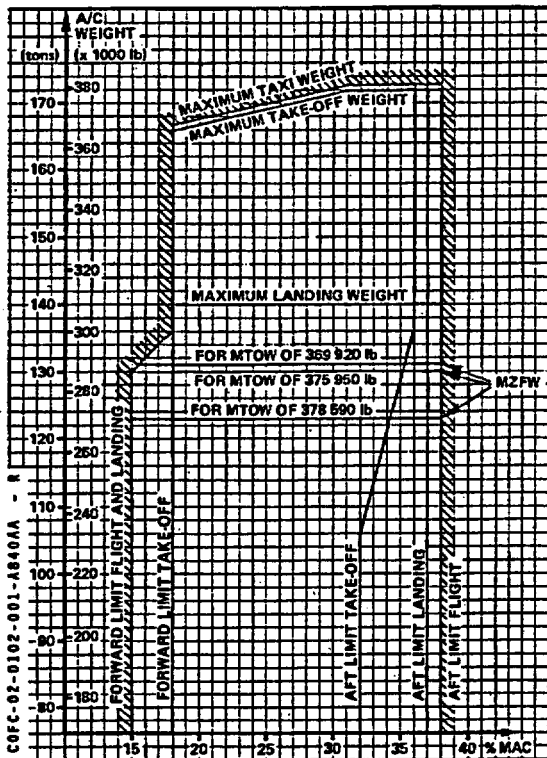


ATTACHMENT S
Excerpts from the Airbus A300-600 FCOM
Volume 2
(6 pages)

1 - WEIGHTS/CENTER OF GRAVITY

A. Center of gravity limits

THE LIMITS OF THE CENTER OF GRAVITY ARE GIVEN IN PERCENTAGE OF THE MEAN AERODYNAMIC CHORD, LANDING GEAR EXTENDED. THE MAC IS 6.608 METERS LONG (260.15 INCHES). STATION 0 IS LOCATED 6.3825 METERS (251.28 INCHES) FORWARD OF FUSELAGE NOSE.



Note : Aircraft Center of gravity must always be within presented limits regardless of fuel load.

Maneuver on ground :

- When the weight is higher than 152 tons (335 160 lb), do not exceed $\pm 65^\circ$ on nose wheel travel during towing.
- When the weight is higher than 163.5 tons (360 520 lb), do not exceed a maximum taxiing speed of 15 kt during a turn.

B. Weight limitations

	KG	POUNDS
MAXIMUM TAXI WEIGHT	172 600	380 580
MAXIMUM TAKE-OFF WEIGHT (BRAKES RELEASE)	171 700	379 590
MAXIMUM LANDING WEIGHT	140 000	308 700
MAXIMUM ZERO FUEL WEIGHT*	123 000	271 210
MINIMUM WEIGHT	90 000	198 410

* - Maximum zero fuel weight is 130 000 kg (286 650 lb) when maximum take off weight is below 170 500 kg (375 950 lb).

- Maximum zero fuel weight is 131 000 kg (288 810 lb) when maximum take-off weight is below 167 800 kg (369 920 lb) provided the TRIM tank is empty and the CENTER tank depleted (in accordance with applicable procedure, as described in FCOM 2.06.30 p 8) prior to take-off.

Note : Residual CTR TK FQI reading is dependant upon aircraft pitch attitude and is not to be considered as part of the ZFW, unless above 180 kg (400 Lbs).

Under exceptional conditions following a take off at any weight within max take off weight and max landing weight an immediate landing is permitted provided overweight landing procedure is adhered to.

Exceptional conditions are :

- . emergencies
- . abnormalities wherein continuance of flight to destination is not possible.

