DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A39CE
Revision 3
Lockheed
C-130A
December 8, 2008

TYPE CERTIFICATE DATA SHEET NO. A39CE

This data sheet which is part of Type Certificate No. A39CE prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: T.B.M., Inc.
6525 Dale Fry Road
Box 868
Tulare, California 93275

Type Certificate Holder Record: Central Air Service, Inc. transferred to T.B.M., Inc. on December 8, 2008

I. Model C-130A (Restricted Category), Approved June 26, 1990

Engines: 4 Allison turboprop T-56-A9 series
See NOTE 7 for optional engines.

Fuel: Commercial aviation turbine fuels conforming to ASTM Specification No. D 1655-59T, types Jet B, Jet A-1, or commercial equivalents of MIL-T-5624, grade JP-4 or JP-5.

Lubricating Oil: Synthetic oil conforming to Allison Specification EMS-35 or MIL-L-7808.

Engine Limits: Static, Standard Day, Sea Level:

	Turbine Inlet Temp.	Torque	Oil Temp
Takeoff (5 minutes)	977°C	19,400 in. lb.	100°C Max
Maximum continuous	927°C	16,100 in. lb.	85°C Max

Propeller and Propeller Limits

(1) 4 Hamilton Standard hydromatic propellers, Hub 54H60-91
(Not approved on T-56-A-11 engines.)
Diameter 13’ 6”, 2% maximum diameter reduction allowed for repair(s)
Constant speed propeller, full feathering with reverse pitch control
Single rotation, four blade assembly with governing speed setting 1015 p.r.p.m. (T-56-A9 engines), 1020 p.r.p.m. (T-56A-11 engines) (13,820 e.r.p.m.).
Propeller assembly is complete with spinner, feathering and reversing provision, constant speed control, negative torque control, synchrophaser, and electrical ice control.

Blade Angles

Feather	92.5°	+	.20°	(a)(b)
Low-pitch stop (min. flt. idle)	23.3°	+	.50°	(a)
Ground idle, beta	4.0°	to	5.5°	(c)
Reverse	-7.0°	+	1.0°	(b)(d)

(a) Propeller blade angles are measured at the blade 42.875 inch station with the propeller on a test post under conditions established by the applicable Hamilton Standard Maintenance Manual.
(b) Propeller blade angles are indicated on the back-up valve housing under conditions established in the USAF T.O. 1C-130A-2-11 and USAF T.O. 3-1-1 or Hamilton Standard Maintenance and Overhaul Manual.
(c) 5.0° to 6.0° with valve housing P/N 714325-2 or later installed.
(d) -5.5° to -7.5° with valve housing P/N 714325-2 or later installed.

I. Model C-130A (Restricted Category) (cont'd)

Propeller and Propeller Limits (cont'd)

(2) 4 Aero Products, A6341FN-D1A Hydraulic propellers, hub and blade assembly P/N 6506600 with Alpha Prefix -wy designation Serial Numbered Blades Only.
Diameter 15 feet
Repair and rework to be in accordance with USAF T.O. 3H3-19-2 or Aero Products Overhaul Manual.
Single rotation, three blade assembly with governing speed setting 1016 p.r.p.m. (13,820 e.r.p.m.).
Propeller assembly is complete with spinner, feathering and reversing provisions, constant speed control, negative torque control, synchrophaser, and electrical ice control.
Blade Angles
Blade angle settings are at the No. 72 station.

Feather	82.0°
Mechanical low pitch stop	5.9° to 6.5°
Flight idle (Hydraulic low pitch stop)	7.8° to 8.2°
Negative	-15.3° to -15.7°
Total allowable blade angle range	97.5°

Propeller Oil

(1) Hamilton Standard, propeller - MIL-H-5606B
(2) Aero Products, Propeller -Penola Aviation Instrument Oil, Government No. 1191X, Manufactured by ESSO Standard Oil Company, Type P-Q Rust Preventative No. 107, Government No. 6603X, manufactured by American Oil Company or Government No. 3106 or 3106X manufactured by Humble Oil and Refining Company, FSN 9150-473-9849.

