

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

A-2-578 Revision 4 (see Note 6) NOORDUYN	
<u>Army UC-64</u>	<u>Norseman Mark IV</u>
UC-64A	
UC-64B	Mark VI
UC-64AS	
Mark V	
January 27, 1992	

TYPE CERTIFICATE DATA SHEET A-2-578

Type Certificate Holder                      Noorduyn Aviation Ltd. (see Note 4)  
Montreal, Canada

I - Models UC-64 or Norseman MK IV

Model Army UC-64A, UC-64B, UC-64AS or Norseman MK VI

Model Norseman MK V (Normal Category) approved January 27, 1992

(The UC-64 and UC-64B are similar and differ from the UC-64A principally in regard to the airframe structure, the electrical system and the fuel tank construction. The UC-64A landing gear accommodates larger shock struts). The UC-64AS is equipped with Edo floats (see item 203). The Norseman MK V is a civilian, nonmilitary version of the Norseman MK VI with increased disposable load capacity due to the removal and elimination of military equipment.)

Engine	Pratt & Whitney Military Model R-1340AN-1
Engine (MK V)	Pratt & Whitney Military Model R-1340AN-1 or WASP S3H1
Fuel	91 minimum octane aviation gasoline
Engine limits	Maximum continuous, (Sea level) 34.0 in. hg., 2200 rpm (550 hp) (5000 ft.) 32.5 in. hg., 2200 rpm (550 hp) Take-off (one minute), 36.0 in. hg., 2250 rpm (600 hp)
Airspeed limits	Level flight or climb    150 mph (130 knots) True Ind. Glide or dive            180 mph (157 knots) True Ind. Flaps extended         108 mph ( 94 knots) True Ind.
C.G. range	Landplane: (+106.2) to (+114.7) Seaplane: (+103.9) to +114.7)
C.G. range (MK V)	<u>Landplane and Skiplane</u> 24.6% MAC (103.3) to 38.0% MAC (114.7) at 7400 lbs. 18.0% MAC (97.7) to 38.0% MAC (114.7) at 6000 lbs. or less <u>Seaplane</u> 25.3% MAC (103.9) to 38.0% MAC (114.7) at 7540 lbs. 18.0% MAC (97.7) to 38.0% MAC (114.7) at 6000 lbs. or less Straight line variation between points given.
M.A.C.	85 inches, L.E. of M.A.C. at +82.36.
Datum	Propeller hub center line
Leveling means	Lugs provided on station 3 steel tubes just aft of pilots seat.
Maximum weights	UC-64 and UC-64B:    6450 lbs. UC-64A:                7300 lbs. UC64AS:                7435 lbs. with MacDonald Edo 55-7170A floats 6800 lbs. with Edo Yd-6470 floats

Note: The UC-64AS is also eligible at 7540 lbs. when MacDonald Edo 55-7170A floats are installed and when modified in accordance with Noorduyn Report 806A as follows:

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	(a) The flaps and aileron interconnecting mechanism removed and the following placard installed: "Use 8° flaps for take-off."
	(b) The baggage compartment modified. Maximum capacity 150 lbs. (+164).
Maximum weights (MK V)	Landplane 7400 lbs. Skiplane 7400 lbs. Seaplane 7540 lbs. (with Edo 55-7170A floats) 7188 lbs. (with Edo Yd 6470 floats)
No. seats	9 (pilot and copilot at +84) (seven passengers). No. seats (MK V) 10 (pilot and copilot at (+84) Bench type seats for eight passengers, or passenger chairs for six.
Maximum baggage	120 lbs. (+236). Cargo section (+91 to +211). Maximum capacity cargo section is 2500 lbs.
Fuel capacity	245 gals. (One tank in each wing at 60 gals. ea., (+112), front fuselage tank 45 gals. (+127.6), rear fuselage tank 80 gals. (+159).) Auxiliary cabin tank of 38 gals. is not approved for installation in the MK V.
Oil capacity	23 gals. (+47.6) 10.2 gals. (MK V)
Control surface movements	Flaps 38° down Elevator 31° up 22° down Elevator trim tab 14° up 19° down Aileron 27° up 23° down Rudder 26° right 26° left Rudder trim tab 4.5° right 11° left
Serial Nos. eligible	All Army serial numbers (Use Mfr's. serial number if available). Mark IV - serial no. 7 through 99, inclusive. Mark VI - serial no. 100 through 849, inclusive. Mark V - serial no. N29-1 through N29-48, inclusive; N29-50 to N29-53, inclusive, and N29-55.
Required equipment	Landplanes: Items 1, 2, 101, 102, 104, 105, 201, 202, 301, 302. Seaplane: Items 1, 2, 101, 102, 104, 105, 203(a) or (b), 301, 302, 601.
Certification basis	Airworthiness Certificate only (CAR 4a)
Export eligibility	Eligible for export to all countries subject to the provisions of MOP 2-4.

