A300F4-600
Airplane Characteristics
For Airport Planning
AC
This revision concerns introduction of new pages and corrections of pages.

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REVISION TRANSMITTAL SHEET

TO: ALL HOLDERS OF A300F4-600 AIRPLANE CHARACTERISTICS

The revision, dated DEC 01/09 is attached and covers all the Airplane Characteristics, and the pavement data, which are identified in the highlights.

FILING INSTRUCTIONS

NOTE: Before introducing this revision make certain that previous revisions are incorporated.

- affected pages are listed on the "List of Effective Pages" and designated as follows:

  R = revised (to be replaced)
  D = deleted (to be removed)
  N = new     (to be introduced)

- make certain that the content of the manual is in compliance with the List of Effective Pages.

- update the Record of Revisions page accordingly.

- file the Revision Transmittal Sheet separately.

- remove and destroy the pages which are affected by this revision.

REASON FOR ISSUE

The attached Highlights detail the reasons for issue.
# A300F4-600

AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

## RECORD OF REVISIONS

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# A300F4-600

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<td>R 9.2</td>
<td>Scaled Drawing 1 cm. = 500 cm.</td>
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1.0 SCOPE

R 1.1 Purpose

R 1.2 Introduction
1.1 Purpose

The A300F4-600 AIRPLANE CHARACTERISTICS (AC) manual is issued for the A300F4-600 basic versions to provide the necessary data needed by airport operators and airlines for the planning of airport facilities.

This document conforms to NAS 3601.

CORRESPONDENCE

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31707 BLAGNAC CEDEX
FRANCE
1.2 Introduction

This manual comprises 9 chapters with a List of Effective Pages (LEP) and a Table Of Content (TOC) at the beginning of each chapter.

Chapter 1 : SCOPE

Chapter 2 : AIRPLANE DESCRIPTION

This chapter contains general dimensional and other basic aircraft data concerning the A300F4-600.

It covers:
- aircraft dimensions and ground clearances,
- passengers and cargo compartments arrangement.

Chapter 3 : AIRPLANE PERFORMANCE

This chapter indicates the aircraft performance.

It covers:
- payload range,
- takeoff and landing runway requirements,
- landing approach speed.

Chapter 4 : GROUND MANEUVERING

This chapter provides the aircraft turning capability and maneuvering characteristics on the ground.

It includes:
- turning radii and visibility from the cockpit,
- runway and taxiway turn path.

Chapter 5 : TERMINAL SERVICING

This chapter provides information for the arrangement of ground handling and servicing equipments.

It covers:
- location and connections of ground servicing equipments,
- engines starting pneumatic and preconditioned airflow requirements.
Chapter 6: OPERATING CONDITIONS

This chapter contains data and safety/environmental precautions related to engine and APU operation on the ground.

It covers:
- contour size and shape of the jet engine exhaust velocities and temperature,
- noise data.

Chapter 7: PAVEMENT DATA

This chapter contains the pavement data helpful for airport planning.

It gives:
- landing gear footprint and static load,
- charts for flexible pavements with Load Classification Number (LCN),
- charts for rigid pavements with LCN,
- Aircraft Classification Number (ACN), Pavement Classification Number (PCN), reporting system for flexible and rigid pavements.

Chapter 8: DERIVATIVE AIRPLANES

This chapter gives relevant data of possible A300F4-600 new version with the associated size change.

Chapter 9: SCALED DRAWING

This chapter contains different A300F4-600 scaled drawings.
2.0 AIRPLANE DESCRIPTION

R 2.1 General Airplane Characteristics
   2.2 General Airplane Dimensions
   2.3 Ground Clearances
   2.4 Interior Arrangements
   2.5 Passenger Compartment Cross Section
   2.6 Lower Compartment
   2.7 Door Clearances
2.1 General Airplane Characteristics

The weight terms used throughout this manual are given below together with their respective definitions.

**Maximum Taxi Weight (MTW):**
Maximum weight for ground maneuver as limited by aircraft strength and airworthiness requirements. (It includes weight of run-up and taxi fuel). It is also called Maximum Ramp Weight (MRW).

**Maximum Landing Weight (MLW):**
Maximum weight for landing as limited by aircraft strength and airworthiness requirements.

**Maximum Takeoff Weight (MTOW):**
Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the takeoff run).

**Maximum Zero Fuel Weight (MZFW):**
Maximum operational weight of the aircraft without usable fuel.

**Operational Empty Weight (OEW):**
Weight of structure, powerplant, furnishings, systems, and other items of equipment that are an integral part of a particular aircraft configuration plus the operator's items. The operator's items are the flight and cabin crew and their baggage, unusable fuel, engine oil, emergency equipment, toilet chemical and fluids, galley structure, catering equipment, passenger seats and life vests, documents, etc.

**Maximum Payload:**
Maximum Zero Fuel Weight (MZFW) minus Operational Empty Weight (OEW).

**Maximum Seating Capacity:**
Maximum number of passengers specifically certified or anticipated for certification.

**Maximum Cargo Volume:**
Maximum usable volume available for cargo.

**Usable Fuel:**
Fuel available for aircraft propulsion.
### A300F4-600

**AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING**

#### AIRPLANE VERSION

<table>
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<th>WV000 (Basic)</th>
<th>WV006</th>
<th>WV009</th>
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<tr>
<td>Maximum Taxi Weight (MTW)</td>
<td>kg</td>
<td>lb</td>
<td>kg</td>
</tr>
<tr>
<td></td>
<td>171 400</td>
<td>377 871</td>
<td>170 500</td>
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<tr>
<td>Maximum Takeoff Weight (MTOW)</td>
<td>kg</td>
<td>lb</td>
<td>kg</td>
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<tr>
<td></td>
<td>170 500</td>
<td>375 887</td>
<td>140 000</td>
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<td>Maximum Landing Weight (MLW)</td>
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<td>lb</td>
<td>kg</td>
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<td>308 646</td>
<td>130 000</td>
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<td>Maximum Zero Fuel Weight (MZFW)</td>
<td>kg</td>
<td>lb</td>
<td>kg</td>
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<td></td>
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<td>308 646</td>
<td>130 000</td>
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**GE CF6-80 Engines**

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<th>kg (180 320 lb)</th>
<th>82 046 kg (180 880 lb)</th>
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<tr>
<td>PW4000 Engines</td>
<td>81 707 kg</td>
<td>81 707 kg</td>
</tr>
<tr>
<td>GE CF6-80</td>
<td></td>
<td></td>
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<tr>
<td>Estimated Maximum Payload GE CF6-80</td>
<td>kg</td>
<td>lb</td>
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<td></td>
<td>47 954</td>
<td>105 720</td>
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<tr>
<td>Estimated Maximum Payload PW4000</td>
<td>kg</td>
<td>lb</td>
</tr>
<tr>
<td></td>
<td>48 293</td>
<td>106 467</td>
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**Standard Seating Capacity**

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<tr>
<td>Usable Fuel Capacity</td>
<td>68 160</td>
</tr>
<tr>
<td>Cockpit Volume</td>
<td>12 m3</td>
</tr>
<tr>
<td>Main Deck Cargo Compartment Volume</td>
<td>540 ft3</td>
</tr>
<tr>
<td>Usable Cargo Compartment Volume (1)</td>
<td>158 ft3</td>
</tr>
</tbody>
</table>

