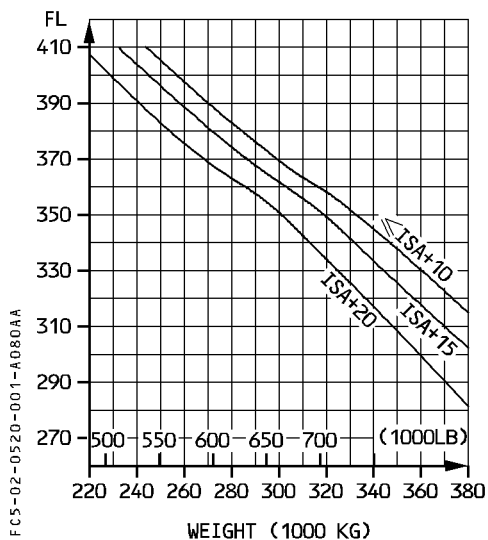


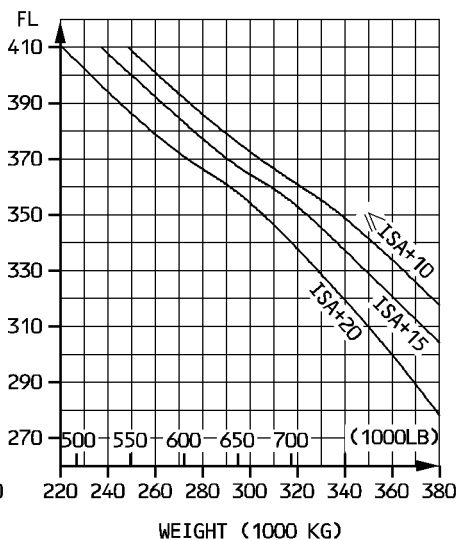
CLIMB CEILING

A minimum climb rate of 300 feet/minute is usually used to define the climb ceiling. The following graphs show for M.78, M.80, M.82, M.84 the flight levels that can be reached with a minimum rate of climb of 300 feet/minute.

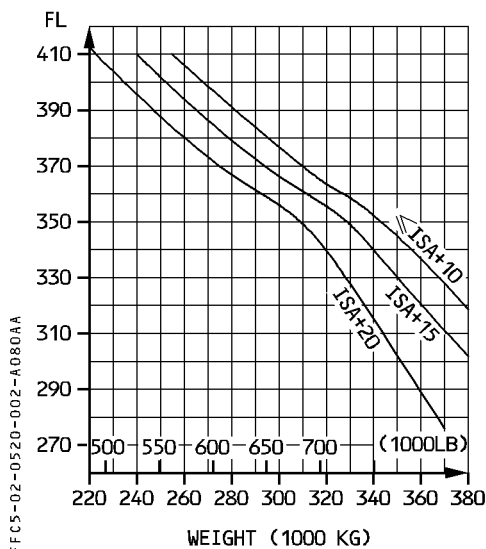
M.78



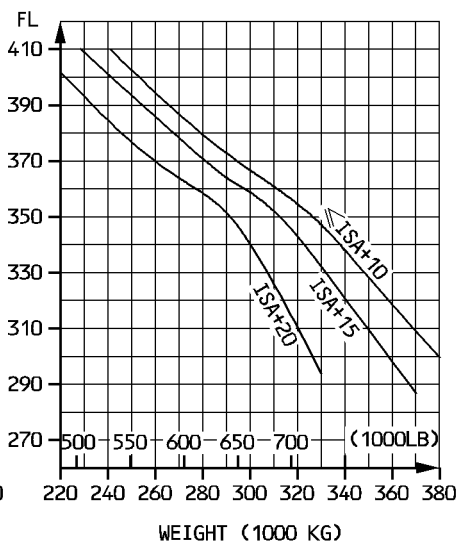
M.80



M.82



M.84



BLEED CORRECTIONS

	ENGINE ANTI ICE ON	TOTAL ANTI ICE ON	PACK FLOW HI AND/OR CARGO COOL ON
≤ ISA + 10	– 200 FT	– 500 FT	– 400 FT
ISA + 20	– 4000 FT	– 5000 FT	– 1000 FT

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OPTIMUM AND MAXIMUM ALTITUDES

DEFINITIONS

- Optimum altitude : the altitude at which the airplane covers the maximum distance per kilogram of fuel (best specific range). It depends on the actual weight and the deviation from ISA.
- Maximum altitude : Maximum altitude which can be flown in level flight without acceleration at maximum cruise thrust.

