

# ARCHIVED REPORT

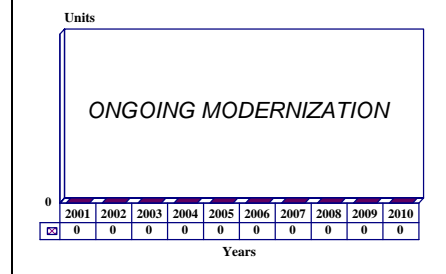
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## Lockheed C-141 Starlifter – Archived 08/2002

### Outlook

- Fleet phasing out, most to retire by FY03
- USAF to phase out final 63 aircraft in 2006

10 Year Unit Production Forecast  
2001 - 2010



### Orientation

**Description.** High-wing, T-tail, four-engine, long-range transport aircraft. Accommodates a four-man flight crew and a maximum of 154 troops or 42,869 kg (94,508 lb) of cargo.

**Sponsor.** US Air Force Aeronautical System Division.

**Contractors.** Lockheed Corp, Lockheed-Georgia Co, Marietta, GA, US.

**Status.** Production ended in 1968.

**Total Produced.** A total of 284 C-141As were produced, plus five development, test and evaluation aircraft. Of these, 270 were converted to the stretched C-141B configuration, plus one C-141A was converted into the YC-141B prototype.

**Application.** Long-range cargo/personnel transport with airdrop capability.

**Price Range.** C-141B modification program costs over \$400 million for a total of 270 aircraft.

### Technical Data

#### (C-141B)

**Design Features.** Cantilever high-wing monoplane, with 25 degree sweep at quarter cord. Hydraulically operated aluminum ailerons, Fowler trailing-edge flaps, and spoilers on upper and lower surfaces of wings. Cantilever tail unit with horizontal stabilizer at top. Upward sweeping rear fuselage, the bottom of which

has a one-piece hydraulically actuated loading ramp which opens downward for simplified vehicle/cargo loading and unloading. Retractable tricycle-type landing gear, with twin-wheel nose unit and four-wheel bogey-mounted main units. Main units retract forward into fairings on each side of fuselage.

	<u>Metric</u>	<u>US</u>
<b>Dimensions</b>		
Length	51.31 m	168.30 ft
Height	11.98 m	39.30 ft
Wingspan	48.78 m	160.0 ft

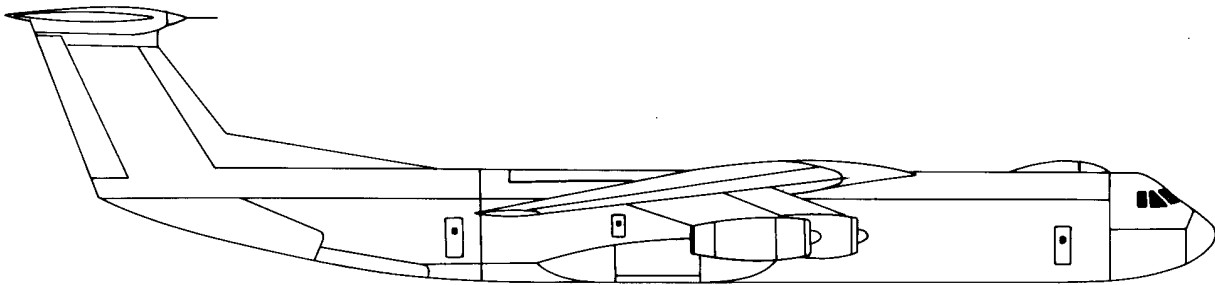
#### Weight

	<u>Metric</u>	<u>US</u>
Operating weight	65,541 kg	144,492 lb
Max payload (2.5g)	33,672 kg	74,233 lb
Max payload (2.25g)	42,869 kg	94,508 lb
Max T-O gross wt (2.5g)	146,557 kg	323,100 lb
Max T-O gross wt (2.25g)	155,584 kg	343,000 lb
<b>Performance</b>		
High speed cruise speed	Mach 0.767	
Long range cruise speed	Mach 0.74	
Range <sup>(a)</sup>	4,639 km	2,501 nm

**Propulsion**

C-141A/B Starlifter (4) UTC/Pratt & Whitney TF33-P-7 turbofans rated 93.4 kN (21,000 lbst) each.

