European Aviation Safety Agency

EASA

TYPE CERTIFICATE DATA SHEET

No. EASA.IM.A.212

for
LEARJET Model 60

Type Certificate Holder:
Learjet Inc.

One Learjet Way
Wichita, Kansas 67209-2942
USA

Airworthiness Category: Large Aeroplanes

For model: M60

Intentionally left blank

TABLE OF CONTENTS

SECTION 1: M60 SERIES

I. General

1. Type/ Model/ Variant Learjet Model 60

2. Performance Class A

3. Certifying Authority FAA

4. Manufacturer Learjet Inc.
One Learjet Way
Wichita, Kansas 67209-2942

5. State of Design Airworthiness Authority Certification Application Date

Unknown

6. EASA Validation Application Date

Learjet Model 60 (See NOTE 1.)

7. State of Design Airworthiness Authority Type Certification Date

Learjet Model 60 15 January 1993

8. EASA Type Validation Date

Learjet Model 60 (See NOTE 1.)
(LJ60XR Configuration 7 April 2007)

II. Certification Basis

1. EASA Certification Basis

Model 60: FAR 25 effective February 1, 1965, as amended by 25-2 and 25-4. In addition, FAR 25 effective February 1, 1965, as amended by Amendments 25-1 through 25-73, except as stated. Sections 25.305(d), 25.562, 25.631, 25.672, 25.773(d), 25.812, and 25.832 are not applicable. The following sections are effective at the amendment level noted: Sections 25.109, 25.365, 25.671, 25.695, 25.775, 25.783, 25.801, 25.805, 25.979, 25.1309, 25.1401 and 25.1435 effective February 1, 1965; Sections 25.807 and 25.855 of Amendment 25-15; Section 25.1529 of Amendment 25-21; Sections 25.561, 25.571, 25.625, and 25.721 of Amendment 25-23; Sections 25.785, 25.853 and 25.1413 of Amendment 25-51; Section 25.1307 of Amendment 25-54; FAR Part 34 effective September 19, 1990; FAR Part 36 effective December 1, 1969, as amended by Amendments 36-1 through 36-18. For the Electronic Flight Instrument System (EFIS) with associated components, and the fully modulated spoiler system, FAR 25.1309 as amended through Amendment 25-41 is applicable in addition to the above certification basis.

Ditching: Compliance with structural provisions of FAR 25.801(b) through (e) and 25.807(d) has not been shown for the Model 60.

Ice Protection: FAR 25.1419 when ice protection system is installed per ECR 2952.

Model 60 (LJ60XR Configuration): In addition to the existing Model 60 certification basis, the following regulations apply: FAR 25.811 Amdt. 25-79; 25.812; Amdt. 25-88; 25.856; Amdt. 25-111; 25.1309 Amdt. 25-41 for Electronic Flight Instrument Systems, Flight Guidance, Passenger Cabin Systems and Equipment; 25.1529 Amdt. 25-54.

Model 60 (including LJ60XR Configuration): In addition to the existing Model 60 certification basis, the following regulations apply: 14 CFR 25.1309 Amdt. 25-41 and 14 CFR 25.1529 Amdt. 25-54 for the Tire Pressure Measuring System.

Model 60 (including LJ60XR Configuration): In addition to the existing Model 60 certification basis, the following regulation applies: 14 CFR 25.1529 Amdt. 25-54 for all changes where application is made after 1/1/2011.

The LJ60XR Configuration is also in compliance with the following Certification Review Items.

CRI F-01	Liquid Crystal Displays
CRI F-02	Systems for Specified Operational Use
CRI F-03	Electronic Standby Instrument System
CRI F-04	Complex Electronic Hardware
CRI F-06	HIRF [Note: Also included below in Section 3 as Special Condition]
CRI F-07	Honeywell EGPWS Mark V with RAAS (optional system)
CRI F-08	WLAN Activation for SATCOM System

2. Special Conditions

FAA Special Condition 25-99-CE-14 dated March 10, 1981, (High Operation Altitude 51 K) (see NOTE 3),
FAA Special Condition 25-ANM-46 dated July 17, 1991 (Lightning Protection and High Intensity Radiated Fields).
CRI F-06 HIRF Protection (LJ60XR only)

3. Equivalent Safety Findings

FAR 25.813(e)	Model 60
FAR 25.841(b)(6)	Model 60
FAR 25.1321(c)	Model 60 (LJ60XR only)
FAR 25.1397(c)	Model 60
FAR 25.1549(a)(b)(c)	Model 60 (LJ60XR only)

4. Environmental Standards

Noise Standards:

The noise levels are in compliance with the FAA requirements of 14 CFR 36, Stage 3, which are essentially equivalent to the requirements outlined in ICAO Annex 16, Chapter 3.

