**DEPARTMENT OF TRANSPORTATION**
**FEDERAL AVIATION ADMINISTRATION**

A24NM
Aero Union Corporation
U.S. Navy
SP-2H (P2V-7)
September 25, 1987

## TYPE CERTIFICATE DATA SHEET NO. A24NM

This data sheet, which is a part of Type Certificate A24NM 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 — Aero Union Corporation
100 Lockheed Avenue
Chico, California 95926

### I. Model SP-2H (P2V-7) (Restricted Category) approved September 25, 1987

Engines — (a) 2 Curtiss-Wright R3350-32WA
Reduction gear ratio 16:7
(2 Jet Engines Removed)

Fuel — MIL-G-5572 Grade 100/130

Engine Limits* — (a) R-3350-32WA (Fuel Grade 100/130 Low Blower)

| | BHP | RPM | M.P. in HG | ALT (FT) |
|---|---|---|---|---|
| Takeoff (5 minutes wet) | 3696 | 2900 | 59.0 | Sea Level |
| Takeoff (5 minutes wet) | 3716 | 2900 | 59.0 | 2000 |
| Takeoff (5 minutes dry) | 2900 | 2900 | 54.0 | Sea Level |
| Takeoff (5 minutes dry) | 2900 | 2900 | 53.0 | 2000 |
| Max. Continuous | 2600 | 2600 | 48.5 | Sea Level |
| Max Continuous | 2655 | 2600 | 47.5 | 4000 |

*Reverse pitch operation are restricted to a maximum of 2600 rpm. See Aero Union Corporation Operating Manual, P2V Operation, for Engine Operating Limits Tables.

Airspeed Limits

| | |
|---|---|
| $V_{NE}$ (Never exceed) | 270 KIAS |
| $V_{FE}$ (Flaps extended 5°) | 210 KIAS |
| $V_{FE}$ (Flaps extended 10°) | 210 KIAS |
| $V_{FE}$ (Flaps extended 15°) | 200 KIAS |
| $V_{FE}$ (Flaps extended 20°) | 175 KIAS |
| $V_{FE}$ (Flaps extended 25°) | 155 KIAS |
| $V_{FE}$ (Flaps extended 32°) | 145 KIAS |
| $V_{LE}$ (Max. gear extend) | 155 KIAS |
| $V_A$ (Max maneuvering) | 160 KIAS |
| $V_{MC}$ (Min. Control) | 97 KIAS |

**Propeller and Propeller Limits**

Hubs - 2 Hamilton Standard 24260-313 or 24260-337 or 24260-223
Blades - 4 2J17H3-36S or 2J17Z3-36S or 2FJ17C3-36S
Diameters limits 14 ft. 2 in. - No cutoff permitted

Continuous ground operation between 2000 and 2400 is prohibited.
Pitch setting at 72-inch station:

| | |
|---|---|
| Low Pitch | 14° (± 0.5°) |
| Feathered | +82° (± 0.5°) |
| Reverse | -22° (± 0.5°) |

Interchangeable Blades - These blades can be used interchangeably in the same propeller provided they are used in pairs and installed in opposite arms and that the prefix letters for opposite blades and the cut-off dash numbers for all blades are the same.

**Fire Retardant Dumping Envelope**

(See NOTE 2)
120 KIAS to 145 KIAS Flap extended 10° Min.

**C.G. Range**

Aft of datum, landing gear extended, MAC (Sta.):
19.4% (354.58) to 36% (375.53) @ 46,000 lbs
19.4% (354.58) to 36% (375.53) @ 61,400 lbs
21.56% (357.31) to 36% (375.53) @ 67,500 lbs.
Straight line variation between points given.

**Empty Weight C.G. Range**

None

**Datum**

The reference datum is located at fuselage station 0.

**Mean Aerodynamic Chord (MAC)**

The leading edge of the MAC is located at fuselage station 330.1.
The length of the MAC is 126.2 inches.

**Leveling Means**

Level the aircraft by dropping a plumb bob from the leveling hook through the leveling grid in the nose wheel well.

**Maximum Weight**

| | |
|---|---|
| Takeoff | 67,500 lbs |
| Landing | 67,500 lbs |
| Zero fuel, oil, and ADI | 59,100 lbs |

**Crew & Number of Seats**

Pilot and co-pilot
2 at 158”, occupancy limited to persons essential to perform the special purpose operation.

**Fire Retardant**

2000 gallons (U.S.) 18,000 lbs at +394.6”.

**Fuel Capacity**

| | Total Fuel Per Tank | | | |
|---|---|---|---|---|
| No. Tanks | U. S. Gal. | U.S. Gal. | Lbs. | ARM |
| 2 | 715 | 1430 | 8580 | +376.5” |

Wing (main) All other fuel tanks permanently removed.

**Oil Capacity**

| | | Total Fuel Per Tank | | | |
|---|---|---|---|---|---|
| | No. Tanks | U.S. Gal | U.S. Gal. | Lbs. | ARM |
| Nacelle Tank | 2 | 60 | 120 | 852 | +382.7” |
| (expansion Space) | | 20 | - | - | |

**Water Injection Tank Capacity**

| | Total ADI Per Tank | | | |
|---|---|---|---|---|
| No. Tanks | U.S. Gal. | U.S. Gal. | Lbs. | ARM |
| 2 | 25 | 50 | 375 | +316” |

Nacelle Tank

Fluid - AMS - 3006 Type I which specifies 48 -52% methyl alcohol by volume and 48 -52% water by volume.

