

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

645
Revision 3
HOWARD
DGA-9 (Army UC-70D)
DGA-12 (Army UC-70A)
August 17, 2009

AIRCRAFT SPECIFICATION NO. 645

Holder of Type Certificate: Howard Aircraft Foundation
P.O. Box 649
Washington, OK 73093

Type Certificate Holder Record: Jobmaster Co. transferred ownership to the Howard Aircraft Foundation on
December 10, 2003.

I - Model DGA-9 (Army UC-70D), 5 PCLM, Approved June 25, 1937

(Same as Model DGA-8, TC#612, except for engine installation, equipment, and placard speeds.)

Engine	Jacobs L-5 (See also Item 201(a))
Placard limits	Maximum, except takeoff – 2000 rpm (285 hp) Takeoff (one minute) – 2000 rpm (285 hp)
Placard speeds	Level flight or climb – 191 mph True Ind. Glide or dive – 288 mph True Ind. Flaps extended – 108 mph True Ind.
Fuel capacity	127 gallons max. (three tanks in fuselage) (See Item 204 and NOTE 3)
Oil capacity	8 gallons (-30)
Standard weight	3600 lbs. (See NOTE 2)
Serial Nos. eligible	200 to 206 inclusive (see NOTE A).

II - Model DGA-12 (Army UC-70A), 5 PCLM, Approved June 25, 1937

(Same as Model DGA-8, TC#612, except for engine installation, equipment, and placard speeds and minor structural changes.)

Engine	Jacobs L-6 (See also Item 201(b))
Placard limits	Maximum, except takeoff (Sea level) 24.5 in. Hg., 2100 rpm (300 hp) (3700 ft.) 23.5 in. Hg., 2100 rpm (300 hp) Takeoff (one minute) 26 in. Hg., 2200 rpm (330 hp)
Placard speeds	Level flight or climb – 191 mph True Ind. Glide or dive – 288 mph True Ind. Flaps extended – (45 degrees) – 108 mph True Ind.
Fuel capacity	127 gallons max. (three tanks in fuselage) (See Item 204 and NOTE 3)
Oil capacity	8 gallons (-30)
Standard weight	3800 lbs.
Serial Nos. eligible	400 and 401 (see NOTE A).

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III - Specifications Pertinent to All Models:

Propeller	Maximum permissible diameter 110 in.					
No. passengers	4 (front +14, rear +56)					
Baggage	120 lbs. (compartment aft of rear seats) (+84)					
C.G. limits	(+6.3) and (+19.0) (Propeller hub and bottom longeron at tail post same height above ground for leveling)					
Control surface movements	Elevators	28°	up	22°	down	(measured from centerline of stabilizer when cord line of stabilizer is parallel to thrust line)
	Rudder	30°	right	30°	left	
	Aileron	28°	up	22°	down	
	Stabilizer	4°	up	8°	down	
	Wing flaps	45°	down			
Specification basis	Type Certificate No. 645 (Aero. Bulletin 7A requirements)					

EQUIPMENT:

(Datum is wing leading edge) (* Means net increase) (See NOTE 4)