The PW305A engine is certified for emissions purposes per Transport Canada AWM 516 and FAR Part 34. Both of these regulatory requirements are consistent with the requirements of Annex 16 to the Convention on International Civil Aviation, Volume II entitled “Environmental Protection – Aircraft Engine Emissions”, published by ICAO.

5. Extended Range Operations

Not applicable.

III. Technical Characteristics and Operational Limitations

The Learjet Model 60 is a twin, aft mounted, turbo-fan aeroplane with a low swept-wing (with winglets) and T-tail.

1. Type Design Definition

1.1 Learjet Model 60 (S/N 60-001 and on) Powered by Pratt & Whitney Canada Engines (see NOTE 1)

This M60 is defined by ECR 2940 or ECR 2940 as modified by any of the following:

ECR 3840	Austria
ECR 4034/4149	Germany
ECR 4312	Ireland
ECR 4221	Italy

1.2 Learjet 60XR Configuration (S/N 60-319 and on), (see NOTE 2)

The LJ60XR avionics package is defined by the following Modsums:
060T000001
060T000256
060T000415
060T000451

The LJ60XR interior incorporates one of the following approved seating configurations: (see NOTE 7)

060T000076	Floor Plan A
060T001296	Floor Plan A (60-359 and on)
060T000077	Floor Plan B
060T001297	Floor Plan B (60-359 and on)
060T000078	Floor Plan C
060T001298	Floor Plan C (60-359 and on)
060T000079	Floor Plan D
060T001299	Floor Plan D (60-359 and on)
060T001145	Floor Plan F
060T002074	Floor Plan F1
060T001619	Floor Plan H

2. Engines

Two Pratt & Whitney Canada PW305A (P/N 31B4067-01)
Two P&W Canada PW305A (P/N 31B4067-02), (see NOTE 4)
Two P&W Canada PW305A (P/N 31B4067-04), (see NOTE 5)

2.1 Engine Limits

Pratt & Whitney Canada PW305A

Thrust ratings (lb.)
Takeoff (standard day), static 4600

Sea level (5 min.)
Maximum continuous, static 4600
Sea level
Maximum permissible engine rotor operating speeds

Low pressure (r.p.m.)	10,820 (102% N1)
High pressure (r.p.m.)	27,469 (102% N2)

102% to 102.5% N1 r.p.m.
Limited to 20 seconds
102% to 102.5% N2 r.p.m.
Limited to 20 seconds
Maximum permissible interstage turbine gas temperature:

Takeoff	785°C
Maximum continuous	785°C
Maximum transient (20 sec)	825°C
Maximum transient for starting	950°C

3. Fuel

The following fuel types are approved by EASA:

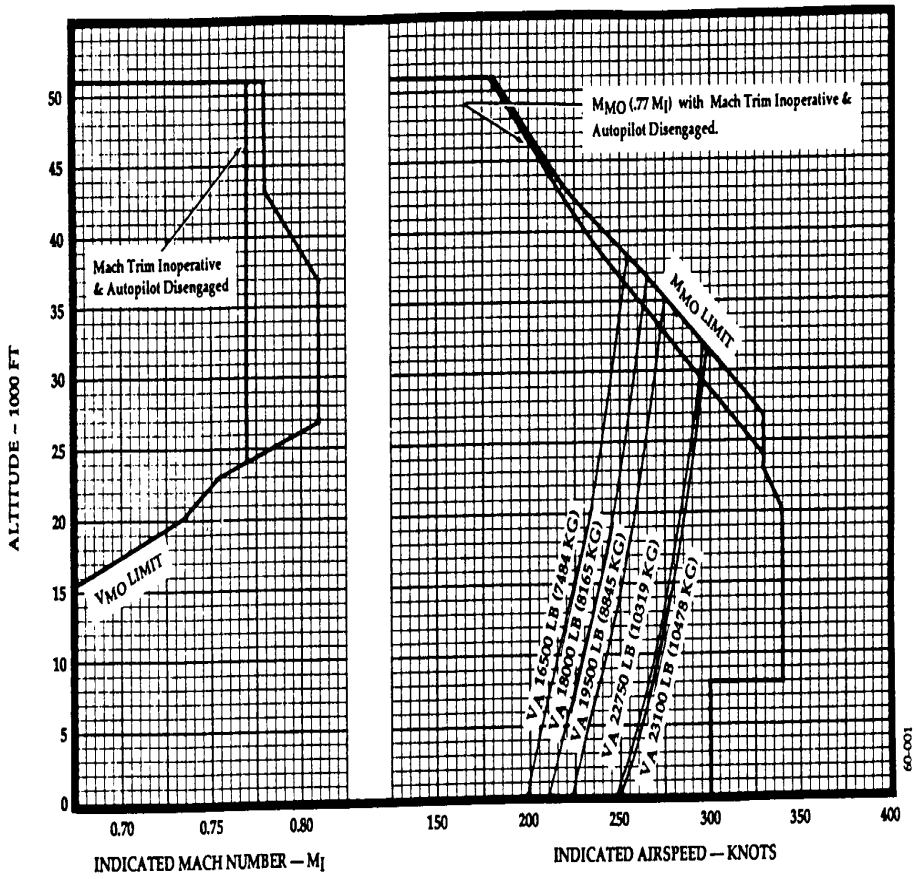
- Commercial JP-5, JP-8, Jet A, Jet A-1 type fuels, conforming to Pratt & Whitney Canada Specification CPW204 and Service Bulletin No. 24004 and later revisions.

- People's Republic of China
  GB 6537 (Jet A-1) RP-3, GB 6537 (Jet A-1) No. 3, according to Modsum 060T002775.

- Russian/Commonwealth of Independent States
  GOST 10227 (Kerosene) RT, GOST 10227 (Kerosene) TS-1, According to Modsum 060T002775.

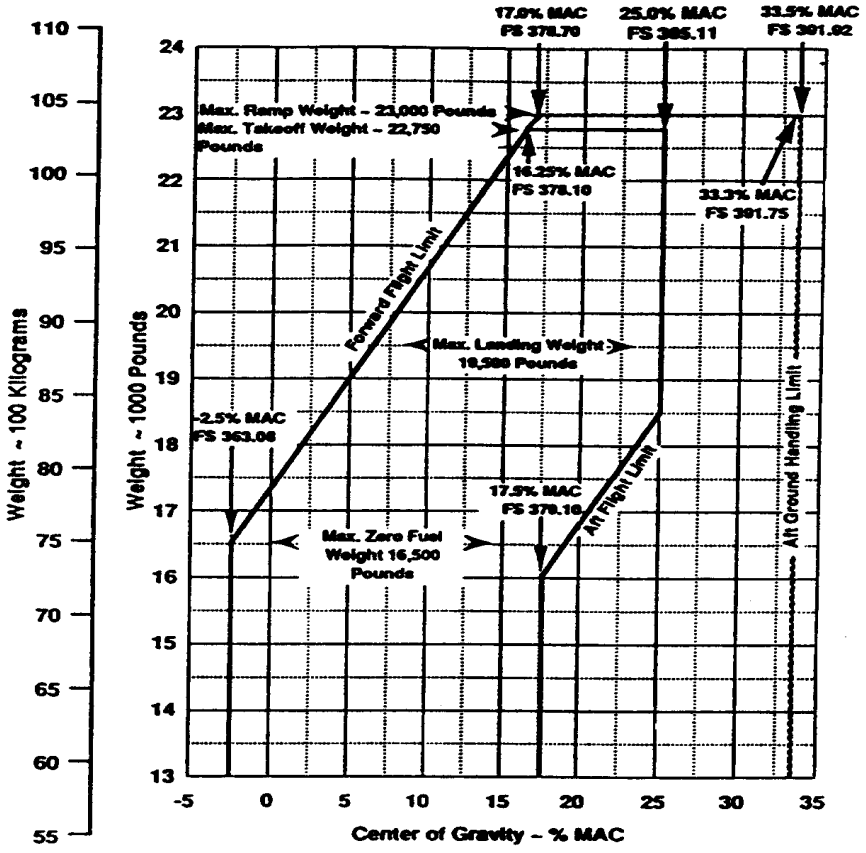
See Airplane Flight Manual for fuel procedures.