2 - SPEED

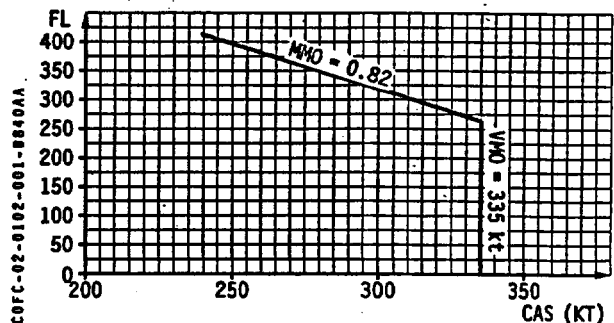
VMCA-VMCG

	kt CAS	kt IAS
VMCG	109.5	114 in 15/0 and 15/15 113 in 15/20
VMCA	117.0	120.6 in 15/0 and 15/15 120 in 15/20

A. Maximum operating speeds

VMO

The maximum operating limit speed VMO may not be deliberately exceeded in any regime of flight (climb, cruise or descent).



B. Maximum flaps/slats speeds (VFE)

MAXIMUM SLATS/FLAPS EXTENDED SPEEDS OR OPERATING SPEEDS

Maximum operating altitude : 20000 ft		
SLATS	FLAPS	SPEED (IAS)
15	0	250 kt
15	15	215 kt
15	20	205 kt
30	40	175 kt

C. Gear operating speeds

VLO are the maximum speeds at which the landing gear may be extended or retracted :
 VLE is the maximum speed with landing gear extended :
 VLO extension : 270 kt/M 0.59
 VLE : 270 kt/M 0.65
 VLO retraction : 240 kt/M 0.53

D. Kruger :

If Kruger cannot be retracted, do not exceed 300 kt/0.65 M

E. Manual pitch trim

When operating with manual pitch trim only, do not exceed 285 kt/0.78 M

3 - MISCELLANEOUS

A. Minimum flight crew

THE MINIMUM FLIGHT CREW CONSISTS OF 2 PILOTS.

B. Dispatchability

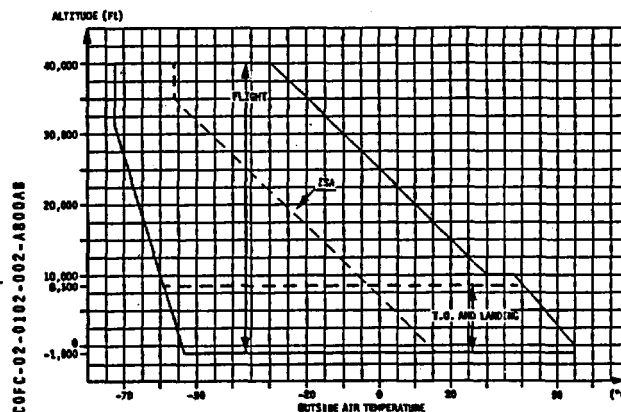
For dispatch in the event of equipment failure or missing parts, refer to MEL/CDL.

C. Flight maneuvering load acceleration limits :

CLEAN CONFIGURATION : + 2.5 g to - 1 g
 TAKE-OFF CONFIGURATION : + 2 g to 0 g
 LANDING HOLDING (SLATS EXTENDED)

D. Operating performance limitations :

(1) Environmental envelope



(2) Airport Operation limitations

RUNWAY SLOPE (MEAN) ± 2 %
 Runway altitude 8500 ft

WIND :
 TAIL WIND COMPONENT (TAKE-OFF AND LANDING) 10 kt

CROSS WIND (TAKE OFF AND LANDING) :
 maximum demonstrated on dry and wet runway 32 kt
 Max wind for passenger and cargo doors operation 60 kt