(1) Volume of Cargo Compartments:
- Fwd Cargo Compartment : 76 m3 (2 683 ft3)
- Aft Cargo Hold Compartment : 61 m3 (2 154 ft3)
- Bulk Cargo Compartment : 21 m3 (741 ft3)
AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

AIRPLANE DIMENSIONS
MODEL A300F4-600

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AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

AIRPLANE DIMENSIONS
GE ENGINE CF6-80C2F

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2.3 Ground Clearances

NOTE: The distances given in the Ground Clearances charts are reference distances calculated for A/C weight and CG conditions. The conditions used in the calculations are maximum A/C weight (minimum ground clearances) and a typical A/C maintenance weight (typical ground clearances for maintenance).
2.3 Ground Clearances
2.7 DOOR CLEARANCES

2.7 p2 Forward Crew Door/Clearances
2.7 p3 Forward Cargo Compartment Door
2.7 p4 AFT Cargo Compartment Door
2.7 p5 Bulk Cargo Compartment Door
2.7 p6 Main Deck Cargo Door
2.7 p7 Radome Travel
AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

31 ft 3.3 in.
9.53 m

12 ft 0.9 in.
3.68 m

105 in.
2.70 m

SEE CHAPTER 2.9

DOOR CLEARANCES
FORWARD CARGO COMPARTMENT DOOR
DOOR CLEARANCES
AFT CARGO COMPARTMENT DOOR

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DOOR CLEARANCES
BULK CARGO COMPARTMENT DOOR
DOOR CLEARANCES
MAIN DECK CARGO DOOR

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AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

RADOME TRAVEL
3.0 AIRPLANE PERFORMANCE

3.1 General Information

3.2 Payload Range

3.3 FAR Takeoff Runway Length Requirements

3.4 FAR Landing Runway Length Requirements

3.5 Final Approach Speed
3.0 AIRPLANE PERFORMANCE

3.1 General Information

Section 3.2 indicates payload range information at specific altitudes recommended for long range cruise with a given fuel reserve condition.

Section 3.3 represents FAR take off runway length requirements at ISA + 15°C (ISA + 59°F) for GE CF6-80C2F engines conditions for FAA certification.

Section 3.4 represents FAR landing runway Length requirements for FAA certification.

Section 3.5 indicates final approach speeds.

Standard day temperatures for the altitudes shown are tabulated below:

<table>
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<tr>
<th>Altitude (FEET)</th>
<th>ISA Temperature (°F)</th>
<th>Temperature (°C)</th>
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<tr>
<td>0</td>
<td>59</td>
<td>15</td>
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<tr>
<td>2000</td>
<td>51.9</td>
<td>11.6</td>
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<tr>
<td>4000</td>
<td>44.7</td>
<td>7.1</td>
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<tr>
<td>6000</td>
<td>37.6</td>
<td>3.1</td>
</tr>
<tr>
<td>8000</td>
<td>30.5</td>
<td>-0.8</td>
</tr>
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</table>
PAYLOAD RANGE
CRUISE CONDITIONS:
ISA, L.R.C
29000 / 37000 Ft

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING
MANUALS" SPECIFIC TO THE AIRLINE OPERATING
THE AIRCRAFT.

PAYLOAD
(1000 lb) (1000 Kg)

INTERNATIONAL RESERVES
- EN ROUTE 5% FLIGHT TIME
- OVERSHOOT
- 200 nm DIVERSION
- HOLD 30 min AT 1500 ft
- APPROACH AND LANDING

165.1 t de MTOW
170.5 t de MTOW
FAR TAKE-OFF RUNWAY LENGTH REQUIREMENTS
ISA CONDITIONS - GE-CF6-80C2F ENGINE
MODEL A300F4-600

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NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING
MANUALS" SPECIFIC TO THE AIRLINE OPERATING
THE AIRCRAFT.
FINAL APPROACH SPEED (1.3 Vs)
AT 50 ft
LANDING GEAR DOWN

SLATS : 30°
FLAPS : 40°

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING
MANUALS" SPECIFIC TO THE AIRLINE OPERATING
THE AIRCRAFT.

FINAL APPROACH SPEED AT 1.3 VS
GE ENGINE
MODEL A300F4-600
4.0 GROUND MANEUVERING

4.1 General Information

4.2 Turning Radii, No Slip Angle

4.3 Minimum Turning Radii

4.4 Visibility From Flight Compartment in Static Position

4.5 Runway And Taxiway Turn Paths

4.6 Runway Holding Bay (Apron)
4.0 GROUND MANEUVERING

4.1 GENERAL INFORMATION

This section provides airplane turning capability and maneuvering characteristics.

For case of presentation, this data has been determined from the theoretical limits imposed by the geometry of the aircraft, and where noted, provides for a normal allowance for tire slippage. As such, it reflects the turning capability of the aircraft in favorable operating circumstances. This data should only be used as guidelines for the method of determination of such parameters and for the maneuvering characteristics of this aircraft type.

In the ground operating mode, varying airline practices may demand that more conservative turning procedures be adopted to avoid excessive tire wear and reduce possible maintenance problems. Airline operating techniques will vary in the level of performance, over a wide range of operating circumstances throughout the world. Variations from standard aircraft operating patterns may be necessary to satisfy physical constraints within the maneuvering area, such as adverse grades, limited area or high risk of jet blast damage. For these reasons, ground maneuvering requirements should be coordinated with the using airlines prior to layout planning.
## Turning Radii No Slip Angle

### A300F4-600

<table>
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<tr>
<th>Steering Angle (Degrees)</th>
<th>R1 (ft)</th>
<th>R2 (m)</th>
<th>R3 (ft)</th>
<th>R3 (m)</th>
<th>R4 (ft)</th>
<th>R4 (m)</th>
<th>R5 (ft)</th>
<th>R5 (m)</th>
<th>R6 (ft)</th>
<th>R6 (m)</th>
</tr>
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<tr>
<td>30</td>
<td>90.51</td>
<td>27.59</td>
<td>122.01</td>
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<td>35</td>
<td>71.87</td>
<td>21.90</td>
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<td>57.36</td>
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<td>88.86</td>
<td>27.08</td>
<td>95.44</td>
<td>29.09</td>
<td>148.58</td>
<td>45.29</td>
<td>110.55</td>
<td>33.70</td>
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<td>45</td>
<td>45.60</td>
<td>13.90</td>
<td>77.10</td>
<td>23.50</td>
<td>86.76</td>
<td>26.44</td>
<td>136.98</td>
<td>41.75</td>
<td>103.15</td>
<td>31.44</td>
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<tr>
<td>50</td>
<td>36.73</td>
<td>10.89</td>
<td>67.22</td>
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<td>55</td>
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<td>8.29</td>
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<td>31.97</td>
<td>87.72</td>
<td>26.74</td>
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**NOTE:**
Actual operating data may be greater than values shown since tire slippage is not considered in these calculations.

