

C. S. O.

0159/F.

TRN/AVI/2#4

FIGAS/IS

0159

(Formerly)

SUBJECT :

DE HAVILLAND BEAVER AIRCRAFT

CONNECTED FILES.

NUMBER AND YEAR.

15th May, 50.

Sir,

We have recently established in this Colony a Government Air Service. This is still, to some extent, in the experimental stage, and at present we are operating with two Duster aircraft, one a land plane and the other a float plane. With the possibility in mind that experience might suggest the desirability of us operating with slightly larger planes, we have been studying a brochure prepared by your Company regarding the DHC 2 Beaver, and I am directed by His Excellency the Governor to make enquiries of you regarding price and possible delivery dates. Any information which you can give us on these points would be welcome, as well as any modifications which may have been introduced into the design of the plane since the date of the brochure in our hands, which His Excellency obtained in Canada last June.

I am,

Sir,

Your obedient servant,

(Sgd) Michael R. Raymer

Manager,
De Havilland Aircraft Company,
Hatfield,
Herts,

COLONIAL SECRETARY

2.
OS.

Please open new file for
this brochure and pass the sheet
below to Mr. Smith Mr. Spencer who
should make on it the extra ^{at back} cover.
filaments required, and return to me.

The operating costs at back
cover, on which I think we can
improve, are attractive and the
general performance is quite outstanding.

McC. 19/vii

Office.

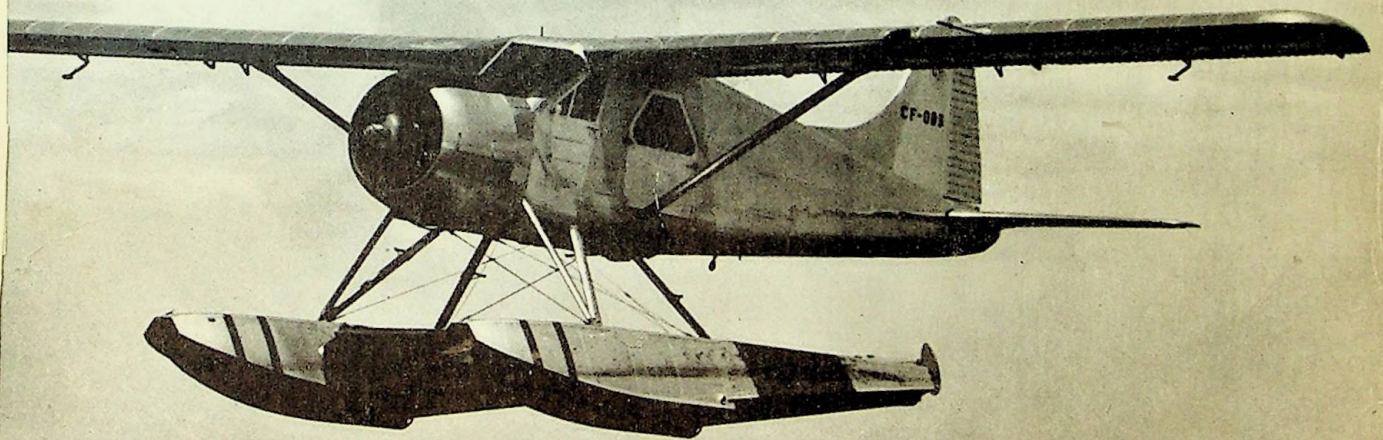
Accordingly please.

19/7/50.

f.s.

3
The de Havilland

Beaver



THE DHC 2 BEAVER

INTRODUCTION

No country in the world poses more difficult problems for the designer of aircraft to meet than the vast abodes of solitude stretching north of Canada's civilization to the shores of the Arctic Ocean. Extremes of climate: from blistering heat in summer to Arctic blizzards in winter, have made the Bush Pilot, out of sheer necessity, one of the most resourceful airmen in the world.

Bush aircraft operate the year round on floats or skis from isolated outposts, unhangared, in the open - exposed to climatic conditions ranging from blazing sun to sub-zero cold, ice, snow and driving sleet. Year in and year out they ply their prodigious task of hauling heavy freight, men and supplies into the mining camps, the forest ranger's fire lines, the trapper's cabin isolated in the wilderness.

The bush aeroplane must, of necessity, have almost every desirable feature that engineering skill and ingenuity can possibly build into it. The nature of its work demands STURDY CONSTRUCTION and RUGGED DEPENDABILITY to an exceptional degree. Ability of take-off and climb out of tiny lakes and rivers - frequently over towering shorelines - demands little short of SUPER TAKE-OFF and INITIAL CLIMB PERFORMANCE. The bush aeroplane must be a veritable "pack mule", capable of handling heavy loads at low cost - and must, in addition, boast ample cabin capacity for the accommodation of BULKY as well as HEAVY freight.

Admittedly, any aircraft which can meet these comprehensive requirements is an outstanding aeroplane for operation in any country in the world - particularly in areas where aircraft operate from aerodromes or seaplane bases located at high altitudes.

Primarily, the Beaver is a sturdy, rugged aeroplane designed to survive continuous hard use under the most strenuous operating conditions. Its ALL METAL structure is strong - stressed to $5\frac{1}{4}$ g, gust conditions up to 66 feet per second, and diving speeds up to 215 miles per hour. It is built to withstand severe exposure moored in the open with a minimum of airframe maintenance. The airframe is treated with a complete scheme for corrosion prevention both internally and externally, protecting its metal surfaces from corrosion when operating from either salt or fresh water

areas. The reliability of its PRATT & WHITNEY WASP JUNIOR engine has been proven over countless thousands of hours of flying in every part of the world. The full power of this engine (450 B.H.P.) is available from sea level up to 5000 ft. altitude.

Adequate RESERVE POWER to guarantee quick take-off and rapid climb is probably the Beaver's most outstanding design feature. Under normal conditions, with a 12-mile wind, the seaplane takes off the water, with an all-up weight of 4820 lbs., in 12.8 seconds. Guaranteed take-off performance at full load under maximum adverse conditions - zero wind - is 15.5 seconds, in a distance of 795 feet.

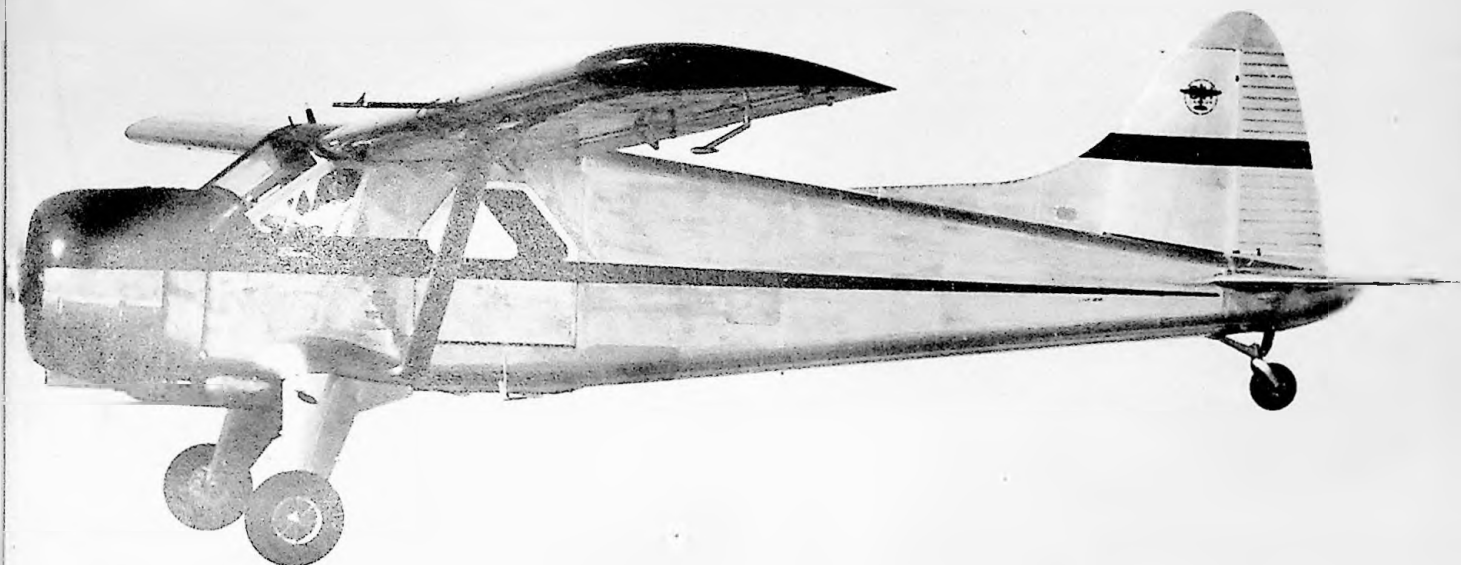
Maximum rate of climb for the seaplane is 1200 feet per minute and for the landplane 1290 feet per minute at sea level.

The Beaver's amazing take-off and climb performance makes the operation of this aircraft possible out of small lakes and rivers - or restricted fields - where few ships of its payload carrying capacity could venture. To the commercial operator, this brings new sources of traffic revenue, otherwise unattainable, within his reach. To the forest ranger and the mining man, it means the placing of crews in areas otherwise inaccessible by air. To the seaplane pilot, it means the elimination of long unprofitable hours tied up at the dock waiting for sufficient wind to get the payload off the water. The Beaver hauls its full payload off even under the most extreme adverse conditions.

With ranges varying from 200 to 578 miles, the Beaver landplane hauls payloads ranging from 1450 lbs. at 200 miles to 1140 lbs. at 578 miles. The seaplane, with ranges of 200 to 510 miles, carries payloads ranging from 1295 lbs. at 200 miles to 1000 lbs. at 510 miles. Cabin accommodation for this impressive payload is provided by the following ample dimensions: 4' x 4'1" x 9' - a total of 150 cu. ft. Deducting the pilot's station, this leaves 125 cu. ft. available for freight or passenger load - plus an additional 9 cu. ft. baggage compartment aft of the rear cabin wall for luggage or emergency bush kit.

The seating arrangement provides an adjustable pilot's seat, three quickly removable passenger seats and a hammock-type seat at the rear of the cabin to accommodate three people with reasonable comfort. An adjustable co-pilot seat may be supplied as optional equipment.

The cabin floor has been stressed to a high strength factor and static load tested for ability to carry concentrated loads on any part of its total area.



▲ The landplane was designed essentially to operate from small fields and from airports considerably above Sea

Level. This feature, and the wide flexibility of payload and range, makes the Beaver landplane ideal for charter, air taxi, industrial aid and private travel use.



