

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A33SO
Revision 5

Grumman

HU-16A
HU-16B
HU-16C (UF-1, UF-1G)
HU-16D (UF-2)
HU-16E (UF-2G)

April 27, 2006

TYPE CERTIFICATE DATA SHEET A33SO

This data sheet, which is part of Type Certificate No. A33SO, prescribes conditions and limitations under which the product for which type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: Air Crane, Inc.
 P.O. Box 603
 Opa Locka, Florida 33054

I - Grumman Model HU-16A (Restricted Category), approved September 29, 1988

Engines	2 Wright F1820-76A, B, C, D				
Fuel	100/130 minimum grade aviation gasoline				
Engine Limits	<u>Low Impeller Ratio</u>	<u>HP</u>	<u>RPM</u>	<u>MP</u>	<u>ALT.FT.</u>
	Takeoff (five min.)	1425	2700	51.5	Sea Level
	Takeoff (five min.)	1425	2700	50.5	2600
	Maximum Continuous	1275	2500	46.5	Sea Level
	Maximum Continuous	1275	2500	45.5	3500
	Straight line variation between points given				
Propeller and Propeller Limits	3 blade Hamilton Standard Hydromatic constant speed full feathering and reversible with integral oil systems.				
	Hub Model No.: 43D50, 43D50-601, 603 or 637				
	Blade No.: 6601- (), 6601A-7 thru -9, or 6621A-7, Nickel Plated 6999-7 thru -9, or 7005-7, 7007B, 7007B-7				
	Pitch settings at the 42 in. station:	Low	16 degrees		
		Feather	89 degrees		
		Reverse	-12 degrees		
	Diameter:		Maximum	132.00 in.	
			Minimum	129.36 in.	
Airspeed Limits	Vne (never exceed)	260 KIAS			
	Severe Turbulence	130 KIAS			
	Full Aileron Deflection	150 KIAS			
	Landing Gear Extended	130 KIAS			
	Landing Lights Extended	120 KIAS			
	Flaps Down 15	175 KIAS			
	Flaps Down 30	135 KIAS			
	Flaps Full Down 40	115 KIAS			
	De-Icer Boot Operation	200 KIAS			

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C.G. Range	294" (20.5% MAC) to 304.0" (28% MAC)	
Datum	71.5 forward of nose jack pad	
Leveling Means	Leveled laterally by leveling lugs located in nose wheel well and longitudinally by a plum bob drop from the small hole located in the shelf of either wheel well.	
Maximum Weight	33,500 lbs.	
Minimum Crew	2 (pilot & copilot)	
Fuel Capacity	Right and Left Main Tanks	340 gal. (each), 2040 lbs., (+297.3)
	Right and Left Float Tanks	212 gal. (each), 1272 lbs., (+307.5)
	Right and Left Drop Tanks	295 gal. (each), 1770 lbs., (+295.0)
Oil Capacity	Right and Left Tanks	25.6 gals (each), 192 lbs., (+262.0)
Control Surface Movement	Wing Flaps	Down 40 ± 3
	Aileron Tab	Up 18± 1 Down 12 ± 1
	Aileron	Up 17± 1 Down 17 ± 1
	Elevator Tab	Up 5 ± 1 Down 12 ± 1
	Elevator	Up 30± 1 Down 20 ± 1
	Rudder Tab	Right 17± 1 Left 25 ± 1
	Rudder	Right 20± 1 Left 15 ± 1
Other Operating Limitation	U.S.A.F. Flight Manual No. T.O. 1U-16(H)A-1, dated Apr. 8, 1965	
Serial Nos. Eligible	149836, 142428, 132429, 131266, 131892, 137900, 137926, 137927, 131916, 142361, 141276, 131911, 142361, 137930, 49-075	