4. Airspeed Limits (IAS)



V_{FE}	Flaps 8°	250 KIAS
	Flaps 20°	200 KIAS
	Flaps 40°	165 KIAS
V_{LO}	(Landing gear operating)	200KIAS
V_{LE}	(Landing gear extended)	260 KIAS
V_{SB}	(Spoilers extended)	Any speed below V_{MO} or M_{MO} except extension is prohibited in flight with flaps extended or with autopilot engaged.
V_{MCA}	8° flap	120 KIAS
	20° flap	110 KIAS
V_{MCG}	(8° and 20° flap)	
	Rudder Boost Off	116 KIAS
	Rudder Boost On	95 KIAS

5. Center of Gravity Range (Landing Gear Extended)



Forward Flight Limits -- F.S. 363.08 (-2.5% MAC) for all weights up to and including 16,500 pounds (7484 kg) and tapers to F.S. 378.10 (16.25% MAC) at 22,750 pounds (10,319 kg).

Aft Flight Limit -- F.S. 379.10 (17.5% MAC) for all weights up to and including 16,000 pounds (7258 kg), tapers to F.S. 385.11 (25.0% MAC) at 18,500 pounds (8392 kg), remains at F.S. 385.11 (25.0% MAC) up to and including 22,750 pounds (10,319 kg).

Ground Handling Limit -- The forward limit is the same as the forward flight limit up to and including 22,750 pounds (10,319 kg) and tapers to F.S. 378.70 (17.0% MAC) at 23,000 pounds (10,433 kg). The aft limit is F.S. 391.92 (33.5% MAC) for all weights up to and including 22,987 pounds (10,427 kg) and tapers to F.S. 391.75 (33.3% MAC) at 23,000 pounds (10,433 kg).

5.1 Optional Center of Gravity Range

Model 60 is eligible for Expanded C.G. Envelope and optional Takeoff Gross Weight of 23,500 Lbs. as defined by Learjet Inc. ECR 3845.

6. Maximum Weights

	Standard
Ramp	23,000 lbs.
Takeoff	22,750 lbs.
Landing	19,500 lbs.
Zero fuel	16,500 lbs.

The Model 60 is eligible for optional Takeoff Gross Weight of 23,100 lbs. as defined by Learjet Drawing No. 6088001. The Expanded C.G. (ECR 3845), also includes an increased Ramp and Takeoff Gross Weight.

Model 60 is eligible for Expanded C.G. Envelope and optional Takeoff Gross Weight of 23,500 Lbs. as defined by Learjet Inc. ECR 3845.

7. Fuel quantity (lb.)

	Usable	Arm
Two wing tanks	2898	391.7
Fuselage tank	5012	427.1
See NOTE 6(a) for data on unusable fuel		

8. Minimum Flight Crew

For all flights, 2 persons (pilot and copilot)

9. Maximum Seating Capacity

Maximum number of occupants: 10 (2 crew, 8 passengers), (see NOTE 7).

10. Cargo Compartment Loading

	Max Baggage	Arm
Cabin	260 lbs.	367.0
Tail	300 lbs.	515.0

11. Other Limitations

Refer to approved Airplane Flight Manual for limitations.

12. Auxiliary Power Unit

One Sundstrand (Gemini) T20G-10C3/-10C3A APU installed by STC ST00265NY – PATS INC.

13. Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.

Learjet Service Manuals or Maintenance Manuals for all series of Model 60 include structural component replacement lives from FAA Approved Learjet Report 60-S47.

14. All Weather Capabilities

Category II

15. Wheels and Tyres

Tyre	Size (in.)
Single (Dual Chine) Nose Wheel and Tyre	18 x 4.4 - 10 ply
Dual Main Wheels and Tyres (L/H & R/H)	17.5 x 5.75 - 14 ply

16. Maintenance Instructions and Airworthiness Limitations

Refer to Replacement Schedule MM-103 Chapter 5 for Airworthiness Limitation Items.

