

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

TQ3CH Revision 1 SNOW C-130A March 10, 2000

TYPE CERTIFICATE DATA SHEET NO. TQ3CH

This data sheet which is a part of Type Certificate No. TQ3CH prescribes conditions and limitations under which the product for the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: Snow Aviation International, Inc.
7201 Paul Tibbets St.
Building 330
Rickenbacker Airport
Columbus, OH 43217

I - Model C-130A, (Restricted Category), Approved January 31, 1994

Engines 4 - Allison turboprop T56-A-9D Engines

Fuel Commercial aviation turbine fuels conforming ASTM Specification No. D1655-59T, types Jet B, Jet A-1, Jet A, or commercial equivalents of MIL-T-5624, grade JP-4 or JP-5.

Lubricating Limits Synthetic oil conforming to Allison Specification EMS-35 or MIL-L-7808

Engine Limits Static, Standard Day, Sea Level

<u>Turbine Inlet Temp.</u>	<u>Torque</u>	<u>Oil Temp.</u>
Takeoff Power (5 minutes): 977°C	19,400 in-lb., T56-A-9D	100°C Max
Maximum Continuous Power: 927°C	16,100 in-lb., T56-A-9D	85°C Max

Propeller and Propeller Limits 4 - Hamilton Standard hydromatic propellers
Hub 54H60-91 Blade A711E-2

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 (no auto feathering), 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)

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Propeller and Propeller Limits (cont'd)	<p>(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.</p> <p>(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.</p> <p>(c) 5.0° to 6.0° with valve housing P/N 714325-2 or later installed.</p> <p>(d) -5.5° to -7.5° with valve housing P/N 714325-2 or later installed.</p>										
Propeller Oil	MIL-H-5606B										
Airspeed Limits (Knots IAS)	<p>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.</p> <table border="0"> <tr> <td>V_{FE} (Take-Off & Approach 50%)</td> <td>180K</td> </tr> <tr> <td>V_{FE} (Landing, 100%)</td> <td>145K</td> </tr> <tr> <td>V_{LO} (Landing gear operation)</td> <td>170K</td> </tr> <tr> <td>V_{LE} (Landing gear extended)</td> <td>170K</td> </tr> <tr> <td>V_{LL} (Landing light extended)</td> <td>170K</td> </tr> </table>	V_{FE} (Take-Off & Approach 50%)	180K	V_{FE} (Landing, 100%)	145K	V_{LO} (Landing gear operation)	170K	V_{LE} (Landing gear extended)	170K	V_{LL} (Landing light extended)	170K
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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 O (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 Wt.	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: 9 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 airplane serial number 3035 which has been found to comply with the requirements of this data sheet.			
Certification Basis	The certification basis is FAR 21.25(a) (2) plus certain airworthiness directives (See Notes 8 & 9) and design related USAF Time Compliance Technical Orders (See Note 10).			
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 applied to:

- A. Basic United States Air Force C-130A airplane with no major modifications except those as required by later FAA approved revisions.
- B. This airplane is certified for the special purpose of carrying enclosed/packaged cargo with the following limitations:
 - 1. In addition to the operating limitations in this data sheet, area, economic, passenger, and other appropriate operating limitations in accordance with FAR 21.25 shall be shown on placards or listings accessible to the pilot.
 - 2. 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 placard markings and manuals."
 - 3. 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 Title 49 (Transportation), Subchapter C (hazardous materials regulations), Part 175 (carriage by aircraft).

- 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. 1-18-40, Handbook of Weight and Balance Data.

NOTE 2. C. The weight of the system fuel as defined below, oil and hydraulic fluid must be included in the airplane empty weight.
(cont'd)

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.

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 field 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, 1C-130A-6, 00-25-4, 1C-130A-36 and the C-130A program depot maintenance work specification developed by the United States Air Force Warner Robins Air Logistics Center.

Alternatively, the Inspection Planning Guide number 182 (IPG-182), which presents the operator with FAA approved inspection and overhaul periods for the Lockheed C-130A aircraft, outlines the minimum maintenance and inspection requirements. These requirements may be utilized in the development of an integrated maintenance program compatible with individual operators' requirements. IPG-182 is an inspection planning guide only and does not contain all the servicing information necessary to maintain the aircraft.

The engines must be serviced and maintained in accordance with USAF T.O. 1C-130A-2-4, 1C-130A-10, 2J-T56-13, 2J-T56-14, and 2J-T56-16.

FAA airworthiness directives for all L-382 series aircraft, Allison 501-D13 Series engines, and Hamilton Standard 54H60 series propellers must be reviewed by the type certificate holder for applicability and complied with accordingly (See Notes 8 and 9). Compliance with applicable Time Compliance Technical Orders for the aircraft and engines must be shown (See Note 10). This includes any airworthiness directives and technical order found to be applicable in the future beyond those listed in this data sheet.