Equipment: A plus (+) or minus (-) sign preceding the weight of an item indicates net weight change when that item is installed.  
An asterisk (\*) preceding items of equipment listed herein denotes approval has been obtained by other than the aircraft manufacturer.

#### Propellers and Propeller Accessories

1. Propeller - Ham. Std., hub 12D40, blades 6101-12  
Diameter: Max. 9'1", min. allowable for repairs 8'10-5/8".  
No further reduction permitted.  
Pitch settings at 42 in. sta.: High 21°, low 11°.
2. Propeller governor - Ham. Std. 1M12-G (+7.5)
3. Propeller - Ham. Std., hub 3D40, blades 6101-12  
Diameter: Max. 9'3/4", min. allowable for repairs 8'10-3/8".  
No further reduction permitted.  
Pitch settings at 42 in. sta.: High 19°, low 8.4°.  
Placard required: "Avoid continuous operation below 1800 rpm."  
(Tachometer should be red-lined accordingly.)

#### Propellers and Propeller Accessories (MK V)

4. Hamilton Standard two-bladed constant speed propeller 12D40-211 or three-bladed constant speed propeller 3D40-231.

Engine and Engine Accessories - Fuel and Oil System

101.	Starter, Jack and Heintz Model JH3L	(+35)
102.	Vacuum pump, Pesco 3P-207-3A, Type B-12	(+30)
103.	Engine nose shutter assembly	( +9)
104.	Oil cooler	(+33)
105.	Wobble pump	(+67)

Landing Gear and Floats

201.	Two 30 inch Hayes H3-44A wheels and smooth contour tires and tubes	(+84)
202.	12.50 Hayes D3-46A tail wheel with smooth contour, channel type tire and tube	(+335)
203.	Two floats (Model UC-64AS only)	
	(a) MacDonald Bros. Edo 55-7170A installed in accordance with Noorduyn Dwg. No. 16-35100.	
	(b) Edo Yd-6470 installed in accordance with Noorduyn Dwg. No. 16-35001.	
208.	Two skis	
	(a) Federal Model AW-7550	Use actual weight change
	* (b) Wesco Model G-8000 installed in accordance with Western Aircraft equipment Company Dwg. Nos. 10 and 148.	Use actual weight change

Ski and Float Installation (MK V)

209.	Ski installation, Federal AWA 7550 with retractable hydraulic actuated skis. Federal Drawing No. 10B1224, 11R434(E).	
210.	Ski installation, NWI Drawing No. 120301/A Main ski, NWI M.S. 7500 Main pedestal, M & C P4E.	
211.	Ski installation, CPAL Drawing No. 25UR-11062/B Main ski, Elliott Bros. E-16 or A.M.B. 13A Main pedestal, M & C P4E.	
212.	Ski installation, Noorduyn Drawing No. 16-33901 Main skis, Noorduyn 16-33928 Main pedestal, Noorduyn 16-33976.	
213.	Ski installation, Aircraft Overhaul & Repairs Ltd. Drawing No. 926, Noorduyn Drawing No. 16-33901 Main ski base, "Norseman" 29C33902 Main ski pedestal, spring-trimmed with added harness.	
214.	Ski wheel installation, Northwest Industries Drawing No. 120305 "A" Type I, or W.P. Dunphy Drawing No. R.30. Main Ski, NWI M.S. 7500E.	
215.	Ski installation, Saskatchewan Government Airways Drawing Nos. SGA 91 and SGA 92. Main ski base, C.C. & F. Model 16-8BR (drawing no. 29-339140 or Noorduyn Drawing No. 16-339108).	
216.	Ski installation, CPAL 25R2276 Main ski base, Elliott E-16 or A.M.B. 12 Main ski pedestal, M & C P4D.	
217.	Ski installation, Noorduyn Drawing No. 29S33901 Main ski base, Noorduyn Drawing Nos. 16-33996, 16-339140, 16-33992, 16-339101, 16-339108, 16-339128.	
218.	Ski installation, NWI Drawing No. R15300 Main ski, M.S. 7500 (ski wheel)	
219.	Ski installation, TransAir Ltd. Drawing NO. 0134 and Engineering Notice No. E 135 Main ski base, Federal D 8000 Main ski pedestal, M & C P4E.	
220.	Float installation, Noorduyn Drawing No. 16-35100 with Edo 55-7150A floats.	
221.	Float installation Noorduyn Drawing No. 29-35201 to 29-35210 inclusive with Edo 55-7170A floats (OPAS drenching gear).	
222.	Float installation Noorduyn Drawing No. 16-35001 with Edo Yd 6470 floats.	
223.	Auxiliary fin on seaplane: for export to the United States of America (see Item 601).	