R
R
R

1. SYMBOLOGY AND DEFINITIONS

R
R
R
R
R

- VS : Minimum stalling speed for a specified configuration. It is a function of the aircraft weight and altitude.
- VMCG : Minimum control speed on ground at which the aircraft can be controlled by use of the primary flight controls only, in case of a sudden failure of the critical engine (the other engine remaining at takeoff power).
- V1 : Speed at which the pilot can make the decision, following failure of critical engine :
 - either to continue take-off
 - or to stop the aircraft.
 Represented by « 1 » on airspeed scale (or V1 value when out of range).
- VR : Speed at which rotation is initiated to reach V2 at an altitude of 35 feet.
- V2 : Take-off safety speed reached before the altitude 35 feet with one engine failed. Represented by the SPEED SELECT symbol on airspeed scale as any speed selected on FCU.
- VMCA : Minimum control speed in flight at which aircraft can be controlled with 5° max bank, in case of failure of the critical engine, the other engine remaining at take-off power (take-off flaps setting and gear retracted).
- F : Equal to 1.25 Vs Slats 15 /Flaps 0 . It is the minimum speed at which the flaps may be retracted to 0°.
Represented by « F » on airspeed scale when the SLAT/FLAP handle is in the 15/15 or 15/20 configuration.
- S : Equal to 1.25 Vs Slats 0 /Flaps 0 . It is the minimum speed at which the slats may be retracted to 0°.
Represented by « S » on airspeed scale when the SLAT/FLAP handle is in the 15/0 configuration.
- O (« GREEN DOT ») : ENGINE OUT OPERATING speed (BEST LIFT TO DRAG RATIO speed or DRIFT DOWN speed) in clean configuration. It corresponds also to the FINAL TAKE OFF speed.
It is equal to 205 kt at 120 t ± 1 kt per ton + 3 kt per 1 000 ft above 20 000 ft.
Represented by « O » (green dot) on airspeed scale when the SLAT/FLAP handle is in the 0/0 configuration.
Note : O, F and S speed displayed are only valid, as manoeuvring speeds, when the SLATS/FLAPS are in the commanded position.
- VFE : Maximum speed for each slats/flaps configuration
- VREF : Reference speed used for a normal final approach, it is equal to 1.3 Vs Slats 30 /Flaps 40 configuration.
- VLS : Lowest Selectable speed. It is represented by an amber strip along the airspeed scale which appears 5 seconds after lift-off.
In the T/O schedule VLS = 1.2 Vs of the actual T/O configuration.

R
R

In the LANDING Schedule VLS = 1.3 Vs of the actual landing configuration.

- Change from T/O to landing schedule is triggered by SLATS/FLAPS handle displacement (either retraction or extension)
- Change from landing to T/O schedule is triggered by LDG GEAR SHOCK absorber compression (A/C on ground).

Above 25 000 ft VLS is calculated so that there is 0.3 g margin with respect to BUFFETING.

In case of SLATS or/and FLAPS JAMMING, VLS represents 1.3 Vs of the actual (ABNORMAL) configuration.

- VSS : Stick shaker speed : The speed at which the stick shaker is activated. It is represented by a red and black strip along the airspeed scale. It is equal to 1.128 Vs in clean configuration, 1.11 Vs in other configurations.

- VAPP : Final approach speed, R

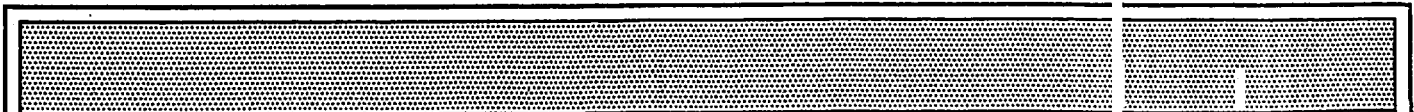
- ◆ VAPP can be computed based on VREF or VLS :
 - VAPP = VREF + VREF INCREMENT + WIND CORR, R
 - VAPP = VLS + VLS INCREMENT + WIND CORR. R
 - In SLATS 30/FLAPS 40 configuration, VLS = VREF, R
 - VREF increments are considered in case of failures affecting the maneuverability or the stall margin, R
 - VLS increments are considered whenever the failure is not accounted in the VLS computation (i.e. Kruger retracted or roll spoilers inoperative). R

2. WIND CORRECTION

WIND CORRECTION =
(1/3 AVERAGE WIND) OR (GUST IF HIGHER)

