

The Howard
Aircrafter



The Personal Transport type of airplane is designed and built to carry heavy loads for long distances over all kinds of terrain and through every condition of flyable weather. It obviously requires specialized skill to produce and maintain planes which can be depended upon to do this job safely and economically with the least mental and physical fatigue to Pilot and Passengers.

The people who do this work are Craftsmen of a high type who take pride in their ability to do many things well, or do perfectly the one job to which they may be assigned, as nothing less will do.

To these we dedicate this edition of the AIRCRAFTER and symbolize them by the Craftsman with the light and magnifying glass shown on the cover page.

HOWARD AIRCRAFT CORPORATION

5301 West 65th Street

CHICAGO—U.S.A.

Below "The Howard in 'water flying' country."



The

Howard

FIVE YEARS OF PROGRESS

THE FIRST Howard cabin airplanes, built for commercial purposes, were completed five years ago and all of these are in constant operation.

These and subsequent models have been flown tens of millions of miles without serious injury to Pilot or Passenger, either here in the United States or in Canada. This is a fine contribution to safe flying by the Owners and those who are maintaining these planes, and a tribute to the Designers and Builders.

All of the experience thus accumulated combined with the advancements made in the science of aircraft design and manufacture are embodied in the Howard for 1940, which we believe reaches new heights in the single engined Personal Transport category.

Our Engineers set out to match or excel any airplane in this class for Pilot vision and handiness of controls, for Passenger comfort and for landing ease, yet retain all of the stamina, speed and super-stability for which this airplane was already noted. Their handiwork is this new Howard for 1940.

We have long since learned, however, that words or pictures cannot describe the "feel" of a superior flying craft; therefore, we urge you to put this new 1940 Howard to the test, then compare its exterior beauty, interior comforts, and outstanding air and ground characteristics with any make. We believe it will win your approval as being the best composite of desirable essentials ever combined in one airplane in this power class.

The Organization producing this superior airplane has been strengthened and the facilities modernized to assure the continuance of a quality of workmanship already associated with the product, therefore we urge you to inspect and fly a 1940 Howard before judging it—there's a flying thrill in store for the seasoned veteran or the casual Flyer. Ask us to provide a Demonstrator so you may obtain proof—flying is believing.



"THE PROOF OF THE AIR-

C.P., Airline Executive, writes:

For some time I have been wanting to write you a word of appreciation concerning my Howard airplane which I have now owned for a year and flown several hundred hours.

I have landed this ship in all sorts of fields from Houston to Nantucket, and have made a number of non-stop flights between St. Louis and Washington in comfort and without fatigue. The plane handles with ease in smooth or rough air and gives one the same sense of steadiness and power one feels in a large transport.

Ample fuel capacity in addition to a good pay load, remarkable stability at stalling speeds, flaps which provide lift as well as drag and which simplify landing in gusty air because of their spring loading, all contribute to make your Howard the best all round private airplane I have ever flown.

Performance Plus — says C.A.H., Pilot for prominent sportsman:

Am enclosing a snapshot of the Howard taken recently in a Sierra Mountain meadow 8200 ft. above sea level where we spent a couple of days on a deer hunt. We came out of there in the middle of the day with better than a ten mile tail wind, approximately half a load of gas and ——— and baggage, totaling fully 450 lbs. of pay load.

A Canadian operator quotes experience:

We have been flying this machine in Northern Canada, which, as you know, is one of the toughest testing grounds in the world for aircraft, and we are pleased to say that it has always come through on top. Its stability and maneuverability is remarkable in rough air such as we encounter around our northern lakes, and we are able to get in and out of lakes where any other aircraft has been, without any difficulty, even with the heaviest of loads. In short, we are pleased to say that the performance of your aircraft is all that you represent it to be—and then some.

Our operation costs are much lower than those operating aircraft of the 4-5 place type when figured on a mileage basis, and our maintenance costs are practically nil.

O.M.W., Rancher, surprises World War Pilot:

It is the most stable airplane that it has ever been my good fortune to fly, and as a consequence one can fly long distances with less fatigue. I remember once having an old war pilot, who had not flown since 1918, in the seat beside me. He was very anxious to fly and when I let him, the ship began to wander all over the sky. Finally I said, "Let's both take our hands and feet off the controls and see what happens." For five minutes neither of us touched the plane and it went down the course as if in a groove. On account of its tremendous stability, it is easy to fly in rough air and seems to take severe bumps almost as if on springs.