---

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A300F4-600
AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

NOTE: COORDINATE WITH USING AIRLINE FOR SPECIFIC PLANNED OPERATING PROCEDURE

RUNWAY AND TAXIWAY TURN PATHS
MORE THAN 90° TURN RUNWAY TO TAXIWAY TURN

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NOTE: COORDINATE WITH USING AIRLINE FOR SPECIFIC PLANNED OPERATING PROCEDURE

RUNWAY AND TAXIWAY TURN PATHS
90° TURN RUNWAY TO TAXIWAY
RUNWAY AND TAXIWAY TURN PATHS
90° TURN TAXIWAY TO TAXIWAY

NOTE: COORDINATE WITH USING AIRLINE FOR SPECIFIC PLANNED OPERATING PROCEDURE
NOSE STEERING ANGLE -25°

280 ft. (85.4 m)

40 ft. (12.2 m)

100 ft. RAO. (30.48 m)

20 ft. (6.1 m)

75 ft. (22.86 m)

150 ft. (45.72 m)

NOTE: COORDINATE WITH USING AIRLINE FOR SPECIFIC PLANNED OPERATING PROCEDURE

RUNWAY HOLDING BAY (APRON)
5.0 TERMINAL SERVICING

R  5.1 Airplane Servicing Arrangements
N  5.2 Terminal Operations – En Route Stations
R  5.4 Ground Service Connections
   5.5 Engine Starting Pneumatic Requirements
   5.6 Ground Pneumatic Power Requirements
R  5.8 Ground Towing Requirements
This section provides typical ramp layouts, showing the various GSE items in position during typical turnaround scenarios. These ramp layouts show typical arrangements only. Each operator will have its own specific requirements/regulations for the positioning and operation on the ramp.
For each ramp layout, the associated typical turnaround time is given in a Chart in the section 5.2.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS</td>
<td>AIR STARTING VEHICLE</td>
</tr>
<tr>
<td>BC</td>
<td>BULK CONVEYOR</td>
</tr>
<tr>
<td>BF</td>
<td>BULK FREIGHT VEHICLE</td>
</tr>
<tr>
<td>CPL</td>
<td>CONTAINER/PALLET LOADER</td>
</tr>
<tr>
<td>CPT</td>
<td>CONTAINER/PALLET TRANSPORTER</td>
</tr>
<tr>
<td>CS</td>
<td>CABIN CLEANERS STEPS</td>
</tr>
<tr>
<td>F</td>
<td>REFUELING VEHICLE</td>
</tr>
<tr>
<td>FC</td>
<td>FREIGHT/CARGO TRAIN</td>
</tr>
<tr>
<td>GPU</td>
<td>ELECTRICAL GROUND POWER UNIT</td>
</tr>
<tr>
<td>MDL</td>
<td>MAIN DECK LOADER</td>
</tr>
<tr>
<td>T</td>
<td>TOILET SERVICING VEHICLE</td>
</tr>
<tr>
<td>W</td>
<td>WATER REPLENISHMENT VEHICLE</td>
</tr>
</tbody>
</table>
Airplane Servicing Arrangements — Typical
Open Apron Free Standing
Model A300F4–600
5.2 Terminal Operations – En Route Stations

This section provides a chart showing typical activities for home-base turnaround. This data is provided to show the general scope and type of activities involved in ramp operations during the turnaround of an aircraft. Varying Airline practices and operating circumstances may result in different sequences and different time intervals to do the activities shown.

- POSITION STAIRWAYS
- OPENING DOORS AND POSITION LOADERS
- BAGGAGE AND CARGO MOVEMENT
- CLEAN CABIN
- SERVICE TOILET AND WATER REPLENISHMENT
- SERVICE GALLEY
- REFUEL
- WALK AROUND CHECK
- REMOVE LOADERS AND CLOSE CARGO DOORS
- REMOVE STAIRWAYS
- START ENGINES
- DISCONNECTIONS

ALL FREIGHT CONTAINERIZED
- 21 STANDARD M SIZE ULDS ON MD
- 4 STANDARD M SIZE ULDS IN FWD LDCC
- 10 STANDARD K SIZE ULDS IN AFT LDCC

100% UNLOADING/LOADING

APU RUNNING

NOTE: IF THE AIRCRAFT IS FITTED WITH ACT'S THE REFUELING TIME WILL BE LONGER
(UP TO 65 min WITH 2 ACT INSTALLED)
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>WATER FILLING AND DRAINING</td>
</tr>
<tr>
<td>B</td>
<td>OXYGEN CHARGING</td>
</tr>
<tr>
<td>C</td>
<td>HYDRAULIC GROUND POWER</td>
</tr>
<tr>
<td>D</td>
<td>IDG OIL FILLING</td>
</tr>
<tr>
<td>D1</td>
<td>ENGINE OIL FILLING</td>
</tr>
<tr>
<td>E</td>
<td>LAVATORY SERVICING, FORWARD</td>
</tr>
<tr>
<td>F</td>
<td>ELECTRICAL GROUND POWER</td>
</tr>
<tr>
<td>G</td>
<td>LOW PRESSURE PRECONDITIONING</td>
</tr>
<tr>
<td>H</td>
<td>FUEL GRAVITY FILLING</td>
</tr>
<tr>
<td>I</td>
<td>HYDRAULIC ACCUMULATOR AIR CHARGING</td>
</tr>
<tr>
<td>J</td>
<td>HYDRAULIC TANK FILLING AND HYDRAULIC GROUND POWER</td>
</tr>
<tr>
<td>K</td>
<td>HYDRAULIC TANK AIR CHARGING AND HYDRAULIC GROUND POWER</td>
</tr>
<tr>
<td>L</td>
<td>FUEL PRESSURE FILLING</td>
</tr>
<tr>
<td>M</td>
<td>HIGH PRESSURE PRECONDITIONING AND ENGINE STARTING</td>
</tr>
<tr>
<td>N</td>
<td>APU OIL FILLING</td>
</tr>
</tbody>
</table>
# HYDRAULIC SYSTEM

## A. Reservoir charging:
One 1/4 in. self-sealing connection common for the 3 reservoirs

## B. Accumulator charging:
Five MS 28889-1 connections (one per accumulator)
- **Green**
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)

- **Yellow**
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)

- **Blue**
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)
  - 26.07 ft (85-6)

## C. Reservoir filling:
One 1/4 in. self-sealing connection common for the 3 reservoirs

## D. Reservoir overflow:
Three 1/4 in. self-sealing connections (one as per reservoir)
- **Green**
  - 25.87 ft (84-10)
  - 22.89 ft (75-1)
  - 22.89 ft (75-1)

- **Yellow**
  - 25.87 ft (84-10)
  - 2.30 ft (7-7)
  - 2.30 ft (7-7)
  - 2.30 ft (7-7)
  - 2.30 ft (7-7)

- **Blue**
  - 25.87 ft (84-10)
  - 3.60 ft (11-10)
  - 3.60 ft (11-10)
  - 3.60 ft (11-10)
  - 3.60 ft (11-10)
E. Ground test:
Three 1 in. self sealing connections and three 1 1/4 in. self sealing connections (one pair per system)
- Green
- Yellow
- Blue

<table>
<thead>
<tr>
<th>DISTANCE AFT OF NOSE</th>
<th>FROM AIRPLANE CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RH SIDE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>25.87 (84-10)</td>
<td></td>
<td>1.77 (5-10)</td>
</tr>
<tr>
<td>22.89 (75-1)</td>
<td>3.60 (11-10)</td>
<td></td>
</tr>
<tr>
<td>22.89 (75-1)</td>
<td></td>
<td>3.60 (11-10)</td>
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</tbody>
</table>
**ELECTRICAL SYSTEM**

<table>
<thead>
<tr>
<th>DISTANCE (Ft - In.)</th>
<th>Meters</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFT OF NOSE</td>
<td>7.28 (23-11)</td>
<td>2.0 (6-7)</td>
</tr>
<tr>
<td>AIRPLANE CENTERLINE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One standard 6 pin connector
ISO R 461 specification

