# DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

A32NM Revision 2 USDA Forest Service P-3A April 26, 2011

# TYPE CERTIFICATE DATA SHEET NO. A32NM

This data sheet which is a part of Type Certificate No. A32NM prescribes the 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

2<sup>nd</sup> Floor, SW Wing 201 14<sup>th</sup> Street SW

Washington DC 20090-6090

# I. Model P-3A (Restricted Category), Approved January 31, 1990

Engines 4 Allison turboprop T-56-A-10W

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	H.P.	Oil Temp
Takeoff (5 minutes)		
971°C Max	4300	100°C Max
Maximum Continuous		
932°C Max	3950	90°C Max

Propeller and Propeller Limits

4 Hamilton Standard hydromatic propellers

Hub 54H60-77 Blade A7121B-2 Diameter 13ft. 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 rpm (13820 erpm).

Propeller assembly is complete with spinner, feathering and reversing provisions, constant speed control, negative torque control, synchrophaser, and electrical ice

control.

Blade Angles

Feather 86.65  $\pm$  .10° Low-pitch stop (min. flt idle) 9.5  $\pm$  .5° - 1°

Ground idle, beta -7°

Reverse  $-14^{\circ} \pm .5^{\circ}$ 

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Propeller Oil MIL-H-5606B

Airspeed Limits (knots IAS)  $V_{MO}$  (Maximum operating) 367 knots at sea level

See NAVAIR (01-75PAA-1)

V<sub>A</sub> (Maneuvering)

 $\begin{array}{lll} V_B & (Turbulent air penetration) & 220 \text{ knots} \\ V_{FE} & (Takeoff \& Approach) & 190 \text{ knots} \\ V_{FE} & (Landing) & 170 \text{ knots} \\ V_{LO} & (Landing gear operation) & 190 \text{ knots} \\ V_{LE} & (Landing gear extended) & 300 \text{ knots} \\ V_{LL} & (Landing light extended) & 260 \text{ knots} \\ \end{array}$ 

Heated Windshield 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 240 knots.

C.G. Range See Figure 1-82, NAVAIR 01-75PAA-1

Datum 573.7 inches forward of jig points (white circled screws) located .75 inches outboard of

wing station 65 joint, 2.5 inches aft of leading edge joint.

MAC 168.7, leading edge 545.9 inches aft of Datum

Maximum Takeoff Weight 127,500 lbs

Maximum Landing Weight 91,320 lbs

Maximum Zero Fuel Weight 71,584 lbs.

Leveling Means Plumb-bob leveling suspension fitting is located in the cabin ceiling at station 723 on the

centerline. The leveling grid is directly below the plumb bob fitting under the floor.

Minimum Crew Pilot and Co-Pilot

Passengers None, limited to the flight crew and number of persons essential to operations.

Fuel Capacity See NAVAIR 01-75PAA-1

Oil Capacity Four nacelle tanks (ARM 492.0)

Capacity for each tank 8.65 gallons.

Cargo Capacity None

Maximum Operating Altitude 30,000 ft.

Control Surface Movements See NAVAIR 01-75PAA-2-2

Serial Numbers Eligible US Navy Bureau Numbers: 150510, 150513, 151361, 151369, 151372, 151385, 151387,

151391

Certification Basis 14 Code of Federal Regulations (CFR) part 21 § 21.25 (a) (2) and (b) (2). CAR Part 4B

as effective Oct. 1, 1959. FAR 21.50 (b), 25.571 and 25.1529 to Amendment 25-96 as effective March 31, 1998 (see Note 3). Type Certificate No. A32NM issued 29 June 1990 for the special purpose of forest and wildlife conservation under FAR Part 91.

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.

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# 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 Navy P-3A airplane with no major modifications except as required by Aero Union Report AUC 1137, dated December 22, 1989, or later FAA approved revisions.
- B. Airplane certified for the special purpose of Forest and Wildlife Conservation 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 NAVAIR 01-75PAA-1, Section I, Part 4, and in the form of placards, markings and manuals."
- Carriage of hazardous materials is prohibited unless compliance is shown with FAR 91 and the applicable regulations in Title 49 of the Code of Federal Regulations, Part 175.

#### 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 NAVAIR 01-1B-40, Technical Manual, Weight and Balance Data, must fall within the percent of the mean aerodynamic chord (MAC) shown on the Center of Gravity Table, Chart E. For information and method of calculating the airplane center of gravity refer to NAVAIR 01-1B-40, Technical Manual, Weight and Balance Data.
- C. The weight of the system (unusable) fuel and oil as defined in NAVAIR 01-1B-40, Chart E, must be included in the airplane empty weight.
- D. Fuel loading and usage.
  - Fuel must be loaded and used to provide compliance with the "Fuel Unbalance" limitation contained in NAVAIR 01-75PAA-1 for normal fuel management procedures.
  - 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. NAVAIR 01-75PAA-1 must be available in the P-3A aircraft for all flight operations.
- B. NAVAIR 01-1B-40, "Technical Manual, Weight and Balance Data."

# NOTE 4

NOTE 4 For continued airworthiness, the aircraft must be maintained to the latest revision of the Airworthiness Limitations contained in the following document

AAS-ALS-07-001 USFS P3A Airworthiness Limitations Section

The Airworthiness Limitations contained in the above document are certified to the requirements of FAR 25.571 and 25.1529. This document specifies mandatory replacements and inspection intervals which are not subject to change without the express approval of the FAA. All maintenance, structural repair, alteration and modification to those areas specified in AAS-ALS-07-001 must be performed to the requirements of FAR 25.571 and FAR 25.1529.

For all other maintenance, the aircraft must be serviced in accordance with the following documents: NAVAIR 01-75PAA-2-1 thru 01-75PAA-2-20

NOTE 5

FAA airworthiness directives for all Lockheed L-188 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 6

Prior to civil airworthiness certification, it must be shown that the following has been accomplished

:

	(a) Incorporation of all applicable NAVAIR Technical Directives which affect airworthiness and which not already covered by AAS-ALS-07-001.
	(b) Inspect all wing joints between planks for sealant deterioration and repair as necessary
NOTE 7	Aircraft approved under this type certificate can only be used for the special purpose of forest and wild Conservation which includes the aerial dispensing of liquids.
NOTE 8	The FAA representative responsible for the issuance of Restricted Airworthiness Certificates shall mak NOTE 4 part of the operating limitations issued with the Airworthiness Certificate.
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