

**MODELS:** Lockheed 12-A (Army UC-40, UC-40A; Navy JO-1, JO-2), 8 PCLM

**T.C. NUMBER:** 616 (Approved 10/14/36)

**Engines** Pratt & Whitney Wasp Jr. SB with one 4-1/2M and one 9N damper (See also Item 89)

**Fuel** 80 minimum octane aviation gasoline (87 minimum octane for takeoff)

**Engine limits** Maximum, except takeoff  
 (Sea level) 34.5 in. Hg., 2200 rpm (400 hp)  
 (Straight line manifold pressure variation with altitude to 5000 ft.) 33.5 in. Hg., 2200 rpm (400 hp)  
 Takeoff (one minute)  
 36.5 in. Hg., 2300 rpm (450 hp)

**Airspeed limits** Level flight or climb - 240 mph True Ind.  
 Glide or dive - 275 mph True Ind.  
 Flaps extended- 125 mph True Ind.

**Propellers** Controllable metal (Hamilton Standard hubs 2D30, blades 6095A-6 to 6095A-12 inclusive. Diameter 9'1/8" maximum, 8'6-1/2" minimum) 150 lbs. (Low pitch setting 16 degrees.) (See Items 24, 65, 88 and 90)

**Usable ceiling** (May be realized under the following conditions)

Ceiling (ft.)	Weight (lbs.)	RPM	Manifold Pressure	T.I.A.S. (mph)	Fuel Octane	Prop Cond	Prop Item
7350	8650	2200	Full throttle	98	80 or 87	Idling in high pitch	Standard
7700	8650	2200	Full throttle	98	80 or 87	Fully feathered	90

Additional conditions	(1) Standard air (2) Either engine inoperative (3) Carburetor air intake on "cold air" (4) Wing de-icers installed but not operating
C.G. range	(-16.3) to (+1.6)
Datum	Spar center line on under side of wing
Leveling means	Base line of main cabin windows
Weight limits	Landing 8650 lbs. (See NOTES 3 and 4) Takeoff 9200 lbs. (Item 79 required) (See NOTES 3 and 4)
No. seats	8 (See Item 19 for location of passenger seats), Crew 2 (-43)
Baggage	450 lbs. maximum (nose compartment, 200 lbs. (-101; aft of cabin compartment 250 lbs. (+111))
Fuel capacity	200 gallons (4 tanks in wing; 2 forward of spar at 49 gallons each (-15); 2 aft of spar at 51 gallons each (+17)) (See NOTES 2 and 4)
Oil capacity	14 gallons (2 tanks at 7 gallons each) (-37)
Control surface movements	Not available
Serial Nos. eligible	1201 and up per NOTE A
Required equipment	Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 19

Specifications Pertinent to All Models:

Certification basis	Type Certificate No. 616 (Aero. Bulletin 7A requirements)
Production basis	None (See NOTE A)
Export eligibility	Eligible for export, at Maximum landing weight, as follows subject to provisions of MOP 2-4: (a) Canada - Landplane - eligible. - Skiplane - not eligible. (b) All other countries except New Zealand.

EQUIPMENT:

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

Propeller and Propeller Accessories (Except De-Icing Equipment)

24. Constant speed propeller control (low pitch setting 11 degrees or 11-1/2 degrees for 6095A-8 and 9 degrees for 6101A-12 blades)	20 lbs.	(-64)
67. Propeller spinners	16 lbs.	(-84)
68. Propeller blades 6101A-12 replacing standard blades 6095A-8 (See Item 24)	*12 lbs.	(-84)
78. Propeller spinners (heavier type)	22 lbs.	(-84)
88. Propeller blades 6167A-6, -8, -10 or -12 (for interchangeable blade models see NOTE 6 of Prop. Spec. No. 206 replacing 6095A-6, -8, -10 or -12 with no change in weight, low pitch setting or pertinent notations.		
90. Propellers - full feathering hydro- matic - Hamilton Standard hubs 22D30, blades 6181A-6 or 6181A-7. Diameter 9'3/8" maximum, 8'10" minimum, low pitch setting 10 degrees at 42 in. propeller station	392 lbs.	(-84)

