DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A-2-575
Revision 16
BOEING
(NORTH AMERICAN)
BC-1A
AT-6 (SNJ-2)
AT-6A (SNJ-3)
AT-6B
AT-6C (SNJ-4)
AT-6D (SNJ-5)
AT-6F (SNJ-6)
SNJ-7
T-6G
November 16, 2009

AIRCRAFT SPECIFICATION NO. A-2-575

Aircraft Specification Holder	The Boeing Company 4000 Lakewood Blvd. Long Beach, California 90846
Aircraft Specification Holder Record	Rockwell International transferred ownership to The Boeing Company on July 23, 2009 North American Aviation transferred ownership to Rockwell International Corp. on February 20, 1996

I - Model BC-1A, AT-6 (Navy SNJ-2), 2 PCLM, Approved November 6, 1946

Engine	Pratt & Whitney Military model R-1340-47, R-1340-49, R-1340-AN-1 or R-1340-36
Fuel	87 min. grade 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) Takeoff (one minute), 36.0 in.Hg., 2250 rpm (600 hp)
Airspeed limits	Level flight or climb 189 mph (164 knots) True Ind. Glide or dive 226 mph (197 knots) True Ind. Flaps extended 111 mph (97 knots) True Ind.
C.G. range	(+27.3) to (+31.2) with landing gear extended.
Empty weight C.G. range	None
Maximum weight	5340 lbs. (See NOTE 3 for crop dusters)
No. seats	2 (+45 and +97) (See Items 408 and 409 for 3 or 4-place)
Maximum baggage	100 lbs. (+126)
Fuel capacity	170 gals. (+37) (One integral tank in wing center section with dividing partition)
Oil capacity	15.5 gals. (-8)

Control surface movements

Wing flaps			Down	41°
Elevators	Up	30°	Down	20°
Elevator trim tabs	Up	6°	Down	17°
Ailerons	Up	30°	Down	16°
Aileron balance tabs	Up	13°	Down	27°
Rudder	Right	35°	Left	35°
Rudder trim tab	Right	4°	Left	10°

Note: Aileron balance tabs may be used in fixed positions as trim tabs. When rudder and aileron control systems are modified pr North American Dwg. 88-05016, pertinent control surface movements are as follows:

Ailerons	Up	14°	Down	16°
Rudder	Left	30°	Right	30°

Serial Nos. eligible	All manufacturer's serial Nos. 55-1548 through 55-1630, 59-1631 through 59-1639, 59-1906 through 59-1990, 65-1997 through 65-2032, 79-3983 through 79-4007. Harvard I aircraft manufactured in the United States: Manufacturer's serial Nos. 49-748 through 49-947, 49-1053 through 49-1252 (See NOTE 4).
Required equipment	In addition to the pertinent required basic equipment specified in CAR 4a, the following items of equipment must be installed: Items 1, 2, 101, 103, 104, 105, 109, 111, 201(a) or (b), 202(a) or (b), 203(a) or (b), 301(a), 405(a), (b) or (c), 406(a) or (b), 407, 602. Aluminum alloy outer wing panels and aft fuselage section are required.

II - Model AT-6A (Navy SNJ-3), AT-6B, AT-6C (Navy SNJ-4), AT-6D (Navy SNJ-5), AT-6F (Navy SNJ-6), Navy SNJ-7, T-6G; 2 PCLM, Approved February 1, 1946

Engine	Pratt & Whitney Military model R-1340-47, R-1340-49, R-1340-AN-1 or R-1340-36
Fuel	87 min. grade 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) Takeoff (one minute), 36.0 in.Hg., 2250 rpm (600 hp)
Airspeed limits	Level flight or climb 189 mph (164 knots) True Ind. Glide or dive 226 mph (197 knots) True Ind. Flaps extended 115 mph (97 knots) True Ind.
C.G. range	(+27.5) to (+32.5) with landing gear extended.
Empty weight C.G. range	None
Maximum weight	5300 lbs.
No. seats	2 (+45 and +97) (See Items 408 and 409 for 3 or 4-place)
Maximum baggage	100 lbs. (+126)
Fuel capacity	111 gals. (+36) (Two 55.5 gal. tanks in wing center section) (20 gal. reserve included in 55.5 gal. capacity of left tank) Note: In addition to the above, Models T-6G incorporate an additional 29 gals. (+50). (Two internal bladder cells in outer wing panel, 14.5 gals. each side).
Oil capacity	10 gals. (-9)