Supply:
115/200 Volt, 3-Phase, 400 HZ
Power required: 90 KVA

R Electrical Connectors for servicing

R **Note**: For mating connectors contact HUBBEL (FSCM 7H582)
OXYGEN SYSTEM

<table>
<thead>
<tr>
<th>Distance (ft - in.)</th>
<th>Meters</th>
<th>Mean Height From Ground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aft of Nose</td>
<td>From Airplane Centerline</td>
<td></td>
</tr>
<tr>
<td>Rh Side</td>
<td>Lh Side</td>
<td></td>
</tr>
<tr>
<td>2.3 (7-66)</td>
<td>0.75 (2-55) -</td>
<td>3.18 (10-18)</td>
</tr>
</tbody>
</table>

One service connection (external charging) 3/8 in. UNF x 24 TPI

Accessible through forward cargo door and RH access door of elec. compartment
FUEL SYSTEM

Two standard 2 1/2 in. connections - ISO R45 Specification

Two service connections (gravity feed)

Two service connections (gravity feed)

Flow Rate: 1475 l/mn (325 Imp. gal/mn) (390 U.S. gal/mn) per connection

Maximum Pressure: 50 psig (3.45 bars)
PNEUMATIC SYSTEM

Two standard 3 in. ISO TC20 connections for engine starting and cabin conditioning.

Two standard 8 in. connections (MS33562) for pre-conditioned air.
POTABLE WATER SYSTEM

<table>
<thead>
<tr>
<th>距从飞机中心线的距离（英尺 - 英寸）</th>
<th>米</th>
</tr>
</thead>
<tbody>
<tr>
<td>飞机鼻部尾部</td>
<td>后部侧</td>
</tr>
<tr>
<td>18.41</td>
<td>1.13</td>
</tr>
<tr>
<td>(60-5)</td>
<td>(3-8)</td>
</tr>
<tr>
<td>28.52</td>
<td>0.70</td>
</tr>
<tr>
<td>(93-7)</td>
<td>(2-3)</td>
</tr>
</tbody>
</table>

One standard 3/4 in. quick release coupling for filling

One 1 in. potable drain connection

Fill rate:
- Flow: 91 l/min (20 Imp. gal/min) (24 U.S. gal/min)
- Pressure: 15 psi (1.03 bar) Pressure shall not exceed 50 PSI/3.45 bar max.

Usable capacity:
- 200 liters (52.8 U.S. gal.)
TOILET SYSTEM

- Per servicing panel
  One standard 4 in. drain connection
  and one Roylyn 1 in. con. in front and
  two Roylyn 1 in. connection behind.

<table>
<thead>
<tr>
<th>DISTANCE</th>
<th>Meters</th>
<th>(Ft – In.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFT OF NOSE</td>
<td>FROM AIRPLANE CENTERLINE</td>
<td>MEAN HEIGHT FROM GROUND</td>
</tr>
<tr>
<td>RH SIDE</td>
<td>LH SIDE</td>
<td></td>
</tr>
<tr>
<td>4.40</td>
<td>1.71</td>
<td>3.29</td>
</tr>
<tr>
<td>(14-5)</td>
<td>(5-7)</td>
<td>(10-9)</td>
</tr>
</tbody>
</table>

Capacity Single toilet :

- Waste : 46.9 liters (12.4 US gal)
- Chemical fluid : 9.46 liters (2.6 US gal)
ENGINE STARTING PNEUMATIC REQUIREMENTS

0 TO 8000 ft. ALT;
TEMP, AMBIENT: ISA - 40°C
    : ISA - 72°F

AIRFLOW REQUIRED AT GROUND CONNECTION

KILOGRAMS PER MINUTE

POUNDS PER MINUTE

0 TO 8000 ft. ALT;
TEMP, AMBIENT: ISA - 40°C
    : ISA - 72°F
ENGINE STARTING PNEUMATIC REQUIREMENTS

AMBIENT TEMPERATURE ISA + 15°C
AMBIENT TEMPERATURE ISA + 27°F

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ENGINE STARTING PNEUMATIC REQUIREMENTS
AMBIENT TEMPERATURE ISA + 37.8°C
AMBIENT TEMPERATURE ISA + 68°F

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COURIER AREA

1. INITIAL TEMPERATURE: -23°C (-9°F)
   INLET TEMP. AT LP GROUND CONNECTOR: 74°C (165°F)
   COURIER AREA
   NOT OCCUPIED
   NO SOLAR LOAD
   NO OTHER HEAT LOADS

2. INITIAL TEMPERATURE: 38°C (100°F)
   INLET TEMP. AT LP GROUND CONNECTOR: 16°C (35°F)
   SOLAR LOAD: 0.06 KW
   COURIER AREA OCCUPIED WITH 6 COURIERS
   ELECTRICAL LOAD: 0.24 KW

TIME TO HEAT COMP. FROM -23°C TO 21°C

TIME TO HEAT COMP. FROM 38°C TO 27°C

GROUND PNEUMATIC POWER REQUIREMENTS
HEATING/COURIER AREA

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MDCC

1. INITIAL TEMPERATURE: -23°C (-9°F)
   INLET TEMP. AT LP GROUND CONNECTOR: 74°C (165°F)
   NO CARGO
   NO SOLAR LOAD
   NO ELECTRICAL LOADS

2. INITIAL TEMPERATURE: 38°C (100°F)
   INLET TEMP. AT LP GROUND CONNECTOR: 16°C (35°F)
   NO CARGO
   NO SOLAR LOAD
   NO ELECTRICAL LOADS

TIME TO HEAT COMP. FROM -23°C TO 21°C

TIME TO HEAT COMP. FROM 38°C TO 27°C

GROUND PNEUMATIC POWER REQUIREMENTS
HEATING/MDCC

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5.8 Ground Towing Requirements

This section provides information on aircraft Towing.

The A300F4-600 is designed with means for conventional towing or towbarless towing. Information on towbarless towing can be found in SIL 09-002 and chapter 9 of the Aircraft Maintenance Manual.

1. Ground Towing

It is possible to tow or push the aircraft, at maximum ramp weight with engines at zero or up to idle thrust, using a towbar attached to the nose gear leg. Two towbar fittings are installed, one at the front of the leg and one at the back.

The body gears have attachment points for towing or debogging (for details refer to chapter 7 of the Aircraft Recovery Manual).

A. The first part of this section shows the chart to determine the draw bar pull and tow tractor mass requirements as function of the following physical characteristics:

- Aircraft weight
- Slope
- Number of engines at idle

The chart is based on the A300F4-600 engine type with the biggest idle thrust.
The chart is therefore valid for all A300F4-600 models.

B. The second part of this section supplies guidelines for the towbar.

NOTE: Information on aircraft towing procedures and corresponding aircraft limitations are given in chapter 9 of the Aircraft Maintenance Manual.
A300F4-600
AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

NOTE: UNUSUAL BREAKAWAY CONDITIONS NOT REFLECTED.
ESTIMATED FOR RUBBER TIRED TOW VEHICLES.
COEFFICIENTS OF FRICTION (µ) APPROXIMATE.