- Note : 1. The average wind is the wind speed value reported by the ATIS or tower, irrespective of its direction. R*
- 2. The gust is the difference between the maximum wind speed and the average wind speed, e.g. for a wind of 20 kt/gusting 25 kt, the average wind speed is 20 kt and the gust is (25-20) = 5 kt. R*

- ◆ Apply WIND CORR only if there is no tail-wind component. R
- ◆ If A/THR is used or when significant ice accretion is suspected : R
 - if WIND CORR < 5 kt, take WIND CORR = 5 kt, R
- ◆ Maximum WIND CORR = 15 kt. R
- ◆ If LDG SPD INCREMENT ON VREF ≤ 20 kt : R
 - maximum LDG SPD INCREMENT ON VREF + WIND CORR = 20 kt, R
- ◆ If LDG SPD INCREMENT ON VREF > 20 kt : R
 - do not apply any WIND CORR R
- ◆ FMS VAPP (on APPROACH page) is defined as : R
 - VAPP = VREF + (11 kt, if landing in 20/20) + 5 kt + WIND CORR. R



TAXI

NOSE Light TAXI
Select NOSE Light to TAXI day and night

TAXI CLEARANCE Obtained
PARKING BRAKE OFF

- Release the parking brake and check brake pressure zero.

ELAPSED TIME Start
To record block time

EXTERIOR LTS As req

THRUST LEVERS As req

In order to get the aircraft moving, little if any power above idle thrust will be required (max 40% N1). Thrust should normally be used symmetrically. Once aircraft is moving little thrust is required.

The wing mounted engines are close to the ground. Avoid placing engines over unconsolidated or unprepared ground e.g over the edge of taxiways. Avoid high thrust settings at low ground speeds due to the risk of ingestion (FOD).

BRAKES Check

Brakes can be checked once the aircraft is moving or while stopped.

To check the brakes while stopped, depress brake pedals with parking brake ON, select the parking brake OFF and check that the yellow hyd pressure is zero on the brake pressure triple indicator.

The main purpose of the brake check is to check that green pressure has taken over and that yellow pressure is at zero on the brake pressure triple indicator.

Note : Any pressure below 130 psi on the brake pressure triple indicator can be considered as zero.

Thereafter the normal maximum taxi speed should be 30 kt in a straight line, 15 kt for a sharp turn. The ground speed is difficult to assess so monitor ground speed on ND. Do not "ride" the brakes, as 30 kt is exceeded, apply brakes smoothly and decelerate to 10 kt, release the brakes and allow the aircraft to accelerate again.

Below - 40° C, small braking inputs are required during Taxi. XX will be indicated in place of the brake temperatures while the temperatures are below 0°.

CAUTION

If the brakes fail during ground operations, immediately select the BRK/A/SKID sw to ALTN-OFF and modulate the brakes with pedals.

Brake pedals should be released when the A/SKID is switched OFF. Otherwise the pedal braking orders will be taken into account and the aircraft will react strongly.

In an extreme emergency and only if pedals are ineffective with the antiskid OFF the aircraft may be stopped with the parking brake (full pressure application will occur).

CAUTION

- If aircraft has been parked in wet conditions for a long period, efficiency of first brakes application at low speed will be reduced.

ECAM Select F/CTL page

Mod : 5670

FLIGHT CONTROLS Check

At a convenient stage during taxi :

1. The PNF checks full travel and feel of the elevators and ailerons/spoilers, whilst monitoring on the ECAM F/CTL page.

Note : If PITCH FEEL pushbutton is selected OFF/R then ON, full travel and feel force of the elevators must be checked.

2. The PF holds the nose wheel steering handle to maintain the aircraft direction and checks full travel and feel of the rudder, whilst the PNF monitors the ECAM F/CTL page.

Check all indications return to zero position with respective controls at neutral, except the ailerons where droop position is indicated.

3. If the OAT is below - 40° C, the PNF should check full extension of the speedbrakes by setting the speedbrake lever notch by notch up to the FULL position whilst monitoring ECAM F/CTL page.

Note 1 : HYD SYS LO PR warning may occur if test is performed on more than one axis at a time.

