01.00 CONTENTS

GENERAL

This section includes the limitations required by the regulations and contained in the Flight
R Manual.
All references to airspeed, Mach and altitude relate to indicated airspeed, indicated Mach and pressure altitude, unless otherwise noted.

KIND OF OPERATIONS

This airplane is certified in the public transport category (passengers and freight) for day and night operations, in the following conditions when the appropriate equipment and instruments required by the airworthiness and operating regulations are approved, installed and in an operable condition :

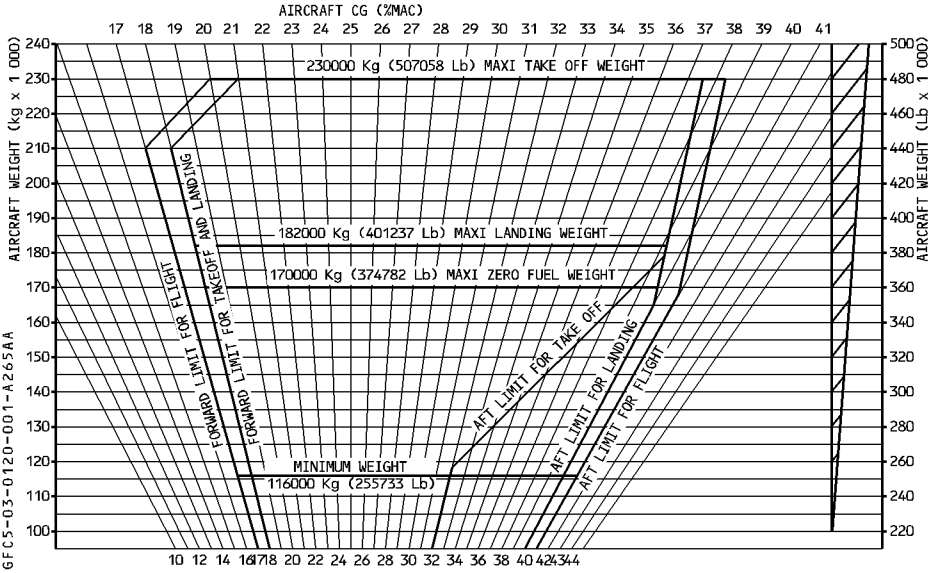
- VFR and IFR
- Extended overwater flight
- Flight in icing conditions

R - Maximum number of passenger seats : 375

MINIMUM FLIGHT CREW

The minimum flight crew consists of 2 pilots.

CENTER OF GRAVITY LIMITS



- CG limits are given in percentage of the reference chord length aft of the leading edge.
- The reference chord length is 7.27 m (23.85 feet). It is 24.96 m (81.89 feet) aft of the aircraft nose.
- The CG must always be within these limits regardless of fuel load.

WEIGHT LIMITATIONS

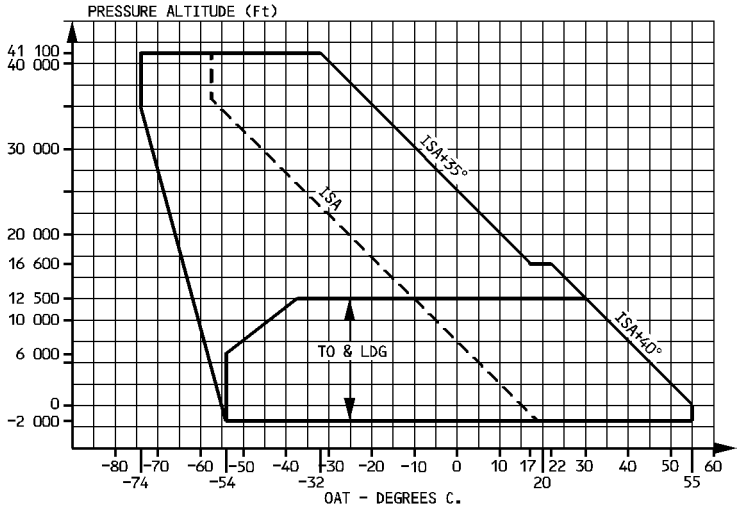
Maximum taxi weight . . . . . 230 900 kg (509 042 lb)
Maximum takeoff weight (brake release) . . . . . 230 000 kg (507 058 lb)
Maximum landing weight . . . . . 182 000 kg (401 237 lb)
Maximum zero fuel weight . . . . . 170 000 kg (374 782 lb)
Minimum weight . . . . . 116 000 kg (255 733 lb)

In exceptional circumstances (inflight turn back or diversion), an immediate landing at weight above maximum landing weight is permitted provided that the pilot follows the overweight landing procedure.