Electrical Equipment

301. Generator, 24 volt, 50 amp., Leece-Neville type M-3 (+ 30.5)
302. (a) Battery, Exide G-1, 24 volt (+ 99)  
 (b) Battery, Exide G-1, 24 volt, with slide support 75 lbs. (+236)  
 (Dwg. No. 29-54012)
303. Two retractable landing lights, AN3095-3 (+105.5)
- \*304. Windshield-wiper installation, Marquette 37V6E-1, 24 volt, 9 lbs. (+ 83)  
 in accordance with All American Aviation Dwg. X10754.  
 (Left side only with Item 403)

Interior Equipment

401. One CO<sub>2</sub> fire extinguisher bottle 24 lbs. (+ 66.5)
402. Two hand fire ext. (1 qt.) 5.5 lbs. ea. (+ 95) & (+188)
403. Safety-Glass windshields (2) (Dwg. No. 29-31801) +22 lbs. (+65)
404. Cabin heater, Surface Combustion Co. ABV-50D-H7A 34 lbs. (+109)  
 (Dwg. No. 16-53401) (See NOTE 2(n) for required  
 modifications prior to operation)

Miscellaneous

601. Auxiliary fin: An auxiliary fin must be constructed and installed in Model UC-64AS in accordance with either Noorduyn Dwg. No. 16-35138 (Canadian Car & Foundry Company, Limited, 621 West Craig Street, Montreal, Canada); Dwg. No. 8625 (Horvath and Jacks Co., 1622 N.E. Second Ave., Miami, Fla.); Dwg. No. 4-79-2, 3-79-3 and 3-79-4 (Transmarine Airlines, Inc., 112 Park Avenue, New York, N. Y.); or an auxiliary fin installed at an arm of 320 in. Such fin should be approximately 53 in. in length, 19 in. in height, have an area of 5.5 sq. ft., be constructed to withstand a bending load of 30 lbs. per sq. ft. with no permanent set and be demonstrated as satisfactory by flight test.
- \*602. All American Type AAS-4 mail pick-up and delivery device (All American Aviation, Inc. installation Dwg. No.X10755)
- (a) Pick-up unit 92 lbs. (+210)
- (b) Knives 14 lbs. (+ 83)
- (c) Arm support assembly and jack 19 lbs. (+ 88)
- (d) Pumps and valves 10 lbs. (+190)
- (e) Pulley trusses 14 lbs. (+233)
- (f) Guard, tail-strut 5 lbs. (+300)
- (g) Guard, tail-wheel 3 lbs. (+330)
- (h) Guard, tie-rods 7 lbs. (+301)
- (i) Auxiliary seat 6 lbs. (+175)
- (j) Pick-up arm 7 lbs. (+138)
- (k) Pulley and frame assembly 51 lbs. (+215)
- (l) Hatch assembly 32 lbs. (+205)
- (m) Purden release and Operators emergency belt 7 lbs. (+190)
- (n) Pick-up container and service line, miscellaneous wiring and switches 22 lbs. (+156)
- (o) 3 Right bins and straps (capacity 573 lbs., total) 38 lbs. (+126)
- (p) 2 Left bins and straps (capacity 382 lbs., total) 27 lbs. (+116)
- (q) Belly cargo compartment (capacity 150 lbs.) installed in accordance with -43 lbs. (+164)  
 Noorduyn Dwg. 29-310188, in place of rear fuselage 80 gal. fuel tank.

The following speed and weight limitations shall be observed during pick-up and delivery:

<u>Maximum Speed</u>	<u>Maximum Load</u>
150	60
140	70
130	80
120	90

NOTE 1. 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 (except in the case of air carrier operators having an approved weight control system).

Each airplane must be weighed to determine its weight and balance prior to original certification unless a satisfactory Army weight and balance report is available.