▲ With full flaps the approach is fairly steep and the landing run exceptionally short. The landplane may be landed in a field 500 to 600 feet in length. Note aileron droop with flaps.



▲ Quick take-off and rapid initial climb are two of the Beaver's outstanding features. With 30° of flaps, zero wind, at full gross load, the take-off requires only 550 feet. In the photo, a remarkably short take-off has been accomplished without use of flaps.

The Beaver LANDPLANE



▲ The head-on view of the Beaver shows very clean lines. The wide track undercarriage (122"), large fin and tailplane area, and positive toe-operated hydraulic brakes, make the aircraft unusually easy to manoeuvre on land.



The Beaver

SEAPLANE

◀ The seaplane in flight, showing large windscreen and window in pilot's door. Note large cabin windows permitting good view for the passengers.



▲ The sensational seaplane take-off at full gross load, 4820 lbs.—zero wind—enables the Beaver to be operated in and out of lakes as small as a half mile in length. The seaplane gets off the water in 15 1/2 seconds in a distance of 795 feet. Distance, from standing start, to clear a 50 foot obstacle is 1165 feet. (Less than a quarter of a mile).



◀ With full flaps the seaplane has a steep approach angle and the landing run is very short. Visibility during the approach and landing is exceptionally good.

The cabin doors have been designed to dimensions which will permit a 45 gallon gas drum to be rolled into the cabin on its side. The doors are easily removable. The cabin floor has been built flush with the door to facilitate freight loading.

A special hatch has been provided in the rear wall to permit long pieces of freight to be loaded back into the rear of the fuselage.

Separate front doors are fitted on both sides of the pilot's cockpit.

Provision has been made for many features of particular interest to the North country operator which are described in detail in the pages which follow. These include: FULL WINTERIZATION . . . FUEL FILLER CAPS located at ground level (eliminating necessity of climbing up on the wings to refuel) . . . There is ample room for the carriage of one canoe on the seaplane floats on either side.

The Beaver is not, strictly speaking, a de Havilland product!!! It is an aeroplane planned by the bush pilot, the explorer, the forest ranger, and the charter operator to meet the exacting requirements of the most difficult operating conditions to be found anywhere in existence - entrusted to de Havilland design and engineering skill to translate into tangible form.

We had, naturally, our own ideas about the requirements of the ideal North country aeroplane - but to ensure that the Beaver should meet the aircraft operator's every requirement 100%, we undertook a survey of commercial operator opinion from coast to coast in Canada and in the principal countries abroad. As a result, our design engineering staff have incorporated every worthwhile feature into the Beaver that the combined experience of the last 22 years has proven desirable.

FLYING CHARACTERISTICS

TAXYING

The comparatively compact engine installation in the Beaver makes visibility on the landplane for taxiing better than normal. On the seaplane, visibility is excellent. Coupled with the good visibility on the landplane, the aircraft is surprisingly easy to manoeuvre, which can be attributed to the exceptionally wide track undercarriage, large fin and tailplane area, and positive toe-operated hydraulic braking system. On a grass surface it is possible to control the aircraft on the ground, up to moderate wind conditions, by use of the engine and rudder only. This controllability is particularly advantageous when the aircraft is mounted on skis.

Large, twin water rudders provide equally fine control during taxiing on the seaplane which may be successfully manoeuvred up to a dock with safety in winds of 25 m.p.h.

Skis with brass runners are fitted on the skiplane. With a little practice the skiplane may be turned in a reasonably short turning radius. Shock absorbing ski pedestals give the aircraft smooth riding qualities, even on rough snow or ice.

TAKE-OFF AND INITIAL CLIMB

The quick take-off and rapid initial climb of the Beaver are obviously the outstanding flying characteristics of the aircraft. On the landplane, the take-off run is short and straightforward with no tendency to swing whatsoever during initial acceleration, hence, the throttle may be opened quickly to full power. This latter feature again can be attributed to the wide track undercarriage. Employing the use of 30° of flap, a take-off may be accomplished, in zero wind conditions with full load, in 550 feet. On the seaplane, the take-off is equally impressive. It is possible to take the aircraft off in zero wind conditions with full load, in as low as 15.5 seconds or a distance of 795 feet. Distance to clear a 50 foot obstacle is 1195 feet. The seaplane rides up on the step as soon as the throttle is opened fully, even when the aircraft is loaded at the full aft C. of G. position there is no delay in getting up on the step.

An initial rate of climb of 1290 feet per minute (landplane) and 1200 feet per minute (seaplane) can be achieved at take-off power at sea level. Although the rate of climb is very slightly higher (25 ft/min) with flaps up, the angle of climb is steeper employing 30° of flap. It is, therefore, unnecessary to raise the flaps until a safe height has been reached. Although the recommended climbing speed is approximately 25% above the stalling speed, it is possible to climb safely at a steeper angle, as low as 10-15% above the stalling speed, if it is found necessary to clear any obstacle immediately after take-off.

The Beaver SKIPLANE



The skiplane handles in the air and trims and flies practically the same as the landplane. It can be turned in a very short radius on the ground, coasts freely, and requires very little engine to keep in motion.



The take-off is similar to the landplane and with average snow conditions equally as impressive. Shock absorbing ski pedestals give the skiplane remarkably smooth riding qualities during taxiing, take-off and landing.

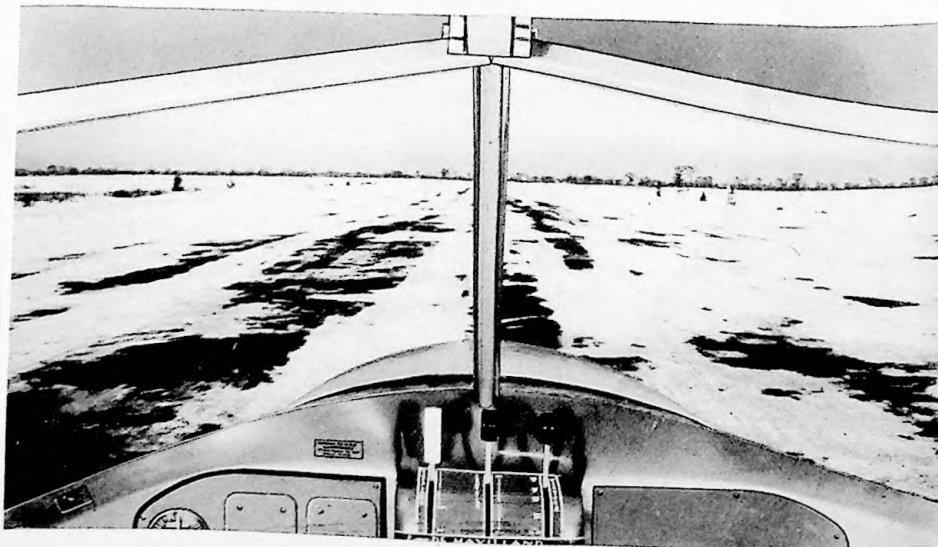
The Pilot's

POINT OF VIEW



◀ The flight instruments are grouped on a standard blind flying panel with provision for rate of climb and gyro instruments as optional equipment. Provision for radio is on the right. The emergency fire warning light, switches and fuel cut-off are all arranged on one panel at the pilot's right hand. The throttle, pitch and mixture controls are centrally located, with the elevator trim control conveniently located directly above. The aperiodic compass is directly in front of the pilot, to avoid parallax error in reading. The wheel is the throw-over type. Dual rudder pedals are fitted with toe brakes on the left side.

▶ The excellent forward and side visibility is clearly indicated in the photograph above showing the view down the runway in the take-off attitude. The nose down tendency with flaps down on approach gives the pilot an excellent view on approaching to land.



Both the outstanding take-off and climb performance have been achieved by the high aspect ratio wing, large slotted flaps and ailerons and a certain amount of aileron droop when flaps are lowered.

GENERAL HANDLING - STALLING CHARACTERISTICS

A positive mechanical elevator trim tab assists the already "easy" flying characteristics of the aircraft. It is possible to trim the aircraft to fly hands off throughout the wide C. of G. range.

The stall, either with flaps up or down, is extremely gentle, and only when the aircraft is loaded at the extreme aft C. of G. position is there a definite nose drop produced. At forward C. of G. positions, with the power off, the aircraft simply "mushes", even when the control column is fully back. The stall, flaps down, power off, with a full load is in the neighbourhood of 47 m.p.h. on the landplane, skiplane or seaplane. Very tight turns may be made without any tendency to stall. When the stall is induced in a turn, a slight buffet takes place before the stall to provide ample warning.

Neither the float nor ski undercarriage adversely affects the handling qualities of the aircraft - in fact, on the skiplane the pilot will notice practically no change from the landplane.

APPROACH AND LANDING

With full flaps, on either wheels, skis, or floats, the aircraft has a fairly steep approach angle and the landing run is very short. Particularly where the landing approach is clear, the landplane may be brought into a field where the landing run provided is as little as 500 to 600 feet. In this case, the positive acting hydraulic brakes can be of great assistance and the aircraft has no turn-over tendency.

Lowering the flaps produces a nose down attitude which provides excellent visibility on the approach and landing. Control during the approach is good, and satisfactory aileron control is available right down to the point of stall. The approach speed is low (75 m.p.h.) and the landing speed approximately 50 m.p.h. which permits the Beaver to get into small landing areas with utmost ease.

LOADING

From the docking and loading standpoint the Beaver is truly a bush pilot's aeroplane. The pilot's door on either side of the aircraft affords him easy entry and exit when the cabin is fully loaded and permits docking from either side of the aircraft. The extra wide cabin doors, both sides, enable bulky freight items to be loaded with ease.

THE COCKPIT

The pilot's seat is adjustable. All main controls are grouped in the centre panel, which allows for all adjustments with the pilot's right hand. The flap selector and pump handle are conveniently located at the right of the pilot's seat. Continuing up the central panel, the trim control is located in the centre of the cabin roof.

