44	0.48 (0.22)	180.98 (4.597)
S	0476-00A	Magnetometer # 2 GMU 44	0.48 (0.22)	180.98 (4.597)
		34-23 - Magnetic compass		
R		Stand-by compass C2350 L4.M23	0.551 (0.250)	163.39 (4.150)
		34-28 - Electronic flight instrumentation system		
A	0226-00C	Synthetic Vision System	/	/
S	0549-00A	Integrated Flight Deck System G3000 composed of :		
		- PFD1 GDU 1200W	8.29 (3.76)	154.88 (3.934)
		- PFD2 GDU 1200W	8.29 (3.76)	154.88 (3.934)
		- MFD GDU 1200W	8.29 (3.76)	154.88 (3.934)
	0565-00A	- Engine/Airframe Interface Unit # 1 GEA 71	2.58 (1.17)	148.27 (3.766)
	0565-00A	- Engine/Airframe Interface Unit # 2 GEA 71	2.58 (1.17)	148.27 (3.766)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S	0430-34A	New SAINT-GOBAIN radome 4906-100-V2	2.82 (1.280)	169.10 (4.295)
		34-43 - Radioaltimeter		
A	0451-34B	GRA 55 radar altimeter, of which :	4.127 (1.872)	220.47 (5.600)
		- Transceiver RA4500	3.527 (1.600)	228.82 (5.812)
		- Transmitting antenna S67-2002	0.300 (0.136)	182.09 (4.625)
		and		
		- Receiving antenna S67-2002	0.300 (0.136)	205.83 (5.228)
		34-44 - Traffic advisory system		
A	0176-00F	TAWS system	/	/
A	0258-00D	TAS system GTS 820, G3000 coupled, of which :	22.53 (10.220)	177.68 (4.513)
		- Processor GTS 820	9.92 (4.500)	143.11 (3.635)
		- Power amplifier/low noise amplifier GPA 65	1.90 (0.860)	221.42 (5.624)
		- Antenna GA 58 (above fuselage)	0.79 (0.360)	230.71 (5.860)
		- Antenna GA 58 (under fuselage)	0.79 (0.360)	260.63 (6.620)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		34-51 - NAV 1 installation		
S		VHF GS-NAV antenna DM N4-17N	3.307 (1.500)	401.57 (10.200)
S		Receiver (integrated in the MOD70-0476-00A GIA 63W Integrated Avionics Unit # 1 : refer to ATA 34-28)	/	/
		34-52 - NAV 2 installation		
S		Receiver (integrated in the MOD70-0476-00A GIA 63W Integrated Avionics Unit # 2 : refer to ATA 34-28)	/	/
		34-53 - Transponder		
A	0475-34A	Transponder # 1 GTX 33D - Mode S with antenna diversity and extended squitter	3.39 (1.54)	147.68 (3.751)
		+ Antenna KA 61 (under fuselage)	0.40 (0.18)	150.08 (3.812)
		+ Antenna KA 61 (above fuselage)	0.40 (0.18)	193.22 (4.908)
S	0475-34B	Transponder # 1 GTX 33 - Mode S without antenna diversity and with extended squitter	3.11 (1.41)	147.68 (3.751)
		+ Antenna KA 61	0.40 (0.18)	193.22 (4.908)
A	0475-34C	Transponder # 2 GTX 33 - Mode S with antenna diversity and extended squitter	3.11 (1.41)	147.68 (3.751)
		+ Antenna KA 61 (under fuselage)	0.40 (0.18)	193.22 (4.908)
		+ Antenna KA 61 (above fuselage)	0.40 (0.18)	193.22 (4.908)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
S	0542-34A	Transponder # 1 GTX 345R - full Mode S enhanced surveillance capability, without antenna diversity, with extended squitter and ADS-B IN acquisition (with ethernet connection) + Antenna KA 61	2.40 (1.09) 0.40 (0.18)	147.20 (3.738) 150.08 (3.812)
O	0542-34B	Transponder # 2 GTX 345R - full Mode S enhanced surveillance capability, without antenna diversity, with extended squitter and ADS-B IN acquisition (without ethernet connection) + Antenna KA 61	2.40 (1.09) 0.40 (0.18)	147.20 (3.738) 150.08 (3.812)
O	0542-34C	Transponder # 2 GTX 345R - full Mode S enhanced surveillance capability, without antenna diversity, with extended squitter and ADS-B IN acquisition (with ethernet connection) + Antenna KA 61 34-54 - Automatic Direction Finder (ADF)	2.40 (1.09) 0.40 (0.18)	147.20 (3.738) 150.08 (3.812)
A	0507-34A	ADF RA 3500 system (European countries only), of which : - Receiver RA3502 P/N 0505.757-912 - Antenna AN3500 P/N 0832.601-912 - RMI converter AC3504 P/N 0856.010-912	7.61 (3.45) 2.205 (1.000) 3.754 (1.700) 1.653 (0.750)	216.48 (5.498) 259.84 (6.000) 171.85 (4.365) 259.84 (6.000)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		34-55 - DME installation		
A	34014G	DME KN63, G3000 coupled	2.80 (1.27)	232.28 (5.900)
		+ Antenna KA 61	0.40 (0.18)	238.82 (6.066)
		34-57 - Global Positioning System (GPS)		
S	0476-00A	GPS/WAAS Antenna GA 36	0.48 (0.22)	204.84 (5.203)
S	0476-00A	GPS/WAAS and Datalink Antenna GA 37	0.55 (0.25)	204.84 (5.203)
		34-62 - Multifunction display		
A	0176-00G	Chartview function	/	/

Pilot's Operating Handbook

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		35 - Oxygen		
S	0207-00	Gaseous oxygen system With EROS oxygen system	22.73 (10.310)	226.77 (5.760)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		37 - Vacuum		
S		Air ejector valve 19E17-5A	0.661 (0.300)	116.14 (2.950)
S		Regulator and relief valve 38E-96-2D	1.323 (0.600)	116.14 (2.950)
S		Vacuum relief valve 691-21A	0.331 (0.150)	139.76 (3.550)
S		Valve 557-18 E	0.353 (0.160)	118.11 (3.000)

Pilot's Operating Handbook

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		52 - Doors		
O	0320-52B	New "Pilot" door	45.607 (20.687)	173.23 (4.400)
S	0342-52	Additional landing gear doors	6.613 (3.000)	204.33 (5.190)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
56 - Windows				
S	56001A	Deiced R.H. windshield	Δ 1.764 (Δ 0.800)	158.27 (4.020)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		57 - Wings		
S	57001A	Utilization on runways covered with melting snow	Δ - 7.716 (Δ - 3.500)	200.00 (5.080)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		61 - Propeller		
		61-10 - Propeller assembly		
S	0345-61	Propeller (5-blade) HC-E5N-3C / NC 8834 K + spinner 104552P	171.08 (77.60)	43.11 (1.095)
		61-20 - Controls		
S		Propeller governor 8210.007	2.646 (1.200)	59.06 (1.500)
R	0445-72	Overspeed governor 1439292	2.535 (1.200)	59.06 (1.330)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		71 - Power plant		
R		Turboprop engine PT6 A-66D	497.30 (226.00)	79.72 (2.025)
S		Top silentblocks 95007-16 (Qty 2)	2.647 (1.201)	79.72 (2.025)
S		Bottom silentblocks 95007-19 (Qty 2)	2.654 (1.204)	79.72 (2.025)
		71-60 - Air inlet		
R	0359-71	Inertial separator actuator JA23372-1000-1	2.156 (0.978)	62.99 (1.600)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		77 - Engine indicating		
R		Compressor turbine tachogenerator (Ng) MIL-G-26611 GEU-7/A / 32005-00	0.981 (0.445)	108.27 (2.750)
R		Power turbine tachogenerator (Np) MIL-G-26611 GEU-7/A / 32005-007	0.981 (0.445)	55.12 (1.400)
R	0328-77	Torque transducer APTE-438-1000-75D	0.473 (0.215)	54.84 (1.393)
		77-12 - Fuel management		
S		Fuel flow transmitter 660 526AS	0.683 (0.310)	110.20 (2.799)

Pilot's Operating Handbook

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		79 - Lubrication		
		79-20 - Distribution		
R		Oil cooler L8538233	10.472 (4.750)	90.55 (2.300)
		79-30 - Indicating		
R	0327-79A	Oil pressure transmitter APT-369A-1000-150G (5 VDC)	0.337 (0.153)	105.35 (2.676)
S	0512-79	Chip detector monitoring	Neglig.	/

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SUPPLEMENT

WX-500 stormscope

Table of contents

	Page
1 - General	9.6.2
2 - Limitations	9.6.2
3 - Emergency procedures	9.6.3
4 - Normal procedures	9.6.3
5 - Performance	9.6.3
6 - Weight and balance	9.6.4
7 - Description	9.6.4
8 - Handling, Servicing and maintenance	9.6.4

SECTION 1

General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the TBM airplane is equipped with the option WX-500 stormscope.

Whenever this supplement refers to the WX-500 Pilot's Guide, it states the one described in section 2.

SECTION 2

Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the airplane is equipped with the option WX-500 stormscope.

The WX-500 stormscope systems signal displays are not intended for the purpose of penetrating thunderstorm areas or areas of severe turbulence ; such intentional use is prohibited.

• NOTE •

Range selection determines receiver sensitivity and therefore relative range. Displayed range is based on signal strength and is not to be used for accurate determination of thunderstorm location.



▲ CAUTION ▲

The stormscope must not be used for thunderstorm penetration.



The WX-500 Pilot's guide, Series II, No. 009-11501-001 and the GARMIN Integrated flight deck pilot's guide, as applicable, at their latest revision shall be readily available to the pilot, whenever the operation of the WX-500 stormscope is predicted.

SECTION 3

Emergency procedures

Installation and operation of WX-500 stormscope do not change the basic emergency procedures of the airplane described in section 3 Emergency procedures of the basic POH.

SECTION 4

Normal procedures

Normal operating procedures of the WX-500 stormscope are outlined in the WX-500 Pilot's Guide.

SECTION 5

Performance

Installation and operation of WX-500 stormscope do not change the basic performance of the airplane described in section 5 Performance of the basic POH.

SECTION 6

Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH when the airplane is equipped with the option WX-500 stormscope.

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		34 - NAVIGATION		
A	34056	Stormscope - shared with the integrated flight deck system WX-500	4.94 (2.240)	232.28 (5.900)

SECTION 7

Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the airplane is equipped with the option WX-500 stormscope.

The WX-500 (series II) stormscope, weather mapping system provides a visual screen readout of the electrical discharges associated with thunderstorms. This information with proper interpretation, will allow the pilot to detect severe thunderstorm activity. A series of green dots or of strike points will be displayed on the screen to indicate the electrical discharge areas.

The WX-500 (series II) stormscope, weather mapping system interfaces with the integrated flight deck system.

SECTION 8

Handling, servicing and maintenance

Installation and operation of WX-500 stormscope do not change the handling, servicing and maintenance procedures of the airplane described in section 8 Handling, servicing and maintenance of the basic POH.

SUPPLEMENT

Engine fire detection system

Table of contents

	Page
1 - General	9.18.2
2 - Limitations	9.18.2
3 - Emergency procedures	9.18.3
4 - Normal procedures	9.18.5
5 - Performance	9.18.5
6 - Weight and balance	9.18.6
7 - Description	9.18.7
8 - Handling, servicing and maintenance	9.18.7

SECTION 1

General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the airplane is equipped with the option Engine fire detection system.

The general hereafter supplement or replace those of the standard airplane described in section 1 General of the basic POH when the airplane is equipped with the option Engine fire detection system.

The fire detection system allows engine fire monitoring and indicating.

SECTION 2

Limitations

Installation and operation of Engine fire detection system do not change the basic limitations of the airplane described in section 2 Limitations of the basic POH.

SECTION 3

Emergency procedures

The emergency procedures hereafter supplement or replace those of the standard airplane described in section 3 Emergency procedures of the basic Pilot's Operating Handbook when the airplane is equipped with the option Engine fire detection system.

Engine fire on ground

Symptoms : ITT increasing, **ITT** , **FIRE** , smoke, ...

1 - THROTTLE CUT OFF

>> Airplane with G1000 or G1000 NXi Flight deck (MOD70-0176-00 or MOD70-0539-00)

2 - BLEED switch OFF / RST

>> Airplane with G3000 Flight deck (MOD70-0476-00)

3 - BLEED switch OFF

>> All

4 - A/C switch OFF

5 - Brakes As required

6 - FUEL TANK SLECTOR OFF

7 - Warn ground assistance, if necessary

8 - Crash lever Pull down

► Evacuate as soon as possible ◀

Engine fire in flight

Symptoms : **FIRE**

Try to confirm the fire warning by looking for other indications such as ITT increase, **ITT** , smoke from engine cowls or air conditioning system.

▲ **CAUTION** ▲
No air start attempt after an engine fire.

▲
► Fly the airplane ◀

If the fire warning is not confirmed :

- 1 - Monitor the engine parameters, ITT in particular
- 2 - Look for smoke coming from engine cowls or from air conditioning system

► Land as soon as possible ◀

If the fire warning is confirmed :

- | | | |
|-----|--------------------------|---------|
| 1 - | THROTTLE | CUT OFF |
| 2 - | AUX BP switch | OFF |
| 3 - | FUEL TANK SELECTOR | OFF |
| 4 - | Oxygen mask | Use |

>> Airplane with G1000 or G1000 NXi Flight deck (MOD70-0176-00 or MOD70-0539-00)

- 5 - BLEED switch OFF / RST

>> Airplane with G3000 Flight deck (MOD70-0476-00)

- 6 - BLEED switch OFF

>> All

- 7 - A/C switch OFF

- 8 - If necessary, Emergency descent

- 9 - Perform Forced landing

SECTION 4

Normal procedures

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal procedures of the basic Pilot's Operating Handbook when the airplane is equipped with the option Engine fire detection system.