Airspeed Limits (knots IAS)

V_{MO}	(Maximum Operating)	See T.O. 1C-130A-1
V_A	(Maneuvering)	Section 5, page 5-15
V_B	(Turbulent air penetration)	
	65 knots above power off stall speed but not to exceed 180 knots IAS. Fig. 6-1, T.O. 1C-130A-1 shows stall speeds measured as a function of gross weight.	
V_{FE}	(Takeoff & Approach 50%)	180k
V_{FE}	(Landing, 100%)	145k
V_{LO}	(Landing gear operation)	170k
V_{LE}	(Landing gear extended)	170k
V_{LL}	(Landing flight extended)	170k

Heated Windshield Limitations

If electric windshield heat is operative: It must be used for all flight operations. Operation without windshield heat on any or all portions of the windshield is permissible provided:
(1) The airplane is not flown in known icing conditions, and
(2) The maximum speed limit below 10,000 feet is 187 knots - C.A.S.

C.G. Range

See Fig 5-6, USAF T.O. 1C-130A-1.

Datum

Fuselage Station 94.0 W.L. 142.98, BL 0 (NAS 221 screw head on bottom of forward fuselage, 71.0" forward of center line of nose gear strut).

M.A.C.

164.5", leading edge F.S. 487.4.

Maximum Takeoff Weight

124,200 lbs.

Maximum Landing Weight

96,000 lbs. up to 124,200 lbs. See page 5-20 of T.O. 1C-130A-1

Maximum Zero Fuel Weight

97,000 lbs.

I. Model C-130A (Restricted Category) (cont'd)

Leveling Means	Provisions for leveling by plumb line are installed in the cargo compartment of the left side at approximately F.S. 637. A plumb line support bracket is located on the fuselage side panel at approximately W.L. 252, BL 64L, and a leveling plate is located on the top of the cargo floor curb at approximately W.L. 150, BL 64L.
Minimum Crew	Three (3), Pilot, co-pilot, and Flight Engineer
Passengers	None, limited to the flight crew and number of persons essential to operations.
Fuel Capacity	See page 1-49 of USAF T.O. 1C-130A-1 for fuel capacity and usable fuel.
Oil Capacity	Usable 4 nacelle tanks 8 gallons each (+442.0)
Cargo Capacity	See USAF T.O. 1C-130A-1 Section 5
Maximum Operating Altitude	40,000 feet

Control Surface Movements (See USAF T.O. 1C-130A-2-9)

Aileron	Up	25°	Down	15°	
Trim Tab	Up	20°	Down	20°	
Elevator	Up	40°	Down	15°	
Trim Tab	Up	6°	Down	25°	
Rudder	Right	35°	Left	35°	
Trim Tab	Right	25°	Left	25°	
Wing Flap	Down	36°	(100%)		

Serial Nos. Eligible	Surplus Military C-130A airplanes that have been found to comply with the requirements of this data sheet.
Certification Basis	The certification basis is FAR 21.25 (a) (2). Restricted Category Type Certificate issued June 26,1990. Application for Type Certificate: August 25, 1989
Production Basis	None - Prior to original certification of each aircraft, an FAA representative must perform an inspection for workmanship, materials, and conformity with the approved technical data. All applicable Technical Orders affecting airworthiness must be accomplished.
Equipment	The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) Must be installed in the aircraft for certification.

NOTE 1 This approval applies to:

(a) Basic United States Air Force C-130A airplane with no major modifications except as required by Central Air Service (C.A.S) Report No. C130-A or later FAA approved revisions.

(b) This aircraft is certified for the special purpose operations in accordance with FAR 21.25(b)(1), (2) , and (5) and (7).

(1) The following placard must be installed in clear view of the pilot:

"RESTRICTED CATEGORY"

"This airplane must be operated as a restricted category airplane and in compliance with the operating limitations stated in USAF T.O. 1C-130A-1 Section V and in the form of placards, markings, and manuals."