Note : Definition of the maximum altitude in the FMGC is different (Refer to FCOM 4).

CRUISE LEVEL CHARTS

These charts have been established for a center of gravity at 37 % MAC.

Maximum and optimum altitudes are given for different temperatures at long range speed, M.80, M.82 and M.84.

Note : 1. Optimum and maximum altitudes curves do not cover for M.80, M.82 and M.84 the whole weight range because above a given weight these Mach numbers cannot be maintained, whatever the altitude.

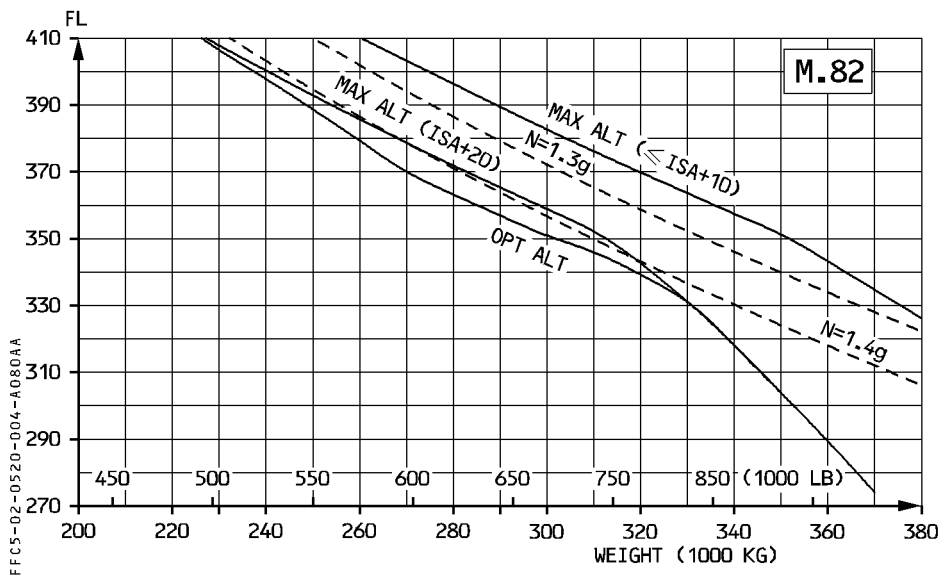
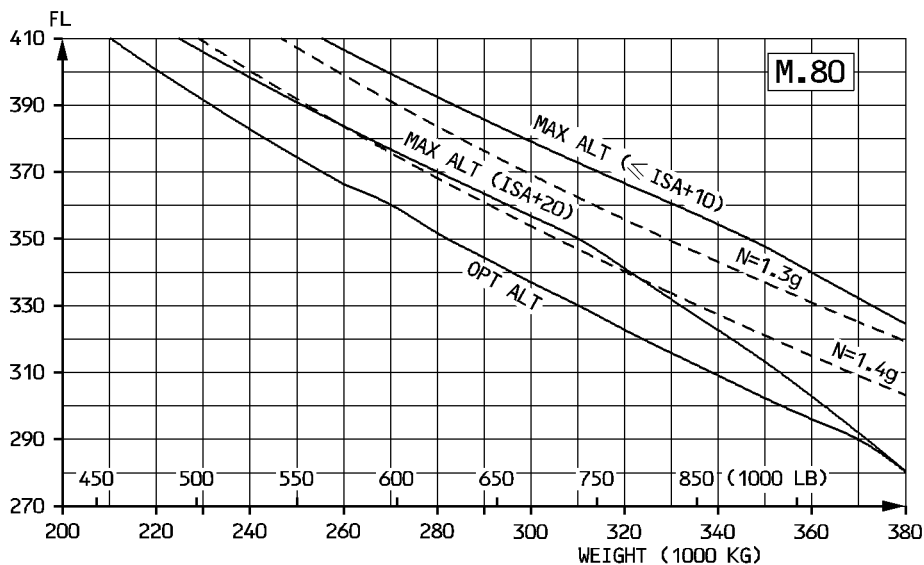
2. The $n = 1.3$ g ($n = 1.4$ g) curve indicates the buffet margin.