Note 2 : FLIGHT CONTROL check should be done with CWS OFF. If CWS is selected full travel will not be available

Note 3 : During aileron check, rudder deflects left or right coordinating with aileron movement (yaw damper input)

ECAM deselect F/CTL page

ATC clearance obtain/confirm

TAKE OFF DATA/CONDITIONS ... Check/Revise

- If take off data have become more limiting such as wind change or Tower temperature increase, or in case of runway change, prepare updated take off data and as appropriate :

SLAT/FLAP LEVER takeoff position

· Select Take off position

V2 reset on FCU

Initial climb speed preset on FCU

FLX TO temperature Reinsert in TRP

PITCH TRIM Check/Adjust

If flap setting is changed, pitch trim setting should be adjusted.

FMS

V1, VR Reinsert

F-PLN (Runway) Revise

· **F-PLN (SID, TRANS)** Revise or check

Particular care should be taken to confirm the ATC clearance agrees with the FMS if NAV is to be used.

FCU As req

AP Should not be selected in CMD for Take off.

CLEARED ALT Set on FCU

IF PROFILE NAV mode is used

PROFILE Arm

NAV Arm

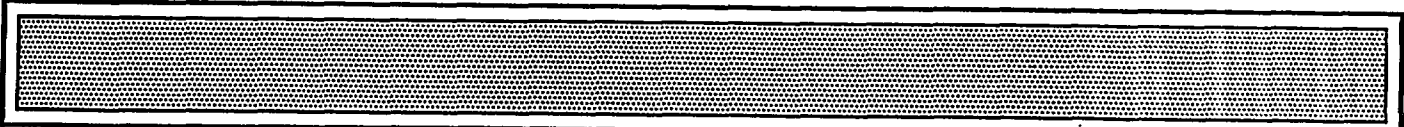
INITIAL AFTER T.O. HDG Set on FCU/As req

If an ATC HDG is required after take off set the heading on the FCU, NAV will be disarmed

FD Check selected ON

FMA Check

R
R
R



L/G UNSAFE INDICATION

L/G selected DOWN

■ **Green light(s) extinguished on both panels :**

L/G NOT DOWN LOCKED

PROC : L/G GRAVITY EXTENSION (10.02) . . . APPLY

● **If unsuccessful :**

PROC : LDG WITH ABNORMAL L/G

(10.04/10.05/10.06) APPLY

■ **Green light(s) extinguished only on one panel :**

L/G POS DET SYS 1(2) FAULT

L/G POS DET SYS SYS 2(1)

● **If nose landing gear unsafe indication on overhead panel only :**

GPWS "TOO LOW GEAR" warning DISREGARD

L/G selected UP

■ **Red light(s) illuminated on both panels :**

L/G NOT UP LOCKED

MAX SPD 270

L/G DOWN

FUEL CONSUMPTION INCREASED

■ **Red light illuminated on only one panel :**

L/G POS DET SYS 1(2) FAULT

L/G POS DET SYS SYS 2(1)

NOTE : With landing gear down, fuel consumption is multiplied by 2.2.
FMS fuel predictions must be disregarded.
Refer to FCOM 2.18.40 for any additional limitations and in-flight performance determination if no immediate turnback.

RECORDED

L/G UNSAFE INDICATION

Indications :

Single chime (only if both panel indications are identical)

ECAM activation with appropriate warning light

Left ECAM CRT : Procedure

Right ECAM CRT : Nil

L/G panel(s)

LANDING GEAR SELECTED DOWN :

- If all green lights are illuminated on one panel, the unsafe indication on the other panel is spurious. Therefore, the L/G POSITION DET SYS switch must be set to the correct system.
- If the landing gear is extended at speeds near V LO it may be necessary to decelerate to obtain satisfactory uplock of the landing gear doors.
- If one gear remains unlocked, accelerate to Vmax, perform turns to increase the load factor and perform alternating side slips in an attempt to lock the gear.