(2) Carriage of hazardous materials is prohibited unless compliance is shown with FAR 91 and the applicable regulations in the Code of Federal Regulations 49, Part 17.

(3) This aircraft is certified for airborne television and film production photography.

I. Model C-130A (Restricted Category) (cont'd)

NOTE 2

(a) Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter.

(b) The location of the center of gravity for any gross weight configuration, determined from T.O. 1-1B-40, Handbook of Weight and Balance Data, must fall within the percent of the mean aerodynamic chord (MAC) shown on the Center of Gravity Limitations Chart (figure 5-6). For information and method of calculating the airplane center of gravity, refer to T.O. 1C-130A-9, Cargo Loading Handbook, and T.O. 1-1B-40, Handbook of Weight and Balance Data.

(c) The weight of the system fuel and oil as defined below, and hydraulic fluid, must be included in the airplane empty weight.
System Fuel: The weight of all fuel required to fill all lines and tanks up to the zero fuel point on the fuel gages in the level flight attitude.

Unusable (includes trainable and trapped fuel):

Tank	lbs.*	Arm
1	65	555.3
2	65	565.4
3	65	565.4
4	65	555.3
Left Aux.	0	
Right Aux.	0	
Total	260	
Trapped or line fuel	149	563.5

* This column includes 41 lbs. of fuel (trapped in lines) distributed to each tank at 5 lbs. per tank.

System Oil: The weight of oil remaining in the engine, lines, and tanks after subtracting the usable oil from the total capacity. Total: 221 lbs., Arm 442.0

(d) Fuel Loading and Usage:
(1) Fuel must be loaded and used to provide compliance with the "Fuel Unbalance" limitations contained in USAF T.O. 1C-130A-1. Refer to USAF T.O. 1C-130A-1 for normal fuel management procedures.

(2) Phillips fuel additive PFA-55MB may be used in concentrations not to exceed 0.15% by volume. No fuel system anti-icing credit is allowed.

NOTE 3

Latest revisions of the following documents are required:
(a) USAF T.O. 1C-130A-1, Change 2, dated March 22, 1981, and USAF T.O. 1C-130A-1-1 must be available in the C-130A aircraft for all flight operations.
(b) USAF T.O. 1C-130A-9, "Cargo Loading Handbook," and Supplement No. 1, dated April 28, 1967, must be used to load and restrain cargo.
(c) USAF T.O. 1-1B-40, "Handbook of Weight and Balance Data."

NOTE 4

The aircraft must be serviced and maintained in accordance with USAF T.O. 1C-130A-2-1 through 1C-130A-2-13.

FAA airworthiness directives for all L-382 series aircraft and Hamilton Standard 54H60 series propellers must be reviewed for applicability and complied with accordingly. Compliance with applicable Time Compliance Technical Orders for the aircraft and engines must be shown.

NOTE 5

C130-A aircraft with Aero Products propellers with Alpha Prefix Serial Numbered blades are approved for Restricted Category operation. These propellers must be maintained in accordance with USAF T.O. 3H3-19-2 dated August 1, 1961, Change 28 dated April 7, 1983, or later revision. Propeller inspection interval and replacement times shall be in accordance with USAF T.O. 1C-130A-6 dated July 1, 1982, Change 1 dated October 1, 1982, or later revision. Blades with numbered serial numbers are not approved.

I. Model C-130A (Restricted Category) (cont'd)

NOTE 6 Prior to civil airworthiness certification, Central Air Service, Inc. must show that the following have been accomplished:

(a) Compliance with all USAF Technical Orders which affect airworthiness.
(b) Inspection of all fuel tanks for sealant deterioration and repair as necessary.

NOTE 7 Airplane Serial Numbers AF57-498 through 57-509 are eligible for installation of 4 each Allison T56-A-11 engines. These engines are approved to use Jet A (JP-1) fuel and are not approved to use JP-4 fuel.

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