NOTE 5. RESERVED

NOTE 6. Prior to civil airworthiness certification, Snow Aviation International, Inc. must show that the following have been accomplished:

- (a) Compliance with all USAF Technical Orders and Airworthiness Directives which affect airworthiness including depot level maintenance in accordance with T.O. 00-25-4.
- (b) Inspect all fuel tanks for sealant deterioration and repair as necessary.

NOTE 7. (a) this aircraft is prohibited from carrying cargo for compensation or hire. Carriage of cargo is limited to such cargo that is incidental to the aircraft owner/operator's business which is other than air transport (Ref: FAR 91.313).

- (b) Restricted category aircraft may not be operated in a foreign country without the express written approval of that country.

(c) This aircraft has not been shown to meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention on International Civil Aviation.

NOTE 8. The following airworthiness directives have been determined to be applicable to the airframe of the C-130A, Serial Number 3035 as of January 31, 1994:

AD 67-18-03 Engine truss mount inspection.

AD 68-03-03 Center wing lower panels CWS 181, SB A382-026.

AD 74-12-06 Inspection of outer wing lower skin and forward beam cap for cracks SB 75.

AD 74-24-04 Center wing modification to lower surface SB 382-121.

AD 74-24-08 Throttle cable inspection.

AD 75-17-04 FS 517 WL 215 inspection SB 382-189.

AD 75-17-35 SB 382-190 Propeller torque check.

AD 75-18-03 Inspection of OWS 54 - 108 lower forward spar cap for cracks SB 382-187.

AD 79-05-05 Inspection of throttle and condition cables.

AD 76-09-11 Inspection of rudder, aileron and elevator crank arm assemblies.

AD 88-09-03 NDI Eddy current inspection of control column base.

AD 88-10-05 Inspection of outer wings OWS 144 - 214 lower panels.

AD 88-10-06 Inspection of FS 477 and 517 BL 61 left and right for cracks.

AD 89-16-09 Inspect nose strut for corrosion (strut P/N 388071-3).

NOTE 9. The following airworthiness directives have been determined to be applicable to the engines installed on the C-130A, Serial Number 3035 as of January 31, 1994:

AD 59-21-03 Compressor blade retention.

AD 69-21-03 1st stage compressor wheel.

AD 75-17-32 2nd stage turbine wheel.

AD 75-22-05 2nd stage turbine wheel.

AD 78-09-09 3rd & 4th stage turbine wheels.

AD 79-25-03 2nd, 3rd & 4th stage turbine wheels.

AD 80-14-13 1st stage turbine wheel.

AD 81-03-02 1st, 2nd, 3rd and 4th stage turbine wheels.

NOTE 10. The following Time Compliance Technical Orders (TCTO's) may be subject to airworthiness directive action applicable to the C-130A, Serial Number 3035 after January 31, 1994:

TCTO 1C-130A-847 "Inspection of outer wing lower forward beam caps at reinforcing strap ends for cracks."

TCTO 1C-130A-838 "Hot Day start blocking rectifiers PN BK 2262."

NOTE 10. TCTO 1C-130-1352 "Inspection for removal of magnesium casting aileron idler bellcranks."
(cont'd)

TCTO 1C-130-1309 "Installation of transformer in synchrophaser circuit."

TCTO 1C-130-1299 "Inspection for sagging and improper clamping of wire bundles located approximately FS1050 at the bottom of the stringer directed above the arc of the lower balance weight in the tail cone area."

TCTO 1C-130A-A-1288 "Inspection of T56 engine throttle quadrants for improper rigging."

TCTO 1C-130-1285 "Inspection of flight deck circuit breakers."

TCTO 1C-130-1316 "Inspection of fire control "T" handle switch, P/N G56815-1 for loose and missing screws."

TCTO 1C-130-1301 "Inspection of horizontal stabilizer leading edge mount bolts for looseness and proper hardware."

TCTO 1C-130-1283 "Inspection for evidence of interference between aileron booster quadrant cable clip P/N 344997-3 and aileron booster quadrant cable guard assembly P/N 344831."

TCTO 1C-130-1271 "Replacement of engine throttle and condition cables with 7 x 19 stainless steel cables."

TCTO 1C-130-1168 "Inspection of circuit wiring of trim tab actuators P/N A555-3 and A555-4."

The complete listing of all TCTO's applicable to this airplane is Lockheed Document SMP 142 dated January 1992 titled "Index of Time Compliance Technical Orders."

...END...