

MODELS: Boeing 314 and A-314

T.C. NUMBER: 704

I - Model 314, 89 PCFoM (Approved 1/25/39)

Engines	4 Wright Double Row Cyclones GR-2600-A2, geared 16.9
Fuel	95 minimum octane aviation gasoline
Engine limits	Maximum, except take-off
(See NOTE 9)	(Straight line manifold pressure variation with

altitude to 5400 ft.) 33.2 in. Hg., 2100 rpm  
 (1200 hp)  
 (Sea level) 35.0 in. Hg., 2100 rpm (1200 hp)  
 Take-off (two minutes)  
 42.5 in. Hg., 2400 rpm (1550 hp)  
 Airspeed limits Level flight or climb - 178 mph (155 knots)  
 True Ind.  
 Glide or dive - 212 mph (184 knots) True Ind.  
 Flaps extended (40 degrees or less) - 121 mph  
 (105 knots) True Ind.  
 Flaps extended (more than 40 degrees) - 105 mph  
 (91 knots) True Ind.  
 Usable ceiling (May be realized under conditions shown)

Ceiling (Ft.)	Weight (Lbs.)	RPM	Manifold Pressure	True Ind. Airspeed (Knots)	Prop. Blades Model	Cowl Flap Opening	De-Icers Installed
8,900	80,000	2100	Full throttle	100	6159A-0	---	---
7,500	84,000	2100	Full throttle	102	6159A-0	---	---
10,000	80,000	2100	Full throttle	100	6243A-3	5 degrees	Yes
9,000	84,000	2100	Full throttle	102	6243A-3	5 degrees	Yes

Additional Conditions  
 (1) Standard air  
 (2) One engine inoperative  
 (3) Inoperative propeller fully feathered  
 (4) Carburetor air intake on "cold air"  
 (5) De-icers not operating

C.G. range  
 (See NOTE 7)  
 In Flight:  
 At loaded weights of 80,000 lbs. or more (455.6)  
 (22 percent MAC) to (478.2) (30.7 percent MAC)  
 At loaded weights less than 80,000 lbs. (444.3)  
 (17.65 percent MAC) to (478.2) (30.7 percent MAC)  
 Landing:  
 At loaded weights of 70,330 lbs. or more (463.4)  
 (28 percent MAC) to (478.2) (30.7 percent MAC)  
 At loaded weights less than 70,330 lbs. (455.6)  
 (22 percent MAC) to (478.2) (30.7 percent MAC)  
 Datum  
 MAC  
 Nose of hull  
 Leaveling means  
 258.79 in. Leading edge of MAC at (398.66).  
 Lugs or starboard truss bulkhead in hull center  
 section  
 Weight limits  
 Landing 80,000 lbs. (See NOTES 2 and 3)  
 Take-off 84,000 lbs. (Se NOTES 2 and 3)  
 No. seats  
 89 maximum (variable)  
 Maximum baggage  
 10,826 lbs. (See NOTE 4)  
 Fuel capacity  
 5448 gallons or 32688 lbs. (2 tanks at 600 gallons  
 or 3600 lbs. each in wing stubs, 1 tank 960  
 gallons or 5760 lbs. (inboard) and 1 at 1164  
 gallons or 6984 lbs. (outboard) in each hydro-  
 stabilizer)  
 Oil capacity  
 300 gallons (4 tanks at 75 gallons each in wing  
 leading edge inboard of each engine)  
 Control surface  
 movements  
 Not available  
 Serial Nos. eligible  
 1988, 1989, 1990, 1991, 1992 and 1993  
 Required equipment  
 Items 101, 102, and 103

II- Model A-314 89 PCFoM (Approved 5/2/41)

(Same as Model 314 except for engine, powerplane installation, engine mount,  
 and inner structural details.)