FLIGHT MANEUVERING LOAD ACCELERATION LIMITS

Clean configuration . . . . . – 1 g to + 2.5g
Slats extended . . . . . 0 g to + 2 g

ENVIRONMENTAL ENVELOPE



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AIRPORT OPERATIONS

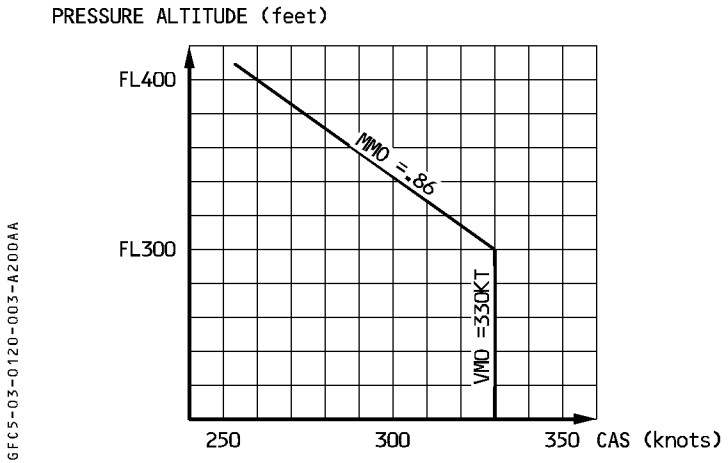
· Runway slope (mean) . . . . . ± 2 %
· Runway altitude . . . . . 12 500 feet
· Wind for takeoff :
  – Maximum crosswind . . . . . 32 knots
  – Maximum tailwind . . . . . 15 knots
  Maximum crosswind value for takeoff has been certified with flight controls in normal law, as well as in direct law, with and without yaw damper.

R *Note : Maximum tailwind for automatic landing and rollout is 10 knots.*

· Wind for landing :
  – Maximum crosswind . . . . . 32 knots with gusts up to 40 knots
  – Maximum tailwind . . . . . 15 knots
  Maximum crosswind value for landing has been demonstrated with flight controls in normal law, as well as in direct law, with and without yaw damper.
· Wind for passenger/cargo door operation :
  – Maximum wind for passenger door operation is 40 knots (or 50 knots, if the aircraft nose is oriented into the wind).
  – Maximum wind for cargo door operation is 40 knots (or 60 knots, if the aircraft nose is oriented into the wind, or the door is on the leeward side).
  – The passenger/cargo door must be closed before the wind speed exceeds 60 knots.

SPEED LIMITATIONS

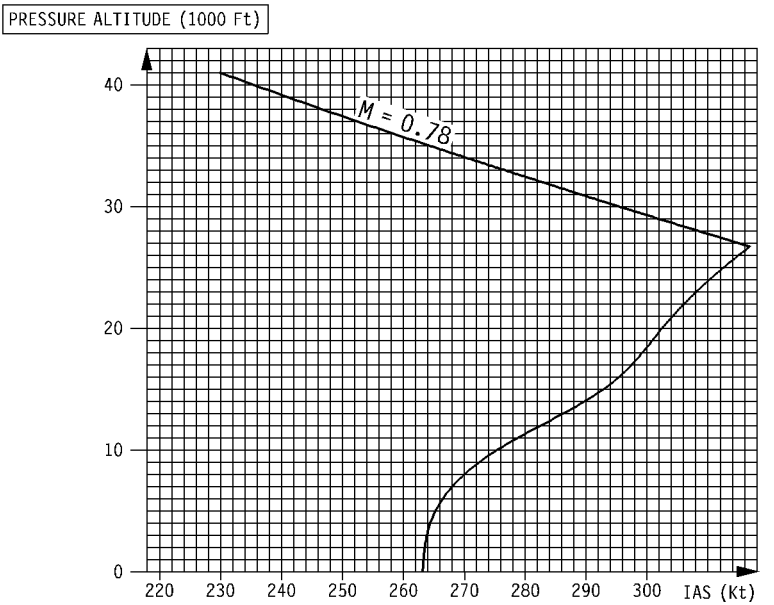
MAXIMUM OPERATING SPEED VMO/MMO



VMO/MMO may not be deliberately exceeded in any regime of flight.

MAXIMUM DESIGN MANOEUVERING SPEED VA

(Applies in alternate or direct flight control laws only).



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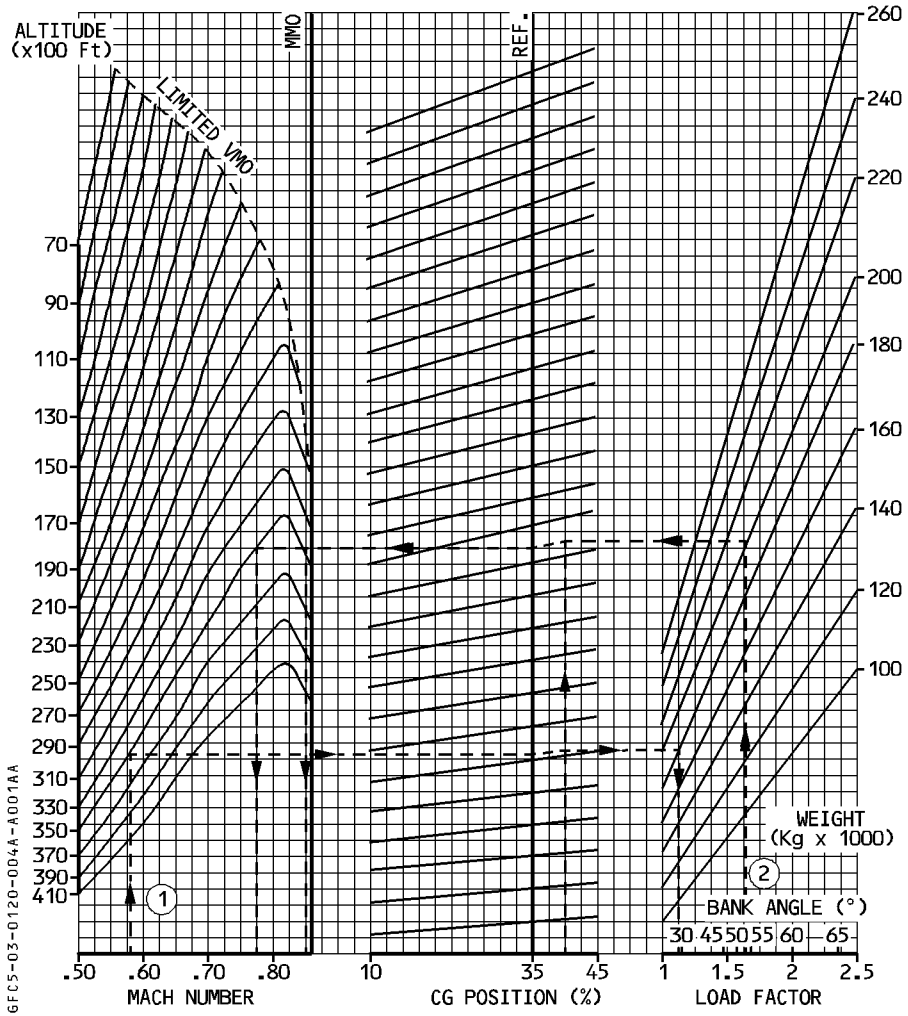
If alternate or direct law is active, full ailerons and rudder application should be confined to speeds below VA.
If alternate or direct law is active, manoeuvres involving angle of attack near stall should be confined to speeds below VA.