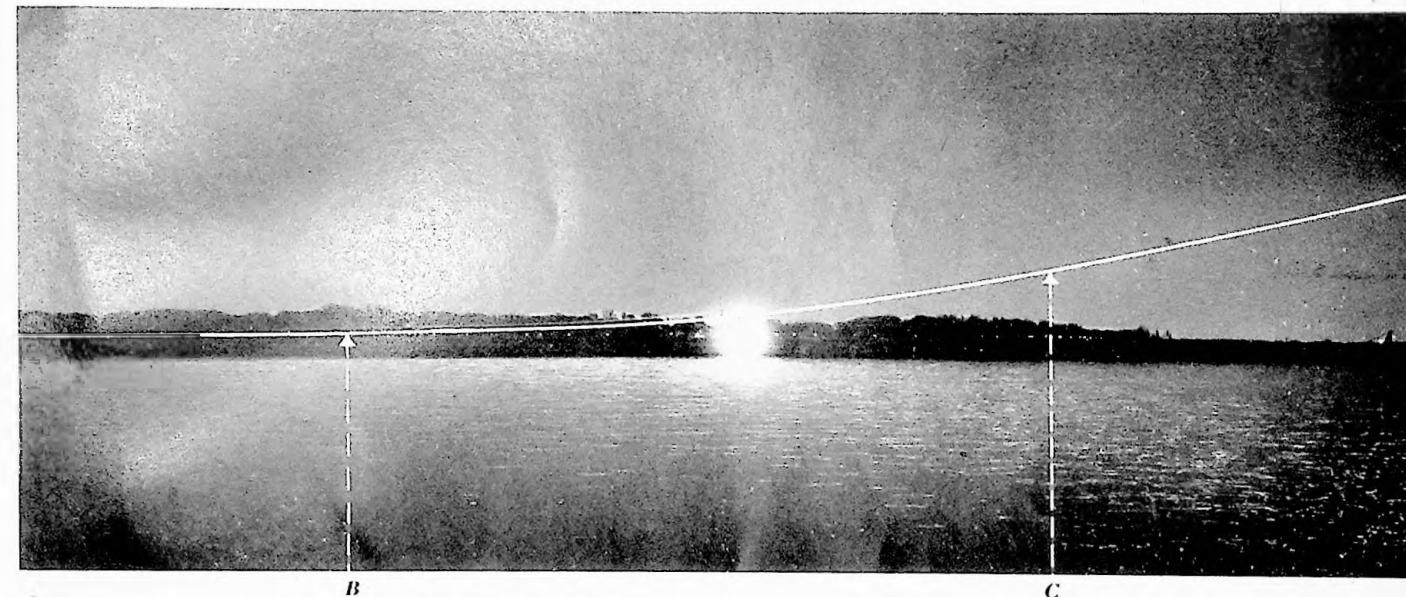
The instruments are grouped in two panels, the flight instrument panel mounted directly in front of the pilot and the engine instrument panel in the centre of the cockpit.

All electrical service switches, magneto switches, starter switches, fuel cock, oil dilution and parking brake knob are conveniently accessible to the pilot. The radio, when fitted, is situated in the panel to the right of the engine instruments within easy reach of the pilot.

The Beaver is fitted with the latest type of engine fire extinguisher with a separate red warning light and manual switch fitted below the flight panel.

A standard carburettor heat unit is fitted with the control located on the lower part of the central panel.

Photo Recorded PERFORMANCE



The actual photographic record of the Beaver seaplane take-off and climb to 50 feet from which the official performance figures were obtained. The recording camera is lined up on centre sight. The arc is the track of the Beaver starboard wing tip light. The throttle is opened at point A (not shown). The aircraft is airborne at position

B, a measured distance of 775 feet. From B to C, the point at which the aircraft has gained 50 feet altitude, is a distance of 390 feet—for a total distance of 1165 feet. From point C, aircraft continues climbing at 1200 feet per minute.

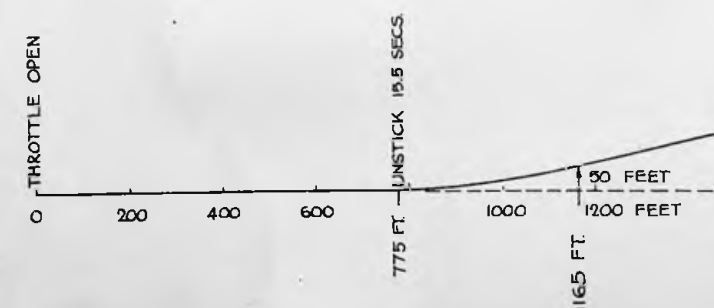
DHC 2 BEAVER

SEAPLANE TAKEOFF AT 4820 LBS.

GROSS WEIGHT

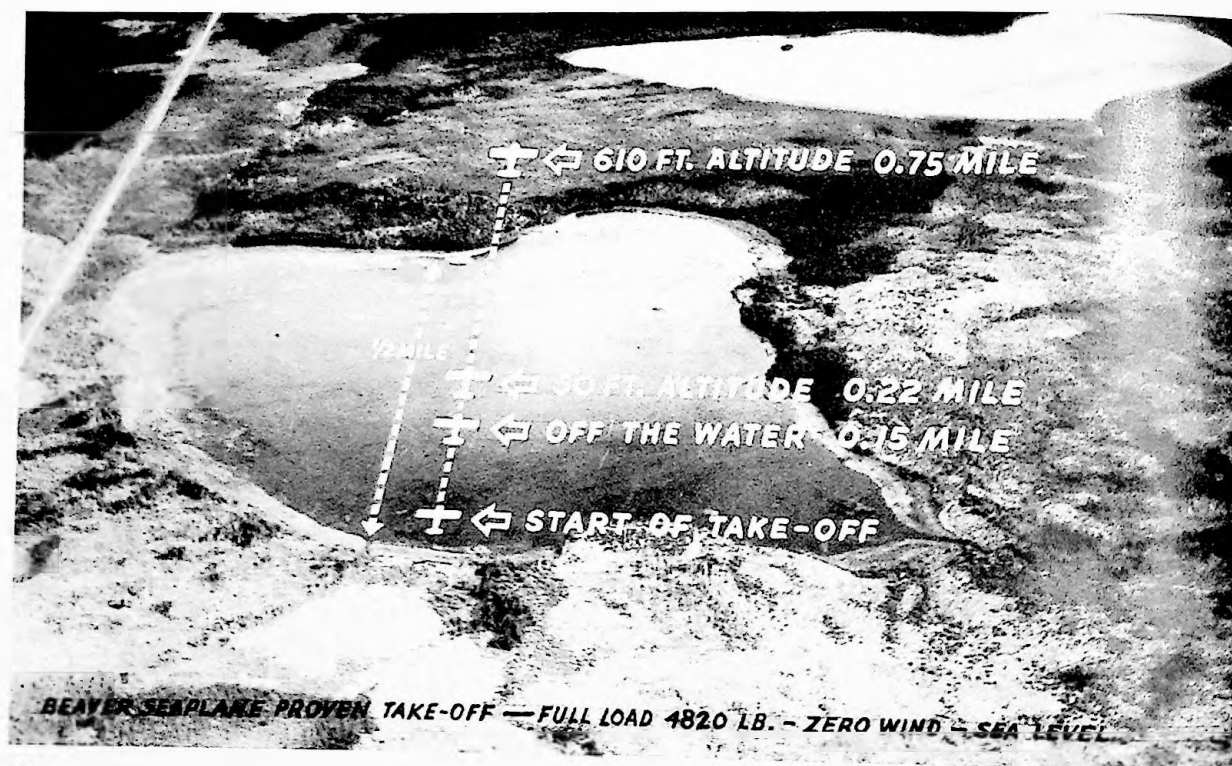
NO WIND FLAPS AT 30°

PROPELLOR DIAM. 8'-6"



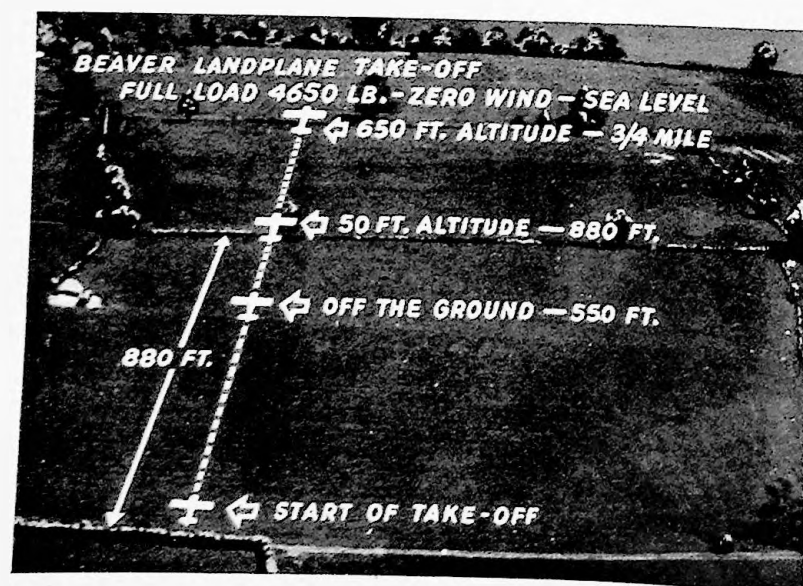
◀ The diagram at the left interprets the Photo-Recorder photograph of take-off and climb performance in graphic form.

Take-off PERFORMANCE



▲ The lake illustrated is a half-mile wide from shoreline to shoreline. Based on the official photo-recorded seaplane performance at full gross load, zero wind, the Beaver is off the water in 775 feet—less than a sixth of a mile. It has

gained 50 feet altitude in less than a quarter mile—half the width of the lake, and cleared the shoreline with a nice comfortable 610 feet to spare!



◀ With zero wind, at full gross load, the landplane takes off in a distance of 550 feet. In the illustration, a field 880 feet wide, the aircraft has cleared the fence by 50 feet. Note that a height of 650 feet is attained in a distance of three quarters of a mile from the start of take-off.

GENERAL DESCRIPTION

TYPE

The aircraft is an all-metal, high wing semi-cantilever monoplane with an all-up weight of 4650 lbs. (2110 kg.) as a landplane, and 4820 lbs. (2190 kg.) as a seaplane, powered with a Pratt & Whitney Wasp Junior engine of 450 B.H.P. (457 c.v.) for take-off, driving a Hamilton standard constant speed propeller. It is convertible and designed to operate on wheels, floats or skis.

LAYOUT

Several features have been embodied in the Beaver to improve the flying qualities of the aeroplane. For example, the rectangular, strut-braced wing has an exceptionally high aspect ratio, and large interconnected slotted flaps and ailerons provide an increased effective flap area by drooping the ailerons as the flaps are lowered. A single stabilizer and fin are used.

TYPE OF CONSTRUCTION

Metal construction is used throughout. The fuselage and all surfaces are metal covered. The engine mount is welded steel tube and the front portion of the fuselage is tubular structure with removable metal covering for ease of service and maintenance of the controls, accessories and instruments.

The standard floats provided are Edo, Model 4580, of all metal construction, fitted with a minimum of five watertight compartments and the customary beaching and mooring provisions. The ski pedestals are M & C Shock Absorbing.

ACCOMMODATION

The fuselage is sufficiently large to accommodate a pilot and 6 passengers with ample width and leg room to insure maximum comfort. Flooring is of a type suitable for carrying cargo.