Engines  
 4 Wright Double Row Cyclones 709C14AC1 or 579C14AC1,  
 geared 16:9  
 Fuel  
 95 minimum octane aviation gasoline  
 Engine limits  
 Maximum, except take-off  
 (Straight line manifold pressure variation with  
 altitude to 6200 ft.) 35.8 in. Hg., 2300 rpm  
 (1350 hp)  
 (Sea level) 37.5 in. Hg., 2300 rpm (1350 hp)  
 Take-off (two minutes)  
 43.5 in. Hg., 2400 rpm (1600 hp)  
 Airspeed limits  
 Level flight or climb - 178 (155 knots) True Ind.  
 Glide or dive - 212 mph (184 knots) True Ind.

Flap extended (40 degrees or less) 121 mph (105 knots) True Ind.  
 Flaps extended (more than 40 degrees) 105 mph (91 knots) True Ind.  
 Usable ceiling (May be realized under conditions shown)

Ceiling (Ft.)	Weight (Lbs.)	RPM	Manifold Pressure	True Ind. Airspeed (Knots)	Prop. Blades Model	Cowl Flap Opening	De-Icers Installed
10,000	80,000	2300	Full throttle	100	6243A-3	5 degrees	Yes
9,000	84,000	2300	Full throttle	102	6243A-3	5 degrees	Yes

Additional Conditions (1) Standard Air  
 (2) One engine inoperative  
 (3) Inoperative propeller fully feathered  
 (4) Carburetor air intake or "cold air"  
 (5) De-icer's not operating

C.G. range (See NOTE 7)  
 In Flight:  
 At loaded weights of 80,000 lbs. or more (455.6) (22 percent MAC) to (478.2) (30.7 MAC)  
 At loaded weights of less than 80,000 lbs. (444.3) (17.65 percent MAC) to (478.2) (30.7 percent MAC)  
 Landing:  
 At loaded weights of 70,330 lbs. or more (463.4) (25 percent MAC) to (478.2) (30.7 percent MAC)  
 At loaded weights less than 70,330 lbs. (455.6) (22 percent MAC) to (478.2) (30.7 percent MAC)

Datum Nose of hull  
 MAC 258.79 in. Leading edge of MAC at (398.66)  
 Leveling means Lugs on rear spar in center section  
 Weight limits Landing 80,000 lbs. (See NOTES 2 and 3)  
 Take-off 84,000 lbs. (See NOTES 2 and 3)  
 No. seats 89 maximum (variable)  
 Baggage 10,826 lbs. (See NOTE 4)  
 Fuel capacity 5448 gallons or 32688 lbs. (2 tanks at 600 gallons or 3600 lbs. each in wing stubs, 1 tank 960 gallons or 5760 lbs. (inboard) and 1 at 1164 gallons or 6984 lbs. (outboard) in each hydro-stabilizer)  
 Oil capacity 206 gallons (2 outboard tanks at 50 gallons each and 2 inboard tanks at 53 gallons each and in wing leading edge inboard of each engine)

Control surface movements Not available  
 Serial Nos. eligible 2081 and up (See NOTE A)  
 Required equipment Items 101, 102 and 103

Specifications Pertinent to All Models:  
 Certification basis Type Certificate No. 704 (Aero. Bulletin 7A requirements)  
 Production basis None (See NOTE A)  
 Export eligibility Eligible for export to all countries except Australia and New Zealand, subject to the provisions of MOP 2-4

**EQUIPMENT:**

Propellers and Propeller Accessories (except propeller de-icer)

101.	Propellers - Hamilton Standard 3 blade metal constant speed hydromatic full feathering hubs 23E50, blades 6243A-3 to 6243A-6 inclusive. Diameter 14'9-3/8" maximum, 14'5-5/8" minimum. For interchangeable blade models see NOTE 6 of Propeller Spec. No. 603. Low pitch setting 10 degrees at propeller Sta. 72. (See NOTE 8)	1928 lbs.	(276)
203.	Propellers (for Model 314 only) Hamilton Standard 3-blade constant speed hydromatic full-feathering hubs 23E50, blades 6159A-0 to 6159A-3 inclusive. Diameter 14'3/8" maximum, 13'8-3/4" minimum. For interchangeable blade models see NOTE 6 of Propeller Spec. No. 603. (See NOTE 9)	1819 lbs.	(276)

Engines and Engine Accessories - Fuel and Oil System

102. Fuel dump valve installation per Drawing  
No. 15-5147

De-icer Equipment:

201. De-icer installation (See NOTE 3)

- A. Wing and control surfaces - Goodrich Model C-140
- (1) Boots and attachments, pump, controls, valves, clips and brackets (removable)
  - (2) Miscellaneous brackets, lines, fittings, valves, controls, wirings, switches, and conduit (fixed) 8 lbs. (370)
  - (3) Wing, fuselage, and empennage lines (fixed) 199 lbs. (501)
- B. Propeller (removable)
- (1) 4 slinger rings (Hamilton Standard 52903) 14 lbs. (282)
  - (2) 2 motor driven pumps (Eclipse M3454), 2-20 gallon tanks 38 lbs. (444)
  - (3) 2 hull ice protection plates 19 lbs. (267)

NOTE A. Each aircraft manufactured subsequent to 6/21/44, must, prior to original certification, satisfactorily pass:

- (a) An inspection for workmanship, materials and conformity during construction.
- (b) A final inspection of the completed aircraft.
- (c) Check of flight characteristics.

NOTE 1. Weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be submitted for each aircraft with original inspector's report and each subsequent report covering change in effective equipment.

NOTE 2. A. If provisions other than Item 102 are made for dumping, the fuel dump valves shall be made positively inoperative.

- B. If Item 102 is installed, the aircraft operation record shall incorporate one of the following statements, as the case may be:
- (1) Non-Air Carrier. "Fuel shall not be dumped except in accordance with the provision of CAR 60.900."
  - (2) Air Carrier.
    - (a) With authorized weight in excess of maximum landing weight - "Landing shall not be made at a weight in excess of maximum landing weight except in accordance with CAR 61.7811. Fuel shall not be dumped except in accordance with CAR 61.7811 and then only if the pilot deems it safer than landing at a weight in excess of maximum landing weight."
    - (b) With authorized weight not in excess of maximum landing weight - "Fuel shall not be dumped except in accordance with CAR 61.7811."

NOTE 3. Maximum landing or take-off weight may be increased 480 lbs. when complete de-icer is installed.

NOTE 4. Allowable baggage

	Capacity	Maximum loading lbs./sq. ft.
Hold #1 (nose of hull)	3826*	62
Holds #2-P and 2-S (hull center section forward)	960 each	84
Holds #3-P and 3-S (hull center section aft)	1280 each	84
Holds #4-P and 4-S (wing stubs)	1360 each	27

\*Includes crew in berths when occupied and 226 lbs. of boat gear in forward end.

NOTE 5. Airworthiness certificate must be accompanied by an approved copy of the manufacturer's operating manual.

NOTE 6. The following placards must be displayed in full view of the pilot:

- (a) "WARNING  
Taxi in accordance with instructions in the approved operating manual."
- (b) "IMPORTANT  
To look rudders and elevator:  
(1) Elevators must be fully down.  
(2) Rudders must be moved to neutral.  
(3) Raise look lever and engage socket."

NOTE 7. It should be noted that the forward C.G. limits shown for "landing" determine the most forward C.G. locations at which the airplane complies with the landing requirements of the Civil Air Regulations. Approved "flight" limits may be used only under special conditions since the airplane must never be flown with its load arranged in such a manner that the approved forward "landing" limit cannot be realized readily by shifting passengers and available crew members in case an emergency landing becomes necessary.

In order to utilize the wide "flight" C.G. limits, it is necessary that the loading instruction referred to in NOTE 1 be prepared in such a manner that they satisfactorily provide for the following restrictions:

- (a) Whenever the airplane C.G. is located ahead of the approved forward landing limit, a sufficient number of passengers and/or crew members must be available to be shifted in such a manner as to move the C.G. within the approved "landing" limits.
- (b) At no time may the airplane C.G. be permitted to move outside the approved "flight" limits.

NOTE 8. When Item 101 is installed, continuous operation between 1750 and 2050 engine rpm should be avoided.

NOTE 9. When Item 203 is installed (Model 314), the placard "Take-off" limit must be reduced to 42 in. Hg., 2300 rpm (1500 hp).