- Before starting the engine

>> *Up to S/N 1105, plus S/N 687, on left side of left instrument panel*

FIRE TEST push-button Press

>> *From S/N 1106, on upper panel*

TEST push-button Press

>> *All*

FIRE lights on and causes the illumination of the MASTER WARNING light.

SECTION 5

Performance

Installation and operation of Engine fire detection system do not change the basic performance of the airplane described in section 5 Performance of the basic Pilot's Operating Handbook.

SECTION 6

Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic Pilot's Operating Handbook when the airplane is equipped with the option Engine fire detection system.

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		26 - Fire protection		
A	26002G or 26002 H	Engine fire detection system L'HOTELLIER (From S/N 1000 to 1105, plus S/N 687)	1.455 (0.660)	96.06 (2.440)
A	0496-26A	Engine fire detection system L'HOTELLIER (From S/N 1106)	1.464 (0.66)	96.06 (2.440)

SECTION 7

Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic Pilot's Operating Handbook when the airplane is equipped with the option Engine fire detection system.

The engine fire detection system enables the monitoring and indication of a fire in the engine area.

The system includes :

- 7 detectors
- the test push-button
- the integrated flight deck system.

Detectors

The 7 detectors are secured on supports positioned in the most sensitive engine areas. They consist of thermal switches detecting a temperature greater than 200°C.

Push-button

The push-button enables the pilot to test the detection system by opening the grounding circuit. It is connected in series with the 7 detectors.

>> *Up to S/N 1105, plus S/N 687*

The FIRE TEST push-button is located on left side of left instrument panel.

>> *From S/N 1106*

The TEST push-button is located on upper panel.

Display

Refer to the GARMIN Integrated Flight Deck Pilot's Guide, as applicable, at its latest revision.

SECTION 8

Handling, servicing and maintenance

Installation and operation of Engine fire detection system do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, Servicing and Maintenance of the basic Pilot's Operating Handbook.

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SUPPLEMENT

Mexico specifics

Table of contents

	Page
1 - General	9.45.2
2 - Limitations	9.45.2
Internal placards	9.45.2
External placards	9.45.10
3 - Emergency procedures	9.45.18
4 - Normal procedures	9.45.18
5 - Performance	9.45.18
6 - Weight and balance	9.45.18
7 - Description	9.45.19
8 - Handling, servicing and maintenance	9.45.19

SECTION 1

General

This supplement is intended to inform the pilot about the airplane specifics, among others those required by the relevant Certification Authorities (limitations, description and operations necessary to the operation of the TBM airplane).

SECTION 2

Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH.

2.9 - Placards

Internal placards

- 1 - Rear pressurized baggage compartment (in cabin)

On partition wall

MÁXIMO 100 kg - (220 lbs)

**ES RESPONSABILIDAD DEL PILOTO
COMPROBAR QUE TODO EL EQUIPAJE ESTÁ
ASEGURADO CORRECTAMENTE.
PARA INSTRUCCIONES DE CARGA REFIERASE A
LOS "DATOS DE PESO Y BALANCE"
DEL MANUAL DE OPERACIÓN DEL PILOTO.**

Pilot's Operating Handbook

For the small cargo net, on frame C13bis



For the large cargo net, on R.H. Side upholstery panel, in the rear baggage compartment



2 - Non pressurized FWD baggage compartment

On baggage compartment door frame

MÁXIMO 50 kg - (110 lbs)

**PARA INSTRUCCIONES DE CARGA REFIERASE
A LOS "DATOS DE PESO Y BALANCE"
DEL MANUAL DE OPERACIÓN DEL PILOTO.**

- 3 - On R.H. side at front seat level and on the first rear passengers masks container (R.H. side on the ceiling)

I4112003AAA/FA/18101



- 4 - On rear passengers masks containers (on R.H. side on the ceiling and left side)

I4112003AAA/FA/18201



- 5 - On rear passenger's table casing

LA MESA DEBE ESTAR GUARDADA DURANTE EL DESPEGUE Y ATERRIZAJE.

Pilot's Operating Handbook

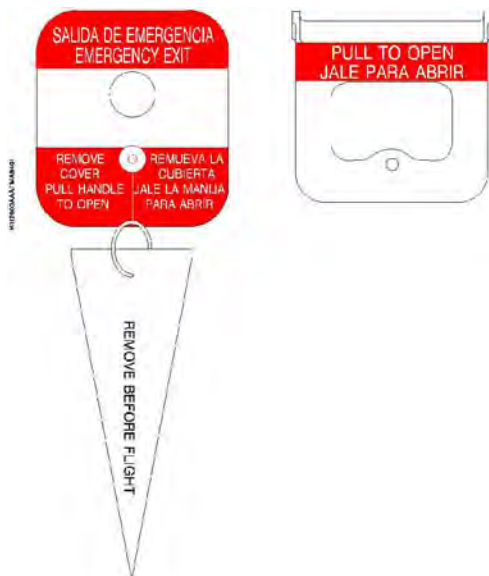
- 6 - Door internal side
On access door



On pilot door, if installed



- 7 - On emergency exit handle



- 8 - On landing gear emergency control access door

14112003AAAMA18400

**LDG GEAR EMERGENCY
ACCESS PULL
TREN DE ATERRIZAJE
DE EMERGENCIA
JALE AQUI**

- 9 - At the upper corner of the window on each side of the cockpit

14112003AAAHMA8301

**HANDLE
HERE
MANIJA
AQUI**

- 10 - On cabinet drawer (optional)

14112003AAAIMA18000

GAFAS PARA HUMO

>> *Airplane equipped with coat hanger (Post-MOD70-0557-25)*

- 11 - On the upper edge of the L.H. Passenger access door panel

14113200AAAKMA18200

SOLO PRENDAS DE VESTIR

Pilot's Operating Handbook

>> *Airplane equipped with lavatory compartment (Post-MOD70-0505-25)*

12 - On fixed panel, cabin side

I4113200AAAKMA8300

EL DIVISOR DEBE ESTAR ALMACENADO DURANTE EL DESPEGUE Y EL ATERRIZAJE

13 - On fixed panel, toilet side

I4113200AAAKMA8000

**EL INODORO NO DEBE
ESTAR OCUPADO DURANTE EL
DEPEGUE Y EL ATERRIZAJE**

**CIERRE Y ASEGURE LA TAPA
DEL INODORO CUANDO NO ESTÉ EN USO**

**NO CUELQUE O GUARDE OBJETOS
EN EL BAÑO O DIVISOR**

**EL DIVISOR DEBE ESTAR ALMACENADO
DURANTE EL DESPEGUE Y EL ATERRIZAJE**

**USE LOS AURICULARES CUANDO EL
DIVISOR ESTÉ DESPLEGADO**

- 14 - On access door, cabin side and toilet side

I4113200AAAKMA8200



- 15 - Behind access door, cabin side and toilet side

I4113200AAAKMA8100



Pilot's Operating Handbook

- 16 - Front face of lavatory compartment, near opening / closing switches

I4113200AAAKMA18000

ALMACENAR

I4113200AAAKMAB400

DESPLEGAR

- 17 - On the magazine rack

I4113200AAAKMA18100

1,5 KG (3.3 LBS)

>> All

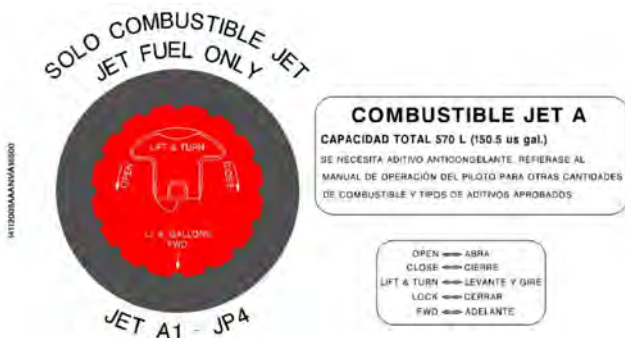
External placards

18 - Under engine cowling and under each wing

I4112003AAA-HMA183D0



19 - Near fuel tank caps



I4112003AAA-HMA183D0

I4112003AAA-HMA8201



Pilot's Operating Handbook

- 20 - Above brakes hydraulic fluid reservoir against firewall

I4112003AAA HMA18101

FRENOS
MIL - H - 5606
AIR 3520
FLUIDO HIDRÁULICO

- 21 - On landing gear hydraulic fluid reservoir

I4112003AAA HMA18001

GEARS
TRENES

MIL - H - 5606
AIR 3520

HYDRAULIC FLUID
FLUIDO HIDRÁULICO

- 22 - On fuse box in engine cowling

I4112003AAA HMA18200

CAJA DE FUSIBLES
Y FOCOS

23 - On internal face of L.H. engine cowling

I4112003AAAEMA5300



I4112003AAA-HMA8101

OILS - ACEITES

- ☐ AEROSHELL 560
- ☐ EXXON 2380 OR ESSO 2380 OR BPTO 2380
- ☐ MOBIL JET OIL II
- ☐ MOBIL JET OIL 254
- ☐ AERO SHELL TURBINE OIL 500
- ☐ ROYCO TURBINE OIL 500
- ☐ CASTROL 5000
- ☐ TURBONYCOIL 525-2A

24 - On front lower portion of firewall L.H. side

I4112003AAA-HMA8401



Pilot's Operating Handbook

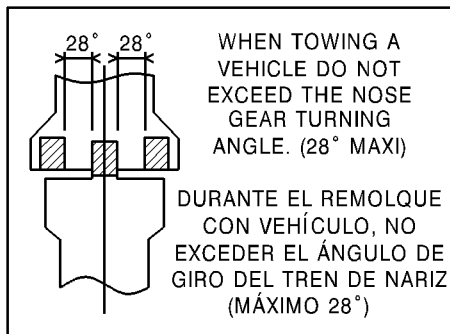
25 - On engine cowling, in front of compartment door

I4112003AAAGMA18500

**ALIMENTACIÓN EXTERNA:
28 VOLTS C.D. NOMINAL.
CAPACIDAD MÍNIMA DE ARRANQUE:
800 AMPS
NO EXCEDER 1000 AMPS**

26 - On nose gear door

I4112003AAAEIMA18101



27 - On nose gear leg

I4112003AAAIMA8200

**TREN DE ATERRIZAJE
DE NARIZ**

**PRESIÓN DE LLANTA: 6,5 bar
94 psi**

28 - On main gear leg

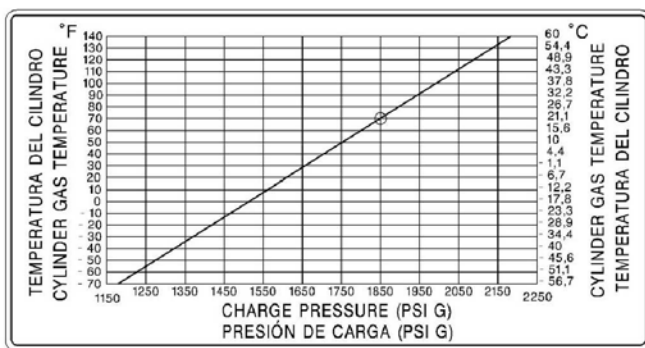
I4112003AAA IMA 8300

**TREN DE ATERRIZAJE
PRINCIPAL**

**PRESIÓN DE LLANTA: 8,96 bar
130 psi**

29 - On internal face of the oxygen cylinder service door

I4112003AAA IMA 18301



30 - On the oxygen service door

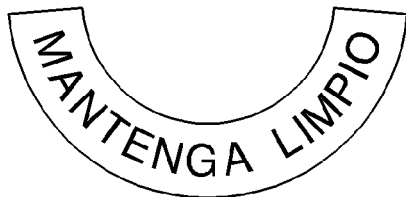
I4112003AAA IMA 18101

**PUNTO DE SERVICIO PARA
OXÍGENO. NO USAR LUBRICANTES**

Pilot's Operating Handbook

- 31 - Near air data system port

I4112003AAA HMA8001



- 32 - On external side of emergency locator transmitter inspection door

I4112003AAA HMA1B400



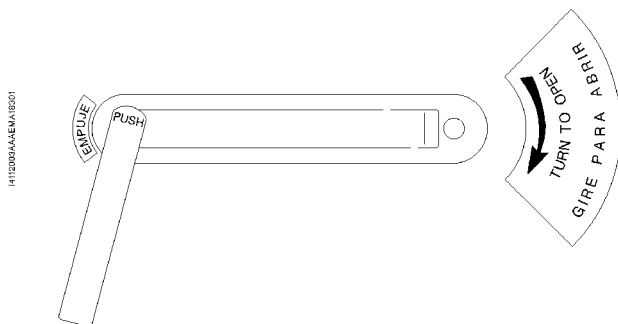
- 33 - On emergency exit external side

I4112003AAAFMA8500

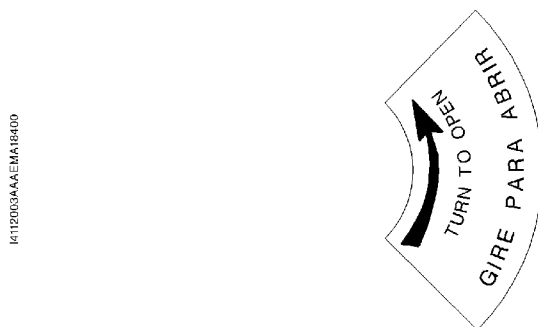


34 - Door external side

On pilot door



On access door



On outer fuselage skin aft of access door and in the cabin forward of access door



Pilot's Operating Handbook

35 - On last step of stairs

CARGA MÁXIMA SOBRE LA ESCALERA : UNA PERSONA

36 - On R.H. access door jamb

1412003AAAFMA18001

**NO USAR EL
PASAMANO
PARA RETRAER
O GUARDAR LA
ESCALERA**

SECTION 7

Description

No specifics

SECTION 8

Handling, servicing and maintenance

No specifics

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SUPPLEMENT
GARMIN TAWS system
Table of contents

	Page
1 - General	9.49.2
2 - Limitations	9.49.2
3 - Emergency procedures	9.49.3
4 - Normal procedures	9.49.4
5 - Performance	9.49.6
6 - Weight and balance	9.49.6
7 - Description	9.49.7
8 - Handling, servicing and maintenance	9.49.14

SECTION 1

General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the airplane is equipped with the option GARMIN TAWS system.