The pilot's seat is permanent but adjustable, the front passenger's seat (alongside the pilot) is removable and the floor flush in this region for long items of cargo or a stretcher. The main rear doors are flush with the floor. The pilot and co-pilot have separate entry doors beside their seats in the front of the cabin.

A hammock type seat which will accommodate three persons extends across the back of the cabin.

Two additional passenger chairs may be installed in the centre of the cabin.

A separate locker of ample dimensions to accommodate emergency bush kit, emergency rations, etc., is fitted aft of the rear cabin wall.

Provision is made for carrying a 16 ft. canoe on one of the floats.

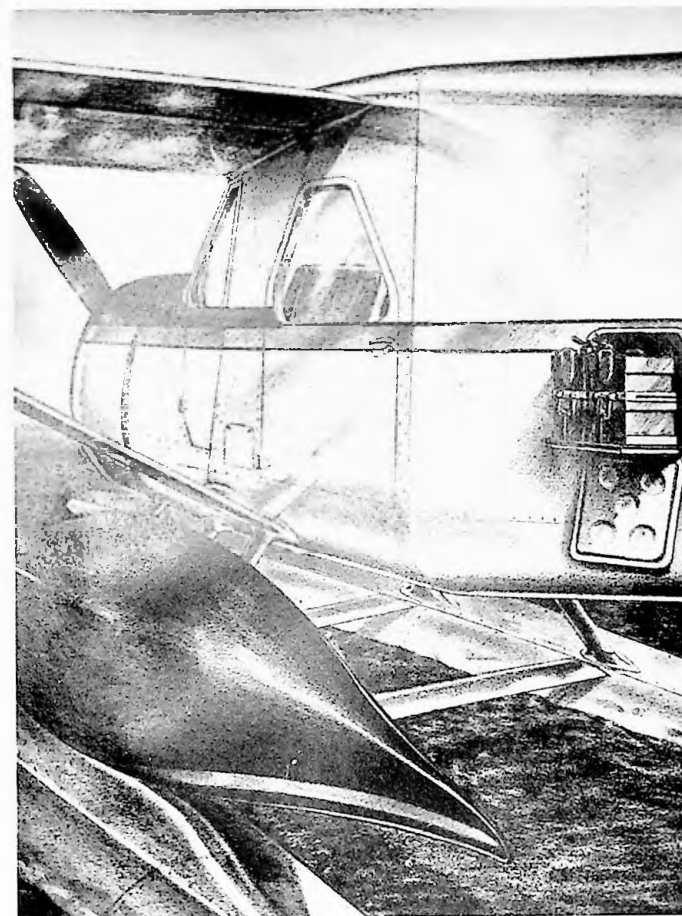
A hatch is provided in the rear wall of the cabin to enable long pieces of freight (such as 10 ft. diamond drill rods, etc.) to be loaded and stowed.

The gross cubic capacity of the cabin is 150 cu. ft. (4,25 cu.m.) and of the emergency locker 9 cu. ft. (0,26 cu.m.)

Deducting space occupied by the pilot, the total cubic capacity available for freight payload is 125 cu. ft. (3,54 cu.m.)

Control movements are normal. A "Throw-over" column and dual rudder pedals enable either pilot or co-pilot to fly the aeroplane. Flaps and brakes are hydraulically operated, the latter by toe-pedals on the rudder control. A parking brake is also fitted. The elevator trim-tab is adjustable in flight.

A cargo drop hatch or camera hole is available as optional equipment. A complete scheme has been engineered for the installation of the Williamson O.S.C. Mark II Aerial Camera, including the camera mounting, drift sight, special seating arrangement and instrument panel for the camera operator. The hatch may be used for cargo dropping, aerial seeding, dry ice bombardment of clouds to produce rain, and many other similar operations.



North Country FEATURES

◀ Canoe carrier fittings and straps may be fitted to carry a canoe on the floats. The canoe illustrated is a 16-foot model used by the Ontario Department of Lands and Forests. It will be seen that canoes of considerably wider beam may easily be accommodated.

The sliding rail battery tray is located on the port side to the rear of the cabin door. Battery connections are made automatically by spring contacts when the tray is pushed in.

▶ The cabin doors (easily removable) have a maximum width of 39 inches for a height of 40 inches from the cabin floor (which is flush with the lower edge of the door openings). This permits a 45-gallon gas drum to be rolled in on its side. The door tapers to a width of 17" at the top. Note separate doors forward on both sides of the pilot's cockpit.



Docking and REFUELING

The fuel tanks are positioned in the belly of the aircraft. The fuel filler caps are located on the pilot's (port) side in a recess, with a hinged door which is flush with the fuselage when closed. Refuelling may be accomplished standing on the ground or the port float—eliminating the risk and inconvenience of climbing up on the wings. The fuel gauges in the cockpit may be read by both the pilot and ground crew mechanic during refuelling.



The Beaver moored up to a dock illustrates the advantages of a high wing monoplane for coming alongside docks (or swinging over shorelines) particularly during low water level. The wide track of the floats (114.75 inches) makes the Beaver particularly seaworthy for manoeuvring on rough water. The water rudders retract and disconnect from the air rudder (in case the former freeze up during seaplane operations at low temperatures).

FUEL INSTALLATION

Total tankage is provided for 72 Imperial Gallons (327 litres) in three tanks located in the fuselage belly, suspended from the floor structure and readily removable for servicing. Two of these tanks are used for normal range. Fillers are provided in an accessible position on the fuselage sides, so that refuelling may be accomplished by standing on the ground or the port float without necessity of climbing up on the wings. The fuel contents gauge can be seen while the tanks are being filled. Quick release filler caps are fitted.

The Beaver may be fitted, as optional equipment, with a long range fuel tank which provides a maximum range of 850 miles for the landplane and 750 miles for the seaplane. The landplane payload at this maximum range is 850 lbs. and the payload of the seaplane is 725 lbs.

OIL SYSTEM

An oil cooler and an oil tank of sufficient capacity for the ultimate range is provided. An oil dilution system is fitted.

ELECTRICAL INSTALLATION

A 24 volt electrical system is provided. An engine driven generator with suitable regulator is installed. Batteries are provided in the rear fuselage in a readily removable tray accessible through the fuselage side. Self connecting contacts facilitate rapid servicing.

Navigation light, anchor riding lights, instrument panel lights, and landing light controlled by suitably located switches may be fitted on special order.

The engine is equipped with an electric starter as standard equipment.

MISCELLANEOUS EQUIPMENT

A hand fire extinguisher accessible to the pilot in flight, and a remotely controlled fire extinguisher system for the engine compartment is provided.

The undercarriage and tailwheel are non-retractable and both make use of rubber blocks for shock absorption. The tail wheel is large and fully-castoring, and incorporates an anti-shimmy friction damper in the design.

The aircraft is equipped with two sets of jacking pads, located on the inside of the undercarriage legs and inboard of the main undercarriage attachments on the bottom of the fuselage. Sling pick-up bolts have been fitted to the structure at the roof of the cabin. Tail slinging is carried out from a point on the rear fuselage.

MAIN DIMENSIONS

	English	Metric
Wing Span	48 ft.	14,62 m.
Length (landplane)	30 ft. 3 in.	9,22 m.
Length (seaplane)	32 ft. 9 in.	9,98 m.
Height (landplane)	10 ft. 7 in.	3,23 m.
Height (seaplane)	12 ft. 1 in.	3,68 m.
Minimum Hangar Door Height (Wheels)	9 ft.	2,74 m.
Wing Area	250 sq. ft.	23,25 sq.m.
Wheel Track	122 in.	3,1 m.
Float Track	114.75 in.	2,92 m.
Float Submerged Displacement	4580 lb. each	2078 km.
Maximum Cabin Width	4 ft.	1,22 m.
Maximum Cabin Height	4 ft. 3 in.	1,30 m.
Maximum Cabin Length	9 ft.	2,74 m.
Maximum Cabin Volume	150 cu. ft.	4,25 cu.m.
Cargo Volume (aft of pilot)	125 cu. ft.	3,54 cu.m.
Emergency Stowage Volume	9 cu. ft.	0,25 cu.m.
Maximum width cabin door	3 ft. 3 in.	1,0 m.
Maximum height cabin door	3 ft. 4 in.	1,01 m.

WEIGHTS

	English	Metric
Landplane Tare		
" Disposable	2775 lb.	1259 kg.
" Gross	1875 lb.	851 kg.
	4650 lb.	2111 kg.
Skiplane Tare		
" Disposable	3022 lb.	1371 kg.
" Gross	1798 lb.	816 kg.
	4820 lb.	2188 kg.
Seaplane Tare		
" Disposable	3083 lb.	1399 kg.
" Gross	1737 lb.	788 kg.
	4820 lb.	2188 kg.

PAY LOAD

FREIGHT VERSION

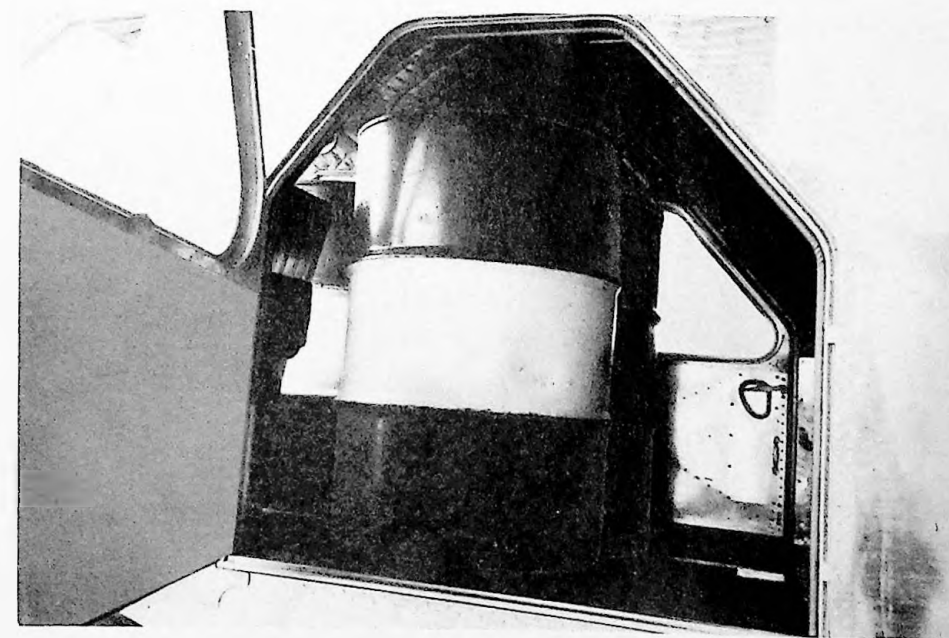
Range with Standard Tanks

	Landplane		Seaplane	
	English	Metric	English	Metric
With 200 mile range	1435 lb.	651 kg.	1295 lb.	588 kg.
With 500 mile range	1205 lb.	547 kg.	1000 lb.	453 kg.
With 578 mile range	1085 lb.	492 kg.	935 lb.	424 kg.