Ground Towing Requirements

IN EXAMPLE A: THE GRAPH REPRESENTS AN A300F4-600 AIRPLANE WEIGHING 165900 kg
(365740 lb) BEING PUSHED REARWARD ON WET CONCRETE UP A 2% SLOPE,
WITH ENGINES IDLING.

SUCH CONDITIONS REQUIRE A 12500 daN (28100 lbf) DRAWBAR PULL AND A MINIMUM 23000 daN (51700 lbf) LOAD ON THE TRACTION WHEELS.

IN EXAMPLE B: THE GRAPH REPRESENTS AN A300F4-600 AIRPLANE WEIGHING 165900 kg
(365740 lb) BEING PULLED FORWARD ON WET CONCRETE UP A 2% SLOPE,
WITH ENGINES STOPPED.

SUCH CONDITIONS REQUIRE A 10500 daN (23600 lbf) DRAWBAR PULL AND A MINIMUM 19300 daN (43400 lbf) LOAD ON THE TRACTION WHEELS.
2. Towbar design guidelines

The aircraft towbar shall respect the following norms:

- SAE AS 1614, "Main Line Aircraft Tow Bar Attach Fitting Interface",
- SAE ARP1915 Revision C, "Aircraft Tow Bar",
- ISO 8267-1, "Aircraft — Tow bar attachment fitting — Interface requirements — Part 1 : Main line aircraft",
- ISO 9667, "Aircraft ground support equipment — Tow bars"
- IATA Airport Handling Manual AHM 958, "Functional Specification for an Aircraft Towbar"

A conventional type tow bar is required which should be equipped with a damping system to protect the nose gear against jerks and with towing shear pins:
- A traction shear pin calibrated at 16550 daN (36500 lbf),
- A torsion pin calibrated at 1750 m.daN (12907 lbf.in).

The towing head is designed according to SAE/AS 1614 (issue C) cat. II.

There is a variety of shear pin arrangements and the values of the shear pins depend on them. We hereafter show two arrangements classically used on towbars.

Ground Towing Requirements
Ground Towing Requirements
Typical Tow Bar Configuration 1
Ground Towing Requirements

Typical Tow Bar Configuration 2

\[
\begin{align*}
M &= F_{\text{shear}} \times L \\
M_{\text{shear}} &= F_{\text{shear}} \times L \\
M_{\text{shear}} &= \frac{F}{2} \times D_2 (M_{\text{shear}} \leq M) \\
D_2 &= \left( \frac{2 \times M_{\text{shear}}}{F} \right) / (F \times L)
\end{align*}
\]

<table>
<thead>
<tr>
<th>F [daN]</th>
<th>M [m.daN]</th>
<th>D1 [mm]</th>
<th>D2 [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>16550</td>
<td>1750</td>
<td>104.2</td>
<td>222.2</td>
</tr>
</tbody>
</table>

RESULTS FOR A TOWBAR LENGTH OF \( \frac{L}{L_{\text{shear}}} = 0.90 \)
Ground Towing Requirements
Nose Gear Towing Fittings
6.0 OPERATING CONDITIONS

6.1 Jet Engine Exhaust Velocities and Temperatures
   6.1.1 Exhaust Velocity Contours - Break away Power
   6.1.2 Exhaust Temperature Contours - Break away Power
   6.1.3 Exhaust Velocity Contours - Take-off Power
   6.1.4 Exhaust Temperature Contours - Take-off Power
   6.1.5 Exhaust Velocity Contours - Idle Power
   6.1.6 Exhaust Temperature Contours - Idle Power

6.2 Airport and Community Noise
   6.2.1 Noise Data

6.3 Danger Areas of the Engines
   6.3.1 Danger Areas of the Engines - Ground Idle
   6.3.2 Danger Areas of the Engines - Take-off
   6.3.3 Acoustic Protection Areas

R  6.3.4 APU - Exhaust Gas Temperature & Velocity

R - Definition of Breakaway Power
R Breakaway Power means the minimum power necessary for the aircraft to be able
R to start moving.
JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES
EXHAUST VELOCITY CONTOURS - BREAK AWAY POWER
(GE CF6-80C2F ENGINE)
8200 LBS (36.47 kN) CORRECTED GROSS THRUST

CORRECTED VELOCITY ~ KNOTS (km/hr)

RADIAL DISTANCE FROM CENTERLINE ~ FEET (m)

VELOCITY RADIAL VARIATIONS
61 FEET (18.59) AFT OF FAN
NOZZLE EXIT

JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES
EXHAUST VELOCITY CONTOURS - BREAK AWAY POWER
(GE CF6-80-2F ENGINE)
JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES
EXHAUST VELOCITY CONTOURS - BREAK AWAY POWER
(GE CF6-80C2F ENGINE)
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CORRECTED TOTAL TEMPERATURE RADIAL VARIATIONS
61 FEET (18.59) AFT OF THE FAN NOZZLE EXIT

TEMPERATURE ~ °R (°K)

DISTANCE AFT OF FAN NOZZLE EXIT ~ FEET (m)

PLUME CORRECTED TOTAL TEMPERATURE PROFILE FOR
8700 LB. (38.70 KN) CORRECTED GROSS THRUST

JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES
EXHAUST TEMPERATURE CONTOURS - BREAK AWAY POWER
(GE CF6-80C2F ENGINE)

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VERTICAL DISTANCE FROM CENTERLINE ~ FEET (m)

JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES
EXHAUST VELOCITY CONTOURS - TAKE-OFF POWER
(GE CF6-80C2F ENGINE)

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JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES
EXHAUST TEMPERATURE CONTOURS - TAKE-OFF POWER
(GE CF6-80C2F ENGINE)
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AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

MINIMUM IDLE

CORRECTED VELOCITY ~ KNOTS (km/hr)

BOTTOM

TOP

RADIAL DISTANCE FROM CENTERLINE ~ FEET (m)

VELOCITY RADIAL VARIATIONS 61 FEET (18.59 m)
AFT OF FAN NOZZLE EXIT

PROJECTED ENGINE C

GROUND PLANE

DISTANCE AFT OF FAN NOZZLE EXIT ~ FEET (km/hr)
PLUME VELOCITY PROFILE FOR MINIMUM IDLE POWER SETTING

JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES
EXHAUST VELOCITY CONTOURS - IDLE POWER
(GE CF6-80C2F ENGINE)

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CORRECTED TOTAL TEMPERATURE
RADIAL VARIATIONS 61 FEET (18.59 m)
AFT OF THE FAN NOZZLE EXIT

TEMPERATURE ~ \( \theta_R \) (K)

PLUME CORRECTED TOTAL TEMPERATURE PROFILE FOR MINIMUM IDLE POWER SETTING

JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES
EXHAUST TEMPERATURE CONTOURS - IDLE POWER
(GE CF6-80C2F ENGINE)

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AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

#### ESTIMATED PROVISIONAL VALUES

<table>
<thead>
<tr>
<th>OCTAVE BAND CENTER FREQUENCY</th>
<th>OCTAVE BAND SPL dB (20 μ PA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45° TO EXHAUST</td>
</tr>
<tr>
<td>63 Hz</td>
<td>110.3</td>
</tr>
<tr>
<td>125 Hz</td>
<td>111.3</td>
</tr>
<tr>
<td>250 Hz</td>
<td>109.3</td>
</tr>
<tr>
<td>500 Hz</td>
<td>104.9</td>
</tr>
<tr>
<td>1000 Hz</td>
<td>98.4</td>
</tr>
<tr>
<td>2000 Hz</td>
<td>92.4</td>
</tr>
<tr>
<td>4000 Hz</td>
<td>96.5</td>
</tr>
<tr>
<td>8000 Hz</td>
<td>92.9</td>
</tr>
</tbody>
</table>