The TAWS function enables to detect if the airplane path is in compliance with the overflowed terrain relief.

SECTION 2

Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the airplane is equipped with the option GARMIN TAWS system.

The TAWS function provides terrain proximity alerting and detection to the pilot. It must not be used for airplane vertical and horizontal navigation.

AC 2318 recommendation : in order to avoid unwillingly warnings, TAWS function must be inhibited for any landing on a terrain which is not mentioned in the data base.

The use of the terrain awareness warning and terrain display functions is prohibited during QFE (atmospheric pressure at airport elevation) operations.

■ >> *Airplane equipped with GARMIN flight deck as standard*

The GARMIN Integrated Flight Deck Pilot's Guide mentioned in section 2 Limitations of the basic POH, as applicable, or any further edition applicable to the latter, shall be readily available to the pilot, whenever the operation of TAWS system is predicted.

■ >> *Airplane retrofitted with GARMIN G1000 NXi flight deck (MOD70-0539-00)*

The GARMIN G1000 NXi Integrated Flight Deck Pilot's Guide for the TBM850/900 P/N 190-02348-00 or any further edition applicable to the latter, shall be readily available to the pilot, whenever the operation of TAWS system is predicted.

SECTION 3

Emergency procedures

The emergency procedures hereafter supplement or replace those of the standard airplane described in section 3 Emergency procedures of the basic POH when the airplane is equipped with the option GARMIN TAWS system.

TAWS FAIL annunciation

The TAWS function is not operational.

SECTION 4

Normal procedures

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal Procedures of the basic POH when the TBM airplane is equipped with the option GARMIN TAWS system.

Before takeoff

- "TAWS System Test OK" voice message Heard
End of procedure.

4.1 - Warnings of the TAWS function

"PULL UP" voice alert

PULL UP PFD/MFD alert annunciation and **PULL UP** MFD pop-up alert light ON.

- 1 - Level the wings.
- 2 - TRQ Maximum
- 3 - Choose the optimum rate of climb adapted to airplane configuration and speed, until the warning disappears.

End of procedure.

**"Terrain Terrain, Pull up Pull up",
"Obstacle Obstacle, Pull up Pull up", voice alerts**

PULL UP PFD/MFD alert annunciation and **TERRAIN/OBSTACLE - PULL UP** MFD pop-up alert light ON.

- 1 - Adjust airplane path in order to make the warning disappear.
End of procedure.

4.2 - Cautions of the TAWS function

"Caution terrain", "Caution obstacle",
"Too low terrain" voice alerts

TERRAIN PFD/MFD alert annunciation and **CAUTION TERRAIN/OBSTACLE**
or **TOO LOW TERRAIN** MFD pop-up alerts light ON.

- 1 - Adjust airplane path in order to make the warning disappear.

End of procedure.

"Don't sink" voice alert

TERRAIN PFD/MFD alert annunciation and **DON'T SINK** MFD pop-up alert
light ON.

- 1 - Re-establish a positive rate of climb.

End of procedure.

"Sink rate" voice alert

TERRAIN PFD/MFD alert annunciation and **SINK RATE** MFD pop-up alert light
ON.

- 1 - Reduce rate of descent.

End of procedure.

SECTION 5

Performance

Installation and operation of GARMIN TAWS system do not change the basic performance of the airplane described in section 5 Performance of the basic POH.

SECTION 6

Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH when the airplane is equipped with the option GARMIN TAWS system.

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
34 - Navigation				
A	0176-00 Version F	TAWS system GARMIN	/	/

SECTION 7

Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the TBM airplane is equipped with the option GARMIN TAWS system.

>> *Airplane with G3000 Flight deck (MOD70-0476-00)*

TAWS-B terrain and obstacle alerts

- Alerts include visual annunciations and voice alerts.
- Alerts are accompanied by visual annunciation on PFD's and pop-up alerts on either Touchscreens Controllers
- Pilot acknowledges the Alert on the Touchscreen Controller

Voice alerts inhibiting

- TAWS Alerts can be inhibited by the pilot selecting Inhibit TAWS on Touchscreens Controllers
- Discretion should be used when inhibiting alerts and the system should be enabled when appropriate.

>> *All*

The TAWS function has 7 modes.

1. Forward Looking Terrain Avoidance alert

The Forward Looking Terrain Avoidance (FLTA) alert is used by TAWS and is composed of :

- **Reduced Required Terrain Clearance and Reduced Required Obstacle Clearance**

Reduced Required Terrain Clearance (RTC) and Reduced Required Obstacle Clearance (ROC) alerts are issued when the airplane flight path is above terrain, yet is projected to come within the minimum clearance values in table 9.49.1. When an RTC or ROC alert is issued, a potential impact point is displayed on the TAWS Page.

- **Imminent Terrain Impact and Imminent Obstacle Impact**

Imminent Terrain Impact (ITI) and Imminent Obstacle Impact (IOI) alerts are issued when the airplane is below the elevation of a terrain or obstacle cell in the airplane's projected path. ITI and IOI alerts are accompanied by a potential impact point displayed on the TAWS Page. The alert is annunciated when the projected vertical flight path is calculated to come within minimum clearance altitudes in table 9.49.1.

Phase of flight	Minimum Clearance Altitude Level Flight (ft)	Minimum Clearance Altitude Descending (ft)
Enroute	700	500
Terminal	350	300
Approach	150	100
Departure	100	100

Table 9.49.1 - Minimum Terrain and Obstacle Clearance values for FLTA alerts

During the final approach phase of flight, FLTA alerts are automatically inhibited when the airplane is below 200 feet AGL while within 0.5 Nm of the approach runway or below 125 feet AGL while within 1.0 Nm of the runway threshold.

Pilot's Operating Handbook

The aural/displayed messages associated with the FLTA function are described in the table 9.49.2.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Reduced Required Terrain Clearance Warning (RTC) (Red)	PULL UP	TERRAIN - PULL UP	"Terrain, Terrain ; Pull up, Pull up"
Imminent Terrain Impact Warning (ITI) (Red)	PULL UP	TERRAIN AHEAD - PULL UP	"Terrain Ahead, Pull up ; Terrain Ahead, Pull up"
Reduced Required Obstacle Clearance Warning (ROC) (Red)	PULL UP	OBSTACLE - PULL UP	"Obstacle, Obstacle ; Pull up, Pull up"
Imminent Obstacle Impact Warning (IOI) (Red)	PULL UP	OBSTACLE AHEAD - PULL UP	"Obstacle Ahead, Pull up ; Obstacle Ahead, Pull up"
Reduced Required Terrain Clearance Caution (RTC) (Amber)	TERRAIN	CAUTION - TERRAIN	"Caution, Terrain ; Caution, Terrain"
Imminent Terrain Impact Caution (ITI) (Amber)	TERRAIN	TERRAIN AHEAD	"Terrain Ahead ; Terrain Ahead"
Reduced Required Obstacle Clearance Caution (ROC) (Amber)	TERRAIN	CAUTION - OBSTACLE	"Caution, Obstacle ; Caution, Obstacle"
Imminent Obstacle Impact Caution (IOI) (Amber)	TERRAIN	OBSTACLE AHEAD	"Obstacle Ahead ; Obstacle Ahead"

Table 9.49.2 - FLTA alerts

2. Premature descent alerting

A Premature Descent Alert (PDA) is issued when the system detects that the airplane is significantly below the normal approach path to a runway (Figure 9.49.1).

PDA alerting begins when the airplane is within 15 Nm of the destination airport. PDA alerting ends when the airplane is either :

- 0.5 Nm from the runway threshold
- or
- at an altitude of 125 feet AGL while within 1.0 Nm of the threshold.

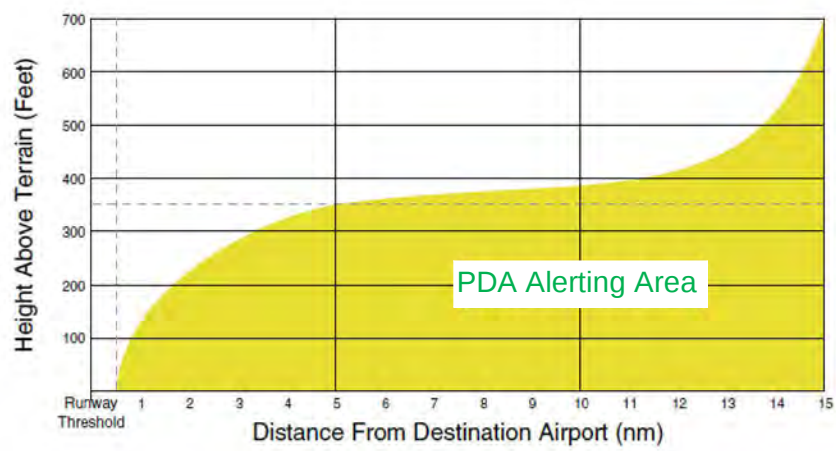


Figure 9.49.1 - PDA alerting threshold

The aural/displayed messages associated with the PDA function are described in the table 9.49.3.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Premature Descent Alert Caution (PDA) (Amber)	TERRAIN	TOO LOW - TERRAIN	"Too low, Terrain"

Table 9.49.3 - PDA alerts

Pilot's Operating Handbook

3. Excessive descent rate alert

The purpose of the Excessive Descent Rate (EDR) alert is to provide suitable notification when the airplane is determined to be closing (descending) upon terrain at an excessive speed. Figure 9.49.2 shows the parameters for the alert as defined by TSO-C151b.

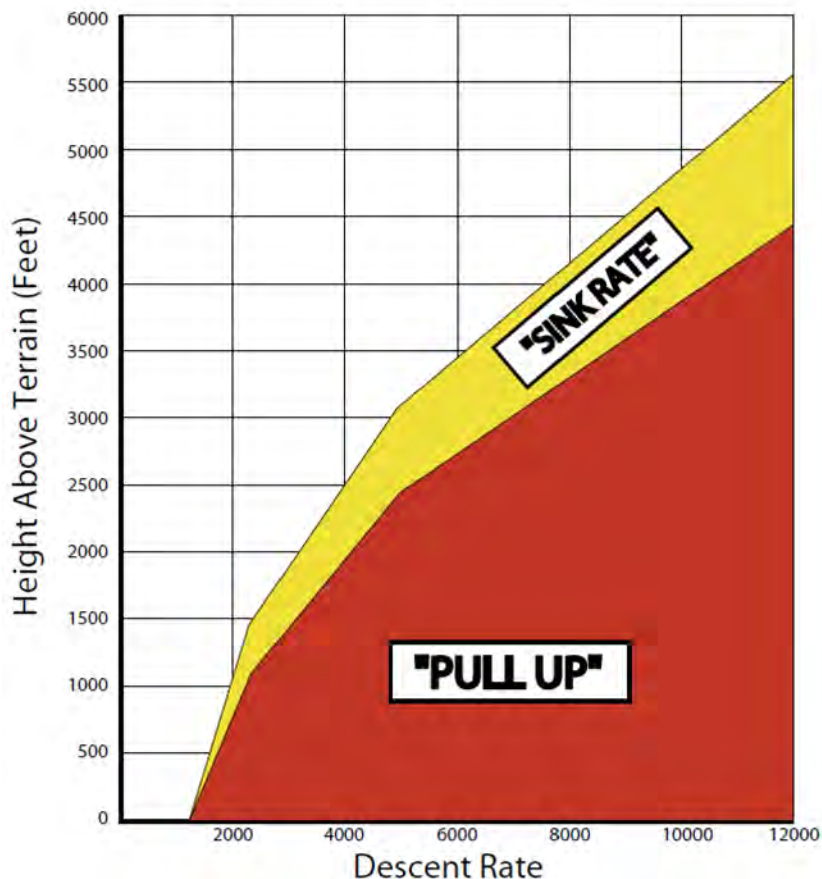


Figure 9.49.2 - Excessive Descent Rate Alert Criteria

The aural/displayed messages associated with the EDR function are described in the table 9.49.4.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Excessive Descent Rate Warning (EDR) (Red)	PULL UP	PULL UP	"Pull up"
Excessive Descent Rate Caution (EDR) (Amber)	TERRAIN	SINK RATE	"Sink rate"

Table 9.49.4 - EDR alerts

4. Negative climb rate after takeoff alert (NCR)

The purpose of the Negative Climb Rate (NCR) After Takeoff alert (also referred to as Altitude Loss After Takeoff) is to provide suitable alerts to the pilot when the system determines that the airplane is losing altitude (closing upon terrain) after takeoff. The aural message "Don't sink" is given for NCR alerts, accompanied by an annunciation and a pop-up terrain alert on the PFD's and Touchscreen Controllers. NCR alerting is only active when departing from an airport and when the following conditions are met :

- The height above the terrain is less than 700 feet.
- The distance from the departure airport is 5 Nm or less.
- The heading change from the heading at the time of departure is less than 110 degrees.

Pilot's Operating Handbook

Figure 9.49.3 shows two figures which illustrate the NCR alerting parameters as defined by TSO-C151b.

The NCR alert is issued when the altitude loss and height are within the range in the first figure, or when the sink rate (negative vertical speed) and height are within the range in the second figure.

