

United States Of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate

Number SA8011NM

This Certificate issued to Orbital Sciences Corporation
17143 Flight Systems Drive
Mojave, California 93501

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 25 of the Federal Aviation Regulations.*

*See equivalent Safety Finding dated March 24, 1998 to 14 CFR § 25.1303(b)(1) and (c)(1) regarding the maximum airspeed pointer (V_{MO}) and overspeed warning system.

Original Product Type Certificate Number: A23WE

Make: Lockheed

Model: L1011-1-385-1-15

Description of Type Design Change: Modification to include both provisions only, or for carriage and launch of the Pegasus Satellite Insertion Vehicle(s) (SIV) in accordance with FAA approved Orbital Sciences Corporation Document Number L70001, revision C, dated September 30, 1998 or later FAA approved revision.

Limitations and Conditions: This installation defines both provisions only, or for carriage and launch of the Pegasus SIV and should not be incorporated in any aircraft unless it is determined that the interrelationship between this installation and any previously approved configuration will not introduce any adverse effect upon the airworthiness of the aircraft. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission. (See Continuation Sheets 3, 4, 5, 6, and 7 for applicable operating limitations).

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: May 22, 1992

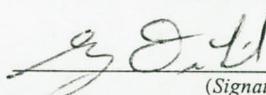
Date reissued: June 22, 1995; September 29, 2000

Date of issuance: August 17, 1994

Date amended: March 24, 1995; October 8, 1998;
September 29, 2000; March 27, 2008; November 19,
2010



By direction of the Administrator


(Signature)

Manager, Airframe Branch
Los Angeles Aircraft Certification Office

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

Supplemental Type Certificate

(Continuation Sheet)

Number SA8011NM

Date of Issuance: August 17, 1994

Date Amended: March 24, 1995, October 8, 1998, September 29, 2000, March 27, 2008

Date Reissued: June 22, 1995, September 29, 2000, November 19, 2010

Limitations and Conditions Continued:

Part 1

Provisions only for carriage and launch of Pegasus SIV: Notes 1, 2, 4, 6 and 7 apply for this configuration.

General

This airplane configuration is approved for transport category operations, provisions only, for carriage and launch of the Pegasus SIV when configured in accordance with FAA Approved "Item 1. Provisions Only" configuration, described in Orbital Sciences Corporation Document Number L70001, Revision C dated September 30, 1998, or later FAA approved revision.

FAA Approved Flight Manual Supplement No. MA1 dated August 17, 1994, or later FAA Approved revisions, to basic Lockheed L-1011-385-1-15 LR25925 Flight Manual is required as a part of this approval for airplanes modified in accordance with FAA approved "Item 1. Provisions Only" configuration, described in FAA approved Orbital Sciences Corporation Document Number L70001, Revision C dated September 30, 1998, or later FAA approved revision.

Supplement No. MA1 contains Limitations, Procedures and Performance information required to operate the L-1011-385-1-15 with provisions only, that is when the Pegasus SIV is not attached and the aircraft is modified in accordance with FAA Approved "Item 1. Provisions Only" configuration described in FAA approved Orbital Sciences Corporation Document Number L70001, Revision C dated September 30, 1998, or later FAA approved revision.

OPERATING LIMITATIONS

Operating Limitations are unchanged from the basic LR25925 Flight Manual except as noted below.

Standard Category Operations:

MAXIMUM WEIGHTS

Taxi	468,000 pounds
Brake Release	466,000 pounds
Landing	368,000 pounds
MZFW	300,000 pounds

Part 2

Carriage and Launch of Pegasus XL SIV: Notes 1, 3, 4, 6 and 7 apply for this configuration.

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Date Amended: March 24, 1995, October 8, 1998, September 29, 2000, March 27, 2008

Date Reissued: June 22, 1995, September 29, 2000, November 19, 2010

Limitations and Conditions Continued

General

This airplane configuration is approved for restricted category operations, for carriage and launch of the Pegasus XL SIV when configured in accordance within FAA approved "Item 2. Carriage and Launch Pegasus XL rocket", described in FAA approved Orbital Sciences Corporation Document Number L70001, Revision C dated September 30, 1998, or later FAA approved revision.

FAA Approved Flight Manual Supplement No. MA2 dated December 6, 1994, or later FAA Approved revision, to basic Lockheed L-1011-385-1-15 LR25925 Flight Manual is required as a part of this approval for airplanes configured in accordance with FAA approved "Item 2. Carriage and Launch of the Pegasus XL rocket", described in FAA approved Orbital Sciences Corporation Document Number L70001, Revision C dated September 30, 1998, or later FAA approved revision.

Supplement No. MA2 contains Limitations, Procedures and Performance information required to operate the L-1011-385-1-15, for carriage and launch, that is when the Pegasus XL SIV is attached and the aircraft is configured in accordance with FAA approved "Item 2. Carriage and Launch Pegasus XL rocket", described in FAA approved Orbital Sciences Corporation Document Number L70001, Revision C dated September 30, 1998, or later FAA approved revision.

OPERATING LIMITATIONS

Operating Limitations are unchanged from the basic LR25925 Flight Manual except as noted below.

Restricted Category Operations:

MAXIMUM WEIGHTS

Taxi	468,000 pounds
Brake Release	466,000 pounds
Landing	368,000 pounds
MZFW	300,000 pounds (Note: When in launch or captive carry configuration the maximum zero fuel weight must be reduced by the weight of any fuel in tanks 1A and 3A whenever tanks 1 and 3 are not full.)