L.O.W., recommends Howard to Sportsman Pilots:

I have flown my Howard for one year now and must say that I am more than pleased with it. In fact, I do not know of any other plane, except a 1940 Howard, that I would part with it for.

The Howard looks like a thoroughbred; is built like one, so much so, except for periodic checkups, I have not had any upkeep expense; it has the stability of one for I have had no trouble flying this ship, although I am only a "Sunday afternoon" pilot, and a very poor one at that; its performance is like one, as everyone knows, it is one of the best performing single motor ships made.

D.J.P., Business Executive, finds Howard ideal for vacation flying:

I am pleased to report that Mrs. ——— and I completed our vacation trip and the Howard worked perfectly throughout the entire trip. Altogether we flew between 4500 and 5000 miles and were in and out of all types of fields and didn't have the slightest bit of difficulty.

W.D.O. enthusiastic after becoming Howard owner:

The ship performed beautifully all the way, and I am quite pleased with it. Thus far everyone down here that has seen it thinks that it is the tops, even the hangar engineers.

The excerpts from a few of the letters which came from Owners of the 1936-37-38 and 1939 models who have dictated, in large measure, the improvements made in the 1940 model.



PLANE IS IN THE FLYING"

L.D., Pilot for Business User reports:

Referring to your letter asking about the number of hours flown by me in our Howard. You may recall that we bought this plane last June and it had about 300 hours on it at that time, according to the log books.

I have flown it 554 hours since that time (less than a year) on company business for a probable mileage of about 90,000 as the speed from hangar to hangar is of course less than the cruising speed in the air, and I feel sure that no other plane in this 4-5 place cabin could beat that record.

While this speed is important in cutting flying costs, it is not the most important factor in flying, according to my ideas. It is the stability of the plane in all kinds of weather which appeals to me most as this enables me to fly long hours and distances without being overly tired, and more important, the passengers can get some rest enroute and be fresh on arrival. Suppose you would claim it is the high wings and low center of mass that does this, well anyway—the Howard has this very important virtue to a greater degree than any plane in this class I've ever flown.

Dr. S.W. likes Howard's superior design:

I agree with you that it has an extremely high safety factor as the result of its construction. It is very readily controlled on the ground, first on account of the tail wheel lock, and the low landing gear has made taxiing easier. Long trips have assured me of the seating comfort.

A year's ownership increases satisfaction of N.E.M.:

I have now had my ship approximately one year and have flown it three hundred hours, and if I was in the market for another ship today I would certainly purchase another Howard, as I have been most satisfied and pleased with its performance and dependability. In this connection I might add that to date I have had practically no maintenance expense of any nature on the airplane itself.

M.S.G., a veteran Owner, says:

We have, as you know, during the past few years, owned several Howard airplanes. During this period it has been my pleasure to make several trips across the continent. During these flights the one thing that impressed me most with the Howard was the inherent smooth riding quality of this airplane, even after extended flights through different types of weather. It is a novel experience to be able to step out and feel just as rested as if you had made the same trip on any of the large commercial airlines.

I sincerely believe the Howard is the first commercial airplane in the five place field that has really done something towards lessening fatigue on both pilot and passengers, which after all adds greatly to the joys of flying.

Comment by J.J., Pilot for Federal Government Department:

I've just returned from a two week's trip using one of your good Howard airplanes, and believe me, it is a honey.

L.G.C. praises Howard plane and service:

I want to thank you for the way you took care of the cowlings situation, and hope that you will see my side of the picture. I am so crazy about the ship, and proud of it, that I just couldn't picture it with anything faulty on it. Also thank you for the pictures of the ship, and if you will let me know how much they were I will pay you for them.