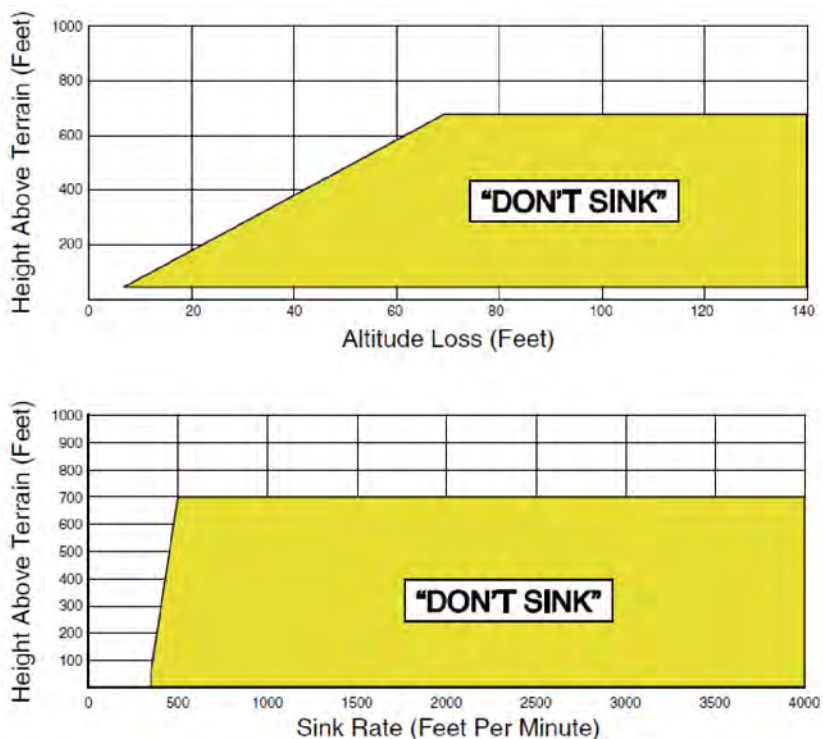


Figure 9.49.3 - Negative Climb Rate (NCR) Alert Criteria

The aural/displayed messages associated with the NCR function are described in the table 9.49.5.

Alert Type	PFD/MFD TAWS Page Annunciation	MFD Map Page Pop-Up Alert	Aural Message
Negative Climb Rate Caution (NCR) (Amber)	TERRAIN	DONT' SINK	"Don't sink"

Table 9.49.5 - NCR alerts

5. "FIVE-HUNDRED" aural alert, altitude voice callout (VCO)

The purpose of the aural alert message "Five-Hundred" is to provide an advisory alert to the pilot that the airplane is 500 feet above terrain. When the airplane descends within 500 feet of terrain, the aural message "Five-Hundred" is generated. There are no display annunciations or pop-up alerts that accompany the aural message.

6. TAWS not available alert

TAWS requires a 3-D GPS navigation solution along with specific vertical accuracy minimums. Should the navigation solution become degraded or if the airplane is out of the database coverage area, the annunciation TAWS N/A is generated in the annunciation window and on the TAWS Page. The aural message "TAWS Not Available" is generated. When the GPS signal is re-established and the airplane is within the database coverage area, the aural message "TAWS Available" is generated.

7. TAWS inhibit

TAWS also has an inhibit mode that deactivates the PDA/FLTA aural and visual alerts. Pilots should use discretion when inhibiting TAWS and always remember to enable the system when appropriate. Only the PDA and FLTA alerts are disabled in the inhibit mode.

SECTION 8

Handling, servicing and maintenance

Installation and operation of GARMIN TAWS system do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, Servicing and Maintenance of the basic POH.

SUPPLEMENT
GARMIN Synthetic Vision System
Table of contents

	Page
1 - General	9.50.2
2 - Limitations	9.50.2
3 - Emergency procedures	9.50.3
4 - Normal procedures	9.50.4
5 - Performance	9.50.5
6 - Weight and balance	9.50.5
7 - Description	9.50.5
8 - Handling, servicing and maintenance	9.50.6

SECTION 1

General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the TBM airplane is equipped with the option GARMIN Synthetic Vision System (SVS).

The SVS does not replace and is not intended to be used independently of the TAS and/or TAWS system(s).

The SVS does not replace and is not intended to be used independently of the horizontal and vertical primary flight instruments.

The SVS does not replace and is not intended to be used independently of the Course Deviation Indicator and the Vertical Deviation Indicator.

SECTION 2

Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the TBM airplane is equipped with the option GARMIN Synthetic Vision System.

The following document, or any further edition applicable to the latter, shall be readily available to the pilot, whenever operation of the SVS is predicted :

>> *Airplane equipped with G1000 Flight deck (MOD70-0176-00)*

- GARMIN Integrated Flight Deck Pilot's Guide, No. 190-00709-05 or its latest revision.

>> *Airplane equipped with G1000 NXi Flight deck (MOD70-0539-00)*

- GARMIN Integrated Flight Deck Pilot's Guide, No. 190-02218-XX at its latest revision.

>> *Airplane retrofitted with GARMIN G1000 NXi Flight deck (MOD70-0539-00)*

- GARMIN G1000 NXi Integrated Flight Deck Cockpit Pilot's Guide for the TBM850/900 P/N 190-02348-00 or any later revision as applicable.

>> *Airplane equipped with G3000 Flight deck (MOD70-0476-00)*

- GARMIN Integrated Flight Deck Pilot's Guide, No. 190-02046-XX at its latest revision.

The use of the Synthetic Vision System display elements alone for airplane control without reference to the GARMIN system primary flight instruments is prohibited.

Pilot's Operating Handbook

The use of the Synthetic Vision System alone for vertical and/or horizontal navigation, or obstacle or terrain avoidance is prohibited.

Pathway boxes must be selected OFF when flying an instrument approach. Turn Pathways OFF when ACTIVATE VECTORS-TO-FINAL, ACTIVATE APPROACH is selected, or the airplane is established on any segment of the approach.

The use of the Synthetic Vision System traffic display alone to avoid other airplane is prohibited.

The Terrain Database has an area of coverage from North 75° latitude to South 60° latitude in all longitudes.

SECTION 3

Emergency procedures

The emergency procedures hereafter supplement or replace those of the standard airplane described in Section 3 Emergency Procedures of the basic Pilot's Operating Handbook when the TBM airplane is equipped with the option GARMIN Synthetic Vision System.

Inconsistent display between SVS and GARMIN system primary flight instruments

>> *Airplane with G1000 Flight deck (MOD70-0176-00)*

From PFD display unit

- PFD softkey Press
- SYN VIS softkey Press
- SYN TERR softkey Press to disable
- SVS is removed from the PFD Verify

>> *Airplane with G1000 Nxi Flight deck (MOD70-0539-00)*

From PFD display unit

- PFD OPT softkey Press
- SVT softkey Press
- Terrain softkey Press to disable
- SVS is removed from the PFD Verify

■ >> *Airplane with G3000 Flight deck (MOD70-0476-00)*

From PFD display unit

- PFD Settings softkey Press
- Attitude Overlays softkey Press
- Synthetic Terrain softkey Press to disable
- SVS is removed from the PFD Verify

>> *All*

Use GARMIN system primary displays for navigation and airplane control.

SECTION 4

Normal procedures

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal procedures of the basic POH when the TBM airplane is equipped with the option GARMIN Synthetic Vision System.

▲ CAUTION ▲

SVS information is not a substitute for standard course and altitude deviation information provided by the CDI, VSI, VDI and the primary flight instruments, as well as for the Traffic Advisory System (TAS) or the Terrain Awareness Warning System (TAWS).



SVS activation

Refer to GARMIN Integrated Flight Deck Pilot's Guide, as applicable, listed in section 2 Limitations of this supplement for further information.

SECTION 5

Performance

Installation and operation of GARMIN Synthetic Vision System do not change the basic performance of the airplane described in Section 5 Performance of the basic POH.

SECTION 6

Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in Section 6 Weight and balance of the basic POH when the airplane is equipped with the option GARMIN Synthetic Vision System.

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
34 - Navigation				
A	0226-00	Synthetic Vision System GARMIN	/	/

SECTION 7

Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the airplane is equipped with the option GARMIN Synthetic Vision System.

SVS provides additional features on the primary flight display (PFD) - refer to GARMIN Integrated Flight Deck Pilot's Guide, as applicable, listed in section 2 Limitations of this supplement for further information.

SECTION 8

Handling, servicing and maintenance

Installation and operation of GARMIN Synthetic Vision System do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, servicing and maintenance of the basic POH.

SUPPLEMENT**GARMIN GSR 56 weather datalink and satellite phone****Table of contents**

	Page
1 - General	9.56.2
2 - Limitations	9.56.2
3 - Emergency procedures	9.56.4
4 - Normal procedures	9.56.4
5 - Performance	9.56.7
6 - Weight and balance	9.56.7
7 - Description	9.56.8
8 - Handling, servicing and maintenance	9.56.9

SECTION 1

General

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the TBM airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

Unless otherwise mentioned, whenever a G1000 system is called in this supplement it concerns either a G1000 system or a G1000 NXi system.

SECTION 2

Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH when the TBM airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

The GARMIN Integrated Flight Deck Pilot's Guide mentioned in section 2 Limitations of the basic POH (G1000 or G3000 as standard) or of the POH supplement (G1000 NXi retrofit), as applicable, or any further applicable edition, shall be readily available to the pilot, whenever the operation of GARMIN GSR 56 weather datalink and satellite phone is predicted.

Satellite phone functions

▲ WARNING ▲

Use of phone by PIC prohibited during all airplane operations



>> Airplane with G1000 Flight deck

- It is forbidden to activate Pilot In Command on-side GMA TEL button as long as the airplane is in the air or moving on the ground.
- Only the Pilot In Command cross side GMA TEL input can be activated at all time of flight for the front passenger and passengers to have the GSR 56 telephone audio functions.

>> Airplane with G3000 Flight deck

- It is forbidden to activate TEL button on Pilot Tab (located in NAV COM/Audio & Radios page) on GTC Touchscreen Controllers as long as the airplane is in the air or moving on the ground.

- Only the TEL button, on Copilot and Pass Tabs (located in NAV COM/Audio & Radios page) on GTC Touchscreen Controllers can be activated at all time of flight for the front passenger and passengers to have the GSR 56 telephone audio functions.

>> All

Weather datalink functions

- The GSR 56 weather datalink is only an advisory weather source, it does not relieve the pilot to comply with the applicable operational regulation in terms of flight preparation especially with regard to the use of an approved weather and NOTAM sources during flight planning.

International telecommunication regulation

The GSR 56 is a telecommunication device approved under FCC ID Q639522B and registered by the ITU (International Telecommunication Union) for international use according to the GMPCS-MoU.

The receiver transmitter RF module embedded in the GSR 56 is a 9522 B manufactured by Iridium Satellite LLC.

Terms of use are subject to changes and are available from the ITU website.

2.1 - Placards

Under L.H. front side window, under instruction plate

I4113207AAA/MA4200

USE OF PHONE BY PIC PROHIBITED DURING ALL AIRCRAFT OPERATIONS

SECTION 3

Emergency procedures

Installation and operation of GARMIN GSR 56 weather datalink and satellite phone do not change the basic emergency procedures of the airplane described in section 3 Emergency procedures of the basic POH.

SECTION 4

Normal procedures

The normal procedures hereafter supplement or replace those of the standard airplane described in section 4 Normal Procedures of the basic POH when the TBM airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

Normal operating procedures of the GARMIN GSR 56 weather datalink and satellite phone system are outlined in the GARMIN Integrated Flight Deck Pilot's Guide.

>> Airplane with G1000 Flight deck

Before starting engine

On L.H. GMA audio panel

- 1 - TEL button OFF

End of procedure.

Before starting a phone call in flight

On L.H. GMA audio panel

- 1 - TEL button OFF

If rear passengers intend to take part in a phone call :

- 2 - CABIN button or PASS ICS button OFF

2 types of wording may exist for the same button

If front passenger intends to take part in a phone call :

- 3 - INTRCOM button or CREW ICS button OFF

2 types of wording may exist for the same button

On R.H. GMA audio panel

- 4 - TEL button ON

If rear passengers intend to take part in a phone call :

- 5 - CABIN button or PASS ICS button ON

2 types of wording may exist for the same button

End of procedure.

>> *Airplane with G3000 Flight deck*

Before starting engine

■ In one of the GTC's NAV COM / Audio & Radios / pilot Tab

1 - TEL button OFF

End of procedure.

Before starting a phone call in flight

■ In one of the GTC's NAV COM / Audio & Radios / pilot Tab

1 - TEL button OFF

If passengers intend to take part into a phone call :

In one of the GTC's NAV COM / Intercom Page

2 - Pilot/Passenger Link Arrow OFF

If front passenger intends to take part into a phone call :

In one of the GTC's NAV COM / Intercom Page

3 - Pilot/Copilot Link Arrow OFF

■ In one of the GTC's NAV COM / Audio & Radios / copilot Tab

4 - TEL button ON
if necessary, switch off Sync to Pilot function

If passengers intend to take part into a phone call :

■ In one of the GTC's NAV COM / Audio & Radios / Pass Tab

5 - TEL button ON
if necessary, switch off Sync to Pilot function

End of procedure.

SECTION 5

Performance

Installation and operation of GARMIN GSR 56 weather datalink and satellite phone. do not change the basic performance of the airplane described in section 5 Performance of the basic POH.

SECTION 6

Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH when the airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
23 - Communication				
A	0331-23	Weather datalink and satellite phone system GSR 56 GARMIN	3.82 (1.736)	58.03 (1.474)

SECTION 7

Description

Information hereafter supplement or replace those of the standard airplane described in section 7 Description of the basic POH when the airplane is equipped with the option GARMIN GSR 56 weather datalink and satellite phone.

GARMIN GSR 56 weather datalink and satellite phone system provides airborne low speed datalink and voice communication capability to Integrated Flight Deck system excluding any voice mail function. GSR 56 weather datalink and satellite phone system contains a transceiver that operates on the Iridium Satellite network.

The weather information are displayed on the MFD maps and on the PFD inset map.