GROUND STATIC
TAKE OFF POWER
100 METERS RADIUS
ISA +10°C AND 70° HR
SEA LEVEL

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AIRPORT AND COMMUNITY NOISE
NOISE DATA (GE CF6-80C2F SERIE ENGINE)

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DANGER AREAS OF THE ENGINES GROUND IDLE
(GE CF6-80C2F ENGINE)
DANGER AREAS OF THE ENGINES TAKE-OFF (GE CF6-80C2F ENGINE)
WARNING
EAR PROTECTION REQUIRED
WITHIN THIS AREA

WARNING
PROLONGER EXPOSURE OF ONE HOUR EVEN WITH EAR PROTECTION CAN CAUSE EAR DAMAGE

<table>
<thead>
<tr>
<th>POWER SETTING</th>
<th>RADIUS X</th>
<th>RADIUS Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUND IDLE</td>
<td>75 Ft (23 m)</td>
<td>100 Ft (30 m)</td>
</tr>
<tr>
<td>BREAK AWAY</td>
<td>90 Ft (27 m)</td>
<td>115 Ft (35 m)</td>
</tr>
<tr>
<td>TAKE-OFF</td>
<td>125 Ft (38 m)</td>
<td>200 Ft (60 m)</td>
</tr>
</tbody>
</table>

DANGER AREAS OF THE ENGINES ACOUSTIC PROTECTION AREAS (GE CF6-80C2F ENGINE)

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7.0 PAVEMENT DATA

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7.2 Landing Gear Footprint
7.3 Maximum Pavement Loads
7.4 LG Loading on Pavement
  7.4.1 LG Loading on Pavement
7.5 Flexible Pavement Requirements U.S. Army
  7.5.1 Flexible Pavement Requirements
7.6 Flexible Pavement Requirements LCN
  7.6.1 Flexible Pavement Requirements LCN
7.7 Rigid Pavement Requirements PCA
  7.7.1 Rigid Pavement Requirements PCA
7.8 Rigid Pavement Requirements LCN
  7.8.1 Radius of Relatives Stiffness – Inches
  7.8.2 Rigid Pavement Requirements LCN
  7.8.3 Radius of Relative Stiffness – Other values
  7.8.4 Radius of Relative Stiffness – Other values
7.9 ACN-PCN Reporting System
  7.9.1 ACN Number Flexible Pavement
  7.9.2 ACN Number Rigid Pavement
PAVEMENT DATA

7.1 General Information

-A300F4-600R Models

1. General Information

A brief description of the pavement charts that follow will help in airport planning.

To aid in the interpolation between the discrete values shown, each airplane configuration is shown with a minimum range of five loads on the main landing gear.

All curves on the charts represent data at a constant specified tire pressure with:

- the airplane loaded to the maximum ramp weight.
- the CG at its maximum permissible aft position.

Pavement requirements for commercial airplanes are derived from the static analysis of loads imposed on the main landing gear struts.

Section 7.2, presents basic data on the landing gear footprint configuration, maximum ramp weights and tire sizes and pressures.

Section 7.3, shows maximum vertical and horizontal pavement loads for certain critical conditions at the tire-ground interfaces.

Section 7.4.1 contains charts to find these loads throughout the stability limits of the airplane at rest on the pavement.

These main landing gear loads are used as the point of entry to the pavement design charts which follow, interpolating load values where necessary.

Section 7.5.1 uses procedures in Instruction Report No. S-77-1 "Procedures for Development of CBR Design Curves", dated June 1977 to show flexible pavement design curves.
The report was prepared by the U.S. Army Corps Engineers Waterways Experiment Station, Soils and Pavement Laboratory, Vicksburg, Mississippi.

Section 7.5.1 & 7.9.1 uses the new load repetition factor according to the ICAO letter Reference AN 4/20.1-EB/07/26.
The line showing 10,000 coverages is used to calculate Aircraft Classification Number (ACN).

2. Flexible Pavement

The procedure that follows is used to develop flexible pavement design curves such as shown in Section 7.5.1.

A. With the scale for pavement thickness at the bottom and the scale for CBR at the top, an arbitrary line is drawn representing 10,000 coverages.

B. Incremental values of the weight on the main landing gear are then plotted.

C. Annual departure line are drawn based on the load lines of the weight on the main landing gear that is shown on the graph.

Section 7.7.1 gives the rigid pavement design curves that have been prepared with the use of the Westergaard Equation. This is in general accordance with the procedures outlined in the Portland Cement Association publications, "Design of Concrete Airport Pavement", 1973 and "Computer Program for Airport Pavement Design", (Program PDILB), 1967 both by Robert G. Packard.

3. Rigid Pavement

The procedure that follows is used to develop rigid pavement design curves such as those shown in Section 7.7.1.

A. With the scale for pavement thickness on the left and the scale for allowable working stress on the right, an arbitrary line load line is drawn. This represents the main landing gear maximum weight to be shown.

B. All values of the subgrade modulus (k values) are then plotted.

C. Additional load lines for the incremental values of weight on the main landing gear are drawn on the basis of the curve for k = 80 MN/m^3 already shown on the graph.

All Load Classification Number (LCN) curves shown in Section 7.6.1 and Section 7.8.2 have been developed from a computer program based on data provided in Internation Civil Aviation Organisation (ICAO) document 7920-AN/865/2, Aerodrome Manual, Part 2, "Aerodrome Physical Characteristics", Second Edition, 1965.
The flexible pavement charts in Section 7.6.1 show LCN against equivalent single wheel load, and equivalent single wheel load against pavement thickness.

The rigid pavement charts in Section 7.8.2 show LCN against equivalent single wheel load, and equivalent single wheel load against radius of relative stiffness.


The ACN/PCN system provides a standardized international airplane/pavement rating system replacing the various S, T, TT, LCN, AUW, ISWL, etc., rating systems used throughout the world.

ACN is the Aircraft Classification Number and PCN is the corresponding Pavement Classification Number.

An aircraft having an ACN equal to or less than the PCN can operate without restriction on the pavement.

Numerically the ACN is two times the derived single wheel load expressed in thousands of kilograms. The derived single wheel load is defined as the load on a single tire inflated to 1.25 Mpa (181 psi) that would have the same pavement requirements as the aircraft. Computationally the ACN/PCN system uses PCA program PDILB for rigid pavements and S-77-1 for flexible pavements to calculate ACN values. The Airport Authority must decide on the method of pavement analysis and the results of their evaluation shown as follows:

<table>
<thead>
<tr>
<th>PCN</th>
<th>PAVEMENT TYPE</th>
<th>SUBGRADE CATEGORY</th>
<th>TIRE PRESSURE CATEGORY</th>
<th>EVALUATION METHOD</th>
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<tbody>
<tr>
<td></td>
<td>R - Rigid</td>
<td>A - High</td>
<td>W - No Limit</td>
<td>T - Technical</td>
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<tr>
<td></td>
<td>F - Flexible</td>
<td>B - Medium</td>
<td>X - To 1.5 Mpa (217 psi)</td>
<td>U - Using Aircraft</td>
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<tr>
<td></td>
<td></td>
<td>C - Low</td>
<td>Y - To 1 Mpa (145 psi)</td>
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<tr>
<td></td>
<td></td>
<td>D - Ultra Low</td>
<td>Z - To 0.5 Mpa (73 psi)</td>
<td></td>
</tr>
</tbody>
</table>

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Section 7.9.1 shows the aircraft ACN values for flexible pavements.