OPTIMUM WEIGHT FOR 4000 FEET STEP CLIMB

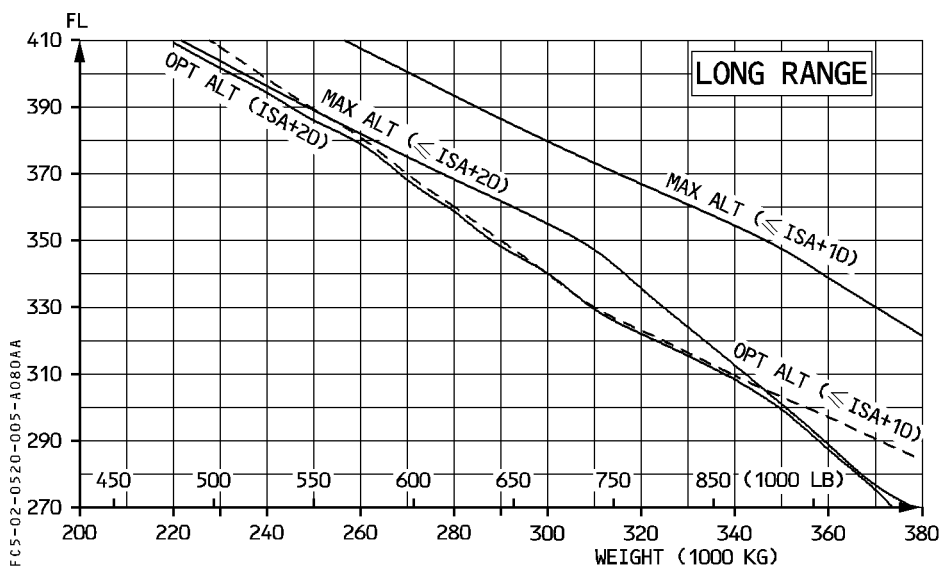
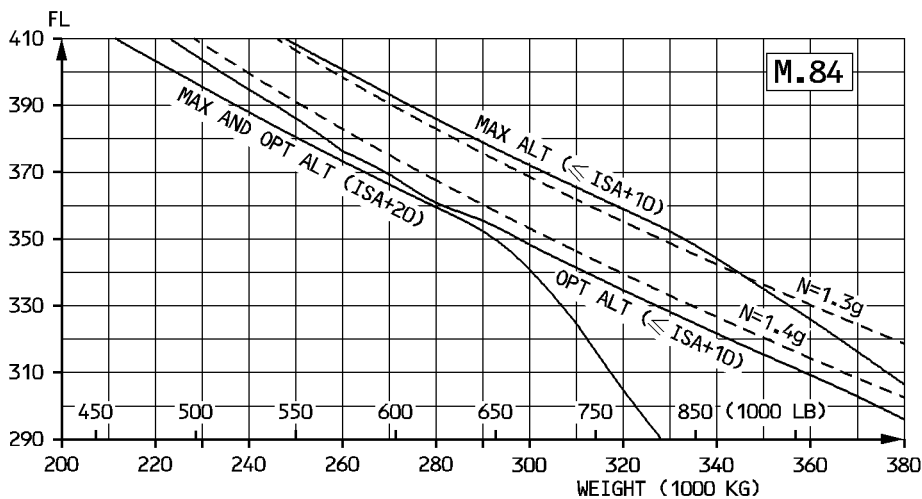
STEP CLIMB FROM/TO	WEIGHT (1000 kg)											
	ISA				ISA + 10				ISA + 20			
	LR	M.80	M.82	M.84	LR	M.80	M.82	M.84	LR	M.80	M.82	M.84
310/350	318	309	323	318	318	310	323	318	312	310	314	293
330/370	289	281	293	290	290	282	293	290	281	280	283	265
350/390	263	255	265	264	264	255	267	263	253	251	254	238
370/410	238	231	243	239	239	231	243	239	227	223	227	212

BLEED CORRECTIONS

	ENGINE ANTI ICE ON	TOTAL ANTI ICE ON	PACK FLOW HI AND/OR CARGO COOL ON
≤ ISA + 4	– 500 FT	– 600 FT	– 400 FT
ISA + 20	– 1900 FT	– 2400 FT	– 800 FT



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OPTIMUM ALTITUDE ON SHORT STAGE

According to the air distance (from brake release point to landing), the cruise flight level is limited by the distance required to perform climb and descent. The graph determines the optimum altitude.

It includes the following profiles :

- Takeoff
- Climb : 250 kt/300 kt/M.82
- Long range cruise (during at least 5 minutes)
- Descent : M.82/300 kt/250 kt
- Approach and landing

and it is established for

- ISA
- CG = 37 %
- Normal air conditioning
- Anti ice OFF