>> *Airplane with G1000 Flight deck*

The satellite phone interface is embedded in the MFD : Phone communication and SMS can be received and sent through the dedicated pages on the MFD.

The controls for the MFD are located on both the MFD bezel and the MFD control unit.

The telephone audio including the incoming call ringing is controlled by the TEL button on the GMA audio panels and can be played in the pilot, front passenger and passengers headphones.

>> *Airplane with G3000 Flight deck*

The satellite phone interface is embedded in the Touchscreen Controllers : Phone communication and SMS can be received and sent through the dedicated pages on the Touchscreen Controllers.

The telephone audio including the incoming call ringing is controlled by the Touchscreen controllers & GMA audio processor and can be played in the pilot, front passenger and passengers headphones.

>> *All*

Although it is possible to leave a message when calling the airplane, as voice mail communication is not supported by the GSR 56 :

- it is not possible to access the GSR 56 voice mail from the airplane
- there is no indication on the Integrated Flight Deck system when a new message has been left on the GSR 56 voice mail.

SECTION 8

Handling, servicing and maintenance

Installation and operation of GARMIN GSR 56 weather datalink and satellite phone. do not change the basic handling, servicing and maintenance procedures of the airplane described in section 8 Handling, Servicing and Maintenance of the basic POH.

Intentionally left blank

SUPPLEMENT

Brazil specifics

Table of contents

	Page
1 - General	9.59.2
2 - Limitations	9.59.2
3 - Emergency procedures	9.59.13
4 - Normal procedures	9.59.13
5 - Performance	9.59.13
6 - Weight and balance	9.59.13
7 - Description	9.59.14
8 - Handling, servicing and maintenance	9.59.14

SECTION 1

General

This supplement is intended to inform the pilot about the airplane specifics, among others those required by the relevant Certification Authorities (limitations, description and operations necessary to the operation of the TBM airplane).

SECTION 2

Limitations

The limitations hereafter supplement or replace those of the standard airplane described in section 2 Limitations of the basic POH.

2.5 - Weight and C.G. limits

Weight limits

>> *With 4-seat accommodation*

- in rear part of pressurized cabin : 396 lbs (180 kg), with small or large net (see sketch below)

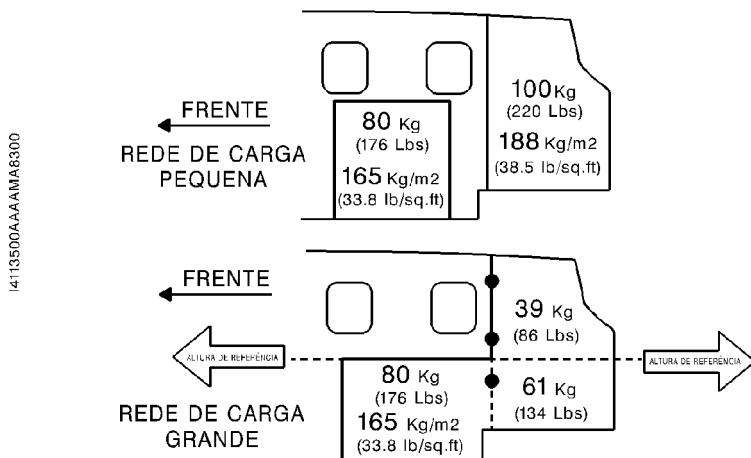


Figure 2.5.1 - Baggage limits

Pilot's Operating Handbook

2.6 - Operation limits

When operating the VHF-COMM system in Brazilian air space, the selection of 8.33 kHz in the channels spacing can cause the loss of communication with the Air Traffic Control (ATC).

GNSS (GPS/SBAS) navigation system limitations

In accordance with Brazilian IS 21-013A, use of GNSS/GPS is prohibited under IFR unless other means of navigation, suitable and approved for the intended route, are installed and operational. It must be possible - at any point along the route - to navigate to the destination or alternate, using such means.

The SBAS functionality is not available in Brazil, therefore operations that require such functionality, such as GNSS vertical navigation modes, are prohibited in Brazilian airspace.

2.9 - Placards

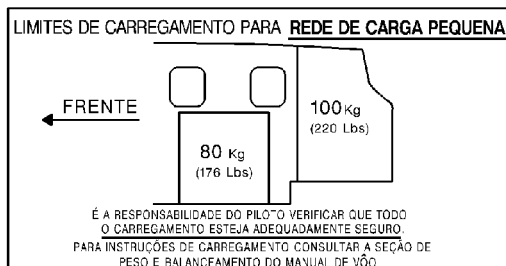
On pressurized baggage compartment partition wall

100 kg MÁXIMO

**É DE RESPONSABILIDADE DO PILOTO
CHECAR SE TODA BAGAGEM ESTÁ
ADEQUADAMENTE SEGURA.
PARA INSTRUÇÕES DE CARREGAMENTO
CONSULTAR A SEÇÃO DE PESO E
BALANCEAMENTO DO MANUAL DE VÔO**

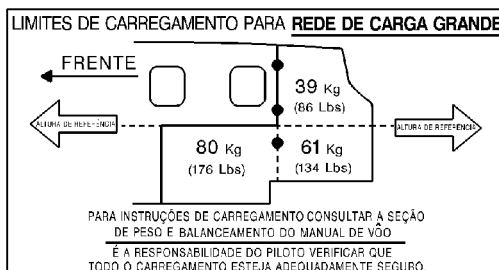
For the small cargo net, on frame C13bis

14113500AAAAB400



For the large cargo net, on R.H. side upholstery panel, in the rear baggage compartment

14113500AAAAB400



On FWD baggage compartment door frame, non pressurized

50 kg MÁXIMO

**PARA INSTRUÇÕES DE CARREGAMENTO
CONSULTAR A SEÇÃO DE PESO E
BALANCEAMENTO DO MANUAL DE VÔO**

Pilot's Operating Handbook

Near fuel tank caps



On internal face of L.H. engine cowl

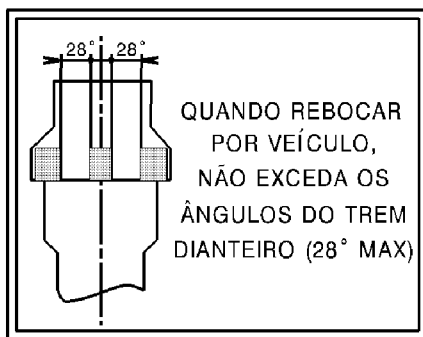


On rear passenger's table casing

A MESA DEVERÁ ESTAR RECOLHIDA PARA DECOLAGEM E POUSO

On nose gear door

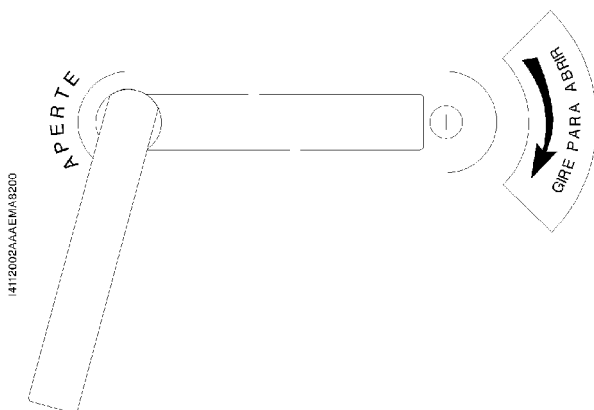
I4112001AAACMA8100



On engine cowling, in front of compartment door

**- TOMADA EXTERNA
- 28 VOLTS D.C. NOMINAL
- 800 AMPS
CAPACIDADE MÍNIMA PARA PARTIDA
- NÃO EXCEDA 1000 AMPS**

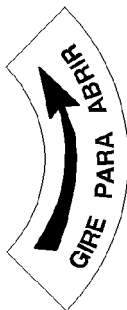
On pilot door - External side, if installed



Pilot's Operating Handbook

On access door - External side

I4112002AAAEIMAB300



On outer fuselage skin aft of access door and in the cabin forward of access door

I4112002AAADMA8400



On access door - Internal side

I4112002AAADMA1B000



**ATENÇÃO: DESTRAVAR ANTES
DE OPERAR A MANOPLA**

**GIRE A MANOPLA
PARA ABRIR** ↑



Marking on cover



Marking on handle



On last step of stairs

MAX. UMA PESSOA NA ESCADA

Pilot's Operating Handbook

On R.H. access door jamb

I4113400AAA8MAB200



On R.H. side at front seat level and on the first rear passengers masks container (R.H. side on the ceiling)

I4113400AAA8MAB300



On rear passengers masks containers

I4113400AAA8MAB400



On the oxygen service door

I4112400AAAAM/A8200

**ABASTECIMENTO DE OXIGÊNIO.
NÃO USE LUBRIFICANTES**

>> *Airplanes equipped with Lavatory compartment (Post-MOD70-0505-25)*

On fixed panel, cabin side

I4113200AAAAM/A8300

A DIVISÓRIA DEVE ESTAR RECOLHIDA DURANTE A DECOLAGEM E O POUSO

On fixed panel, toilet side

I4113200AAAAM/A8000

**O ASSENTO DO SANITÁRIO NÃO DEVE ESTAR
OCUPADO DURANTE A DECOLAGEM E O POUSO**

**FECHE E TRAVE A TAMPA DO SANITÁRIO
QUANDO NÃO ESTIVER EM USO**

**NÃO PENDURE OU MANTENHA OBJETOS
SOBRE O SANITÁRIO OU NA DIVISÓRIA**

**A DIVISÓRIA DEVE ESTAR RECOLHIDA
DURANTE A DECOLAGEM E O POUSO**

**OS FONES DE OUVIDO DEVEM SER
UTILIZADOS QUANDO A
DIVISÓRIA ESTIVER ESTENDIDA**

Pilot's Operating Handbook

On access door, cabin side and toilet side

I4113200AA\MMMA8200



Behind access door, cabin side and toilet side

I4113200AA\MMMA18200



Front face of lavatory compartment, near opening / closing switches

I4113200AAAMMA18000



I4113200AAAMMA8400



On the magazine rack and on side wall of storage volume

I4113200AAAMMA18100

1,5 KG (3.3 LB)

>> *Airplanes equipped with Coat hanger (Post-MOD70-0557-25)*

On the upper edge of the L.H. Passenger access door panel

I4113200AAALMA8200

SOMENTE VESTUÁRIO

SECTION 3

Emergency procedures

No specifics

SECTION 4

Normal procedures

No specifics

SECTION 5

Performance

No specifics

SECTION 6

Weight and balance

The weight and balance hereafter supplement or replace those of the standard airplane described in section 6 Weight and balance of the basic POH.

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
01 - Specific optional equipment				
S	01004	Brazil certification markings	/	/

SECTION 7

Description

No specifics

SECTION 8

Handling, servicing and maintenance

No specifics

SUPPLEMENT

Lavatory compartment

Table of contents

	Page
1 - General	9.63.2
2 - Limitations	9.63.2
3 - Emergency Procedures	9.63.7
4 - Normal Procedures	9.63.8
5 - Performance	9.63.8
6 - Weight and Balance	9.63.8
7 - Description	9.63.10
8 - Handling, Servicing and Maintenance	9.63.14

SECTION 1

General

This supplement is intended to inform the pilot about the equipment limitations, emergency procedures, normal procedures, and description necessary following the installation of the lavatory compartment option.

SECTION 2

Limitations

The information in this section supplements and/or replaces the information in section 2: Limitations of the standard POH.

- toilet seat must not be occupied during take-off and landing
- divider must be stowed during take-off and landing
- headset shall be worn at all time when seat is occupied

>> From S/N 1000 to S/N 1269

2.9 - Placards

On fixed panel, cabin side

DIVIDER MUST BE STOWED DURING TAKE-OFF AND LANDING

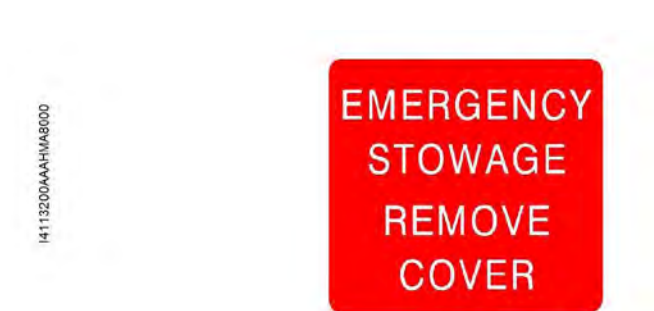
I4113200AAAHHMA8300

Pilot's Operating Handbook

On fixed panel, toilet side



On access door, cabin side and toilet side



Behind access door, cabin side and toilet side



Inner face of toilet cover

I4113200AAA/HWA18200



Front face of lavatory compartment, near opening/closing switches

I4113200AAA/IMA8100



I4113200AAA/IMA8200



On the magazine rack

I4113200AAA/IMA8000

3.3 LBS (1,5 KG)

>> **From S/N 1270****2.9 - Placards**

On fixed panel, cabin side

I4113200AAANMA8200

DIVIDER MUST BE STOWED DURING TAKE-OFF AND LANDING

On fixed panel, toilet side

I4113200AAANMA8300

TOILET SEAT MUST NOT TO BE
OCCUPIED DURING TAKE-OFF
AND LANDINGCLOSE AND LOCK TOILET COVER
WHEN NOT IN USEDO NOT HANG OR STORE ITEMS
ON TOILET OR DIVIDERDIVIDER MUST BE STOWED DURING
TAKE-OFF AND LANDINGHEADSET MUST BE USED WHEN
DIVIDER IS DEPLOYED

On access door, cabin side and toilet side

I4113200AAANMA8100

**EMERGENCY
STOWAGE

REMOVE
COVER**

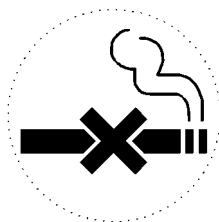
Behind access door, cabin side and toilet side

I4113200AAA NMA8000



Inner face of toilet cover

I4113300AAA AIMA8400



Front face of lavatory compartment, near opening/closing switches

I4113200AAA AIMA8400



I4113200AAA IMA18000



Pilot's Operating Handbook

On the magazine rack

14113200AAA/IMA8300

1,5 kg - 3.3 lbs

SECTION 3

Emergency Procedures

The information in this section supplements and/or replaces the information in section 3: Emergency Procedures of the standard POH.