Class I:			<u>DGA-9</u>	<u>DGA-12</u>
101.	Propeller – fixed metal (Curtiss 55501)	56 lbs.	(-77)	(-66)
102.	Battery (12V, in engine compartment)	(use actual wt.)	(-29)	(-29)
103.	Starter (Eclipse E-80)	25 lbs.	(-48)	(-37)
104.	Generator (Eclipse 3171)	17 lbs.	(-48)	(-37)
105.	Fuel pump			
	(a) Romec D2-2-RD1562	5 lbs.	(-47.5)	----
	(b) Pesco R-300 B-L-H	5 lbs.	----	(-38)
106.	Engine ring cowl	35 lbs.	(-63)	(-50)
107.	7.50-10 wheels (Goodyear 10HBM) with 7.50-10 6-ply tires (wheels must be placarded for these tires)	70 lbs	(0)	(0)
108.	10 in. smooth contour tail wheel (Goodyear) with tire	5 lbs.	(+194)	(+194)
109.	Engine shielding			
Class II:				
200.	Miscellaneous items as noted in approved weight and balance report.			
201.	Dual ignition engines			
	(a) L-5M or L-5MB	15 lbs.*	(-60)	----
	(b) L-6M or L-6MB	15 lbs.*	----	(-48)
202.	Parachute flares			
	(a) Three 1-1/2 minute	17 lbs.	(+80)	(+80)
	(b) Four 1-1/2 minute	21 lbs.	(+80)	(+80)
203.	Heater and ventilator (Carburetor and cabin)	7 lbs.	(-30)	(-28)
204.	Fuel Tanks:			
	(a) Front tank – 30 gallons (optional)	17 lbs.	(-10)	(-10)
	(b) Main tank -- 60 gallons (standard)		(+28)	(+28)
	(c) Rear tank – 37 gallons (optional)	21 lbs.	(+61)	(+61)
205.	Radio, variable (location and actual weight of installation including controls, etc., or name of manufacturer and model if already installed and included in the actual empty weight, should be noted on Inspector's report.)			

206.	(a) Controllable metal propeller (Hamilton Standard 2B20 hub, with 6135A blades)	52 lbs.*	(-77)	(-66)
	(b) Constant speed control (low pitch setting 12 degrees)	5 lbs.*	(-46)	(-35)
207.	Pressure fire extinguishers		(-27) or (+14)	
	(a) Pyrene 52	10 lbs.		
	(b) Lux 5C	19 lbs.		
	(c) (2 Pyrene C62)	12 lbs.		
208.	Generator (Eclipse D-15-25)	6 lbs.*	(-48)	(-37)
209.	Vacuum pump (Romec B-2A)	4 lbs.	(-34)	(-38)
210.	Battery (12V, in engine compartment)	(use actual wt.)	(-29)	(-29)
211.	Exhaust gas analyzer (Cambridge)	11 lbs.*	(-22)	(-22)
212.	Built-in parachutes (rear)	20 lbs. ea	(+57)	(+57)

Class III.

301.	Wheels		(0)	(0)
	(a) 7.50-10 (Hayes 750A)	8 lbs.*		
	(b) 7.50-10 (Goodyear 10MBM)	4 lbs.*		
	(c) 6.50-10 (Hayes 651A)	4 lbs.*		
	(d) 6.50-10 (Hayes 561M)	Net decrease 2 lbs.		
302.	10.5 in. streamline tail wheel with tire	2 lbs.*	(+194)	(+194)
303.	Wheel streamlines	18 lbs.	(+4)	(+4)
304.	Landing lights (Grimes ST-250)	7 lbs.	(+22)	(+22)
305.	Special cabin door (left)	5 lbs.	(+36)	(+36)
306.	Built-in parachutes (front)	20 lbs. ea.	(+15)	(+15)

NOTE A. Serial numbers 200 to 206 were produced by Howard Aircraft Corp. as Model DGA-9 from 1937 to 1938. Serial numbers 400 and 401 were produced by Howard Aircraft Corp. as Model DGA-12 in 1939. Additionally, each new aircraft manufactured after 11/12/40, must, prior to original certification, satisfactorily pass:

- (a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- (b) A final inspection of the completed aircraft.
- (c) A check of the flight characteristics.

NOTE 1 Eligible for export as follows subject to inspection for equipment specified in Chapter XII of Inspection Handbook (8/7/41):

- (a) Canada
 - Landplane
 - Skiplane - not eligible.
- (b) All other countries except Australia, Great Britain and New Zealand.

NOTE 2. Standard weight (DGA-9) may be increased to 3800 lbs. when item 206(a) is installed and airplane is placarded as follows:

“Flaps must be fully extended for takeoff when standard weight exceeds 3600 lbs.”

NOTE 3. Fuel tanks and selector valves must be placarded as shown in pertinent weight and balance reports.

NOTE 4. 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 Class I or Class II equipment.

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