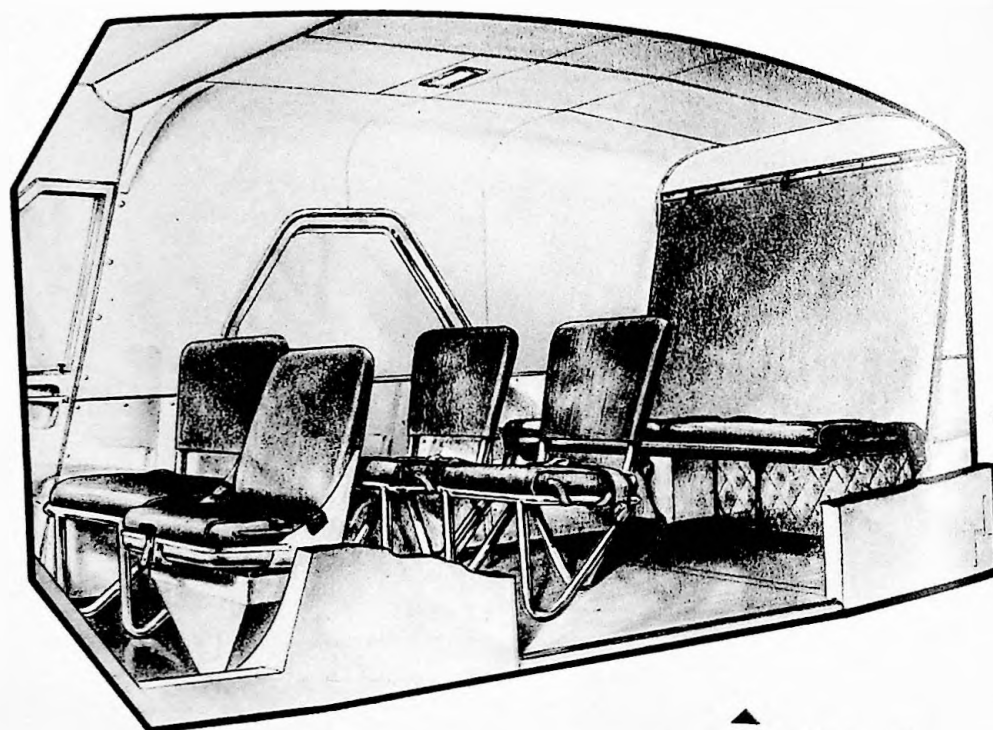
Payload AND RANGE

With 200 miles range, 1435 lbs. payload is permissible in the landplane and 1295 lbs. in the seaplane. With maximum range (578 miles) the landplane carries 1085 lbs. and the seaplane 935 lbs. Cargo capacity is 134 cu. ft., including the rear emergency storage locker.

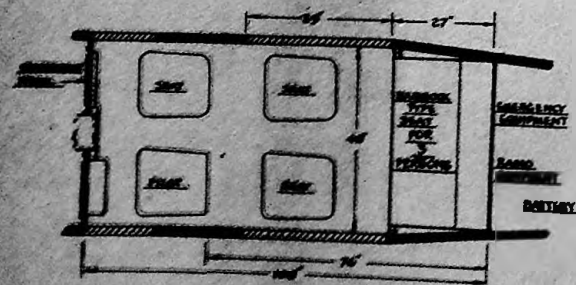


Three 45-gallon drums of gasoline weighing 380 lbs. each for a total of 1140 lbs. can be loaded in the cabin leaving capacity for an additional 300 lbs. cargo in the landplane and 150 lbs. in the seaplane over a 200 mile range. Ample door dimensions permit loading of drums either vertically or horizontally.

The Cabin INTERIOR



The cabin has 150 cubic feet capacity. The standard seating arrangement consists of adjustable pilot seat, two passenger seats, and a hammock type bush seat which rolls up when not in use. An additional passenger seat may be fitted as extra equipment.



Plan view of the Beaver seating arrangement showing ample dimensions as either a 4, 5 or 6 place aircraft.

Maximum Range with Long Range Tank

	Landplane		Seaplane	
	English	Metric	English	Metric
850 miles	850 lb.	390 kg.	725 lb.	330 kg.
750 miles				

Example - 500 Mile Range

	Landplane		Seaplane	
	English	Metric	English	Metric
Pilot	170 lb.	77 kg.	170 lb.	77 kg.
Fuel (60 Imp. Gal.) (273 Litres)	432 lb.	196 kg.		
Fuel (70 Imp. Gal.) (318 Litres)			504 lb.	229 kg.
Oil (5.2 Imp. Gal.) (23,65 Litres)	47 lb.	21 kg.	47 lb.	21 kg.
Payload	1205 lb.	547 kg.	1000 lb.	453 kg.

PASSENGER VERSION

With 6 passengers deduct from freight payload shown above 25.5 lb. (weight of 3 chairs). 6 passengers equals 1020 lbs. Balance remaining is baggage allowance. (Note: Weight of hammock seat is included in aircraft tare weight.)

PERFORMANCE

Note: Airspeeds given are TRUE, unless otherwise stated.

ENGLISH

	Power	Landplane	Skiplane	Seaplane
All-up weight		4650 lb.	4820 lb.	4820 lb.
Maximum Speed, sea level	450 h.p.	171 mph	155 mph	155 mph
Maximum Speed, 5000 ft.	435 h.p.	179 mph	160 mph	160 mph
Cruising Speed, sea level	300 h.p.	148 mph	132 mph	132 mph
Economical Cruising, sea level	240 h.p.	133 mph	120 mph	120 mph
Cruising Speed, 5000 ft.	300 h.p.	153 mph	137.5 mph	137.5 mph
Economical Cruising, 5000 ft.	240 h.p.	137 mph	124 mph	124 mph
Maximum Climb, sea level	450 h.p.	1290 fpm	1260 fpm	1200 fpm
Maximum Continuous Climb, s.l.	390 h.p.	1145 fpm	1050 fpm	990 fpm
Maximum Continuous Climb, 5000 ft.	410 h.p.	1190 fpm	1110 fpm	1020 fpm
Maximum Continuous Climb, 10000 ft.	355 h.p.	965 fpm	860 fpm	800 fpm
Climbing Speed, I.A.S.		80-85 mph	80-85 mph	80-85 mph
Take-off, sea level, zero wind,				
30° Flaps	- Time	11 secs.		15.5 secs.
	- Distance	504 ft.		795 ft.
Take-off to clear 50 ft.				
(still air)	- Time	14 secs.		19 secs.
	- Distance	890 ft.		1195 ft.

ENGLISH (Cont'd)

Stalling Speed - Flaps up I.A.S.
Stalling Speed - 45° Flaps I.A.S.
Service Ceiling
Absolute Ceiling

Power	Landplane	Skiplane	Seaplane
	55 mph	55 mph	55 mph
	42 mph	42 mph	42 mph
	26,000 ft.	23,000 ft.	23,000 ft.
	28,000 ft.	25,000 ft.	25,000 ft.

Special FEATURES

Range and Endurance
Economical Cruising
at 5000 ft. (still air)

Imp.Gals.	Landplane	Skiplane	Seaplane
60	480 miles	420 miles	435 miles
	3½ hours	3½ hours	3½ hours
72	578 miles	500 miles	524 miles
	4¼ hours	4¼ hours	4¼ hours

Air Miles per Gal.
Maximum Flap Speed I.A.S.
Maximum Diving Speed I.A.S.
Taxying, Take-off and Climb to
5000 ft. Fuel Allowance

8	7.0	7.3
105 mph	105 mph	105 mph
195 mph	175 mph	175 mph
3 gals.		

METRIC

All-up weight
Maximum Speed, sea level
Maximum Speed, 1525 m.
Cruising Speed, sea level
Economical Cruising, sea level
Cruising Speed, 1525 m.
Economical Cruising, 1525 m.
Maximum Climb, sea level
Maximum Continuous Climb, s.l.
Maximum Continuous Climb, 1525 m.
Maximum Continuous Climb, 3050 m.
Climbing Speed, I.A.S.

Power	Landplane	Skiplane	Seaplane
	2110 kg.	2190 kg.	2190 kg.
457 c.v.	275 km/hr	249 km/hr	249 km/hr
441 c.v.	288 km/hr	257 km/hr	257 km/hr
304 c.v.	238 km/hr	212 km/hr	212 km/hr
243 c.v.	214 km/hr	193 km/hr	193 km/hr
304 c.v.	246 km/hr	221 km/hr	221 km/hr
243 c.v.	221 km/hr	200 km/hr	200 km/hr
457 c.v.	6,6 m/sec	6,40 m/sec	6,10 m/sec
396 c.v.	5,8 m/sec	5,34 m/sec	5,03 m/sec
416 c.v.	6,1 m/sec	5,64 m/sec	5,18 m/sec
360 c.v.	4,9 m/sec	4,37 m/sec	4,06 m/sec
	129-137 km/hr	129-137 km/hr	129-137 km/hr

Take-off, sea level, zero wind,
30° Flaps

- Time
- Distance

Take-off to clear, 15,2 m.

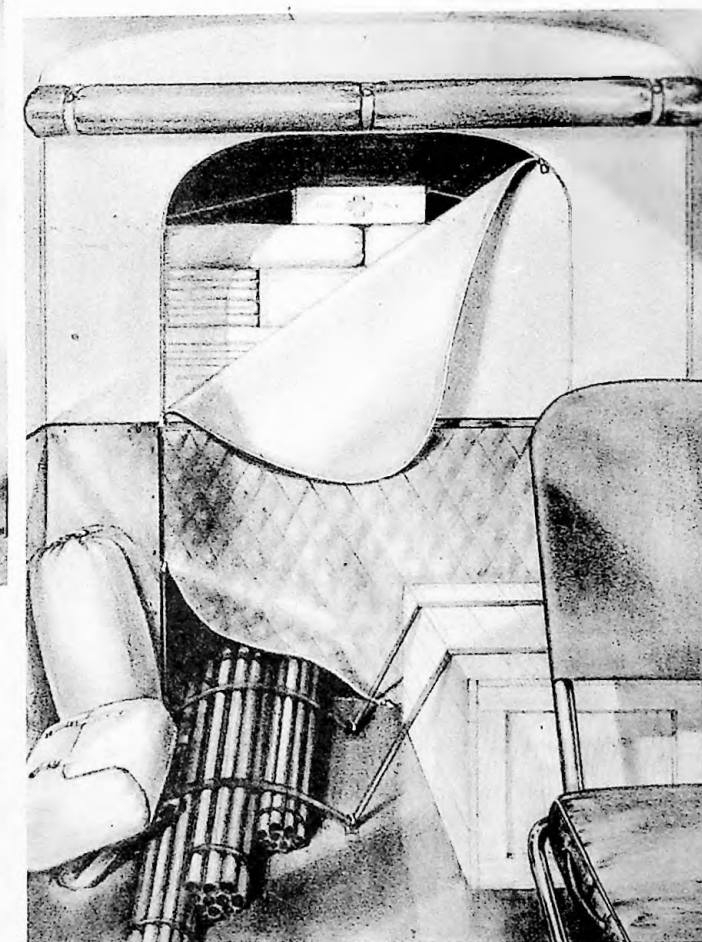
- Time
- Distance

11 secs.	15.5 secs.
168 m.	236 m.
14 secs.	19 secs.
268 m.	355 m.
89 km/hr	89 km/hr
68 km/hr	68 km/hr
7930 m.	7010 m.
8540 m.	7620 m.