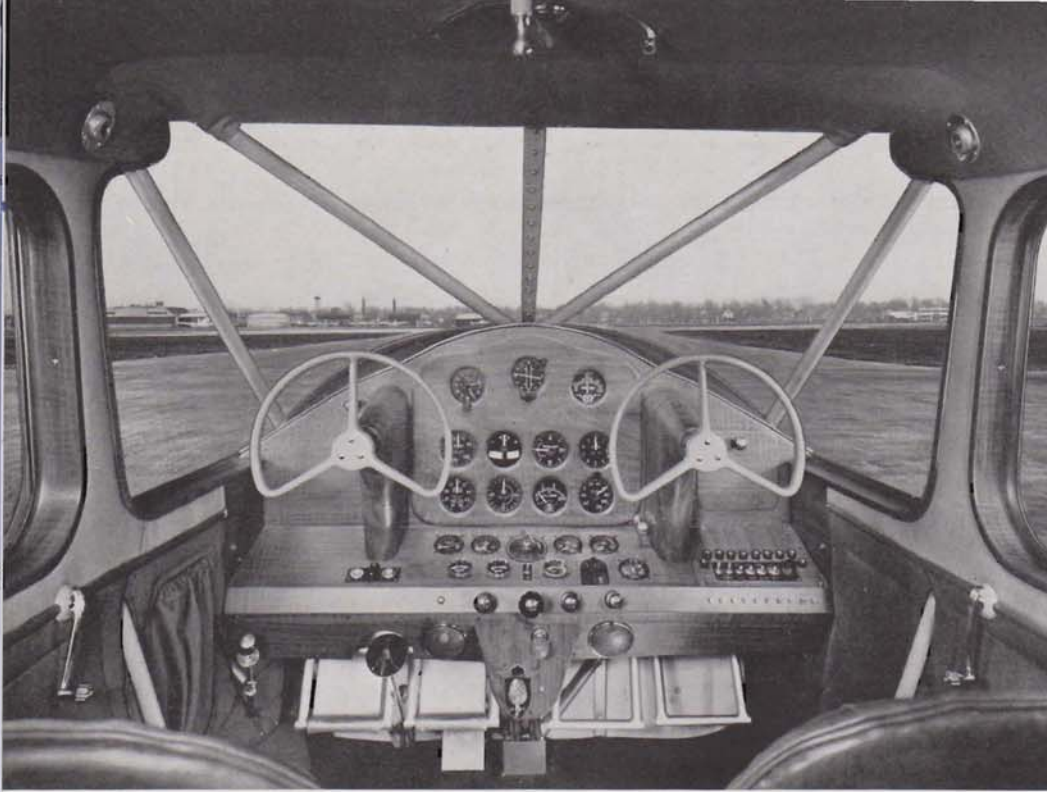
D.S.L., Executive and Veteran Flyer, endorses Howard:

I think it is proof that the airplane manufacturers can produce a plane that one can use for longer distances in the same way that one uses an automobile for short distances. I have been using my Howard just that way. I find it fast, easy to fly, day or night contact or instrument, requiring practically no attention and comfortable—in that it is well ventilated, well heated, and flies in rough air with a minimum of movement.

Names and addresses have been purposely omitted above, but we will be glad to furnish same on request by responsible persons who are genuinely interested.



VISION



PILOT HAS PANORAMIC VIEW

(In the air or on the ground)

This photograph is taken aft of the Pilot seats, therefore only indicates the excellent vision when seated forward at the controls. Eyes are shrouded overhead when in normal position but the vista opens wide when the Pilot leans ahead for a "look around." Note the central position of the flying instruments and handiness of engine, propeller, and other controls. Note also that the windows back of the windshield area may be opened (cranks visible). The Pilot seats are so spaced that either occupant may move to the rear without disturbing the other — no close quarters in this Pilot's compartment. A large map pocket is provided (lower left) and ventilators bringing fresh, fume-free air from the wings are provided (upper right and left).

The radio controls are placed to the left of and below the left Pilot's control wheel. An ample compartment is recessed in the panel to the right (see knob on door).

INSPECTION — MAINTENANCE

The Engineers have designed this Howard for 1940 so that all inspections may be quickly and economically made because of the accessibility of all vital parts. Servicing operations are also simplified because of this "get-at-ability", all of which reduces operating costs to the minimum and assures Peace of Mind when flying.



COMFORT



MOTOR CAR COMFORT FOR THREE

(In rear seat)

The rear seat has been positioned for the utmost comfort in flight and properly upholstered to eliminate "long trip" fatigue heretofore prevalent in many airplanes. There is ample space aft of the seat and over the baggage compartment for coats and hats, also beneath the seat for portfolios, overnight bags, or other small baggage.

Ventilation and heating are Pilot controlled, and scientific sound-proofing makes for airliner quietness in flight. There is ample space between the Pilots' seat backs and the rear seat to permit "stretching out," which is made practical by adjusting the cushion in the rear seat for lounging.

Only the finest broadcloth and leather is used for upholstery, and careful study has been given to create pleasing effects by a simplicity of design so prevalent in the country's finest custom built motor cars. Although a wide variety of selections in colors are offered as standard, other "custom" combinations may be had, at Purchaser's option, at slightly added costs.