Control surface movements

Wing flaps			Down	45°
Elevators	Up	30°	Down	20°
Elevator trim tabs	Up	8°	Down	16°
Ailerons	Up	29°	Down	16°
Aileron balance tabs	Up	15°	Down	30°
Rudder	Right	35°	Left	35°
Rudder trim tab	Right	4°	Left	10°

Note: Aileron balance tabs may be used in fixed positions as trim tabs. On some of the models AT-6C and on all of the models AT-6D, AT-6F and T-6G the rudder and aileron control systems have been modified per North American Dwg. 88-05016. The pertinent control surface movements for these aircraft are as follows:

Ailerons	Up	14°	Down	16°
Rudder	Right	30°	Left	30°

Serial Nos. eligible	All serial numbers of aircraft models covered by this section. (Manufacturer's serial number will be found stamped on same identification plate with the military serial number.) Harvard II aircraft manufactured in the United States: Manufacturer's serial Nos. 66-2234 through 66-2833, 75-3048 through 75-3057, 75-3418 through 75-3507, 76-3508 through 76-3957, 81-4008 through 81-4132. (See NOTE 4).
Required equipment	In addition to the pertinent required basic equipment specified in CAR 4a, the following items of equipment must be installed:

Items 1, 2, 101, 103, 104, 105, 109, 111, 201(a) or (b), 202(a) or (b), 203(a) or (b), 301(a), 405(a), (b) or (c), 406(a) or (b), 407, 602. Aluminum alloy outer wing panels and aft fuselage section are required.

SPECIFICATIONS PERTINENT TO ALL MODELS

Datum	Leading edge of wing center section
Leveling means	Lugs left side rear cockpit
Certification basis	Airworthiness Certificate only (CAR 4a)
Export eligibility	Eligible for export to all countries subject to the provisions of MOP 2-4 except as follows: (Note: Export license from State Department may be required) Canada - Landplane, eligible Skiplane, not eligible

Equipment: A plus (+) or minus (-) sign preceding the weight of an item indicates net weight change when that item is installed.

Propeller and Propeller Accessories

1. Propeller - Hamilton Standard, constant speed hub 12D40, blades 6101-12 to -14, incl. Dia.: Max. 9'1", Min. allowable for repairs 8'10-5/8". No further reduction permitted. Pitch settings at 42 in. sta.: 11.5° low, 27° high Following placard required: (With blade models 6101-12 and -13), "Avoid ground operation between 1280 and 1800 RPM unless the aircraft is headed into the wind." (With blade model 6101-14), "Avoid ground operation between 1450 and 1800 RPM unless the aircraft is headed into the wind."	175 lbs. (-57)
2. Constant speed governor, Ham. Std. 1M12-A, -G, or 1P12-A	5 lbs. (-50)
3. Propeller spinner (Montgomery) Part No. 42J15621 for Hamilton Standard propeller	12 lbs. (-57)

Engine and Engine Accessories - Fuel and Oil System

101. Carburetor air heater	
102. Air filter, Air Maze	3 lbs. (-23)
103. Engine-driven fuel pump (Army Type B-21 or F-10)	1 lb. (-30)
104. Wobble pump and strainer (Army Type D-3)	12 lbs. (+16)
105. Oil temperature regulator (8" dia. radiator)	21 lbs. (-9)
106. Oil dilution system	3 lbs. (+2)
107. Exhaust gas analyzer	5 lbs. (+20)
108. Engine-driven vacuum pump (Pesco Type B-12)	6 lbs. (-26)
109. Engine-driven hydraulic pump (Pesco 1P-263-E)	
110. Starter	
(a) 12 volt (Eclipse type C-20 or H-2)	33 lbs. (-19)
111. Cylinder head temperature gages (See NOTE 2(k) for markings)	