The four subgrade categories are:

A High Strength  CBR 15
B Medium Strength  CBR 10
C Low Strength  CBR 6
D Ultra Low Strength  CBR 3

Section 7.9.2 shows the aircraft ACN for rigid pavements.

The four subgrade categories are:

A High Strength  Subgrade \( k = 150 \text{ MN/m}^2 \) (550 pci)
B Medium Strength  Subgrade \( k = 80 \text{ MN/m}^2 \) (300 pci)
C Low Strength  Subgrade \( k = 40 \text{ MN/m}^2 \) (150 pci)
D Ultra Low Strength  Subgrade \( k = 20 \text{ MN/m}^2 \) (75 pci)
A300F4–600
AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

<p>| | |</p>
<table>
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<th></th>
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<tbody>
<tr>
<td>MAXIMUM RAMP WEIGHT</td>
<td>166 000 kg (365 975 lb)</td>
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<tr>
<td>PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP</td>
<td>See Section 7-4-1 MRW 166 000 kg</td>
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<td>NOSE GEAR TIRE SIZE</td>
<td>40 x 14-16 or 40 x 14 R16</td>
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<tr>
<td>NOSE GEAR TIRE PRESSURE</td>
<td>9.9 bar (144 psi)</td>
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<tr>
<td>WING GEAR TIRE SIZE</td>
<td>49 x 17-20</td>
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<tr>
<td>WING GEAR TIRE PRESSURE</td>
<td>13.4 bar (194 psi)</td>
</tr>
</tbody>
</table>

Landing Gear Footprint
A300F4–600R Models - MRW 166 000 kg

NOTE: DIMENSIONS IN MILLIMETERS (FEET AND INCHES IN BRACKETS).
### MAXIMUM RAMP WEIGHT

168,900 kg (372,350 lb)

### PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP

See Section 7-4-1 MRW 168,900 kg

### NOSE GEAR TIRE SIZE

40 x 14-16 or 40 x 14 R16

### NOSE GEAR TIRE PRESSURE

9.9 bar (144 psi)

### WING GEAR TIRE SIZE

49 x 17-20

### WING GEAR TIRE PRESSURE

13.4 bar (194 psi)

---

**Landing Gear Footprint**

**A300F4-600R Models - MRW 168,900 kg**

**NOTE:** DIMENSIONS IN MILLIMETERS (FEET AND INCHES IN BRACKETS).

- 18,604 mm (61 ft)
- 9,600 mm (31 ft 6 in)
- 625 mm (24.6 in)
- 927 mm (36.5 in)
- 1,397 mm (55 in)
### A300F4–600

**AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING**

<table>
<thead>
<tr>
<th>MAXIMUM RAMP WEIGHT</th>
<th>171 400 kg (377 875 lb)</th>
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</thead>
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<td>PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP</td>
<td>See Section 7-4-1 MRW 171 400 kg</td>
</tr>
<tr>
<td>NOSE GEAR TIRE SIZE</td>
<td>40 x 14 -16 or 40 x 14 R16</td>
</tr>
<tr>
<td>NOSE GEAR TIRE PRESSURE</td>
<td>9.9 bar (144 psi)</td>
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<tr>
<td>WING GEAR TIRE SIZE</td>
<td>49 x 17 -20</td>
</tr>
<tr>
<td>WING GEAR TIRE PRESSURE</td>
<td>13.4 bar (194 psi)</td>
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**Landing Gear Footprint**

**A300F4–600R Models – MRW 171 400 kg**

**NOTE:** DIMENSIONS IN MILLIMETERS (FEET AND INCHES IN BRACKETS).

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### Maximum Pavement Loads

**V (NG)**: Maximum Vertical Nose Gear Ground Load at Most Forward CG

**V (MG)**: Maximum Vertical Main Gear Ground Load at Most Aft CG

**H**: Maximum Horizontal Ground Load from Braking

<table>
<thead>
<tr>
<th>MODEL</th>
<th>MAXIMUM RAMP WEIGHT</th>
<th>STATIC LOAD AT MOST FWD C.G. (@ 10 ft/s² DECELERATION)</th>
<th>STATIC LOAD AT MAX AFT C.G. (@ 10 ft/s² DECELERATION)</th>
<th>STEADY BRAKING AT INSTANTANEOUS BRAKING COEFFICIENT = 0.8</th>
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<tr>
<td></td>
<td>lb</td>
<td>kg</td>
<td>lb</td>
<td>kg</td>
</tr>
<tr>
<td>F4-600R</td>
<td>365 975</td>
<td>166 000</td>
<td>18 910</td>
<td>30 350</td>
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<td></td>
<td></td>
<td></td>
<td>174 500</td>
<td>79 150</td>
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<td></td>
<td>56 875</td>
<td>25 800</td>
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<td></td>
<td></td>
<td></td>
<td>139 600</td>
<td>63 320</td>
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<tr>
<td>F4-600R</td>
<td>372 350</td>
<td>168 900</td>
<td>18 800</td>
<td>30 170</td>
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<td>177 550</td>
<td>80 530</td>
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<td>142 025</td>
<td>64 420</td>
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<tr>
<td>F4-600R</td>
<td>377 875</td>
<td>171 400</td>
<td>18 800</td>
<td>30 170</td>
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<td>58 725</td>
<td>26 640</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>144 125</td>
<td>65 380</td>
</tr>
</tbody>
</table>

**V (NG)**: Maximum Vertical Nose Gear Ground Load at Most Forward CG

**V (MG)**: Maximum Vertical Main Gear Ground Load at Most Aft CG

**H**: Maximum Horizontal Ground Load from Braking

1. MRW = 166 000 kg  
   FWD CG = 18% MAC AT A/C WEIGHT = 166 000 kg
   MRW = 168 900 kg  
   FWD CG = 18% MAC AT A/C WEIGHT = 168 000 kg
   MRW = 171 400 kg  
   FWD CG = 18% MAC AT A/C WEIGHT = 165 000 kg

2. MRW = 166 000 kg  
   AFT CG = 37% MAC AT A/C WEIGHT = 166 000 kg
   MRW = 168 900 kg  
   AFT CG = 37% MAC AT A/C WEIGHT = 168 000 kg
   MRW = 171 400 kg  
   AFT CG = 37% MAC AT A/C WEIGHT = 171 400 kg

**NOTE**: All loads calculated using airplane maximum ramp weight.
7.4 Landing Gear Loading on Pavement
-A300F4-600R Models

In the typical example shown in Section 7.4.1 with MRW 166 000 kg.

The Gross Aircraft Weight is 150 000 kg (330 700 lb) and the percentage of weight on the Main Gear is 95.36 %.

For these conditions the total weight on the Main Gear Group is 143 040 kg (315 350 lb).
Landing Gear Loading on Pavement
A300F4-600R Models - MRW 166 000 kg

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Landing Gear Loading on Pavement
A300F4-600R Models – MRW 168 900 kg
Landing Gear Loading on Pavement
A300F4-600R Models - MRW 171 400 kg
7.5 Flexible Pavement Requirements - US Army Corps of Engineers Design Method

To find a Flexible Pavement Thickness, the Subgrade Strength (CBR), the Annual Departure Level and the weight on one Main Landing must be known.