CAUTION

Rapid and large alternating control inputs, especially in combination with large changes in pitch, roll, or yaw (e.g. large sideslip angles) may result in structural failures at any speed, even below VA.

BUFFET ONSET



Examples :

1. Determine Maximum Bank Angle limited by buffet :
   DATA : M = 0.58, FL = 350, CG = 40 %, WEIGHT = 180000 kg
   RESULT : load factor = 1.15 g or 30° bank
2. Determine low and high speed limited by buffet :
   DATA : 52° bank or 1.63 g, WEIGHT = 200000 kg, CG = 40%, FL = 350
   RESULT : M = 0.775 (low speed buffet) and M = 0.85 (high speed buffet).

MAXIMUM FLAPS/SLATS SPEEDS

Lever Position	SLATS	FLAPS	AILERONS	Ind. on ECAM	MAX SPD	FLIGHT PHASE
1	16	0	0	1	240	HOLDING
		8	5	1 + F	215	TAKEOFF
2	20	8	10	2 (a)	205	APPROACH
	20	14	10	2	196	TAKEOFF/APPROACH
3	23	22	10	3	186	TAKEOFF/APPR/LDG
FULL	23	32	10	FULL	180	LANDING
(a) This slats/flaps position corresponds to CONF 1*						

· Maximum altitude with flaps/slats extended : 20000 feet

GEAR DOWN SPEEDS

· Maximum speed with landing gear extended (VLE) 250 knots/.55
· Maximum speed at which the landing gear may be operated (extension and retraction) (VLO) 250 knots/.55
· Maximum speed for gravity extension (VLE, VLO) . . . . . 200 knots
· Maximum altitude at which the landing gear may be extended . . . . . 21000 feet

MAXIMUM TIRE SPEED

R · Ground speed . . . . . 204 knots

WINDSHIELD WIPERS IN USE

· Maximum speed . . . . . 230 knots

COCKPIT WINDOW OPEN

· Maximum speed . . . . . 230 knots

Note : It is not possible to open the cockpit windows, with the packs ON.

SPEEDBRAKES

· No limitation.

MINIMUM CONTROL SPEEDS

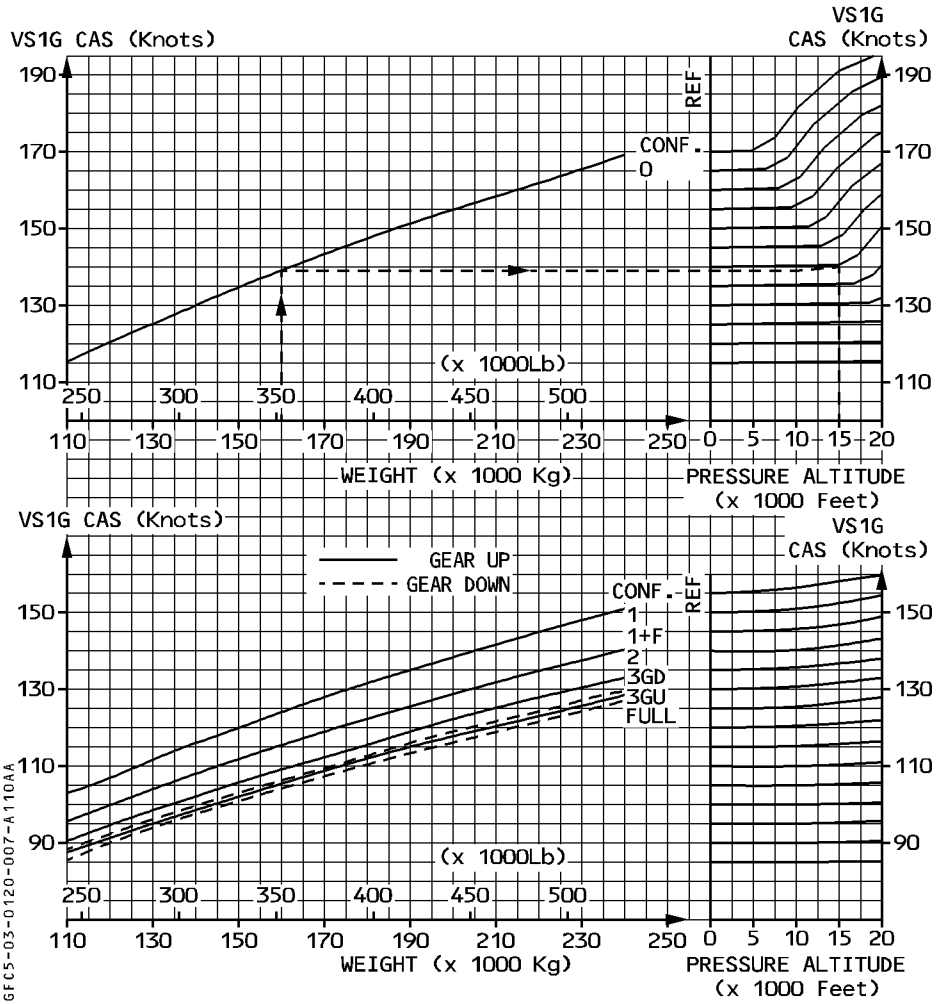
VMCL = 118 (KT IAS)