LARGER BAGGAGE DOOR — MORE SPACE

As airplane luggage becomes bulkier, a larger baggage door and more baggage space is required. Howard Aircraft Engineers have provided 16 cu. ft. of space behind the rear seat and below the radio compartment. The baggage door is locked inside the cabin, and small luggage can be removed from this compartment into the cabin when in flight.

THE HOWARD



WIDE TREAD GEAR

(simplifies landings)

Because the load is centered lower in the fuselage than in other makes of planes, this Howard for 1940 now offers a wider tread gear, center of mass considered, than any other make.

Long stroke, dual springdraulic shock absorbers smooth out bumps and make for the utmost safety in landing or taxiing when combined with smooth acting hydraulic brakes. Thus the Howard for 1940 now takes top position in this all important function. One landing will convince you.



The high winged Monoplane is best typified in the Howard for 1940 because of a superior design and construction which gives a lower empty weight than the latest in biplanes, and an exceptionally high authorized diving speed for airplanes in this category. This is conclusive evidence of type superiority in weight and strength, plus the other advantages of Monoplane construction which has resulted in its universal adoption by American and Foreign builders for Commercial and Military airplanes.



RD FOR 1940

The great majority of Flyers demand the best COMBINATION of speed, range, load carrying ability, takeoff, flying and landing characteristics. We believe this Howard for 1940 will more than measure up if carefully compared with other makes.

One make may be slightly faster, another may land a trifle slower, and still another may carry as much load, but we do not believe that any airplane in this power class offers the equivalent in ALL OF THESE ESSENTIALS which make for the utmost in desirability from the Owner's point of view.



STEERABLE TAIL WHEEL

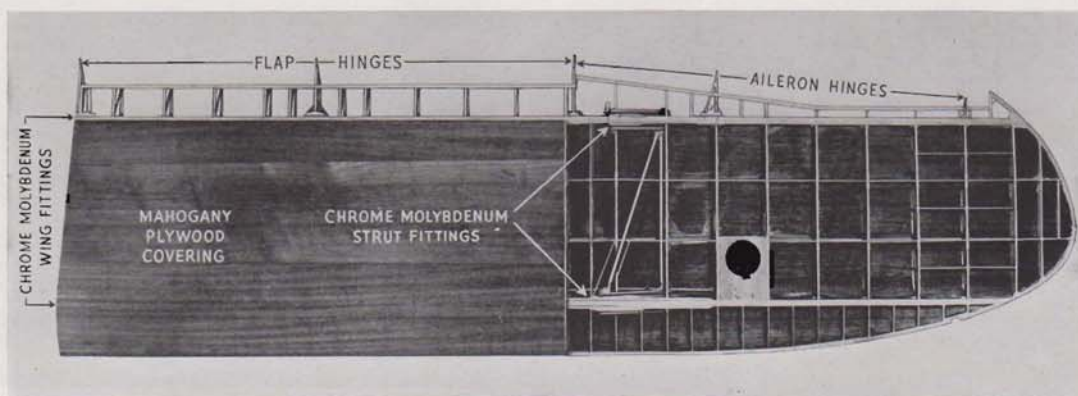
(simplifies taxiing)

At Pilot's option, the tail wheel and rudder may be locked together, before or after landing, and the combination is then operated from the rudder pedals. Consequently, taxiing in cross winds or "zigzagging" may be easily accomplished, without the excessive application of brakes which always causes higher upkeep.

Once you have owned a plane incorporating this feature, you will always insist on it, as it makes for safer and faster ground handling.



WINGS



FINISHED

SEMI-FINISHED

The technique of building wings structured of the finest spruce and covered with plywood is known to but few airplane manufacturers, as it is a heritage from the racing planes of the early "thirties" which had to withstand the terrific strains imposed at the pylon turns.

With the advent of the improved resinous glues, impervious to moisture, now used to bond together mahogany and other woods, the so-called "plastic" structure covering is coming into notable prominence; however, this is history to Howard Engineers and workmen who have long specialized in this construction, which produces such high factors of torsional rigidity and strength, unaffected by vibration.

Wing, strut, aileron and flap attachment fittings of chrome molybdenum steel are joined to the spruce structure by methods proven in many years of experience. You may rely on these wings, free of drag wires and sealed against the elements.