Control Surface Movements

| | | | | |
|---|---|---|---|---|
| Aileron | Up | 22° ± -1° | Down | 15°30' ± 1° |
| Aileron Tab | Up | 15°45' ± -2° | Down | 16°20' ± -2° |
| Elevator | Up | 27°37' ± -1°30' | Down | 27° ± -1°30' |
| Elevator Trim | | | | |
| Panel | Up | 7° + 1/4° -0° | Down | 3° + 1/4 -0° |
| Spoiler | Up | 55° - 60° | | |
| Rudder Trim | | | | |
| Tab | Left | 10° | Right | 10°30' |
| Rudder | Left | 21° | Right | 21° |

Aileron Spring Tab: Adjust spring tab in accordance with NAVWEPS 01-76EEB-2-3 figure 3-16.

Serial Numbers Eligible

U.S. Navy Bureau Numbers:
135596 140963 145903 145917 145920
147959 147964 147967 147968 148339
148343 150281 150283

Production Basis

None. Prior to original airworthiness certification of each aircraft, FAA personnel must perform an airworthiness inspection determining condition for safe operation and determine the applicant has conducted a satisfactory flight test. See NOTE 5 for data on Service Bulletins and Ads.

Certification Basis

FAR 21.25 (a) (2) and (b). Type Certificate issued September 25, 1987 for the special purpose of forest and wildlife conservation (firefighting). Date of application May 20, 1986. The modifications incorporated are considered appropriate to the special purpose operation, forest and wildlife conservation (firefighting). The criteria established in Civil Air Regulations Part 4B appropriate to the special purpose operation has been used to evaluate these particular changes and demonstrate that the original level of airworthiness established by the military requirements has not been reduced. A Finding of No Significant Impact (FONSI) for the modified Lockheed (Navy) Model SP-2H (P2V-7) Aircraft has been accomplished and approved on September 23, 1987. A finding under the applicable provisions of the Noise Control Act of 1972 has been accomplished and approved on September 23, 1987, for the modified Lockheed SP-2H (P2V-7) Aircraft (Restricted Category-Military Surplus).

Equipment

The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. Equipment necessary for the particular special purpose operation must be installed. In addition, an FAA approved Airplane Flight Manual Supplement is required. (See NOTES 2 & 4)

NOTE 1 Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary must be provided for in each aircraft at the time of original airworthiness certification.

NOTE 2 The aircraft shall be operated in accordance with NATOPS Flight Manual Navy Model SP-2H Aircraft NAVAIR 01-75EEB-1 (procedures and limitations) and Flight Handbook Navy Model P2V-6 Aircraft AN-01-75EEA-1 (performance) except wherein superseded by Aero Union Corporation FAA Approved Airplane Flight Manual Supplement dated September 22, 1987 original issue or later approved revision.

NOTE 3 Prior to civil certification compliance with the following Department of the Navy Service Bulletins Aircraft and Aircraft Service Changes must be accomplished:

SP-2H (P2V-7) Airframe and Interim Airframe Bulletins - - Nos. 1, 4, 5, 6, 8, 9, 10, 12, 13, 14, 17, 18, 19, 20 Rev. B, 21 and Amend 1, 22, 23, 24, 25, 26 and Amend 1, 27 Rev. A., 31 and Amend 1, 63, 65, 67, 69 and Amend 1, 72, 74, 75, 78, 81, 82, 83 Amend 1, 86, 88, 90, 91, 92, 93, 94, 95 and Amend 1, 98, 100, 101, 102, 103, 104, 105, 107, 108, 110, 114 Rev. A, 115, 116 and Amend 1, 117, 118,119.

P2V-7 Aircraft Service Changes - - 605, 676, 681, 688, 694, 697, 699, 709, 714, 721, 722, 724, 733, 735, 737, 751, 752, 753A, 758A, 765A, 768, 770, 781, 783, 787A, 793, 795, 798, 802, 803A, 806A, 807, 812, 815, 816, 817, 819, 822, 826, 831B, 839C, 843, 845A, 848A, 851, 856, 861A, 862, 864, 878, 894 Amend 1, 896 Amend 1, 898, 900, 903, 912, 923, 924 Amend 1, 928, 929, 931 Amend 1, 934, 935, 937, 940, 948, 952, 953 Amend 1, 955A, 979, 980, 981, 987, 991.

Wright R3350-32WA engine Bulletins - - 469 Rev A Amend 2, 474 Rev A, 494 Rev B, 490 Rev A, 516, 517, 518, 519 Amend 1, 520 Amend 1, 562 Rev A, 564 Rev. B Amend 2, 566 Rev B, 625 Rev A Amend 1, 635 Rev C, 646 Rev A, 656 Rev A, 663, 681, 682 Rev A, 687, 693, 694 Amend 1, 698, 707, 708, 709, 711 Amend 1, 713 Rev A, 714 Rev B, 716 Amend 1, 720, 721 Rev B Amend 1, 722, 726 Amend 1, 727, 731, 732, 735, 736, 737, 742 Amend 2, 750, 751 Rev A, 752.

NOTE 4 Modification to these aircraft and installation of special equipment will be necessary (reference FAR 21.25 (a)(2)) or (b)(2), prior to civil airworthiness certification to the special purpose of forest and wildlife conservation (firefighting) and for any other FAA approved special purpose operation in accordance with Aero Union Master Drawing List 10801, Rev. H, dated September 8, 1987.

NOTE 5 Restricted Aircraft Airworthiness Certificates issued are effective under FAR 21.181 (a) (1) as long as maintenance and preventive maintenance are performed in accordance with FAR 91, Subpart C.

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