Stalling Speed - Flaps up I.A.S.
Stalling Speed - 45° Flaps I.A.S.
Service Ceiling
Absolute Ceiling



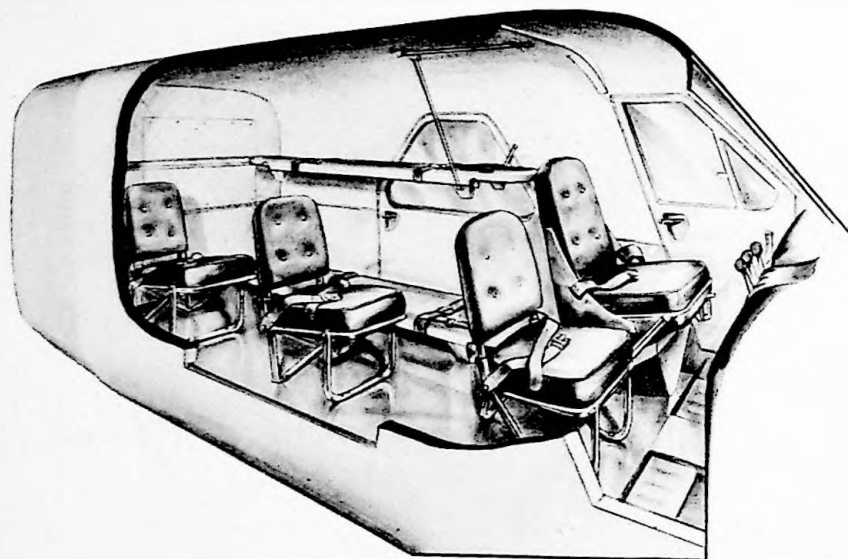
◀ The Beaver may be quickly converted to an ambulance plane. With the right hand front seat removed, a stretcher may be installed, using the floor seat fittings to secure it. Accommodation is provided for an attendant, with baggage and medical supplies.



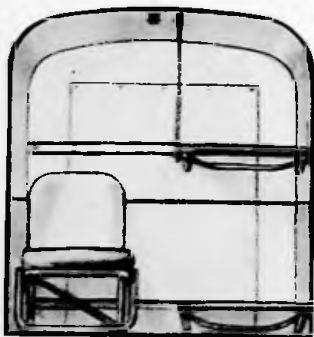
▶ A locker of 9 cubic feet capacity is provided for emergency kit and rations, or for baggage. Below this is a hatch which permits long pieces of freight, such as 10-foot diamond drill rods, to project through the rear bulkhead when loaded in the cabin.

The Beaver **AMBULANCE**

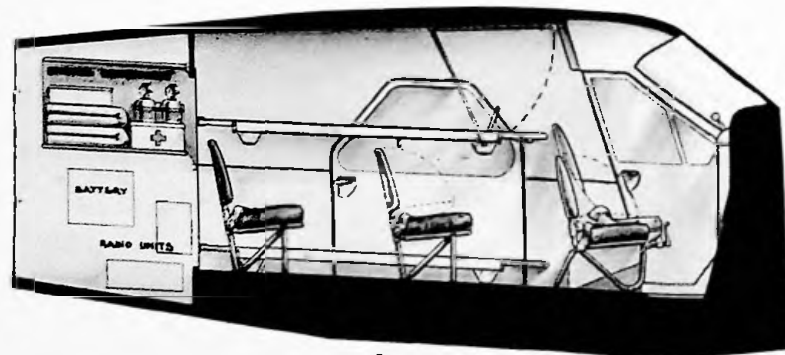
2 Stretchers—3 Passenger seats



The Beaver's ability to land and take off from small land or water areas makes it ideal for emergency ambulance requirements. The stretchers are designed for comfort and ease of handling.



END VIEW



SIDE ELEVATION

END VIEW

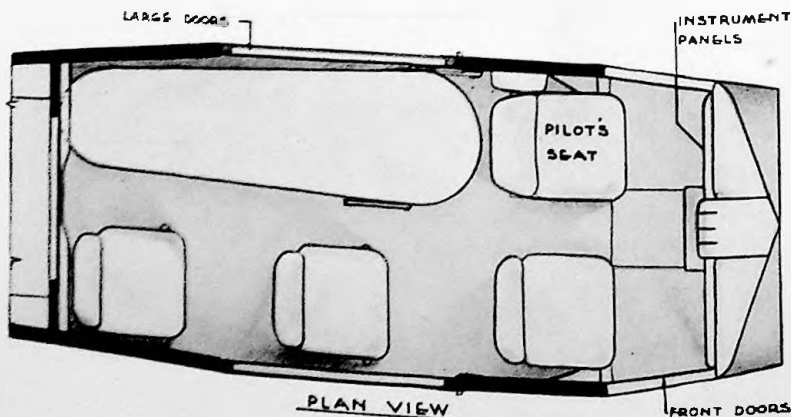
Telescopic handles are provided so that stretchers may be carried as easily by two persons as by three or four.

SIDE ELEVATION

If added space is required for bulky medical equipment, the seats may be easily removed. The seat backs fold down flat if required.

PLAN VIEW

In normal cases where one or two stretchers are required, three seats for ambulatory patients, doctors, nurses, etc., may be provided.



PLAN VIEW

METRIC (Cont'd)

	Litres	Landplane	Skiplane	Seaplane
Range and Endurance	273	773 km.	676 km.	700 km.
Economical Cruising at 1525 m. (still air)	327	3½ hours 940 km. 4¼ hours	3½ hours 810 km. 4¼ hours	3½ hours 840 km. 4¼ hours
Air Km. per Litre		2,83	2,48	2,55
Maximum Flap Speed I.A.S.		169 kph	169 kph	169 kph
Maximum Diving Speed I.A.S.		314 kph	281 kph	281 kph

EQUIPMENT

Standard

ENGINE

Type - Pratt & Whitney Wasp Jr.
R-985-AN-6B

Rating - 450 B.H.P. (457 c.v.) @ 2300 rpm maximum and 36.5 in.Hg.
manifold pressure @ sea level

Fuel - 87 Octane (91/98 Grade) (Spec. 3-GP-5)

Oil - Summer - Spec. 3-GP-4-4B-100
AN-C-8 Grade 1100
or - DED 2472 B/O
- Winter - Spec. 3-GP-4-4B-80
AN-C-8 Grade 1080
or - DED 2472 A/O

PROPELLER

Type - Hamilton Standard 2D30-237-6101A-18
Two Blade - Constant Speed

Diameter - 8 ft. 6 in. (2.59 m.)

Governor - Hamilton Standard 1A2-G5 (or - A5)

ENGINE ACCESSORIES

Fuel Pump
Engine Primer
Magnetos
Generator
Starter
Spark Plugs
Vacuum Pump
Oil Cooler

INSTRUMENTS

Tachometer
Manifold Pressure Gauge
Engine Gauge Unit

EQUIPMENT (cont'd)

Standard

INSTRUMENTS (cont'd)

Cylinder Head Temperature Thermometer
Carburettor Mixture Temperature Thermometer
Fuel Contents Indicator
Airspeed Indicator
Altimeter
Turn and Bank Indicator
Magnetic Compass
Outside Air Temperature Thermometer
Chronometer