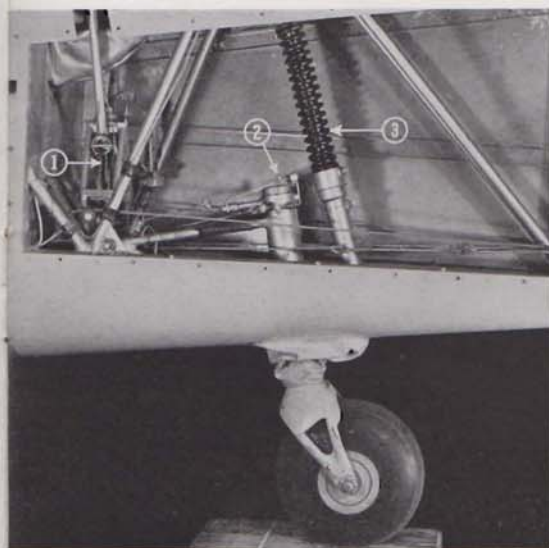
The plywood is covered with fabric, then finished with "dope". The result is — the "smoothest" wings in aviation.



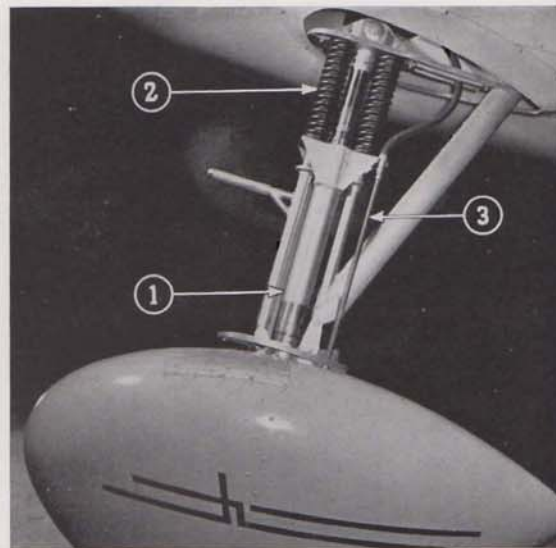
Note the smooth wing tip to wing tip profile with only slight dihedral in this 1940 Howard.

Super-stability in the stall and excellent lateral control at slow speeds is thus inbuilt—for safety.

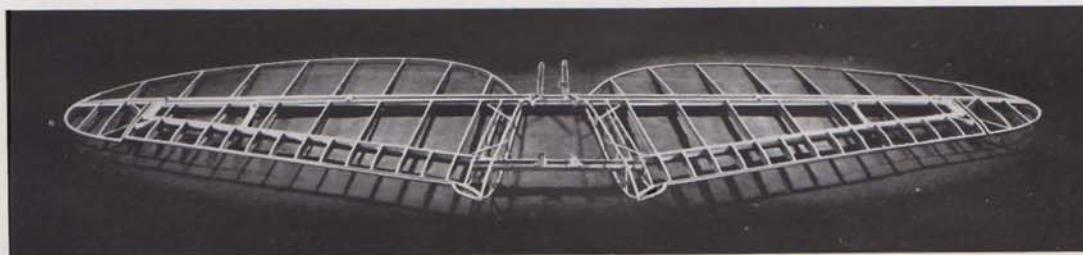
STRUCTURE



LEFT—(1) Two tubular arms bolted to the stabilizer adjusting nut grip the front spar of the stabilizer and lessen tension on external bracing. (2) Device for locking tail wheel with rudder. (3) Long stroke spring-draulic tail wheel shock strut.