Landing Gear and Floats

201. Main wheels, tires and tubes	
(a) 27" smooth contour wheels and brakes (AC-25258 or Hayes Model 2750A) with 6-ply tires	131 lbs. (+10)
(b) 27" smooth contour wheels and brakes (AN-W-6 or Hayes Model 2750A) with 8-ply tires	136 lbs. (+10)
202. Tail wheel, tire and tube	
(a) 10" smooth contour wheel with 6-ply tire	6 lbs. (+234)
(b) 12.5" smooth contour wheel with 6-ply tire	10 lbs. (+234)
203. Tail wheel gear (less wheel, tire and tube)	
(a) Steerable	26 lbs. (+230)
(b) Free swivel with lock	26 lbs. (+230)

Electrical Equipment (24 volt electrical system may be substituted for 12 volt system per North American Dwg. 121-954004)

301. Battery and case	

(a) 12 volt - 68 amp. hr. (5 hr. rate) (Exide 6-TAS-17)	71 lbs. (-1)
302. Generator	
(a) 12 volt - 50 amp. (Leece-Neville E-5A)	32 lbs. (-26)
303. Landing lights	3 lbs. (+21)
304. Radio installations	
(a) Antenna and mast	7 lbs. (+29)
(b) Marker beacon receiver and antenna	5 lbs. (+63)
(c) Radio compass and loop	42 lbs. (+14)
305. Interphone	10 lbs. (+62)
306. Electric heated pitot	1 lb. (+7)

Interior Equipment

401. Fire extinguisher and bracket	7 lbs. (+101)
402. Cabin heater and ventilator	17 lbs. (-18)
403. Oxygen system	
(a) High pressure	30 lbs. (+136)
(b) Low pressure	29 lbs. (+116)
404. Provisions for 90 lbs. of photographic equipment at	(+113)
405. Front seat	
(a) Dural	8 lbs. (+52)
(b) Wood	12 lbs. (+52)
(c) Magnesium (Warren McArthur or Shick-Johnson)	8 lbs. (+52)
406. Rear seat	
(a) Swivel type	28 lbs. (+101)
(b) Dural	8 lbs. (+101)
407. Safety belts, A-3,B-11, B-12, or B14	
408. Two-place rear seat installation (Vent Aircraft & Finance Co., 4600 Dehlia St., Hayden Field, Denver, Colo.) Seat kits to be installed in accordance with the manufacturer's installation instructions dated October 9, 1946.	
409. "Air Tandem" Three passenger seat kit (Ralph R. Richardson, Route 1, Box 303, Port Orchard, Washington). Installation must be made per manufacturer's dwgs. and instructions as listed in Detail Folder No. RC-2 consisting of Pages 1, 1a, 1b, 2 thru 9 and three pages of Installation Instructions.	

Miscellaneous (Not listed above)

601. Blind flying hood	4 lbs. (+105)
602. Control surface tabs, dural or wood	
603. Mooring kit	11 lbs. (+140)
604. Engine cover	15 lbs. (+140)
605 Wood horizontal stabilizer	-3 lbs. (+222)

NOTE 1. Current weight and balance report including list of equipment included in certificated empty weight must be in each aircraft at the time of original certification and at all times thereafter. If removable ballast is used to stay within the specified forward limit, the following placard must be installed on instrument panel and baggage compartment: "When flown solo ____ lbs. of baggage or equivalent must be carried in baggage compartment."

NOTE 2. The following must be accomplished prior to original certification of the aircraft:

(a) Aircraft must have aluminum alloy wing outer panels and fuselage aft sections.
(b) Placard rear cockpit, "Solo Flying From Front Seat Only."
(c) Placard both cockpits, "Intentional Spinning Prohibited" and "Caution: Unless Left Tank is Full, use reserve or Right Tank for Take-off and Landing."
(d) Placard baggage compartment:
"Maximum Capacity 100 lbs.
With Both Seats Occupied __ lbs. Maximum"
The latter weight to be determined per NOTE 1, the limiting factor being the rearward center of gravity.
(e) Mark fuel tank filler caps, "Fuel capacity __ gal., 87 min. oct."
(f) Mark oil tank filler cap, "Oil capacity __ gal."
(g) Mark instruments for approved operating limits.
(h) Provide oil measuring stick for oil tank.