Engine and Engine Accessories - Fuel and Oil System

1. Two engine ring cowls	75 lbs.	(-63)
2. Two exhaust collector rings	99 lbs.	(-44)
3. Two oil radiators (UAP 6")	28 lbs.	(-41)
6. Two starters (electric)	64 lbs.	(-48)
17. (a) Residual fuel and oil in system	18 lbs.	(-25)
(b) Old type dump valves and controls (Lockheed Drawings 68002, 68004) (See NOTE 4)		
25. Exhaust gas analyzer (Cambridge)	12 lbs.	(-45)
26. Pesco vacuum pumps (two)	10 lbs.	(-59)
27. Eclipse vacuum pumps (two)	14 lbs.	(-59)
38. Fuel capacity increased 49 gallons (one fuselage tank Lockheed No. 69300)	40 lbs.	(-16)
39. Oil capacity 19 gallons (9-1/2 gallon tank, Lockheed No. 64331 or 64329, in each nacelle, replacing standard 7 gallon tanks)		No change in weight

46.	Oil immersion heaters	6 lbs.	(-37)
54.	Fuel capacity increased 98 gallons	80 lbs.	(-16)
69.	Two oil radiators (UAP 7")	40 lbs.	(-41)
74.	(a) Automatic rocker oiling (SB engines only)	11 lbs.	(-64)
	(b) Arens control to rocket oiling	2 lbs.	(-64)
79.	Closeable dump valves, controls and discharge chutes (See NOTE 4)	+14 lbs.	(+8)
84.	Wing fuel tank installation (Lockheed Drawing No. 68007) (four tanks in wing; 2 forward of spar at 49 gallons and 2 aft of spar at 50 gallons)	62 lbs.	(+0.5)
89.	Engines (must have one 4-1/2N and one 9N damper)	Use actual weight change	
	(a) Pratt & Whitney Wasp Jr. SB-2 (limits same as for SB)		
	(b) Pratt & Whitney Wasp Jr. SB-3 (limits same as for SB)		
	(c) Pratt & Whitney Wasp Jr. T1B3 Fuel, 87 minimum octane aviation gasoline. Limits: Maximum, except takeoff (Sea level) 34.2 in. Hg., 2300 rpm (400 hp) (Straight line manifold pressure variation with altitude to 5400 ft.) 32.5 in. Hg., 2300 rpm (400 hp) Takeoff (one minute) 37.5 in. Hg., 2300 rpm (450 hp)		
	(d) Pratt & Whitney Wasp Jr. T1B2 (limits same as T1B3)		
	(e) Military R-985-AN-4 (limits same as SB)		
	(f) Military R-985-AN-6 or -AN-6B (limits same as SB)		
	(g) Military R-985-AN-12 or -AN-12B (limits same as SB)		
	(h) Military R-985-AN-14B (limits same as SB)		
	(i) Military R-985-25 (limits same as T1B3)		
	(j) Military R-985-AN-1 or -AN-3 (limits same as T1B3)		
	(k) Military R-985-13, -17, -19, -23, -48, -50, AN-2, -AN-8 (limits same as SB)		
	(l) Military R-985-27 (limits same as T1B3)		

#### Landing Gear and Floats

10.	31 in. streamline wheels (Hayes 3100M)	66 lbs.	(-28)
11.	81 in. streamline tires, General Special 8-ply (wheels must be placarded for these tires, 43 lbs. pressure inflation)	84 lbs.	(-28)
12.	Shock struts (Aerol SP350L)	95 lbs.	(-28)
13.	13-1/4 in. streamline tail wheel and tire	10 lbs.	(+290)
14.	Tail wheel shock strut (Aerol 300L)	20 lbs.	(+282)
16.	Wheel fenders	5 lbs.	(-20)
31.	Cactus proof tubes (replacing standard tubes)	+14 lbs.	(-28)
42.	31 in. streamline wheels (Hayes 3100A)	82 lbs.	(-28)
43.	11.00-12 wheels (Hayes 1101A or 1102A)	64 lbs.	(-28)
44.	11.00-12 tires (Goodrich) 8-ply and plain tubes	86 lbs.	(-28)
45.	11.00-12 cactus proof tubes	10 lbs.	(-28)
59.	Brake controls (dual set-copilot)	4 lbs.	(-74)
60.	30x13-6 wheels (Goodyear 6HBM)	62 lbs.	(-28)
61.	30x13-6 tires (HD 6-ply) and plain tubes	86 lbs.	(-28)
62.	30x13-6 cactus proof tire liners	20 lbs.	(-28)
63.	Chock strut (Aerol SP 350L-13)	-6 lbs.	(-28)
64.	Tail wheel lock	3 lbs.	(-50)
70.	Cactus proof tail wheel tire liner	3 lbs.	(+290)
76.	Revised brake control system in accordance with data submitted 6/18 and 6/21/37.	No change in weight	