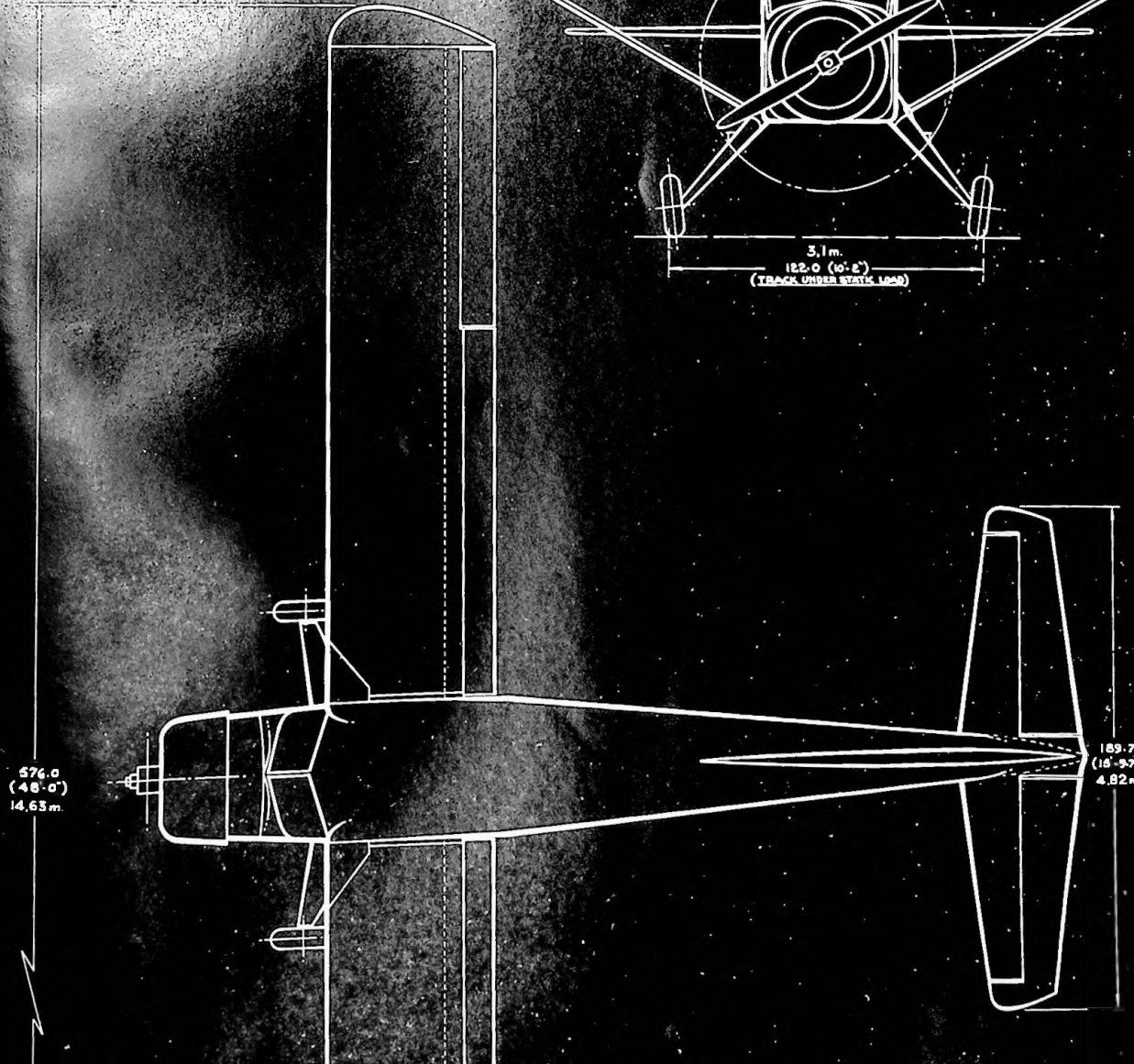
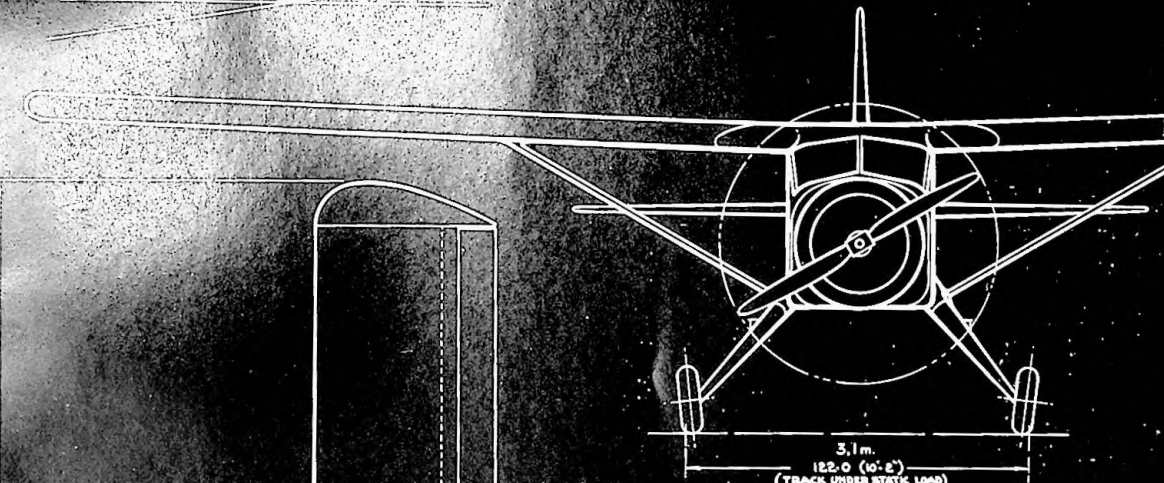
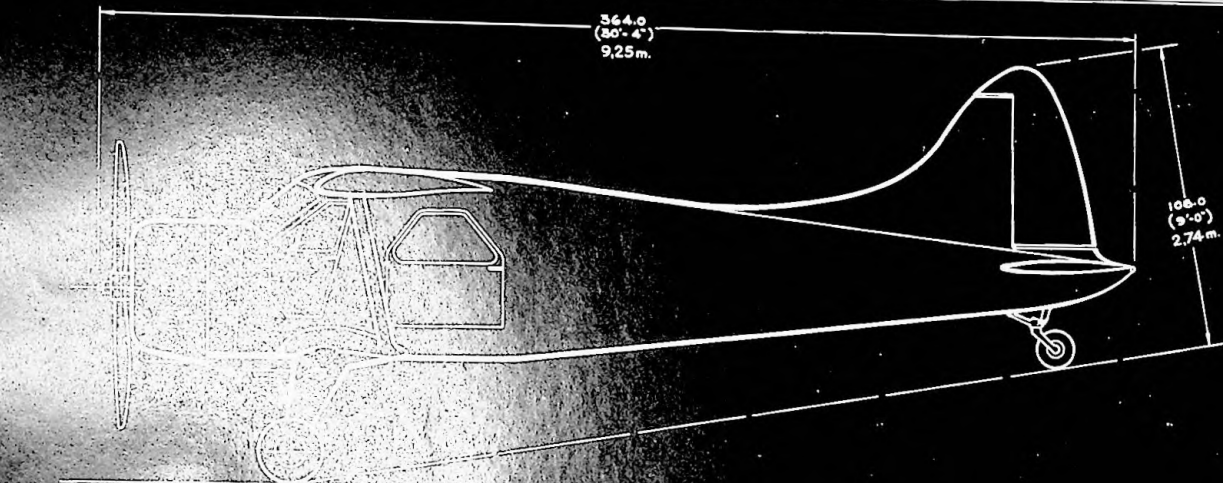
CONTROLS

Y - type control column with throw-over wheel
Hydraulic flap system
Water rudder retraction and disconnect control supplied beside pilot's seat
Engine controls provided will be:-

- | | |
|----------------------------------|----------------------|
| (a) Throttle |) with friction lock |
| (b) Propeller Governor | |
| (c) Mixture control | |
| (d) Carburettor air heat control | |

MISCELLANEOUS ITEMS

Hand Fire Extinguisher
First Aid Kit
Battery (24 volt)
Cabin Light
Fire and Generator Warning Lights
Engine Fire Extinguisher
Oil Dilution System
Hand Fuel Pump