3.10 - Pressurization and air conditioning

>> Pre v15 GARMIN software update (Pre-MOD70-0407-00)

CABIN ALTITUDE

Inform passengers to use emergency stowing of the divider and oxygen mask.

>> Post v15 GARMIN software update (Post-MOD70-0407-00) or airplane with G3000 Flight deck (MOD70-0476-00)

CABIN ALTITUDE and **USE OXYGEN MASK**

or

CABIN ALTITUDE and **USE OXYGEN MASK** and **EDM**

Inform passengers to use emergency stowing of the divider and oxygen mask.

Other procedures in the standard POH are unchanged.

SECTION 4

Normal Procedures

The information in this section supplements and/or replaces the information in section 4: Normal Procedures of the standard POH.

BRIEFING to passengers to be performed before entering the airplane

Normal and Emergency stowing operations of the divider.

In case of depressurization: emergency stowing of the divider, use oxygen mask, and remain seated unless otherwise instructed by the crew.

The headset must be used when the divider is deployed to allow communication with the crew in case of emergency.

SECTION 5

Performance

The installation of the Lavatory compartment system does not change the performance of the airplane described in section 5: Performance of the standard POH.

SECTION 6

Weight and Balance

The information in this section supplements and/or replaces the information in section 6: Weight and Balance of the standard POH.

6.1 - General

This paragraph is intended to provide the pilot with a simple and rapid means of determining weight and balance of the airplane when equipped with the lavatory compartment option.

▲ WARNING ▲

It is the pilot's responsibility to ensure that the airplane is properly loaded and the weight and balance limits are adhered to.



6.4 - Determining the new airplane empty weight and balance after the application of the lavatory compartment option

• NOTE •

The new empty weight determination after lavatory compartment installation shall be performed from the 6-seat configuration airplane characteristics

Using the weight and balance form

▲ CAUTION ▲

Be sure to use the weight and balance report issued after the lavatory compartment option is installed which gives the new empty weight, arm, and CG %, for the weight and balance form.

Refer to POH section 6.4 using the weight and balance form procedure to determine the weight and balance of the airplane equipped with the lavatory compartment option together with the use of the loading form hereafter.

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
25 - Equipment and furnishings				
O	0505-25C or 0505-25D	Lavatory compartment equipment	17.6 (8.0)	270.9 (6.880)
O	0505-25E	Lavatory compartment equipment	19.2 (8.7)	270.6 (6.873)

SECTION 7

Description

The information in this section supplements and/or replaces the information in section 7: Description of the standard POH.

For operation, refer to equipment User's Guide.

The lavatory compartment is installed against right interior upholstery panel, facing large door. The lavatory compartment is installed at the place of the rear seats, removed to allow this installation. It is attached to the fuselage structure on the cabin floor, using the seats tracks with four pads and screws.

The lavatory compartment structure is made of composite panels.

The lavatory compartment assembly is composed of:

- A chemical toilet,
- Electrically deployable separating panels (divider),
- Two (2) actuating switches (DEPLOY, STOW),
- Two (2) emergency stowing buttons (PUSH TO STOW), accessible from inside or outside the lavatory compartment,
- One (1) mirror,
- One (1) electric power plug,
- One (1) headset allowing communication between the passenger and the crew.

When the lavatory compartment is not occupied, the divider is stored unfolded in the lavatory compartment structure.

Two (2) switches, located on the seat front face, left side, hidden when latching strap snap fastener is locked, control the deployment/stowing of the moveable parts of the divider.

Two (2) access doors (attached with self gripping tape), located on each side of the fixed part of the divider, give access to the emergency stowing push button, allowing the emergency (manual) retraction of the divider, using the application of a vertical force (by hand) on the upper edge of the divider.

Pilot's Operating Handbook

Electric connection of the system is performed via a power plug:

>> Up to S/N 1407 without optional 12V power plugs (Pre-MOD70-0174-25)

- 28 volts

>> Up to S/N 1407 with optional 12V power plugs (Post-MOD70-0174-25)

- 12 volts

>> From S/N 1408 (TBM 960 airplane only)

- 115 volts

If the divider stops during deployment or stowing, it is possible to reset the lavatory compartment. To do so, remove the backrest hatch to access the dedicated circuit breaker.

>> All

The power plug is located on the right hand side upholstery panel. Connection is only accessible when the lavatory compartment structure is unscrewed from the floor and moved slightly aside to access the plug.

The circuit breaker for the power plug is only accessible when the lavatory compartment is removed.

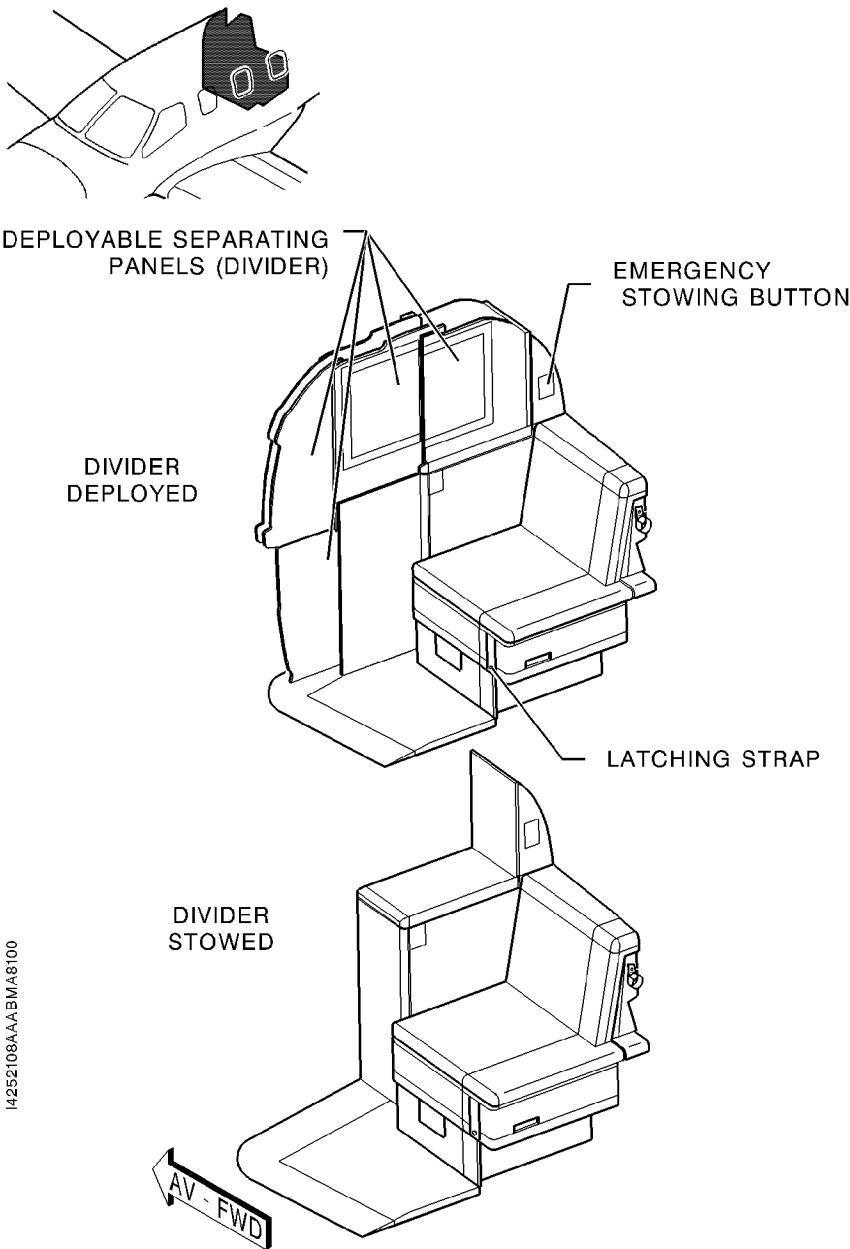
A mirror automatically illuminates when the divider is deployed.

A safety anti pinching sensor stops the deployment of the divider in case an interference is detected.

To remove the chemical toilet system from the lavatory compartment structure, it is necessary to unlatch the toilet cover, remove the top frame, if installed then lift upward the forward face of the structure and pull out the toilet from the structure.

A storage volume on the left side of the toilet is accessible when toilet cover is up.

A magazine rack is located on the forward side of the fixed part of the divider.



14252108AA/BMA8100

Figure 9.63.3 (1/2) - Lavatory compartment

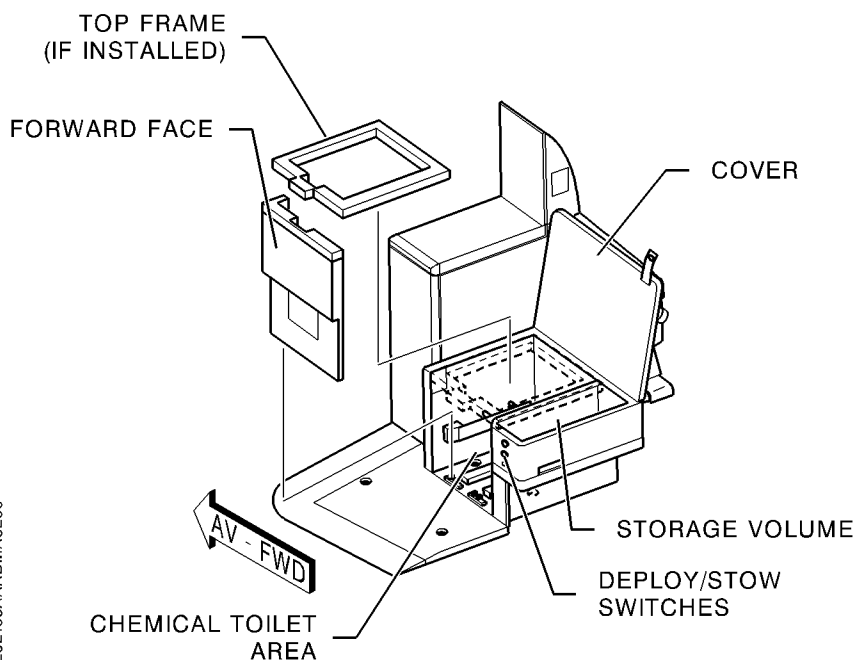
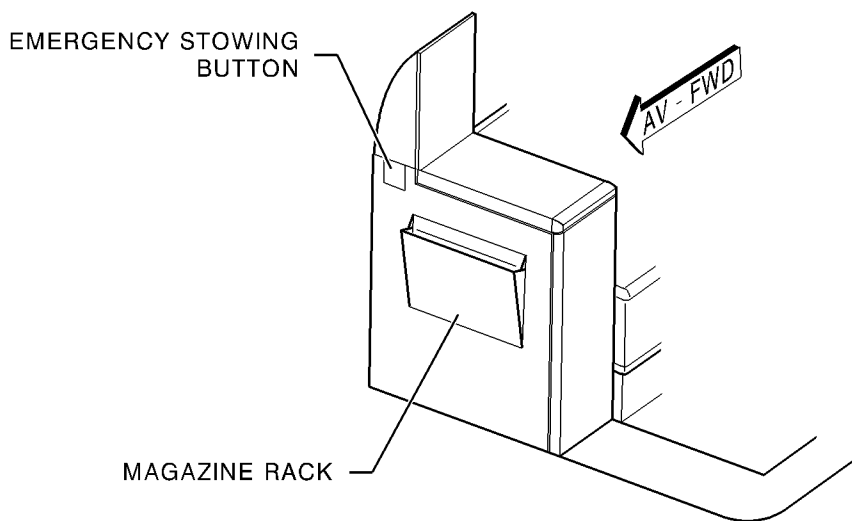


Figure 9.63.3 (2/2) - Lavatory compartment

SECTION 8

Handling, Servicing and Maintenance

The installation of the Lavatory compartment system does not change the handling, servicing and maintenance of the airplane described in section 8: Handling, Servicing and Maintenance of the standard POH.

SUPPLEMENT

DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX)

TABLE OF CONTENTS

	Page
1 - GENERAL	9.67.2
2 - LIMITATIONS	9.67.2
3 - EMERGENCY PROCEDURES	9.67.2
4 - NORMAL PROCEDURES	9.67.2
5 - PERFORMANCE	9.67.3
6 - WEIGHT AND BALANCE	9.67.3
7 - DESCRIPTION	9.67.4
8 - HANDLING, SERVICING AND MAINTENANCE	9.67.4

SECTION 1

GENERAL

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation when the airplane is equipped with the option DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX).

SECTION 2

LIMITATIONS

Installation and operation of DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX) do not change the basic performance of the airplane described in Section 2 Limitations of the basic Pilot's Operating Handbook.

SECTION 3

EMERGENCY PROCEDURES

Installation and operation of DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX) do not change the basic performance of the airplane described in Section 3 Emergency Procedures of the basic Pilot's Operating Handbook.

SECTION 4

NORMAL PROCEDURES

Installation and operation of DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX) do not change the basic performance of the airplane described in Section 4 Normal Procedures of the basic Pilot's Operating Handbook.

SECTION 5

PERFORMANCE

Installation and operation of DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX) do not change the basic performance of the airplane described in Section 5 Performance of the basic Pilot's Operating Handbook.

SECTION 6

WEIGHT AND BALANCE

The weight and balance hereafter supplement or replace those of the standard airplane described in Section 6 Weight and balance of the basic Pilot's Operating Handbook when the airplane is equipped with the option DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX).