R

Altitude (ft)	VMCA (KT CAS)	VMCG (KT IAS)		
		CONF 1 + F	CONF 2	CONF 3
0	105.5	107.5	107.5	108
2000	103	105.5	105.5	106
4000	102	104	104	104.5
6000	98.5	101	101.5	101.5
8000	95.5	98.5	98.5	98.5

STALLING SPEEDS

R

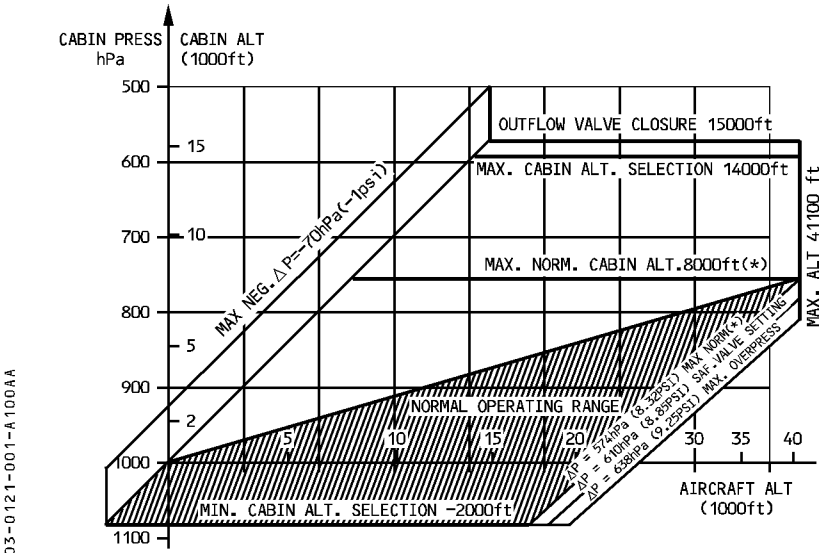


DATA : GW = 160000 kg (352740 lb), PRESSURE ALTITUDE 15000 feet, CLEAN CONFIGURATION

RESULT : VS1G = 140 knots CAS

CABIN PRESSURE

- Maximum positive differential pressure . . . . . 9.25 psi
- Maximum negative differential pressure . . . . . – 1 psi
- Safety relief valve setting . . . . . 8.85/– 1 psi



(*): VALUES FOR FLIGHTS SHORTER THAN 2.5 HOURS. FOR FLIGHTS LONGER THAN 2.5 HOURS, THE MAX NORM CABIN ALTITUDE IS LIMITED TO 7350ft WITH A Δ P OF 593 hPa.

Note : Maximum differential pressure and safety valve setting tolerance = ± 7 hPa (0.1 psi)

RAM AIR INLET

Opens only if differential pressure is lower than 1 psi.

AIR CONDITIONING WITH LP GROUND UNIT

- Do not use conditioned air simultaneously from packs and LP ground units.
- Air flow supplied by two ground carts should not exceed 2 × 1.6 kg/sec (2 × 3.53 lb/sec).

R **AIR CONDITIONING WITH HP GROUND UNIT**

R – Do not use HP ground unit when APU supplies bleed air to avoid bleed system damage.

GENERAL

AUTO PILOT FUNCTION

Minimum weight for use of autoland . . . . . 123 000 kg
Minimum height for use of the autopilot on takeoff with SRS mode . . . . . 100 ft AGL
(An internal FMGS logic prevents the autopilot from engaging during the 5 seconds after liftoff).
Minimum height for use of the autopilot in :
Straight-in non precision approach . . . . . applicable MDA (MDH)
Circling approach . . . . . applicable MDA - 100 ft (or MDH - 100 ft)
ILS approach with CAT 1 displayed on FMA . . . . . 160 ft AGL
Go-around (AP or FD engagement) . . . . . 100 ft AGL
All other phases . . . . . 500 ft AGL
Use of the AP or FD in OPEN DES or DES mode is not permitted in approach, unless the FCU altitude is set to, or above, MDA (MDH) or 500 feet, whichever is the highest.