(i) For day operation, electrical protective devices in circuits to all equipment used in such operation should be accessible to the pilot in flight. The airplane should then be restricted to day operation.

(j) In order for these aircraft to be eligible for night operation, it will be necessary that the following changes be made:

1. Remove the present red and green wing position lights and cover the mounting holes with aluminum alloy plates. Install Grimes Model E wing-tip position lights and connect them into the present position light junction boxes located near the wing tips. Also remove the present two rear position lights from the fin and replace them with either Grimes lights No. A-4060 or Grimes lights A-2063 modified specifically by Grimes for use on these airplanes. Either type of lights should have 15 candlepower lamps installed.
2. Remove position light resistors and eliminate the work "Dim" at the position light switch.
3. Relocate all electrical circuit protectors so that they are accessible to the pilot in flight.

(k) The cylinder head temperature gauge be marked to indicate a limiting temperature of 500°F.

(l) On models BC-1A, AT-6 and SNJ-2 only, inspect fuel tank to determine whether gasoline can flow from one compartment into the other. If so, the following placard should be placed adjacent to the fuel selector valve: "Refer to both fuel gauges to determine remaining fuel."

(m) Add the following information to the engine nameplate: "C.A.A. Spec. No.5E-2."

(n) Fixed ballast not to exceed 33 lbs. may be installed at Station 240 to prevent exceeding the forward center of gravity limit. Ballast weight installation must be approved and is to be placarded, "Removal requires weight and balance check."

(o) On Model T-6G determine that the center wing flap is in the operative configuration.

NOTE 3. Model AT-6 series aircraft certificated in the restricted category prior to October 11, 1950 for crop dusting may continue to be operated with the following limitations:

	AT-6	AT-6A, 6B, 6C
(a) Maximum takeoff weight	5870 lbs.	5830 lbs.
Maximum landing weight	5340 lbs.	5300 lbs.
Maneuvering speed at maximum weight	151 mph	151 mph

(b) The following placard must be in full view of the pilot:
"Maneuvering speed at maximum weight not to exceed 151 mph."
Each aircraft certificated on the above basis must be subjected to a flight test to determine that the installed duster apparatus has no adverse effect on the flight characteristics of the aircraft. In the case of identical duster installations in aircraft of the same model, the flight test need only be made to the prototype.

All original certification in the restricted category after October 11, 1950 must be in accordance with CAR and CAM 8.

NOTE 4. Prior to civil certification, it must be ascertained that Harvard aircraft manufactured in the United States conform to the type design. Some of the known deviations from the original configuration are discussed as follows:

(a) The mixture control must be reworked to standard American system, that is "lean-aft, Rich-forward". A conversion to exact AT-6 system would be acceptable. Any other system would have to be evaluated.

(b) The long exhaust stack configuration should be modified to the AT-6 system. Utilization of winterized stack would require evaluation with respect to:

(1) Carbon monoxide content in the cockpit from both the fresh air system, heat exchanger within the stack and the stack proper.

(2) Detrimental temperature effects on the fuselage skin due to the proximity of the stack to the fuselage as well as possible adverse exhaust back pressure.

(3) Determination that system was United States manufactured inasmuch as a foreign built unit would not be eligible for approval.

(c) The use of Pratt & Whitney S3H1 engine is acceptable with Item 1 propeller.

(d) The acceptability of engine accessories must be determined. In this regard, Technical Order 00-25-29

"Maintenance Interchangeability Cross Reference Charts" may be utilized as a guide.

(e) The use of a foreign manufactured landing gear is not considered acceptable, and therefore must be replaced by an acceptable gear manufactured in the United States.

(f) The landing gear fairing and associated attachment hardware must be installed.

(g) The forward control stick has a four inch hand grip which differs from the standard straight stick installation. If clearance from the structure appears adequate this may be considered acceptable.

(h) Electrical system deviations from the approved type design data must be appropriately changed and adjusted satisfactorily.

(i) Airspeed flap speed and cylinder head gage limits must be incorporated as in the AT-6 aircraft.

Other existing difference must be satisfactorily resolved with the local FAA Engineering Office prior to certification.

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