S/ R/ A/ O	ITEM OPT70 or MOD70	REQUIRED (R) OR STANDARD (S) OR OPTIONAL (A or O) EQUIPMENT	WEIGHT per unit lb (kg)	ARM in. (m)
		31 - INDICATING/RECORDING SYSTEMS		
A	0578-31A	Data collection and transmission system PWC	3.62 (1.64)	125.2 (3.18)

SECTION 7

DESCRIPTION

Information hereafter supplement or replace those of the standard airplane described in Section 7 Description of the basic Pilot's Operating Handbook when the airplane is equipped with the DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX).

7.14 - MISCELLANEOUS EQUIPMENT

DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX)

The data collection and transmission system collects data from aircraft data buses and discrete inputs and store it in resident non-volatile memory.

When the aircraft is on the ground and a few minutes after the engine shut-down, recorded data are automatically transmitted to a ground station via the cellular or WiFi network. These data are intended to be used for maintenance and trend monitoring.

The data collection and transmission system records data from the GASC and data from the GIA integrated avionics unit #1 (GARMIN integrated flight deck system).

The data collection and transmission system starts recording data as soon as the crash lever is set upwards, and stops recording data when the crash lever is set downwards.

The data collection and transmission system is installed in the front cargo compartment, and does not require a pilot input to operate.

The data collection and transmission system is powered from the BATT BUS and protected by the "REC" circuit breaker.

SECTION 8

HANDLING, SERVICING AND MAINTENANCE

Installation and operation of DATA COLLECTION AND TRANSMISSION SYSTEM (FASTBOX) do not change the basic handling, servicing and maintenance procedures of the airplane described in Section 8 Handling, Servicing and Maintenance of the basic Pilot's Operating Handbook.

SUPPLEMENT

TBM930 (2018)

TABLE OF CONTENTS

	Page
1 - GENERAL	9.68.2
2 - LIMITATIONS	9.68.3
3 - EMERGENCY PROCEDURES	9.68.4
4 - NORMAL PROCEDURES	9.68.5
5 - PERFORMANCE	9.68.7
6 - WEIGHT AND BALANCE	9.68.7
7 - DESCRIPTION	9.68.8
8 - HANDLING, SERVICING AND MAINTENANCE	9.68.17

SECTION 1

GENERAL

This supplement is intended to inform the pilot about the equipment limitations, description and operations necessary for operation of the airplane TBM930 (2018).

The list of systems equipping the airplane delivered from January 2018 is :

- TBM930 fitted with SW GDU V6.6 and with MOD70-0549-00 capability ,
- Heated seats MOD70-0588-25 ,
- O₂ smart mike mask MOD70-0597-35 ,
- Landing and taxi light rotary switch MOD70-0595-92.

This supplement is valid until the TBM930 Pilot's Operating Handbook at edition 1 is issued and airplanes concerned by this supplement have applied MOD70-0549-00.

SECTION 2

LIMITATIONS

Operation of the airplane TBM930 (2018) does not change the limitations of the airplane as described in Section 2 Limitations of the basic Pilot's Operating Handbook.

SECTION 3
EMERGENCY PROCEDURES

The emergency procedures hereafter supplement or replace those of the standard airplane described in Section 3 Emergency Procedures of the basic Pilot's Operating Handbook when the airplane uses the equipment of the TBM930 (2018).

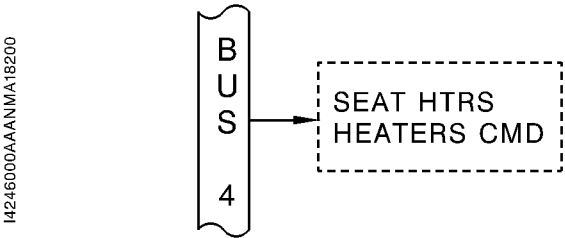
3.9 - ELECTRICAL SYSTEM

MAIN GEN

AND

LOW VOLTAGE

1 - SEATS HTRS MASTER OFF



NOTE: CIRCUIT BREAKERS ON C13 BIS FRAME

Figure 3.9.1 - ELECTRICAL DISTRIBUTION OF BUS BARS

SECTION 4

NORMAL PROCEDURES

The normal procedures hereafter supplement or replace those of the standard airplane described in Section 4 Normal Procedures of the basic Pilot's Operating Handbook when the airplane uses the equipment of the TBM930 (2018).

4.3 - CHECK-LIST PROCEDURES

INSIDE INSPECTION

2 - SEATS HTRS MASTER **OFF**

Other procedures in the basic Pilot's Operating Handbook are unchanged.

AFTER ENGINE START

1 - SEATS HTRS MASTER **As required**

Other procedures in the basic Pilot's Operating Handbook are unchanged.

SHUT-DOWN

1 - SEATS HTRS MASTER **OFF**

Other procedures in the basic Pilot's Operating Handbook are unchanged.

4.3 - AMPLIFIED PROCEDURES
PREFLIGHT INSPECTION

- 1 - SEATS HTRS MASTER **OFF**

Other procedures in the basic Pilot's Operating Handbook are unchanged.

INSIDE INSPECTION

- 1 - SEATS HTRS MASTER **OFF**

Other procedures in the basic Pilot's Operating Handbook are unchanged.

AFTER ENGINE START

- 1 - SEATS HTRS MASTER **As required**

Other procedures in the basic Pilot's Operating Handbook are unchanged.

SHUT-DOWN

- 1 - SEATS HTRS MASTER **OFF**

Other procedures in the basic Pilot's Operating Handbook are unchanged.

PILOT'S OPERATING HANDBOOK

SECTION 5
PERFORMANCE

Operation of the airplane TBM930 (2018) does not change the performance of the airplane described in Section 5 Performance of the basic Pilot's Operating Handbook.

SECTION 6
WEIGHT AND BALANCE

Operation of the airplane TBM930 (2018) does not change the weight and balance of the airplane described in Section 6 Weight and Balance of the basic Pilot's Operating Handbook.

SECTION 7

DESCRIPTION

Information hereafter supplement the one given for the standard airplane in Section 7 Description of the basic Pilot's Operating Handbook when the airplane uses the equipment of the TBM930 (2018).

7.3 - ACCOMODATIONS

SEAT, BELTS AND HARNESSSES

Heated seats (Figure 7.3.1)

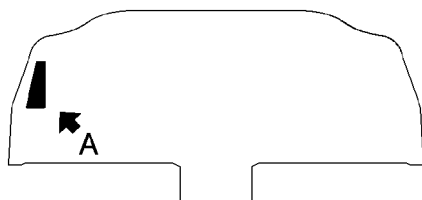
Cockpit and cabin seats are equipped with a heating system providing comfort to pilot and passengers.

The system consists of :

- One heating element in the cushion and one heating element in the backrest of each seat,
- The SEATS HTRS MASTER switch located on the instrument panel,
- HI/OFF/LOW three positions switch located on each cockpit and cabin seat,
- The seats heaters control box and relays located under the floor panel.

Each seat is equipped with a power supply wire with a connector. A clip provides a holding mean for the connector to prevent its damage during seat operation or seat storage.

PILOT'S OPERATING HANDBOOK



- 1) SEATS HTRS MASTER switch
- 2) Backrest surface heating
- 3) Seat surface heating
- 4) HI/OFF/LOW three position switch
- 5) Tactile marks

14251204AAA MA18000

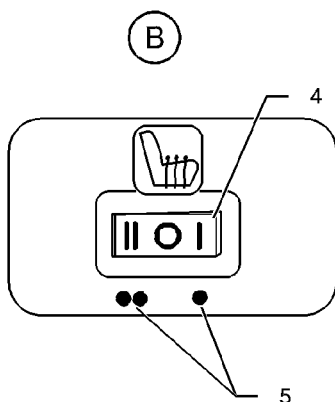
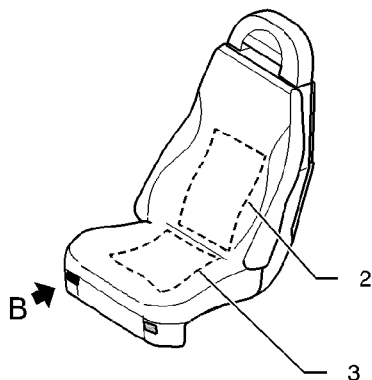
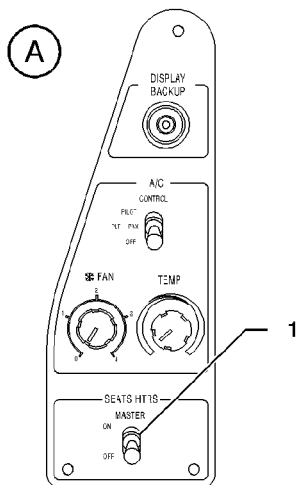


Figure 7.3 1 - Heated seat

PILOT'S OPERATING HANDBOOK

The seats heating is only available when the airplane is connected to a GPU or when the main generator is supplying power.

The system does not operate if GENERATOR selector is set to ST-BY.

The SEATS HTRS MASTER switch allows the pilot to enable or not the electrical supply of all seats heaters.

Each seat is then individually controlled by the HI/OFF/LOW switch :

NOTE : *Two tactile marks located under the HI / OFF / LOW switch enables to determinate which position is selected.*

- OFF position is obtained when the switch is in the central position. In this position the seat does not heat.
- HI position is obtained by positioning the switch to the right. In this position the seat heats at its maximum capacity.
- LOW position is obtained by positioning the switch to the left. In this position the seat heats less than HI position.

NOTE : *In HI position, the heating sensation comes up after approximately 3 minutes.*

To avoid overheating, each seat is equipped with thermal sensors which remove power supply in case of overtemperature detection.

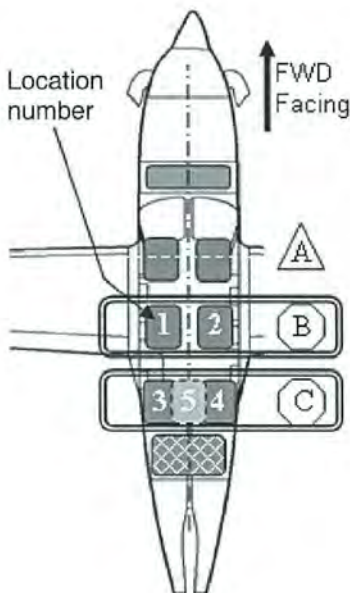
Precaution of use of the seats heaters system :

- Do not place any sharp or heavy objects on the seat, as the seat heater could otherwise be damaged.
- Persons with an impaired sensitivity to heat should only operate the seat heater at low level.
- Do not place any heat insulating objects, such as blankets or coats, on the seat when the seat heater is switched on.
- The seat heater can be damaged by fluids spilt on the seat.
- Never switch the seat heater on when it is wet.

PILOT'S OPERATING HANDBOOK

Possible configurations of seats equipped with the seat heaters system :

Configuration name	Location number				
	1	2	3	4	5
C1	X	X	X	X	
C2 (2)	X	X			X
C3	X	X		X	
C4 (1)	X	X			
C5	X	X	X		
C6	X		X	X	
C7	X		X		
C8	X			X	
C9 (2)	X				X
C10 (1)	X				
C11		X	X	X	
C12 (2)		X			X
C13		X	X		
C14		X		X	
C15 (1)		X			
C16			X	X	
C17			X		
C18				X	
C19 (2)					X
C20 (1)					
	Zone (B)		Zone (C)		



(1) This configuration accepts small net or large net

(2) Rear seat, with seats heaters system, cannot be connected to electrical supply in this configuration

Each cross indicates that you have a seat at the correspondent location number.

- 1) DISPLAY BACKUP, A/C CONTROL and SEATS HTRS panels
- 2) General alarm red and amber indicators
- 3) PFD1
- 4) MD302
- 5) Landing gear configuration and control panel
- 6) Parking brake control
- 7) Left station control wheel tube
- 8) Deicing control and check panel
- 9) L.H. station rudder pedals adjusting handle
- 10) Left station reception-micro jacks
- 11) Pitch & Yaw trim setting management
- 12) Push To Talk button (PTT)
- 13) AP / TRIM DISC red push-button
- 14) CWS
- 15) Paper clip
- 16) Chronometer management
- 17) Transponder Ident sequence
- 18) Stormscope clear
- 19) COM 2 (Stand-by / active)
- 20) Flight conditions and instruction placard
- 21) Adjustable air outlet
- 22) Circuit breaker panel lighting switch
- 23) Oxygen mask microphone switch
- 24) Hourmeter
- 25) USB servicing plug

Figure 7.3 2 (1/2) - LEFT INSTRUMENT PANEL

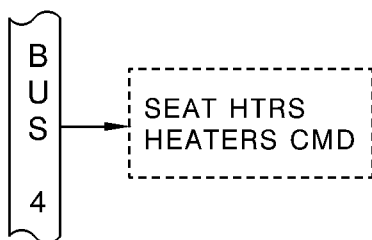
PILOT'S OPERATING HANDBOOK



Figure 7.3 2 (2/2) - LEFT INSTRUMENT PANEL
(Typical arrangement)

7.8 - ELECTRICAL SYSTEM

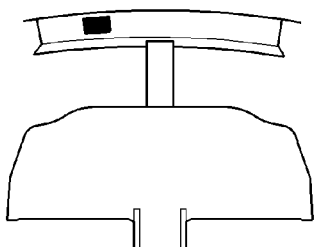
14246000AAANMA18200



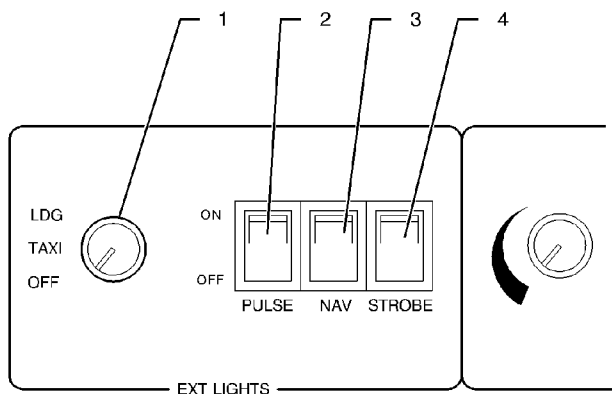
NOTE: CIRCUIT BREAKERS ON C13 BIS FRAME

Figure 7.8.3 - ELECTRICAL DISTRIBUTION OF BUS BARS

PILOT'S OPERATING HANDBOOK



- 1) Taxi and landing light switch
- 2) Pulse system switch
- 3) Navigation lights switch
- 4) Strobe lights switch



14240000AAVVA18000

Figure 7.8.6 - EXTERNAL LIGHTING CONTROLS

Other information in the Paragraph 7.8 of the Pilot's Operating Handbook are unchanged.