AUTOTHRUST FUNCTION

Use of the autothrust is approved with, or without, AP/FD in selected or managed mode.

FLIGHT MANAGEMENT FUNCTION

FMGS lateral and vertical navigation has been certified for after takeoff, en route, and terminal area operations, for instrument approach procedures (except ILS, LOC, LOC-BC, LDA, SDF and MLS), and for missed approach procedures.

R RNP accuracy with GPS PRIMARY, has been demonstrated to be :

R

	With AP ON in NAV	With AP OFF and FD ON in NAV	With AP OFF and FD OFF
En route	2 NM	2 NM	2 NM
In terminal area	0.5 NM	0.51 NM	0.51 NM
In approach	0.3 NM	0.31 NM	Not authorized

R Without GPS PRIMARY (or GPS deselected or inoperative), the navigation accuracy is a function of ground radio navaid infrastructure, or elapsed time since the last radio update. The FMGS is also certified for navigation within BRNAV, PRNAV, and RNP 10 airspace. RNP10 oceanic/remote area operations are approved with GPS PRIMARY or, without GPS PRIMARY (or GPS deselected or inoperative), provided time limitations in IRS only navigation (acceptable to operational authorities), are established.

FMGS approval is based on the assumption that the navigation database has been
R validated for intended use. The Precision RNAV Airworthiness approval does not account
R for database accuracy or compatibility.

Obstacle clearance and adherence to airspace constraints remains the flight crew's responsibility.

Fuel, time predictions/performance information is provided for advisory purposes only.

NAV mode may be used after takeoff, provided FMGS runway updating has been checked.

TAKEOFF IN GPS PRIMARY

For certain airports, where the difference between the local coordinate system and WGS 84 (geodesic standard used by GPS, FMS) is not negligible, a map shift may occur after takeoff.

GPS must be deselected for takeoff from these airports, until a safe altitude is reached.

USE OF NAV AND FINAL APP MODES FOR NON PRECISION APPROACH

NAV, or NAV and FINAL APP mode may be used for VOR, VOR/DME, NDB, NDB/DME or RNAV (including GPS) approach, but not for ILS, LOC, LOC-BC, LDA, SDF, or MLS final approach.

For instrument approach procedures not coded in WGS 84 (or equivalent) coordinate system, the GPS must be deselected.

FINAL APP mode guidance capability with GPS PRIMARY has been demonstrated down to MDH/DH (barometric) 250 feet.

VOR, VOR/DME, NDB or NDB/DME approach procedures may be performed, in NAV, or NAV and FINAL APP mode, provided AP or FD is used, and :

- GPS PRIMARY is available. In this case, the reference navaid may be unserviceable, or the airborne radio equipment may be inoperative, or not installed, provided operational approval is obtained.
- Without GPS PRIMARY :
  - The reference navaid and the corresponding airborne equipment is serviceable, tuned, and monitored during the approach, or
  - The radio navaid coverage supports the RNP value, specified for the approach procedure, and an operational approval is obtained.

For GPS approach, GPS PRIMARY must be available.

RNAV approach without GPS PRIMARY may be performed only if the radio navaid coverage supports the RNP value and HIGH accuracy is displayed on the MCDU with the specified RNP, and operational approval is obtained.

NAV mode may be used in the terminal area, provided :

- GPS PRIMARY is available, or
- HIGH accuracy is displayed, and the appropriate RNP is checked or entered on the MCDU, or

R - Navaid raw data is monitored.

AUTOMATIC APPROACH, LANDING AND ROLL OUT

CATEGORY II

Minimum decision height : . . . . . 100 feet AGL
At least one autopilot must be engaged in APPR mode and CAT 2, CAT 3 SINGLE or CAT 3 DUAL must be displayed on FMA.
If the crew performs an automatic approach without autoland, the autopilot must be disengaged no later than at 80 feet.

CATEGORY III FAIL PASSIVE

Minimum decision height : . . . . . 50 feet
At least one autopilot must be engaged in APPR mode and CAT 3 SINGLE or CAT 3 DUAL must be displayed on FMA.

CATEGORY III FAIL OPERATIONAL

A/THR must be used in selected or managed speed.
Alert height : . . . . . 200 feet
– CAT III With DH
  2 autopilots must be engaged in APPR mode and CAT 3 DUAL must be displayed on FMA
– CAT III Without DH
  2 autopilots must be engaged in APPR mode and CAT 3 DUAL must be displayed on FMA
Minimum Runway Visual Range : . . . . . 75 meters

R **ENGINE OUT**

R CAT II and CAT III fail passive autoland are only approved in configuration 3, and if
R engine-out procedures are completed before reaching 1000 feet in approach.

MAXIMUM WIND CONDITIONS FOR CAT II/CAT III AUTOMATIC APPROACH, OR AUTOMATIC LANDING AND AUTOMATIC ROLLOUT

Headwind : 35 knots
Tailwind : 10 knots
Crosswind : 20 knots

Note : Wind limitation is based on surface wind, reported by the tower. If the wind displayed on the ND exceeds the above-noted limitations for autoland, but the tower reports surface wind within the limitations, then the autopilot can remain engaged. If the tower reports surface wind beyond limitations, only CAT I automatic approach without autoland can be performed.

