DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A15NM
Revision 4
USDA FOREST SERVICE
C-130A

August 7, 2006

Type Certificate A15NM was surrendered to the FAA on August 7, 2006.

TYPE CERTIFICATE DATA SHEET NO. A15NM

This data sheet which is a part of Type Certificate No. A15NM 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 — USDA Forest Service
2nd Floor, SW Wing
201 14th Street SW
Washington DC 20090-6090

I - Model C-130A, (Restricted Category) Approved August 21, 1985

Engines — 4 - Allison turboprop T-56-A9 or T-56-A11 Engines

Fuel — Commercial aviation turbine fuels conforming to ASTM Specification No. D 1655-59T, types Jet B, Jet A-1, Jet A, 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)		19,400 in-lb., T-56-A9 19,600 in-lb., T-56-A11	100°C Max
Maximum continuous		16,100 in-lb., T-56-A9 17,500 in-lb., T-56-A11	85°C Max

Propeller and propeller limits — 4 - Hamilton Standard hydromatic propellers Hub 54H60-91

Diameter 13 ft. 6 in
2% reduction allowable for repair

Constant speed propeller, full feathering and reverse pitch

Single rotation, four blade assembly with governing speed setting 1020 prpm (13820 erpm)
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.

(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.

Propeller Oil (Ham Std.)

MIL-H-5606B

OR 4 Aeroproducts, A6341FN-DIA Hydraulic propellers hub and blade assembly P/N 6506600 with Alpha Prefix -wy designation serial numbered blades only.

Propeller and propeller limits

Diameter 15 feet
Repair and rework to be in accordance with USAF T.O. 3H3-19-2.

Single rotation, three blade assembly with governing speed setting 1016 prpm (13,820 erpm). 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 (Aero products)

Penola Aviation Instrument Oil, Government No. 1191X, manufactured 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)

Vmo	(Maximum operating)	See T.O. 1C-130A-1,
Va	(Maneuvering)	Section 5, page 5-15
Vb	(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.	
Vfe	(Take-Off & Approach 50%)	180K
Vfe	(Landing, 100%)	145K
Vlo	(Landing gear operation)	170K
Vle	(Landing gear extended)	170K
Vll	(Landing light 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 ft. is 187 KCAS.

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	124,200 lbs.
Maximum landing wt.	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.
Leveling means	Provisions for leveling by plumb line are installed in the cargo compartment on the left side of 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 T.O. 1C-130A-1 for fuel capacity and usable fuel. *See Note 2 for unusable fuel.*
Oil capacity	Four nacelle tanks (Arm 442.0). Capacity for each tank: 8 gallons usable, 12 gallons total. *See Note 2 for system oil.*
Cargo capacity	See USAF T.O. 1C-130A-1 Section 5
Maximum operating altitude	40,000 ft.
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 Left 35° Right 35° Trim Tab Left 25° Right 25° Wing Flap Down 36° (100%)
Serial Numbers 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).
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 U.S.D.A. Forest Service Report No. 130A, Revision 4, or later FAA approved revisions.

B. Airplane certified for the special purpose of agriculture, forest, and wildlife conservation, and the carriage of cargo with the following limitations:

1. The following placard is to 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 21.25, FAR 91 and the applicable regulations in the Code of Federal Regulations 49, Part 17.

3. Aircraft approved under this type certificate may only be used as fire fighting aircraft.

NOTE 2. A. Current weight and balance report including list of equipment included in certificated weight empty, 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 altitude.

Unusable (includes drainable 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	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" limitation 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 percent 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. C-130A aircraft with Aeroproducts 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 Aprul 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 approvedl

NOTE 6. Prior to civil airworthiness certification, Reagon Enterprises Company must show that the following have been accomplished:

(a) Compliance with all USAF Technical Orders which affect airworthiness.

(b) Inspect all fuel tanks for sealant deterioration and repair as necessary.

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