II - Grumman Model HU-16B, (Restricted Category), approved September 29, 1988

Engines	2 Wright F1820-76A, B, C, D				
Fuel	100/130 minimum grade aviation gasoline				
Engine Limits	<u>Low Impeller Ratio</u>	<u>HP</u>	<u>RPM</u>	<u>MP</u>	<u>ALT.FT.</u>
	Takeoff (five min.)	1425	2700	51.5	Sea Level
	Takeoff (five min.)	1425	2700	50.5	2600
	Maximum Continuous	1275	2500	46.5	Sea Level
	Maximum Continuous	1275	2500	45.5	3500
	Straight line variation between points given				
Propeller and Propeller Limits	3 blade Hamilton Standard Hydromatic constant speed full feathering and reversible with integral oil systems.				
	Hub Model No.: 43D50, 43D50-601, 603 or 637				
	Blade No.: 6601- (), 6601A-7 thru -9, or 6621A-7, Nickel Plated 6999-7 thru -9, or 7005-7, 7007B, 7007B-7				
	Pitch settings at the 42 in. station:	Low	16 degrees		
		Feather	89 degrees		
		Reverse	-12 degrees		
	Diameter:	Maximum	132.00 in.		
		Minimum	129.36 in.		

Airspeed Limits	Vne (never exceed)	254 KIAS
	Severe Turbulence	130 KIAS
	Full Aileron Defection	150 KIAS
	Landing Gear Extended	130 KIAS
	Landing Lights Extended	120 KIAS
	Flaps Down 15	243 KIAS
	Flaps Down 30	163 KIAS
	Flaps Full Down 40	140 KIAS
	De-Icer Boot Operation	175 KIAS
C.G. Range	294.4" (20.5% MAC) to 304.0" (28% MAC)	
Datum	71.5 forward of nose jack pad	
Leveling Means	Leveled laterally by leveling lugs located in nose wheel well and longitudinally by a plum bob drop from the small hole located in the shelf of either wheel well.	
Maximum Weight	35,400 lbs.	
Minimum Crew	2 (pilot & copilot)	
Fuel Capacity	Right and Left Main Tanks	340 gal. (each), 2040 lbs., (+297.3)
	Right and Left Float Tanks	212 gal. (each), 1272 lbs., (+307.5)
	Right and Left Drop Tanks	295 gal. (each), 1770 lbs., (+295.0)
Oil Capacity	Right and Left Tanks	25.6 gals (each), 192 lbs., (+262.0)
Control Surface Movement	Wing Flaps	Down 40 ± 3
	Aileron Tab	Up 18± 1 Down 12± 1
	Aileron	Up 17± 1 Down 17± 1
	Elevator Tab	Up 5 ± 1 Down 12± 1
	Elevator	Up 30± 1 Down 20± 1
	Rudder Tab	Right 16± Left 26±1
	Rudder	Right 20± Left 15±1
Other Operating Limitations	U.S.A.F. Flight Manual No. T.O. 1U-16(H)B-1, dated Dec. 1, 1967	
Serial Nos. Eligible	0126, 1030, 9099, 51-5291, 51-7195A, 51-0043, 86B, 51-0019, 51-7162, 49-097, 99-7213, 51-7187, 51-025, 2132, 51-7246, 51-5303, 146427, 51-7240	

III - Grumman Model HU-16C (UF-1, UF-1G) (Restricted Category), approved January 23, 1995

Same as the Model HU-16A, see Section I for information, except as follows:

Serial Nos. Eligible	131904, 131905, 131906, 131910, 131917, 137912, 137921, 137924, 137928, 137932, 137933, 141262, 141265, 141271, 142360, 142362, 17164
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IV-Grumman Model HU-16D (UF-2) (Restricted Category), approved January 23, 1995

Same as the Model HU-16B, see Section II for information, except as follows:

Other Operating Limitations:	U.S. Navy Flight Manual NAVWPS 01-85AB-1
Serial Nos. Eligible	7188, 7214, 7227, 7245, 7226, 1311, 146426, 141278

V-Grumman Model HU-16E (UF-2G) (Restricted Category), approved January 23, 1995

Same as the Model HU-16B, see Section II for information, except as follows:

Other Operating Limitations: U.S. Navy Flight Manual NAVWPS 01-85AB-1

Serial Nos. Eligible 1265, 1272, 1294, 137904, 137911, 2135

DATA PERTINENT TO ALL MODELS

Certification Basis FAR 21.25(a)(2), effective February 1, 1965, Amendments 21-1 through 21-60. Date of application July 27, 1988. Type Certificate A33SO, issued September 29, 1988, for the special purpose of patrolling, agricultural, forest and wildlife conservation, aerial surveying, weather control, and carriage of cargo.

Production Basis None.

Equipment The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis) must be installed in the aircraft for certification. In addition, Airplane Flight Manual, T.O. 1U-16(H) A-1, T.O. 1U-16(H)B-1, or NAVWPS 01-85AB-1 must be included in the airplane.

Note 1. Current weight and balance report including a list of equipment in certificated empty weight and loading instructions when necessary must be in the aircraft at the time of original certification and at all times thereafter.

Note 2. The following placard must be installed in clear view of the pilot:

THIS AIRPLANE MUST BE OPERATED AS A RESTRICTED CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS, AND MANUALS.

No persons may be carried on a restricted category civil aircraft unless they are necessary for the accomplishment of the work activity directly associated with that special purpose. Reference FAR 91.313.

Note 3. Models HU-16B, HU-16D and HU-16E airplanes are limited to the following flight hours due to the installation of 7075-T6 spar caps in the wing center section:

<u>HU-16B S/N's</u>	<u>Flight Hrs.</u>	<u>HU-16D S/N's</u>	<u>Flight Hrs.</u>	<u>HU-16E S/N's</u>	<u>Flight Hrs.</u>
0126	8906	7188	9656	1265	9430
1030	9505	7214	9855	1272	9723
9099	8307	7227	9043	1294	9388
51-5291	8936	7245	9855	137904	8932
51-7195A	8646	7226	9049	137911	8312
51-0043	8696	1311	8284	2135	9305
86B	9855	146426	7871		
51-0019	9630	141278	8454		
51-7162	9500				
49-097	8073				
99-7213	9593				
51-7187	8254				
51-025	8621				
2131	8785				
51-7246	8922				
51-5303	8433				
146427	8371				
51-7240	9157				

Note 4. These airplanes must be serviced and maintained in accordance with T.O. 1U-16(H)A/B-2 or NAVWPS 01-85AB-2 and an approved progressive maintenance program.

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- Note 5. A. The airplane must satisfactorily pass an inspection for possible hidden damage and for workmanship and materials used in making any repairs and/or alternations. A FAA 8130-9 must be completed.
- B. The maintenance, overhaul, and modification records must be reviewed for changes made by the military services that may have an effect on the airworthiness of the airplane. Modifications and changes of equipment which effect the safety or performance of the airplane must be approved by the Federal Aviation Administration.
- C. Conduct an inspection of the engine support structures to verify their structural integrity.
- D. This aircraft is not equipped or approved for operation with APU.
- E. The modification data plate in restricted category must be installed next to manufacturers data plate in cockpit.
- Note 6. Carriage of hazardous materials is prohibited unless compliance is shown with applicable regulations in the Code of Federal Regulations, Title 49, Part 175.
- Note 7. The following note must be placed under "exceptions" on all export certificates of airworthiness for this airplane. "This airplane is type certificated in the restricted category and may not meet the applicable airworthiness code as provided by Annex 8 to the Convention of International Civil Aviation."
- Note 8. Flight into known icing is prohibited.
- Note 9. Approved cargo nets/straps to be FAA TSO'd equipment.
- Note 10. Two (2) oxygen masks providing 100% breathing capacity for both pilots and two (2) smoke masks are required for flight in the aircraft at all times, if in cargo configuration.
- Note 11. Two (2) fire extinguishers installed - one in cockpit and one in cabin are required.

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