AUTOMATIC LANDING

CAT II and CAT III autoland is approved in CONF3 and CONF FULL.
Automatic landing has been demonstrated :
- on CAT II and CAT III ILS beam,
- with ILS slope angle inside a range of (– 2.5°, – 3.15°),
- for airfield elevations lower than 9200 feet.
- R – for weights below maximum landing weight.
- R – at approach speed (Vapp) = VLS + wind correction
- R minimum wind correction 5 knots
- R maximum wind correction 15 knots

Automatic rollout performance has been approved on dry and wet runways, but performance on snow-covered or icy runways has not been demonstrated.
Automatic landing system performance has been demonstrated on CAT II and CAT III ILS beams. However, automatic landing in CAT I, or better weather conditions, is possible on CAT I ground installation or when ILS sensitive areas are not protected, if the following precautions are taken :
- The airline has checked that the ILS beam quality and the effect of the terrain profile before the runway have no adverse effect on autopilot guidance. In particular, the effect of terrain discontinuities within 300 meters before runway threshold must be evaluated.
- The crew is aware that LOC or GS beam fluctuations, independent of the aircraft system, may occur and the PF is prepared to immediately disconnect the autopilot and to take the appropriate action, should unsatisfactory guidance occur.
- At least CAT 2 capability is displayed on the FMA, and CAT II/III procedures are used.
- Visual references are obtained at a DH appropriate for the CAT I approach being flown, or a go-around is performed.
- When the crew does not intend to perform an autoland, they should disconnect the AP at, or above, 80 feet. This altitude being considered as a minimum to take over and feel comfortable. Nevertheless, for safety reasons, the AP can be disconnected at any time.

R *Note : Under the crew's responsibility, and in case of an emergency, autoland can be performed up to Max Takeoff Weight.*

GENERAL

FUEL AND ADDITIVE SPECIFICATIONS

– See engine specification

R – The fuel system has been certified with JET A, JET A1, JET B, JP 4, JP 5, JP 8, N°3
R JET and TS-1.

MAXIMUM ALLOWABLE WING FUEL IMBALANCE

Maximum allowed wing fuel imbalance in either inner or outer tanks at takeoff, landing and in flight.

INNER TANKS		OUTER TANKS	
Tank content (heavier tank)	Authorized asymmetry	Tank content (heavier tank)	Authorized asymmetry
FULL	2 900 kg (6400 lb)	FULL	1 480 kg (3260 lb)
HALF	4 800 kg (10500 lb)	2400 kg (5290 lb)	1 580 kg (3480 lb)
7 500 kg (16500 lb)	7 500 kg (16500 lb)	1 730 kg (3810 lb)	1 730 kg (3810 lb)

The variation is linear between these values.
(No limitation below 7500 kg (16500 lb) for inner tanks and 1730 kg (3810 lb) for outer tanks).

Note : Inner and outer authorized asymmetries should not be added.

FUEL TEMPERATURE

R Maximum fuel temperature : JET A, JET A1, JP 5, JP 8, N°3 JET and TS-1 : + 55°C.
JP 4, JET B : + 49°C
Minimum fuel temperature : Freezing point or – 44°C below 30000 feet or – 54°C above 30000 feet whichever is the higher in inner tank.
Freezing point in outer or trim tank.

If the actual fuel freezing point of the fuel being used for the flight is unknown, the fuel specification freezing point provided hereafter must be used :

R

JET A	JET A1	JP 5	JP 8	N°3 JET	TS-1	JP 4	JET B
– 40°C	– 47°C	– 46°C	– 47°C	– 47°C	– 50°C	– 58°C	– 50°C

MINIMUM FUEL QUANTITY FOR TAKEOFF : 5 200 kg (11460 lb)

WING TK LO LVL warning must not be displayed on ECAM for takeoff.

GENERAL

FUEL AND ADDITIVE SPECIFICATIONS

– See engine specification
– The fuel system has been certified with JET A1, JET A, JET B, JP 4, JP 5, and JP 8.

MAXIMUM ALLOWABLE WING FUEL IMBALANCE

Maximum allowed wing fuel imbalance in either inner or outer tanks at takeoff, landing and in flight.

R

INNER TANKS		OUTER TANKS	
Tank content (heavier tank)	Authorized asymmetry	Tank content (heavier tank)	Authorized asymmetry
FULL	2 900 kg (6400 lb)	FULL	1 480 kg (3260 lb)
HALF	4 800 kg (10500 lb)	2400 kg (5290 lb)	1 580 kg (3480 lb)
7 500 kg (16500 lb)	7 500 kg (16500 lb)	1 730 kg (3810 lb)	1 730 kg (3810 lb)

R The variation is linear between these values.
R (No limitation below 7500 kg (16500 lb) for inner tanks and 1730 kg (3810 lb) for outer
R tanks).

Note : Inner and outer authorized asymmetries should not be added.

FUEL TEMPERATURE

Maximum fuel temperature : JET A, JET A1, JP 8 and JP 5 : + 55°C .
JP 4, JET B : + 49°C
Minimum fuel temperature : Freezing point or – 44°C below 30000 feet or – 54°C above 30000 feet whichever is the higher in inner tank. Freezing point in outer or trim tank.

If the actual fuel freezing point of the fuel being used for the flight is unknown, the fuel specification freezing point provided hereafter must be used :

JET A1	JET A	JP 5	JP 8	JP 4	JET B
– 47°C	– 40°C	– 46°C	– 47°C	– 58°C	– 50°C

MINIMUM FUEL QUANTITY FOR TAKEOFF : 5 200 kg (11460 lb)

WING TK LO LVL warning must not be displayed on ECAM for takeoff.