7.10 - EMERGENCY OXYGEN SYSTEM

O₂ SMART MIKE MASK

The two cockpit masks, O₂ smart mike masks, are equipped with a system that detects when a communication is made operating one of the push-to-talk buttons. It activates a noise reduction system to attenuate the oxygen flow noise in the headsets.

Noise reduction function operates when the switch located on O₂ connecting line is set to ON.

14351100AAEMA8000

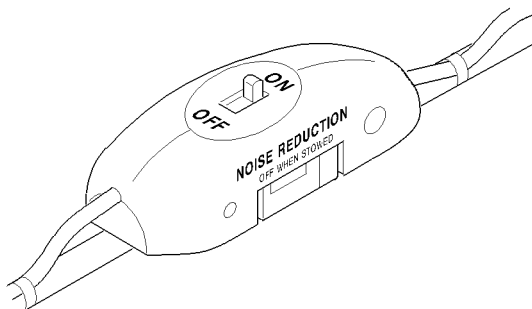


Figure 7.10.2 - NOISE REDUCTION SWITCH

Other information in the Paragraph 7.10 of the Pilot's Operating Handbook are unchanged.

SECTION 8

HANDLING, SERVICING AND MAINTENANCE

Information hereafter supplement the given for the standard airplane in Section 8 Handling, Servicing and Maintenance of the basic Pilot's Operating Handbook when the airplane uses the equipment of the TBM930 (2018).

8.10 - PREPARING OF THE AIRPLANE (EQUIPMENT AND FURNISHING)

CONVERSIONS OF SEATS ACCOMODATION

CAUTION

MAKE SURE TO DISCONNECT THE SEAT HEATING SYSTEM BEFORE THE REMOVAL OF THE SEAT TO PREVENT DAMAGE TO THE HARNESS.

Before a seat removal, disconnect heating system harness, and clip the loose connectors to the holders located on the seat backrest and under the cabin floor, close floor access door.

After seat installation or re-configuration, reconnect heating system harness, and clip connector to the dedicated holder on the seat.

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Supplement

Buckle positioner

Table of contents

	Page
1 - General	9.76.2
2 - Limitations	9.76.2
3 - Emergency procedures	9.76.2
4 - Normal procedures	9.76.3
5 - Performance	9.76.3
6 - Weight and balance	9.76.4
7 - Description	9.76.4
8 - Handling, servicing and maintenance	9.76.8

Section 1

General

This supplement is intended to inform the pilot about the procedures and description necessary for operation when the airplane is equipped with the buckle positioner.

Section 2

Limitations

The information in this section supplements and/or replaces the information in Section 2: Limitations of the standard POH when the airplane is equipped with the buckle positioner.

▲ WARNING ▲

The buckle positioner does not serve as a fifth attach point for the safety belts. Only use the self-gripping strap for proper positioning of the buckle.



2.9 - Placards

- (1) On both sides of the buckle positioner

C4112200AAABMA8000

SEAT BUCKLE POSITIONER ONLY

Section 3

Emergency procedures

The buckle positioner does not change the emergency procedures of the airplane described in Section 3: Emergency procedures of the standard POH.

Section 4

Normal procedures

The information in this section supplements and/or replaces the information in Section 4: Normal procedures of the standard POH when the airplane is equipped with the buckle positioner.

4.4 - Amplified procedures

Inside inspection

Ensure correct positioning of front seat occupiers' safety belt buckles by using the buckle positioners.

• NOTE •

Check for the correct locking of belt buckles for the pilot and passengers; as well as automatic locking of shoulder harness by exerting a rapid pull on the harness.

Unoccupied seat belts need to be strapped. It is prohibited to fly with these belts unstrapped.

•

Section 5

Performance

The buckle positioner does not change the performance of the airplane described in Section 5: Performance of the standard POH.

Section 6

Weight and balance

The information in this section supplements and/or replaces the information in Section 6: Weight and Balance of the standard POH when the airplane is equipped with buckle positioner.

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in. (m)
		25 - Equipment and furnishings		
		Seats - Belts		
		Belts		
A	0754-25	Buckle positioner	0.11 (0.05)	170.6 (4.334)

Section 7

Description

The information in this section supplements and/or replaces the information in Section 7: Description of the standard POH when the airplane is equipped with the buckle positioner.

7.3 - Accomodation

Seats, belts and harnesses

Belts and harnesses - see Figure 9.76.2

The two cockpit seats are equipped with a buckle positioner that enables the central buckle to be positioned correctly - see Figure 9.76.1.

The length of the buckle positioner is adjustable using the self-gripping area of the strap. Each occupier of cockpit seats must check that the buckle positioner is properly adjusted.

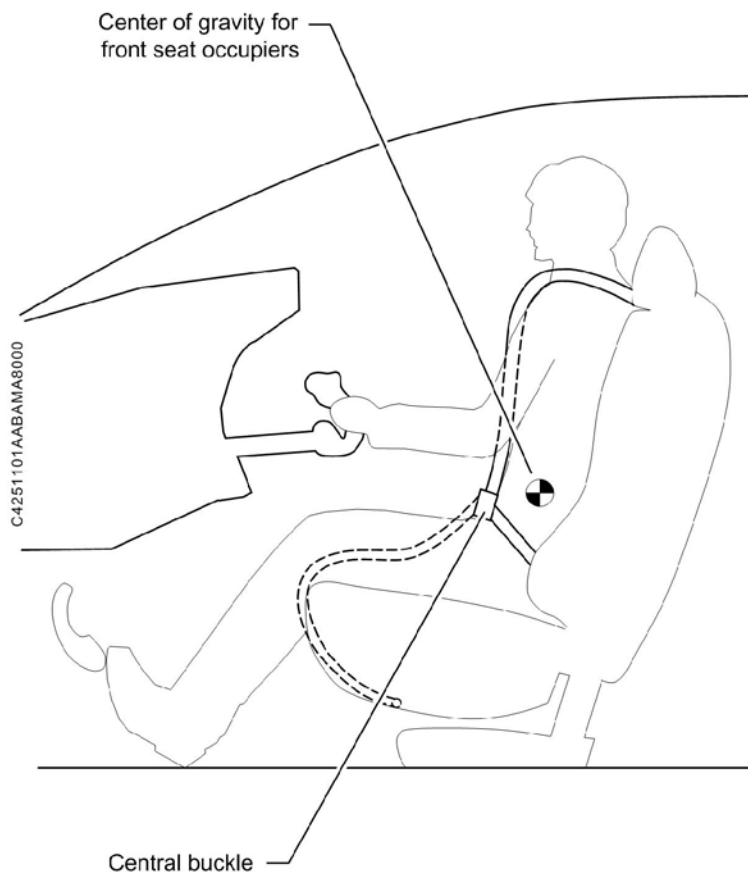


Figure 9.76.1 - Correct pre-positioning of the buckle

▲ WARNING ▲

The central buckle must be positioned so that the belt straps remain at hip level (just below the center of gravity) to prevent the body from slipping under the belts.



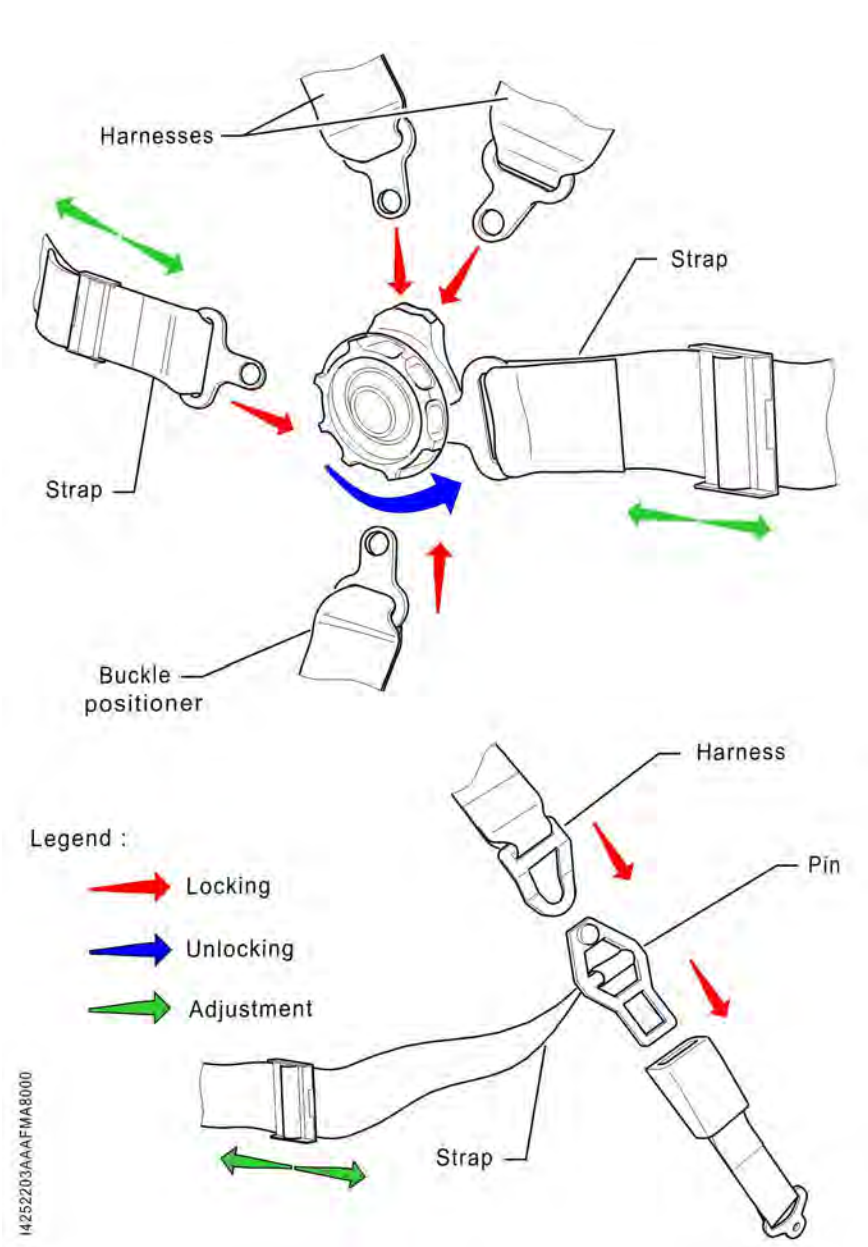


Figure 9.76.2 - Front and rear seat belts, with movable straps and harnesses

Pilot's Operating Handbook

Fastening the seat belts on front seats

- 1 - Fasten the belt straps.
- 2 - Fasten the buckle positioner in the buckle and adjust its length so that the belt straps remain at hip level.
- 3 - Adjust the belt straps.
- 4 - Fasten and adjust the harnesses.

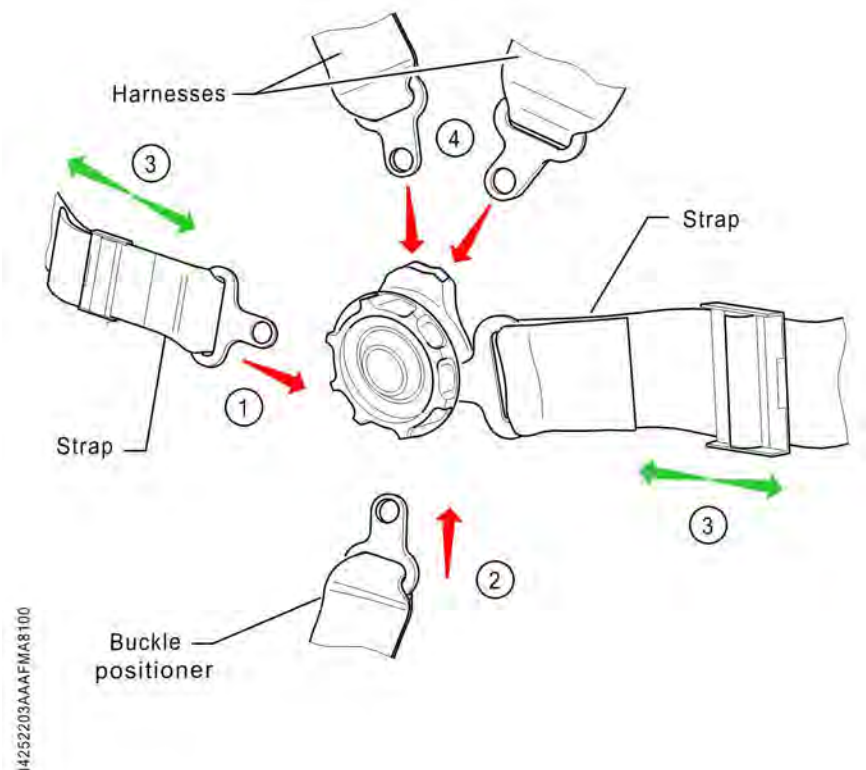


Figure 9.76.3 - Fastening the seat belts on front seats

Section 8

Handling, servicing and maintenance

The buckle positioner does not change the handling, servicing and maintenance of the airplane described in Section 8: Handling, servicing and maintenance of the standard POH.