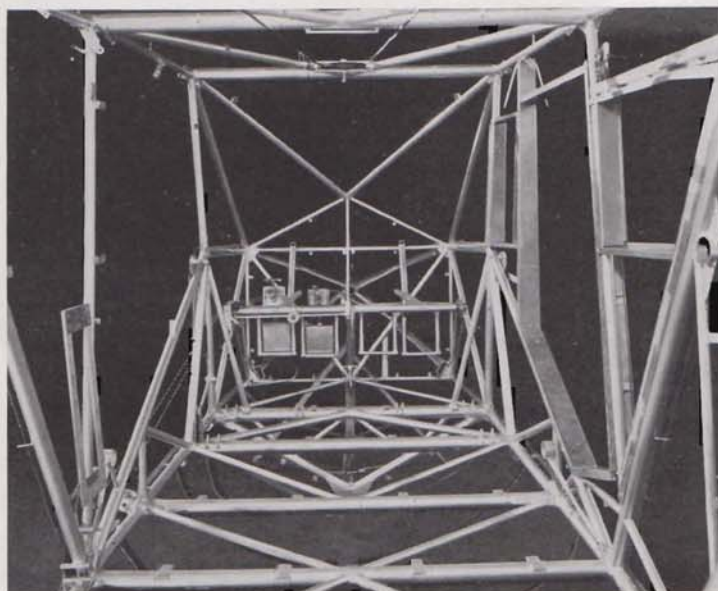


RIGHT—(1) Hydraulic shock absorbers for landing. (2) Dual springs to take initial landing loads and for taxiing. (3) Hydraulic brake line.



Horizontal tail surfaces are constructed of chrome molybdenum steel. Tubular spars and channel ribs make for extra strength and light weight.

The section of the Howard fuselage pictured here shows the cabin portion which is the main backbone of the airplane between engine and tail group, to which the wings and landing gear are attached. Note the bridge-like construction.



Proper jigs, carefully selected and prepared chrome molybdenum tubing, and expert oxy-acetylene welding creates a fuselage structure which is uniform in strength and torsional rigidity, which can withstand the stresses of both flying and landing loads.

HOWARD — The Most Completely Equipped Airplane

We believe that the 1940 Howards are the most completely equipped Personal Transports ever offered in this category. A wider selection of exterior colors and interior finishes are also available without added cost. The materials

and equipment used are the finest procurable, therefore we suggest that you compare equipment specifications when you compare Howard's prices with other makes in order to appreciate the extra value built into these airplanes.



INSTRUMENTS

Flight instruments are by Kollsman, accepted as a standard for the most luxurious airliners. The Flight Panel is shock mounted and indirectly lighted. Note particularly the identifying numbers of the instruments given on the opposite page, as Howard furnishes several instruments as standard equipment which may be had on other makes only at added cost. We do not furnish either the Sperry Directional Gyro or Artificial Horizon as standard equipment, but put these in proper position at the regular price for these instruments listed by the manufacturer, plus installation costs.



RADIO AND ACCESSORIES

It is impractical to attempt to pre-select Radio Equipment because of the wide divergence of opinion regarding the range required, therefore we have not included Transmitters, Receivers or Direction Finders as standard equipment, but furnish these instruments at regular prices listed by the manufacturer, plus installation costs, and maintain a special Radio Department. We have not included flares as standard equipment but will also furnish the same at regular prices when requested to do so. The engines are shielded and plane bonded for Radio. We will be glad to furnish recommendations about various sizes and ranges of Radio Equipment on request.



EXTERIOR COLORS AND FINISH

All Howard Models are finished with the newly created non-fading "bird" colors recently produced by Glidair. This 14-16 coat process results in a highly lustrous surface, impervious to the elements and which will stay new for years. Standard colors are two tones of red, blue, green or brown with a third color for pin striping, or black with any of the standard colors as the contrasting color, with a third color for pin striping. Other colors are special, as are striping schemes requiring excessive masking.



INTERIORS AND UPHOLSTERY

Interior upholstery is of highest grade Laidlaw Broadcloth, selected for its beauty, durability and soundproofing qualities. Pilot's seats may be finished in hand-buffed leather in colors to match, if desired. Standard colors are dual tones of russet, blue, green and gray in a wide variety of patterns. The instrument panel is "custom" finished to harmonize with the interior color scheme chosen. Cabin furnishings are complete (arm rests, assist cords, ash trays, etc.) The hardware is in a modern motif.