FUEL MANAGEMENT

- Tanks must be emptied in the following order : Center tank, then wing tanks.
- In case of a trim tank forward transfer pump failure, do not select the trim tank forward when the pitch attitude is above 3 degrees to avoid inadvertent fuel aft transfer.
- Transfer from center to inner, when using JP4, is possible up to 20000 feet.

HYDRAULIC

Normal operating pressure is 3000 psi ± 200.

GENERAL

BRAKES

Maximum brake temperature for takeoff (brake fans ◁ off) . . . . . 300° C

AUTOBRAKE

Use of the autobrake does not relieve the pilot of his responsibility to safely stop within the available runway length by taking over brake control with the brake pedals.
The pilot may disengage the automatic braking system, either by pressing the pushbutton of the armed mode, or by applying firm action on the brake pedals.

PARKING BRAKE

CAUTION
Do not set EPR above 1.24 with the parking brake ON.

NOSEWHEEL STEERING

The nosewheel steering angle is limited to 65°.
Do not use differential braking during taxiing or turning at speeds below 20 knots.
Asymmetric thrust may be used during turns at high NWS angles, in order to initiate the turn and to keep the aircraft moving during the turn. But, it should not be used to tighten the turn.
For towing and pushback, the nosewheel steering angle is limited to 60°. The ground crew should make use of the 60° marking on the nose landing gear door, to ensure that this limitation is not exceeded.

TAXI WITH DEFLATED TIRES

R If tire damage is suspected after landing or after a rejeted takeoff, inspection of the tires is required before taxi. If the tire is deflated but not damaged, the aircraft can be taxied at low speed with the following limitations :

1. If one tire is deflated on one or more gears (ie. a maximum of three tires), the speed should be limited to 7 knots when turning.

R 2. If two tires are deflated on the same main gear, (the other main gear tires not being
R deflated), speed should be limited to 3 knots, and the nosewheel steering angle should be limited to 30 degrees.

R **INERTIAL REFERENCE SYSTEM**

R Refer to the Polar Navigation section in the FCOM 4.04.40.

ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS)

- Aircraft navigation is not to be predicated on the use of the terrain display.
  The terrain display is only intended as a situational awareness tool, and may not provide the accuracy on which to solely base terrain avoidance maneuvers.
  The EGPWS database, display, and alerting algorithms, do not currently take into account man-made obstructions.
- The EGPWS enhanced function should be inhibited (TERR pushbutton to OFF, on the GPWS panel) when the aircraft position is less than 15 NM from the airfield :
  - For operations to/from runways not incorporated in the EGPWS database.
  - For specific approach procedures, which have previously been identified as potentially producing false terrain alerts.

COCKPIT FIXED OXYGEN SYSTEM

MINIMUM FLIGHT CREW OXYGEN PRESSURE

REF TEMPERATURE *		°C	– 10	0	10	20	30	40	50
		°F	14	32	50	68	86	104	122
MIN ** BOTTLE PRESSURE (PSI)	2 CREW MEMBERS		520	540	560	580	600	620	640
	2 CREW MEMBERS	+1 OBS	660	690	710	740	760	790	810
	2 CREW MEMBERS	+2 OBS	810	850	880	910	940	970	1 000

* REF TEMPERATURE :
. on ground : (OAT + CAB TEMP) / 2
. in flight : CAB TEMP (°C) – 10°C
or
CAB TEMP (°F) – 18° F

** MINIMUM BOTTLE PRESSURE TO COVER :
– Preflight checks
– Usage of oxygen when only one pilot is in the cockpit
– Unusable quantity (to ensure regulator functioning with minimum pressure)
– Normal system leakage
– and
· Protection after loss of cabin pressure with mask regulator on NORMAL (diluted oxygen) :
– During emergency descent for all cockpit members for 15 minutes (refer to cabin fixed oxygen system)
– During cruise at FL 100 for 2 crew members for 105 minutes

or

· Protection against smoke with 100 % oxygen for all cockpit members during 15 minutes at 8000 feet cabin altitude.

Note : The above times are based on the use of a sealed mask, may be shorter for bearded crew (in terms of performance, pressure or duration).

* REF TEMPERATURE :
. on ground : (OAT + CAB TEMP) / 2
. in flight : CAB TEMP (°C) – 10°C
or
CAB TEMP (°F) – 18° F
** MINIMUM BOTTLE PRESSURE TO COVER :
– Preflight checks
– Usage of oxygen when only one pilot is in the cockpit
– Unusable quantity (to ensure regulator functioning with minimum pressure)
– Normal system leakage
and
· Protection after loss of cabin pressure with mask regulator on NORMAL (diluted oxygen):
– taking into account following flight profile :
· 1 minute at FL 400
· descent at 5500 ft/min from FL 400 to cruise altitude
· flight time at the cruise altitude read on the chart (at least 105 minutes at FL 100 for 2 crew members)
· descent at 2700 ft/min from cruise altitude to FL 100
or
· Protection against smoke with 100 % oxygen for all cockpit members during 15 minutes at 8000 feet cabin altitude.

Note : The above times, which are based on the use of a sealed mask, may be shorter for bearded crew (in terms of performance, pressure or duration).