<sup>(a)</sup>With 42,869 kg (94,508 lb) payload.



LOCKHEED C-141B

Source: Forecast International

## Variants/Upgrades

**C-141A.** Only production version. Total of 284 delivered from 1965 to 1968. In addition, five development, test and evaluation aircraft were procured. Powered by Pratt & Whitney TF33-P-7 engines. Fitted with all-weather landing system (AWLS) that proved Category II+ capability by meeting US Federal Aviation Administration (FAA) Category II minimum requirements and by having the capability to automatically control the aircraft to touch down in VFR conditions.

**C-141B.** Stretched modification of C-141A. One C-141A was converted to YC-141B prototype in 1976-1977. Total of 270 C-141As were converted to the production C-141B configuration from 1979 to 1982. Fuselage increased by 711.2 cm (280 inches) through insertion of two plugs. This modification increased the floor area of the cargo compartment by 22.30 sq m (240.0 sq ft) and its volume by 61.48 cu m (2,171 cu ft). Also included in the modification was the addition of aerial refueling capability.

## Program Review

**Background.** The Lockheed C-141 Starlifter was developed in response to a late 1950s Air Force requirement, designated SOR-128, which called for a long-range cargo and troop transport aircraft for Military Airlift Command (MAC). In March 1961, Lockheed-Georgia was announced the winner of a design competition for a turbofan-powered cargo and personnel transport for use by the MAC. Other competing firms were Boeing, Douglas and General

Dynamics' Convair Division. After initially contracting for five development, test and evaluation aircraft, the US Air Force ordered a total of 284 production aircraft under the designation C-141A. Initial operational capability was achieved in April 1965 and the last C-141A was delivered in February 1968. Lockheed had plans at one time to produce commercial versions of the Starlifter, but these were abandoned.

In 1976, Lockheed was awarded a contract to develop a stretched version of the C-141 with aerial refueling capabilities. First flight of a converted C-141A, redesignated YC-141B, took place in March 1977. The Air Force began a program for modification of 271 C-141As in May 1978 with the initial increment of a \$407 million contract to Lockheed. The program involved the insertion of two plugs, one before and one aft of the wing, stretching the fuselage by 23.3 ft. The first C-141B was delivered to the Air Force in December 1979 and Lockheed delivered the final

aircraft in June 1982. The total cost of the program was estimated at \$475 million.

The C-141 AWLS and TCAS retrofits were completed last year and the service is scheduled to take delivery of the last of 63 aircraft fitted with the GPS equipment in late 2001. These aircraft are to be redesignated C-141C and will constitute the entire C-141 inventory from 2003 until their retirement three years later.

No further upgrades are anticipated for the C-141.

## Funding

	<u>US FUNDING</u>							
	<u>FY98</u>		<u>FY99</u>		<u>FY00</u>		<u>FY01 (Req)</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
C-141 Mods		\$43.4		32.8		10.8		0.7

All \$ are in millions.

## Recent Contracts

None noted.

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Mar	1961	Lockheed-Georgia declared winner of MAC transport design competition
Dec	1963	First flight of C-141A
Apr	1965	Initial delivery of C-141A to USAF
Feb	1968	Final C-141A delivered
	1976	Lockheed begins C-141B work under USAF contract
Jan	1977	YC-141B prototype rolled out
Mar	1977	First flight of YC-141B
Dec	1979	First production C-141B delivered to USAF
Jun	1982	Final C-141B delivered
	2006	Planned retirement to be completed

## Worldwide Distribution

There are 188 C-141Bs in the USAF inventory, including reserve forces.

## Forecast Rationale

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and will constitute the entire C-141 inventory from 2003 until their retirement three years later.

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## Ten-Year Outlook

No further production is forecast.

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