Powerplant Limitations

Unchanged from basic Airplane Flight Manual

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Date Reissued: June 22, 1995, September 29, 2000, November 19, 2010

Limitations and Conditions Continued

Operation of the APU is prohibited except when the airplane is stationary.

Performance Limitations

For all takeoff and landings:

Maximum permissible wind speed	30 knots
Maximum crosswind component	20 knots
Maximum tailwind component	10 knots

Autopilot/Flight Director

Airfield approach mode is limited to Category 1 coupled approach and the autopilot and autothrottle must be disengaged at 300 feet above airfield threshold altitude.

Part 3

Carriage and Launch of Pegasus Hybrid: Notes 1, 3, 4, 6, and 7 apply for this configuration.

General

This airplane configuration is approved for restricted category operations, for carriage and launch of the Pegasus Hybrid SIV when configured in accordance within FAA approved "Item 3. Carriage and Launch of the Hybrid Pegasus rocket", described in Orbital Sciences Corporation Document Number L70001, Revision C dated September 30, 1998, or later FAA approved revision.

FAA Approved Flight Manual Supplement No. MA2, Revision 3, dated August 8, 1998, or later FAA Approved revisions, to basic Lockheed L-1011-385-1-15 LR25925 Flight Manual is required as a part of this approval for airplanes configured in accordance with FAA approved "Item 3. Carriage and Launch of the Hybrid Pegasus rocket", described in FAA approved Orbital Sciences Corporation Document Number L70001, Revision C dated September 30, 1998, or later FAA approved revision.

Supplement No. MA2, Revision 3, dated August 8, 1998, contains limitations, Procedures and Performance information required to operate the L-1011-385-1-15, for carriage and launch, that is when the Pegasus Hybrid SIV is attached and the aircraft is configured in accordance within FAA approved Item 3. Carriage and Launch of the Hybrid Pegasus rocket", described in FAA approved Orbital Sciences Corporation Document Number L70001, Revision C dated

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Limitations and Conditions Continued

September 30, 1998, or later FAA approved revision.

OPERATING LIMITATIONS

Operating Limitations are unchanged from the basic LR25925 Flight Manual except as noted below.

Restricted Category Operations:

MAXIMUM WEIGHTS

Taxi	468,000 pounds
Brake Release	466,000 pounds
Landing	368,000 pounds
MZFW	300,000 pounds

Powerplant Limitations

Unchanged from basic Airplane Flight Manual

Operation of the APU is prohibited except when the airplane is stationary.

Performance Limitations

For all takeoff and landings:

Maximum permissible wind speed	30 knots
Maximum crosswind component	20 knots
Maximum tailwind component	10 knots

Autopilot/Flight Director

Airfield approach mode is limited to Category 1 coupled approach and the autopilot and autothrottle must be disengaged at 300 feet above airfield threshold altitude.

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Limitations and Conditions (Continued):

Other Operating Limitations:

Flight within 10NM of areas of thunderstorms activity or areas likely to result in sleet, hail, snow, or any form of electrical discharge is prohibited.

Flight into known areas of icing or severe turbulence is prohibited.

Notes: (applicable to Parts 1, 2, and 3 as indicated above)

- 1) Carriage of personnel is restricted to a maximum of five persons in the cockpit, a maximum of two persons at the Launch Panel Operators (LPO) console and a maximum of twelve persons occupying the six double seats in the main cabin.
- 2) The nitrogen installation is limited to a maximum of 30 nitrogen cylinders. The maximum stored gas pressure must not exceed 1600 psi in any cylinder. Operation of the nitrogen system is prohibited.
- 3) Operation of the nitrogen installation is limited to a maximum of 30 nitrogen cylinders. The maximum stored gas pressure must not exceed 5000 psi in any cylinder.
- 4) This modification has been determined/demonstrated not to increase the noise level and is not considered an "acoustical change" as defined in Paragraph 21.93(b), Amendment 21-75 of the Federal Aviation Regulations.
- 5) An amendment to the Lockheed L-1 011 SID document LR92ER0060 must be FAA approved within 2000 operating hours, from the August 17, 1994 issue date of this STC, for continued operation of the L-1 011-385-1-15.
- 6) Applicable Serial Number(s) of aircraft for Provisions Only, Pegasus XL, and Pegasus Hybrid Modifications Include: 193E-1067.
- 7) 14 CFR part 26 regulations:
Based on 14 CFR §§ 21.115 and 21.101 and FAA Order 8110.48, the certification basis for the L1011-1-385-1-15 is as shown in TCDS A23WE for parts changed or affected by the change. Based on 14 CFR § 21.101(g), applicable provisions of 14 CFR part 26 are included in the certification basis. For any future 14 CFR part 26 amendments, the holder of this STC must demonstrate compliance with the applicable sections. As of the issuance date of this STC, compliance has been found for the following regulations, 14 CFR § 26.11 (Amdt. 26-0). Revised EWIS ICA has been approved by the Los Angeles Aircraft Certification Office. (Refer to § 26.11).
- 8) This aircraft must be operated with Rolls-Royce RB211-524B4 engines installed with FAA approved Lockheed Martin Service Bulletin 093-71-050, Revision 2, dated March 26, 2008 or later FAA approved revision.

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