GENERAL

OIL QUANTITY

R Minimum before start . . . . . LOW OIL LEVEL ECAM advisory not displayed
R *Refer to 3.02.80.*

APU STARTER

After three consecutive start attempts without cool down, a 60 minute cooling interval must be observed before the next start.

ROTOR SPEED

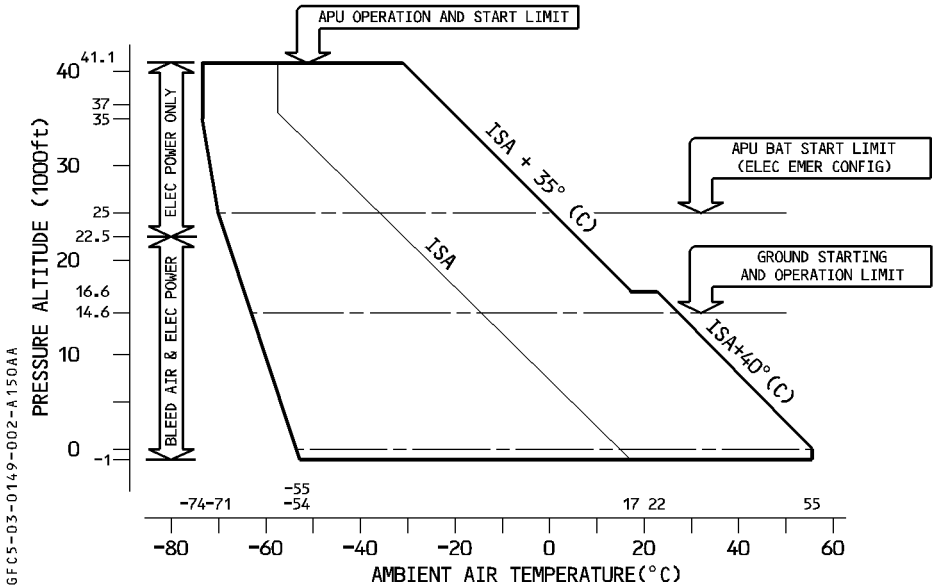
· Maximum N . . . . . 107 %

EGT

· Maximum EGT . . . . . 650 degrees C
· Maximum for start . . . . . 1250 degrees C

ENVELOPE

R



Note : In the APU start envelope, APU start is guaranteed within 3 consecutive start attempts.
When JET B or JP4 is used, APU operation is limited to 25000 feet.

· ELEC power extraction only (in flight or on ground) . . . . . 115 KVA (100 %)
· APU Air bleed extraction with generator load in flight :

BLEED AIR AND GEN LOAD IN FLIGHT				
TEMP ▶ / MAX ALT (feet) ▼		ISA	ISA + 20	ISA + 35
22500 feet	ONE PACK	100 % (115 KVA)	63 % (72 KVA)	35 % (40 KVA)
20000 feet	ENG START	100 % (115 KVA)	74 % (85 KVA)	44 % (51 KVA)
17500 feet	TWO PACKS	100 % (115 KVA)	100 % (115 KVA)	74 % (85 KVA)

· APU air bleed extraction for wing anti-ice is not permitted.

THRUST SETTING / EGT LIMITS

R

OPERATING CONDITION	TIME LIMIT	EGT LIMIT	NOTE
Takeoff and go around	20 sec	920°C	
	5 min	900°C	
	10 min		Only in case of engine failure
MCT	Unlimited	850° C	
STARTING		700° C	
		850° C	For air start only

OIL

Oil temperature

Maximum temperature . . . . . 190° C
Minimum for takeoff . . . . . 20°C

Oil pressure

Minimum oil pressure . . . . . 25 psi

Oil quantity

Minimum oil quantity . . . . . Refer to 3.03.04

RPM

N1 max . . . . . 99 %

Note : The N1 limit depends upon ambient conditions and engine airbleed configuration. These may limit the N1 to a value lower than that given above.

N2 max . . . . . 103.3 %
N3 max . . . . . 100 %

STARTER

R – Starter maximum continuous operation is 5 minutes.
– Two 3–minute duty cycles and a consecutive 1–minute cycle is permitted with run down to zero N3 between each cycle.
R – After one continuous operation, or the three cycles wait 30 minutes to allow the starter
R to cool.
R – No running engagement of the starter, when the N3 is above 10 % on ground, or 30 %
R in flight.

REVERSE THRUST

– Selection of reverse thrust in flight is prohibited.
– Backing the aircraft with reverse thrust is not permitted.
– Maximum reverse should not be used below 70 knots. Idle reverse is allowed down to aircraft stop.

REDUCED THRUST TAKEOFF

– Takeoff at reduced thrust is only permissible, if the airplane meets all applicable performance requirements at the planned takeoff weight with the operating engines at the thrust available for the assumed temperature.
– Thrust reduction must not exceed 25 % of the full rated takeoff thrust.
To meet this requirement, the flexible temperature must not be higher than ISA + 48°C (T MAX FLEX).
– The assumed temperature must not be lower than the flat rating temperature, or the actual OAT.
– Takeoff at reduced thrust is not permitted on contaminated runways.
– Takeoff at reduced thrust is allowed with any inoperative item affecting the performance, only if the associated performance shortfall has been applied to meet all performance requirements at the takeoff weight with the operating engines at the thrust available for the flex temperature.