SPECIFICATIONS - Weights and Performance

	Model DGA-15P	Model DGA-15W	Model DGA-15J
PROPELLER	Hamilton Constant Speed	Hamilton Constant Speed	Hamilton Controllable (2 position)
ENGINE (Takeoff Power)	Wasp Jr. SB 450 H.P.	Wright E2 350 H.P.	Jacobs L-6 330 H.P.
Automatic Valve Lubrication	Yes	Yes	No
Carburetor	Stromberg	Stromberg	Stromberg
Ignition	Scintilla Dual Magneto	Scintilla Dual Magneto	Scintilla Magneto — Battery
Generator	Eclipse 15 Ampere	Eclipse 15 Ampere	Eclipse 15 Ampere
Battery	Exide 6-TS-13-1 (38 Amp. Hrs.)	Exide 6-TS-13-1 (38 Amp. Hrs.)	Exide 6-TS-13-1 (38 Amp. Hrs.)
Starter	Eclipse F-141	Eclipse E-80	Eclipse E-80
Fuel Pump	Pesco Engine Driven	Pesco Engine Driven	Pesco Engine Driven
Auxiliary Pump	Romec Hand Pump	Romec Hand Pump	Romec Hand Pump
Oil Radiator	Yes	Yes	Yes
Fire Extinguisher	Pyrene Pressure	Pyrene Pressure	Pyrene Pressure
Engine Mount	Chrome Moly.—Lord Bushings	Chrome Moly.—Lord Bushings	Chrome Moly.—Lord Bushings
Engine Cowling	N.A.C.A.	N.A.C.A.	N.A.C.A.
INSTRUMENTS—			
Compass	Kollsman 65-BL	Kollsman 65-BL	Kollsman 65-BL
Altimeter	K. (Sensitive) 205-031	K. (Sensitive) 205-031	K. (Sensitive) 205-031
Bank and Turn	Pioneer 1700-1A-A1	Pioneer 1700-1A-A1	Pioneer 1700-1A-A1
Climb Indicator	Kollsman 472-K-02	Kollsman 472-K-02	Kollsman 472-K-02
Fuel Analyzer	Cambridge	Cambridge	No
Air Speed and Pitot	Yes	Yes	Yes
Tachometer	Yes	Yes	Yes
Clock	Jaeger 1780	Jaeger 1780	Jaeger 1780
Thermocouple (two point)	Yes	Yes	Yes
Manifold Pressure Gauge	Yes	Yes	Yes
Carburetor Air Temperature	Yes	Yes	Yes
Oil Temperature Indicator	Yes	Yes	Yes
Oil Pressure Indicator	Yes	Yes	Yes
Fuel Pressure Indicator	Yes	Yes	Yes
Fuel Level Indicator	Yes	Yes	Yes
Stabilizer Indicator	Yes	Yes	Yes
Ammeter	Yes	Yes	Yes
LIGHTS — Navigation	Yes	Yes	Yes
Landing	Yes	Yes	Yes
Dome	Yes	Yes	Yes
WHEELS AND BRAKES	Goodyear Hydraulic Disc	Goodyear Hydraulic Disc	Goodyear Hydraulic Disc
TIRES	8:50" x 10"-6 ply	8:50" x 10"-6 ply	8:50" x 10"-6 ply
TAIL WHEEL	10.00" Diameter-6 ply (steerable)	10.00" Diameter-6 ply (steerable)	10.00" Diameter-6 ply (steerable)
WINGS — Covering	Mahogany Plywood — Fabric	Mahogany Plywood — Fabric	Mahogany Plywood — Fabric
Loading	20.7 lbs. per sq. ft.	20.7 lbs. per sq. ft.	20.7 lbs. per sq. ft.
FLAPS — Operation	Electric — Spring Loaded	Electric — Spring Loaded	Electric — Spring Loaded
CABIN — Cover	Metalclad	Metalclad	Metalclad
Heating	Yes	Yes	Yes
Ventilation	Yes — from wings	Yes — from wings	Yes — from wings
POWER LOADING (Rated Power)	10.9 lbs. per H.P.	13.6 lbs. per H.P.	14.5 lbs. per H.P.
WEIGHTS — Gross	4350 lbs.	4350 lbs.	4350 lbs.
Empty	2705 lbs.	2575 lbs.	2517 lbs.
Useful	1645 lbs.	1775 lbs.	1833 lbs.
Cruising Speed (Optimum Altitude)	192 M.P.H.	171-175 M.P.H.	165-169 M.P.H.
Rate of Climb	1,560 F.P.M.	1050 F.P.M.	1000 F.P.M.
Service Ceiling	21,500 Feet	17,500 Feet	15,500 Feet
Gasoline Capacity	120 Gals. Standard	120 Gals. Standard	120 Gals. Standard
Oil Capacity	6 Gals.	6 Gals.	6 Gals.
Range	920 Miles	1025 Miles	1110 Miles

*150 gallons gasoline capacity may be had with any model. Added weight of tankage 20 lbs.