NOTE 2. Prior to certification as a civil aircraft the following must be accomplished:

(Applies to all models: UC-64, UC-64A, UC-64AS, and MK V)

- (a) The following placards must be installed in full view of the pilot:
  - (1) "Intentional Spins Prohibited."
  - (2) "Use 15° flaps for take-off."
  - (3) "Use rear fuselage fuel tank in level flight only."
  - (4) For UC-64AS only: "CAUTION: Water rudders must be raised before take-off and left in that position during flight and until taxing recommences."
- (b) Mark instruments for approved operation limits.
- (c) Date of conversion to certificated status must be marked on identification plate.
- (d) Fuel gauges must be checked for accuracy.
- (e) Tie-downs suitable to prevent shifting of cargo must be provided if cargo is to be carried.
- (f) Passenger seats and safety belt installations other than originally provided by the manufacturer must be of an approved type or shown to meet the strength requirements of CAR 4. Bucket type sets are acceptable.
- (g) All fuel tank filler caps or adjacent surface must be marked to indicate the minimum octane fuel and the tank capacity.
- (h) The oil tank filler cap must be marked "OIL" and indicate capacity.
- (i)
  - (1) For day operation, non-trip-free circuit breakers in circuits used in day operation must be replaced with trip-free breakers as soon as such breakers become generally available. Airplane should be restricted to day operation.
  - (2) To make the airplane eligible for night operation, the following must be accomplished:
    - Install approved landing flares.
    - Replace all non-trip circuit breakers with trip-free breakers as soon as such breakers become generally available.
    - Install approved type position lights.
- (j) Inspect the carburetor hot air intake system to ascertain that there is no leakage of cold air between the hot air shroud and the carburetor. Also determine that the butterfly gate assembly and valve spring fit properly. These items must be satisfactory to obtain adequate carburetor air heat rise. Also ascertain that the carburetor air mixing chamber is securely braced to the engine to prevent failure due to the excessive overhang.
- (k) Adjust the elevator control system stops to provide the correct movement.
- (l) Seal any openings in the firewall with material equivalent to the firewall material.
- (m) The engine nameplate must have the following information added:
  - "C.A.A. Specification No. 5E-2."
- (n) The Surface Combustion fuel burning heater must be made inoperative by disconnecting and plugging the fuel line as near the engine as practicable unless the following modifications are accomplished:
  - (1) A fire resistant bulkhead must be installed between the heater and the belly fuel tank. A firewall having the fire resistant qualities specified in CAR 03.4700 will be acceptable.
  - (2) A fuel shut-off valve, controllable from the pilots' compartment must be installed in the fuel line between the engine and the heater.
  - (3) Shrouds must be installed on the heater exhaust and drain lines to isolate the lines from the airframe.

NOTE 3. The following Noorduyn Aviation Limited and Canadian Car & Foundry Company reports are listed for information only.

N.A.L. Report No.

743	Conversion of Norseman VI fuselage fuel tank compartments to Norseman V baggage compartments.
754	Conversion of Norseman VI wing assembly to Norseman V wing assembly.
756	Conversion of Norseman VI radio installation to Norseman V radio installation.
758	Removal of unnecessary military service equipment.
760	Mods to front belly tank and filler neck well installation.
762	Relocation of battery.
780	Installation of folding bench seats or passenger charts.

C.C.&F. Report No.

761	Same as N.A.L. Report No. 760.
772	Substitution of Grimes landing light for U.S.A.A.F. type.
775	Installation of improved exhaust tail pipe.
776	Installation of new design pilot and co-pilot seats.
777	Installation of metal doors and window frames.
780A	Installation of upholstered passenger chairs.
789	Relocation of B-16 compass.
791	Installation of auxiliary baggage compartment at (+236).
792	Installation of folding bench type seats.

All Noorduyn Aviation Limited and Canadian Car and Foundry Company Report Numbers and Drawing Numbers are available from Northland Aircraft Service, Attn: Gordon H. Hughes, Number One Hughes Road, P.O. Box 220, Ignace, Ontario, Canada P0T - 1T0.

NOTE 4. Aircraft Specification (AS) No. A-2-578 is held in public domain due to non-existence of AS holder. The manufacturer appearing in the AS is the last known holder of AS No. A-2-578.

NOTE 5. The owner/operator should report any failures, malfunctions, and defects in accordance with Federal Aviation Regulation Part 21.3.

NOTE 6. Previous revision (Revision 3) was dated March 10, 1954.

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