#### Electrical Equipment

4.	Two retractable landing lights in wing (one warning light in nose) (-133)	8 lbs.	(-19)
7.	Battery (Exide 6-FHM-13-1)	75 lbs.	(-81)
8.	Generator, 25 amp.	21 lbs.	(-54)
33.	Generator, 50 amp.	36 lbs.	(-54)

34.	(a) Antenna reel (H & K)	10 lbs.	(+290)
	(b) Antenna	5 lbs.	(+20)
36.	Battery (Prestolite R-1213-G)	91 lbs.	(-81)
<b>Interior Equipment</b>			
5.	Two flares and brackets (3 minute)	50 lbs.	(-88)
9.	Pressure fire extinguisher system (Alfite, 5 lb. bottle under copilot's seat, or at rear of nose baggage compartment)	23 lbs.	(-43)
15.	Instruments and panel	50 lbs.	(-72)
18.	Heater and ventilator	32 lbs.	(+35)
19.	Six standard passenger seats at 20 lbs. each (-11, -11, +31, +31, +64, +64) (See Items 21 and 77)		
21.	Standard passenger chair removed; deduct 20 lbs. each (Roman numerals in parenthesis signify number of seats removed (See Items 19 and 77)		
23.	Cockpit partition and door assembly	25 lbs.	(-30)
28.	Couch - three-place	81 lbs.	(+42)
35.	Automatic pilot (Sperry)	100 lbs.	(-64)
77.	Standard model 14 chair installed (Add 53 lbs. each) (Roman numerals in parenthesis signify number of seats installed) (See Items 19 and 21)		
80.	Heavy type nose baggage compartment flooring	+10 lbs.	(-101)
86.	Zeiss special camera installation	10 lbs.	(+67)
87.	Two flares and brackets (3 minute)	50 lbs.	(+165)
<b>De-Icing Equipment</b>			
47.	De-icing equipment (fixed portion 30 lbs. - removable 65 lbs.) (See NOTE 3)	95 lbs.	(-13)
<b>Miscellaneous (not listed above)</b>			
32.	Abrasion strips (tail surfaces L.E.)	5 lbs.	(+250)
50.	Abrasion strips (on lower fins)	2 lbs.	(+270)
81.	Revised empennage assembly with dynamically balanced rudders (Lockheed Drawing No. 63012)	+55 lbs.	(+273)
82.	Aileron 100 percent static balance (Lockheed Drawing No. 62002G)	+23 lbs.	(+26)
83.	Fuselage revised tail section, .032 replacing .025 skin (Lockheed Drawing No. 60060E)	+6 lbs.	(+187)

NOTE A. Each aircraft manufactured after January 26, 1943 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 changes in equipment.

NOTE 2. (a) The following placard must be conspicuously posted at the right rear main fuel tank (wing) filler cap: "FILL WITH 87 OCTANE FUEL ONLY." When Item 38 is installed, in lieu of above, a placard must be conspicuously posted at the fuselage fuel tank filler cap reading: "FILL WITH 87 FUEL ONLY."

- (b) The following placard must be placed at the fuel selector valve: "USE REAR WING MAIN TANKS (OR FUSELAGE TANK) FOR TAKE-OFF AND LANDING."
- (c) When 87 octane fuel is used in all tanks, the above placards must be deleted, and the aircraft "Operation Limits" placard should bear the notation: "87 OCTANE FUEL ONLY USED IN ALL TANKS."

NOTE 3. Maximum landing and takeoff weights may be increased 52 lbs. when complete de-icer is installed.

NOTE 4. A. If provisions other than Item 79 are made for dumping, the fuel dump valves shall be made positively inoperative.

- B. If Item 79 is installed and the aircraft is used for air carrier operation, the aircraft operation record shall incorporate the following statements:

- (1) With authorized weight in excess of 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."

- (2) With authorized weight not in excess of maximum landing weight  
"Fuel shall not be dumped except in accordance with CAR 61.7811."

NOTE 5. Placard lavatory door as follows: "This room not to be occupied during takeoff and landing."