IV. Operating and Service Instructions

	Model 60	LJ60XR Configuration
Airplane Flight Manual, Document No.	*FM-123	*FM-133A
Maintenance Manual, Document No.	*MM-103	*MM-103
Service Letters and Service Bulletins:	Infoservice Newsletter Model 60 Service Bulletins	

* or later approved revision.

V. Notes

NOTE 1. In accordance with Commission Regulation (EC) No 1702/2003, the Model 60 was accepted by EASA under the grand-fathering provision for products type certificated in an EU Member State prior to 28 September 2003.

NOTE 2. The LJ60XR configuration of the Model 60 aircraft is comprised of an Upgraded avionics package and upgraded interior. The Rockwell Collins Pro Line 21 avionics suite is incorporated into the baseline Model 60 along with four new optional floor plans. The Pro Line 21 display system embodies the incorporation of four 8” x 10” Liquid Crystal Displays (LCDs) and includes other changes to the aircraft to support the interface with these new displays.

NOTE 3. The airplane models listed below are the subjects of Special Condition related to operation at high altitude. This special condition includes pressurization system requirements, as well as damage tolerance requirements on the pressure vessel. Therefore, any changes to the pressurization system or modifications or repairs to the pressure vessel must be approved in accordance with the requirements defined in the special condition.

The damage tolerance requirements in the special condition are specified in terms of cabin altitude time history, which is a function of the cabin leak rate. For the Model 60 the specified cabin altitude time history requirement can be met with a pressure vessel opening of 1.2 sq. in (see table below), (assuming an emergency descent). The determination of an equivalent crack length will depend upon the particular location of the crack, the pressure vessel configuration in that location, and the direction of the crack, etc. The approval of modifications and/or repairs must take into account the requirements of the special condition and how they apply to the particular location and configuration being modified or repaired. The resulting inspection program must also consider other applicable structural criteria.

Model	High Altitude Special Condition	Pressure Vessel Opening (sq. in.)
60	25-99-CE-14 Par. D.1. (b)(1) & D.1.(b)(2)	1.2

NOTE 4. These engines are eligible at Serial Number -026 through -065 as defined by Learjet Inc. ECRs 3504 and 3719; Serial Number -066 through –128 as defined by Learjet Inc. ECR 3926; Serial Number -002 through -025 incorporating Learjet SB 60-78-1.

NOTE 5. These engines are eligible at aircraft serial number 60-129 and on as defined by Learjet Inc. ECR 4126. Aircraft serial numbers 60-002 through 60-128 are eligible when both EECs are replaced per Learjet Inc. Service Bulletin 60-76-2.

NOTE 6. (a) Current weight and balance report including list of equipment included in the certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification. The empty weight and corresponding center of gravity locations must include:

Unusable fuel	32 lb.
(based on 6.7 lb.	At
per gal.)	382.6

(b) The airplane must be so loaded that the C.G. is within the specified limits at all times.

NOTE 7. Ref. Learjet Report No. ER-199, ER-210, ER-211, ER-212, ER-214, ER-239 and ER-250 for approved seating configurations.

LJ60XR Configuration:
S/N (60-319 and on): Ref. Learjet Report No. 60-D1944, 60-D2067, and 60-D2142 for approved seating configurations.

SECTION II: ADMINISTRATIVE

I. Acronyms and Abbreviations

none

II. Type Certificate Holder Record

Learjet Inc.
One Learjet Way
Wichita, Kansas 67209-2942
USA

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	24/09/2007	Initial Issue of EASA TCDS	N/A*
Issue 02	27/05/2011	**1.II.1:** Addition to Certification Basis Model 60: 14 CFR 25.1309 Amdt. 25-41, 14 CFR 25.1529 Amdt. 25-54 **1.II.1:** CRI F-08 SATCOM WLAN added (LJ60XR) **1.III.1.2:** Changes to Type Design Definition LJ60XR interior **1.IV.** Maintenance Manual Document Number corrected for LJ60XR **Note 6:** deleted **Note 7** (former 8): Reports for approved seating configurations added.	N/A*
Issue 03	30/10/2012	Two fuel types added under Para 3.	N/A*

* formal EASA Type Certificate pending

-END-