The Howard "Multi-Use" Model

Howard answers the demand for a faster airplane which can carry heavier loads on wheels, pontoons, or skis. This "MULTI-USE" model is a conversion of the Personal Transport described in the preceding pages, and the cabin is so arranged that the Operator can make quick changes to accommodate passengers, cargo, a stretcher for the ill or injured, mail or express, or for use in aerial photography. Mountings for machine guns and bomb racks are also obtainable. Note the illustrations on opposite page and the "Three View" on back cover.

SPECIFICATIONS

The specifications of these "MULTI-USE" Models differ from those shown on the preceding page and these variations are shown below; however, we will gladly furnish more detailed and specific data when presented with a particular flying problem, and we solicit your inquiries.

DESCRIPTION	Model DGA-15PC	Model DGA-15WC	Model DGA-15JC
Propeller	Hamilton Controllable (Two Position)	Hamilton Controllable (Two Position)	Hamilton Controllable (Two Position)
Generator	Eclipse 25 Ampere	Eclipse 25 Ampere	Eclipse 25 Ampere
Battery	Exide 6-XT-13-1 (65 Amp. Hrs.)	Exide 6-XT-13-1 (65 Amp. Hrs.)	Exide 6-XT-13-1 (65 Amp. Hrs.)
Gas Analyzer	No	No	No
Cargo Door	Yes	Yes	Yes
Stretcher and Fittings	Only when ordered	Only when ordered	Only when ordered
Pontoon Fittings	Only when ordered	Only when ordered	Only when ordered
Ski Fittings	Only when ordered	Only when ordered	Only when ordered
Standard Colors	Silver, Red or Yellow	Silver, Red or Yellow	Silver, Red or Yellow
Standard Upholstery	} Leather Seats and Backs } Leatherette Side Walls	} Leather Seats and Backs } Leatherette Side Walls	} Leather Seats and Backs } Leatherette Side Walls
Camera Openings	Special — state make	Special — state make	Special — state make
Machine Gun Mountings	Special	Special	Special
Bomb Rack Mountings	Special	Special	Special
Gross Weight	4350 lbs.	4350 lbs.	4350 lbs.
Useful Load (approximately)	1625 lbs.	1750 lbs.	1800 lbs.

NOTE: To calculate performance and weight on "pontoons", add 400 pounds (plus or minus) to empty and gross weights, deduct 10% from speed and 15% from climb. This is approximate only and we will be glad to give specific data on request.

EXPORT DATA

This model is particularly suited for commercial purposes in countries where the airplane is called upon to serve many purposes on short notice. When built for Export, the plane is carefully assembled and test flown, then disassembled and placed in one crate which is approximately 7½ feet by 7½ feet by 27 feet long and weighs about 6750 pounds (varies from 6600 to 6900 pounds, depending on model and equipment). The cost of crating, freight and insurance F.O.B. cars New York City is \$685.00.





TOP—For observation, photography and light armament.

CENTER—For freight, express and mail. With or without passengers.

BOTTOM—For use as an ambulance or laboratory.



BAGGAGE
COMPARTMENT.
CAPACITY 18 CU. FT.

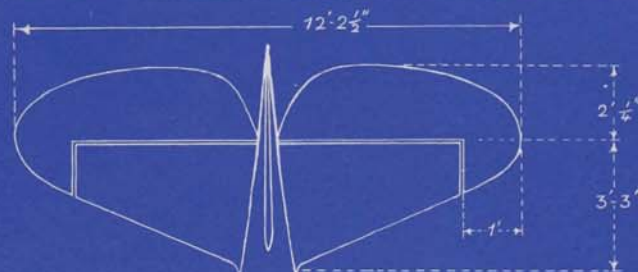
HAMMOCK SEAT.
QUICKLY REMOVABLE
BUT COMFORTABLE
FOR THREE."

PLEXIGLASS WINDSHIELD.
RECOGNISED EQUIVALENT
FOR SHATTERPROOF GLASS.

FLIGHT PANEL.
SHOCK MOUNTED.

CONTROL PANEL
INCLINED.

STAINLESS STEEL
ENGINE COMPARTMENT WALL
ASBESTOS LINED.



21.27 SQ. FEET.
TOTAL FLAP AREA.

8' 6" 6' 11 1/2" 1' 6"

4' 2"
AVERAGE CABIN WIDTH.

38'

MAXIMUM HEIGHT OF PLANE
ALL WHEELS ON GROUND.

8' 5" — TO TOP OF FIN.

8' 4"

HOWARD AIRCRAFT CORP.
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CHICAGO,
ILL. U.S.A.