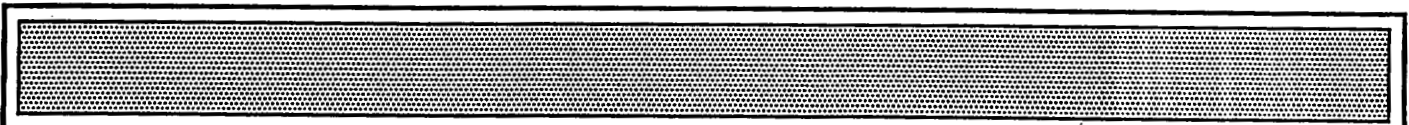
R

LANDING GEAR SELECTED UP:

- If light(s) illuminated on one indicator panel but indications are normal on the other panel, the unsafe indication is spurious.
- Flight with landing gear extended has a significant effect on fuel consumption and climb gradient (refer to ch. 2.18.40 SPECIAL OPERATIONS).
- Landing gear down selection may be delayed if performance requires.

Note : When red light(s) illuminated on both panels, the speed is limited to 270 kt or M 0.65 at or above 25000 ft.

R
R
R



L/G UNSAFE INDICATION

L/G selected DOWN

- Green light(s) extinguished on both panels :
L/G NOT DOWN LOCKED
PROC : L/G GRAVITY EXTENSION (10.02) APPLY
- If unsuccessful :
PROC : LDG WITH ABNORMAL L/G
(10.04/10.05/10.06) APPLY
- Green light(s) extinguished only on one panel :
L/G POS DET SYS 1(2) FAULT
L/G POS DET SYS SYS 2(1)
- If nose landing gear unsafe indication on overhead panel only :
GPWS "TOO LOW GEAR" warning DISREGARD

L/G selected UP

- Red light(s) illuminated on both panels :
L/G NOT UP LOCKED
MAX SPD 270
L/G DOWN
FUEL CONSUMPTION INCREASED
- Red light illuminated on only one panel :
L/G POS DET SYS 1(2) FAULT
L/G POS DET SYS SYS 2(1)

NOTE : With landing gear down, fuel consumption is multiplied by 2.2.
FMS fuel predictions must be disregarded.
Refer to FCOM 2.18.40 for any additional limitations and in-flight performance determination if no immediate turnback.

L/G UNSAFE INDICATION

Indications :

- Single chime (only if both panel indications are identical)
- ECAM activation with appropriate warning light
- Left ECAM CRT : Procedure
- Right ECAM CRT : Nil
- L/G panel(s)

LANDING GEAR SELECTED DOWN :

- If all green lights are illuminated on one panel, the unsafe indication on the other panel is spurious. Therefore, the L/G POSITION DET SYS switch must be set to the correct system.
- If the landing gear is extended at speeds near V LO it may be necessary to decelerate to obtain satisfactory uplock of the landing gear doors.
- If one gear remains unlocked, accelerate to Vmax, perform turns to increase the load factor and perform alternating side slips in an attempt to lock the gear.

Note : Sideslip is used to generate aerodynamic loads on the landing gear structure to force the downlock into position. The sideslip should be initiated using the rudder on the same side of the aircraft as the unsafe gear indication, i.e., if the right main landing gear is unlocked, slowly apply right rudder up to full deflection if necessary while maintaining wings level to generate sideslip. If the gear still fails to lock, then slowly return the rudder to neutral, allow the airplane to stabilize, and then slowly apply opposite rudder. If necessary, repeat this cycle in an attempt to lock the gear.

R
R
R
R
R
R
R
R
R

LANDING GEAR SELECTED UP:

- If light(s) illuminated on one indicator panel but indications are normal on the other panel, the unsafe indication is spurious.
- Flight with landing gear extended has a significant effect on fuel consumption and climb gradient (refer to ch. 2.18.40 SPECIAL OPERATIONS).
- Landing gear down selection may be delayed if performance requires.

Note : When red light(s) illuminated on both panels, the speed is limited to 270 kt or M 0.65 at or above 25000 ft.

Code : 0020