-A300F4-600R Models

In the typical example shown in Section 7.5.1 with MRW 166 000 kg for:

- a CBR value of 3
- an Annual Departure level of 3000
- and the load on one Wing Landing Gear of 50 000 kg (110 225 lb)
- the required Flexible Pavement Thickness is 40 cm (16 inches).

The line showing 10 000 Coverages is used to calculate Aircraft Classification Number (ACN).
Flexible Pavement Requirements
A300F4–600R Models – MRW 166 000 kg

Flexible Pavement Thickness
49 x 17 - 20 TIRES
TIRE PRESSURE CONSTANT AT 13.4 BAR (194 PSI)
Flexible Pavement Requirements

A300F4-600R Models - MRW 168 900 kg

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Flexible Pavement Requirements

A300F4–600R Models – MRW 171 400 kg

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7.6 Flexible Pavement Requirements - LCN Conversion - A300F4-600R Models

To find the airplane weight that a Flexible Pavement can support, the LCN of the pavement and the thickness (h) must be known.

In the example shown in Section 7.6.1 with MRW 166 000 kg.

The thickness (h) is shown at 762 mm (30 in.) with an LCN of 98.

For these conditions the weight on one Main Landing Gear is 70 000 kg (154 325 lb).
Flexible Pavement Requirements LCN
A300F4-600R Models - MRW 166 000 kg
Flexible Pavement Requirements LCN
A300F4-600R Models - MRW 168 900 kg
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Flexible Pavement Requirements LCN
A300F4-600R Models - MRW 171 400 kg
7.7 Rigid Pavement Requirements – Portland Cement Association Design Method
- A300F4-600R Models

To determine a Rigid Pavement Thickness, the Subgrade Modulus (k), the allowable working stress and the weight on one Main Landing Gear must be known.

In the typical example shown in Section 7.7.1 with MRW 166 000 kg for:

- a k value of 80 MN/m$^3$ ($K = 300$ lbF/in$^3$)
- an allowable working stress of 28.12 kg/cm$^2$ ($400$ lb/in$^2$)
- the Load on one Wing Landing Gear of 60 000 kg ($132 275$ lb)
the required Rigid Pavement Thickness is 28 cm (11 inches).
Rigid Pavement Requirements
A300F4–600R Models – MRW 166 000 kg

NOTE: THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m² BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K.

REFERENCE: "DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN - PROGRAM POILB PORTLAND CEMENT ASSOCIATION."
Rigid Pavement Requirements
A300F4–600R Models - MRW 168 900 kg

NOTE: THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m² BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K.

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN - PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.
Rigid Pavement Requirements
A300F4-600R Models - MRW 171 400 kg

NOTE: THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m² BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K.

REFERENCE: "DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN - PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.
7.8 Rigid Pavement Requirements – LCN Conversion

- A300F4–600R Models

To determine the airplane weight that a Rigid Pavement can support, the LCN of the pavement and the Radius of Relative Stiffness (L) must be known.

In the typical example shown in Section 7.8.2 with MRW 166 000 kg.

The Radius of Relative Stiffness is shown at 1270 mm (50 in.) with an LCN of 93.

For these conditions the weight on one Main Landing Gear is 70 000 kg (154 325 lb).
### RADIUS OF RELATIVE STIFFNESS (L)

VALUES IN INCHES

\[
L = \sqrt[4]{\frac{E d^3}{12(1-\mu^2)k}} = 24.1652 \sqrt[4]{\frac{d^3}{k}}
\]

WHERE

- \( E \) = Young’s Modulus = 4 x 10^6 psi
- \( k \) = Subgrade Modulus, lb/in^3
- \( d \) = Rigid Pavement Thickness, inches
- \( \mu \) = Poisson’s Ratio = 0.15

<table>
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<tr>
<th>( d )</th>
<th>( k=75 )</th>
<th>( k=100 )</th>
<th>( k=150 )</th>
<th>( k=200 )</th>
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Rigid Pavement Requirements LCN
A300F4-600R Models – MRW 171 400 kg
7.8.3 Radius of Relative Stiffness (Other values of E and \( \mu \))

- A300F4–600R Models

The table "Radius of Relative Stiffness" of Chapter 7.8.1 presents \( L \) values based on Young's Modulus (E) of 4 000 000 psi and Poisson's Ratio (\( \mu \)) of 0.15.

To find \( L \) values based on other values of E and \( \mu \),
See Section 7.8.4 Figure "Radius of Relative Stiffness".

For example, to find an \( L \) value based on an E of 3 000 000 psi, the "E" factor of 0.931 is multiplied by the \( L \) value found in the table "Radius of Relative Stiffness" of Section 7.8.1 "Radius of Relative Stiffness".

The effect of variations of \( \mu \) on the \( L \) value is treated in a similar manner.
NOTE: BOTH CURVES ON THIS PAGE ARE USED TO ADJUST THE $L$ VALUES OF TABLE 7-8-1 "RADIUS OF RELATIVE STIFFNESS" IN SECTION 7-8-1.
7.9 ACN/PCN Reporting System
- A300F4-600R Models

To find the ACN of an aircraft on flexible or rigid pavement, the aircraft gross weight and the subgrade strength must be known.

In the example shown in Section 7.9.1 with MRW 166 000 kg.

For an Aircraft Gross Weight of 125 000 kg (275 575 lb) and low subgrade strength (code B), the ACN for the flexible pavement is 35.

In the example shown in Section 7.9.2 with MRW 166 000 kg.

For an Aircraft Gross Weight 125 000 kg (275 575 lb) and low subgrade strength (code B), the ACN for the rigid pavement is 38.

NOTE: An aircraft with an ACN equal to or less than the reported PCN can operate on that pavement, subject to any limitation on the tire pressure.

A300F4–600
AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

Aircraft Classification Number – Flexible Pavement
A300F4–600R Models – MRW 171 400 kg

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Aircraft Classification Number – Rigid Pavement
A300F4-600R Models – MRW 166 000 kg
A300F4–600
AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

Aircraft Classification Number – Rigid Pavement
A300F4–600R Models – MRW 171 400 kg

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8.0 DERIVATIVE AIRPLANES

8.1 Possible Future A300F4-600 Derivative Airplane
8.1 Possible Future A300F4–600 Derivative Airplane

R No derivative versions of the A300F4–600 are currently planned.
9.0 SCALED DRAWINGS

R 9.1 A300F4-600 Scaled Drawing 1 in. = 500 ft.
R 9.2 A300F4-600 Scaled Drawing 1 cm. = 500 cm.
9.1 Scaled Drawing - 1 in. = 500 ft.
A300F4-600
AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

9.1 Scaled Drawing - 1 in. = 500 ft.

NOTE: WHEN PRINTING THIS DRAWING, SURE TO ADJUST FOR PROPER SCALING

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AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

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Page 1

9.2 Scaled Drawing - 1 cm. = 500 cm.

NOTE: WHEN PRINTING THIS DRAWING, SURE TO ADJUST FOR PROPER SCALING
9.2 Scaled Drawing — 1 cm. = 500 cm.

NOTE: WHEN PRINTING THIS DRAWING, SURE TO ADJUST FOR PROPER SCALING