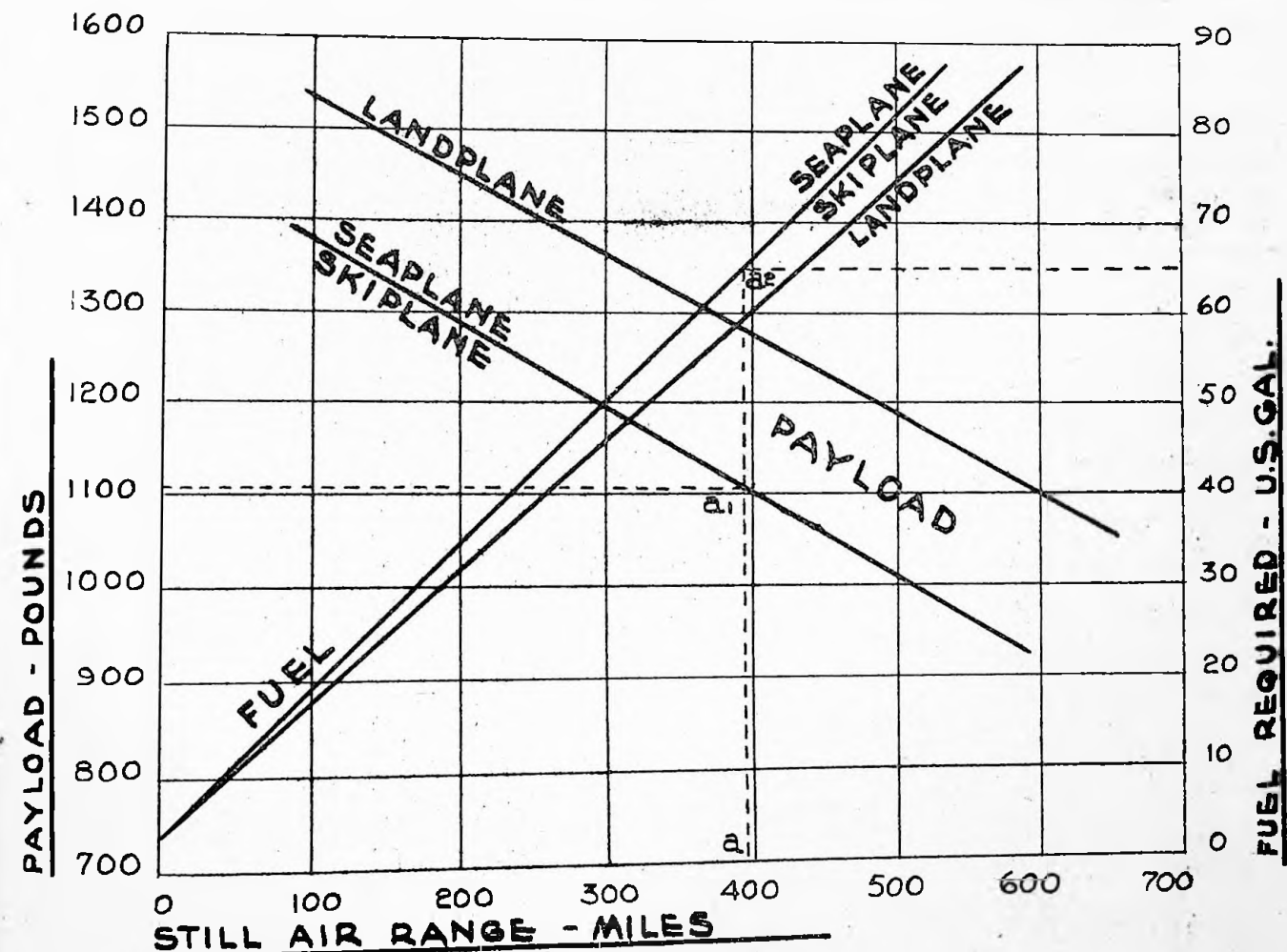


DHC 2-BEAVER
DE HAVILLAND AIRCRAFT OF CANADA LTD

DRG No - C2 - X - 163

AMS - DEC 3-47
SCALE - 2/100

	GROSS WEIGHT	TRUE AIRSPEED
LANDPLANE	4650 LB	137 MPH
SEAPLANE	4820 LB	124 MPH
SKIPLANE	4820 LB	124 MPH



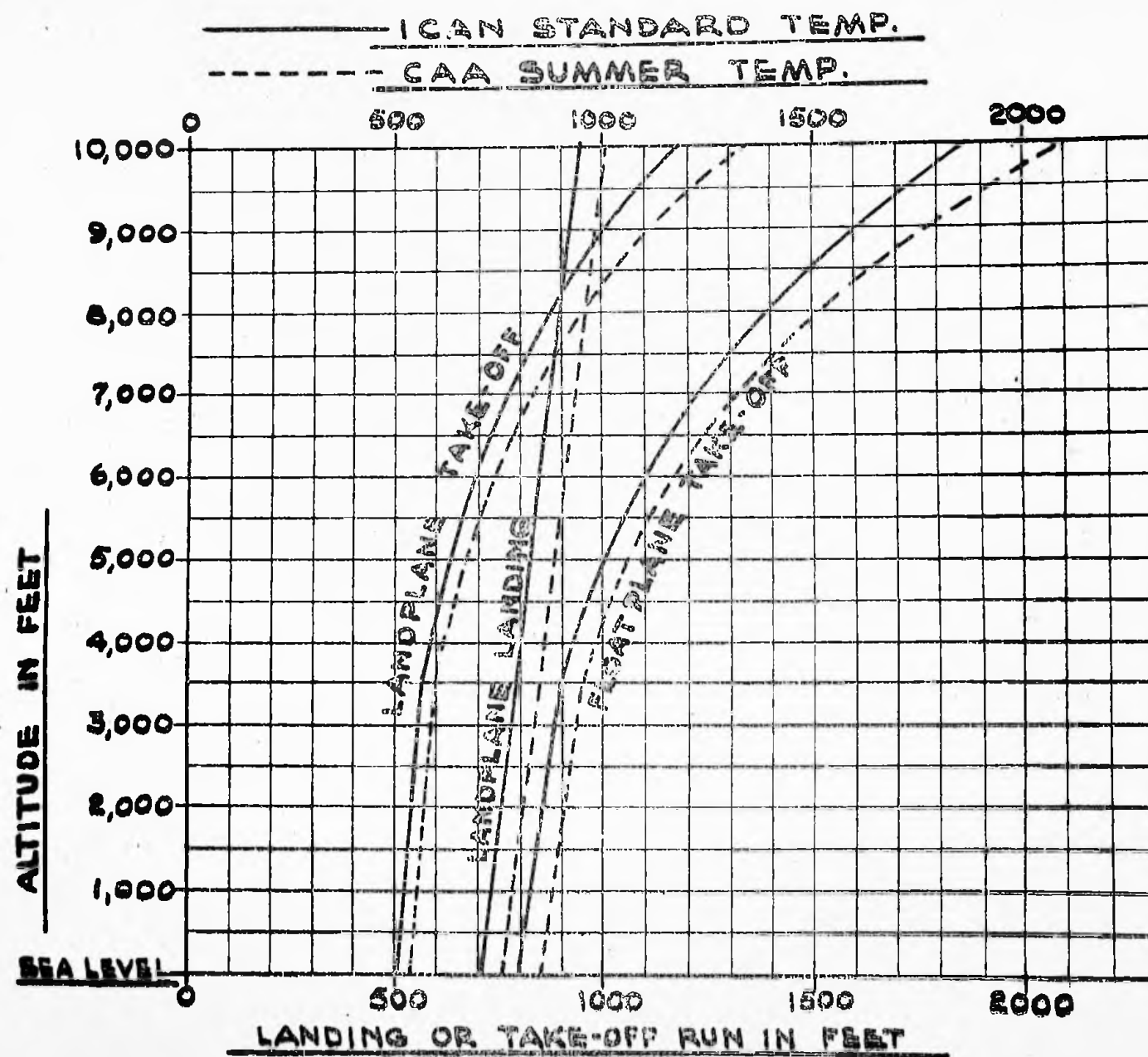
DHC 2 - BEAVER PAYLOAD VS RANGE

ECONOMICAL CRUISING POWER (240 BHP) AT 5000 FT.
SUBTRACT 3% FROM RANGE FOR FLIGHT AT SEA LEVEL ALTITUDE
SUBTRACT 15% FROM RANGE FOR FLIGHT AT 10MPH HIGHER CRUISE SPEED

NOTE - U.S. GALLONS

PLATE No 2.1 (B)

AMENDMENT No 1



TAKE-OFF & LANDING RUN VS ALTITUDE

——— AT ———
ICAN STANDARD TEMP. & CAA SUMMER TEMP.

TAKE-OFF & LANDING DISTANCES

DHC 2 - BEAVER

PLATE NO 2.2

AMENDMENT NO 1

Do not remove huc.

DHC-2 BEAVER

Analysis of Estimated Direct Operating Costs (landplane) 14 year basis.

Hours per Annum	500		1000	
Cost of Standard Aircraft including 8% Sales Tax	\$27,324.00		\$27,324.00	
Life Expectancy - 14 years	7,000 hrs.		14,000 hrs.	
Cruising Speed @ 53% of take-off power	137.5 m.p.h.		137.5 m.p.h.	
Air miles per year	68,750		137,500	
Passenger miles per year (4 pass.)	275,000		550,000	
Passenger miles per year (5 pass.)	343,750		687,500	
Passenger miles per year (6 pass.)	412,500		825,000	
<u>Fixed Charges</u>	<u>Per Year</u>	<u>Per Hour</u>	<u>Per Year</u>	<u>Per Hour</u>
Depreciation (no residual value)	\$1,951.71	\$3.90	\$1,951.71	\$1.95
Insurance - 12% of aircraft value	3,228.88	6.56	3,278.88	3.28
Pilot's Salary	4,500.00	9.00	4,500.00	4.50
<u>Maintenance</u>				
Airframe	1,000.00	2.00	2,000.00	2.00
Engine	1,000.00	2.00	2,000.00	2.00
<u>Fuel and Oil</u>				
87 Octane gasoline, 16 g.p.h. @ 35¢ per gallon.	2,800.00	5.60	5,600.00	5.60
Oil 6% of Gasoline	168.00	.34	336.00	.34
Total cost per annum	\$14,698.59		\$19,666.59	
Total cost per hour		\$29.40		\$19.67
Total cost per mile		.214		.143
Total cost per passenger mile (4 pass.)		.053		.036
Total cost per passenger mile (5 pass.)		.043		.028
Total cost per passenger mile (6 pass.)		.035		.024

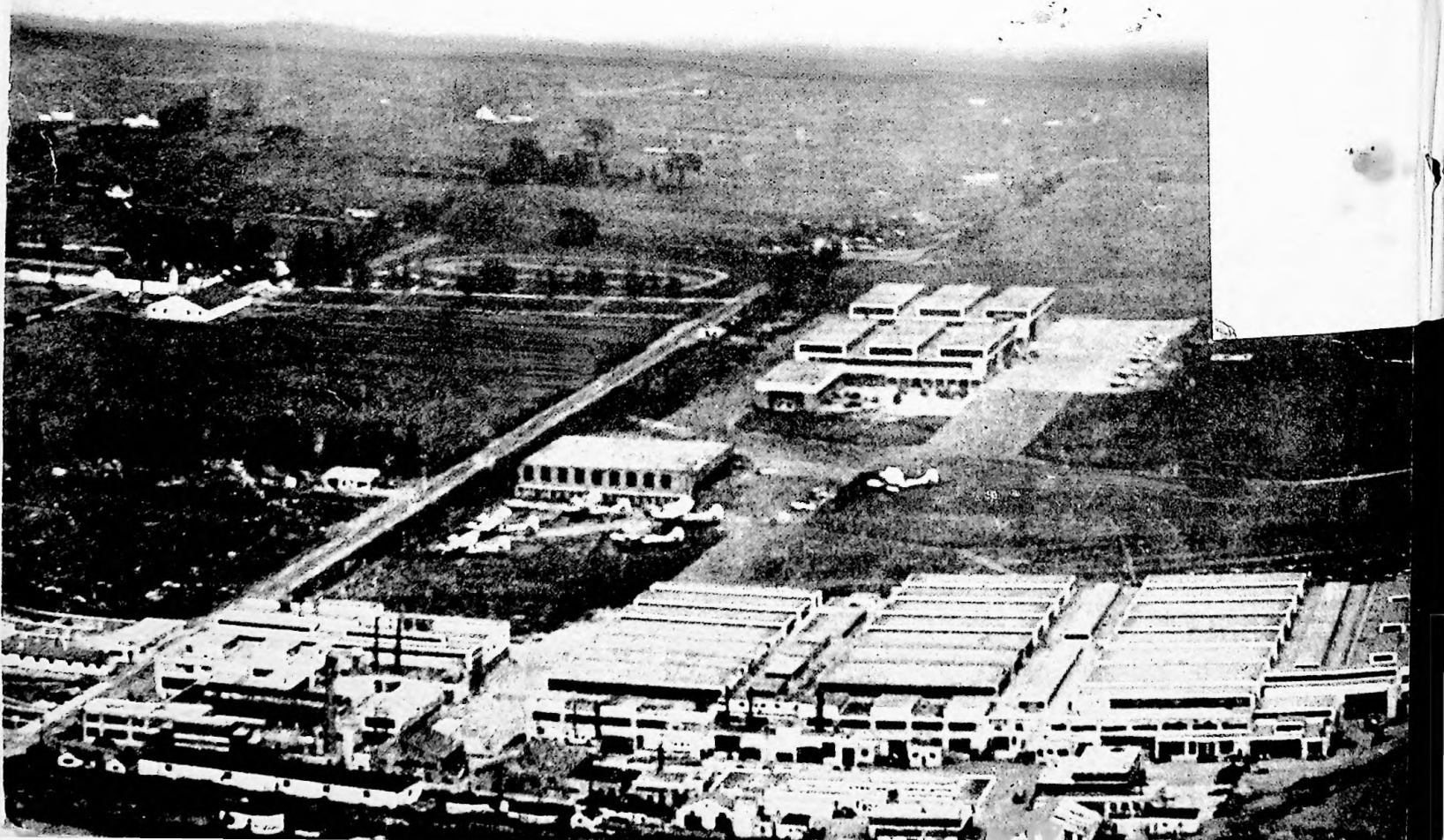
December 22nd, 1949.

A Beaver landplane is shown over the De Havilland factory with its five and a half acres of modern buildings with complete facilities for design, manufacture and repair of aircraft. The Beaver is in full production and now operating across Canada from the Atlantic to the Pacific and to the Arctic Ocean as well as in many other countries of the world.

Sandy
 Mrs Joan Cooper.
 Ellauri
 680 Marlboro.

FASTEN Envelope by
 OPEN by cutting Label

FASTEN Envelope by
 OPEN by cutting Label



CS

I make the cost, without R/T equipment, or delivery charges C\$ 31,305.00 which is, I suppose, in the neighbourhood of £12,000. In a message from Sgt. L. McDougall I gather that he can do a bit better than that for us. He will need to.

The next question would be how to get it here. I don't favour flying it to Monte for re-crating there

X | and think depended to U.K. and then J. Briscoe is the answer.

me. 20/VII

AS.7.

X above. Can you tell us what it cost to crate the Nooseman in Canada & ship it across to U.K.

2) What sort of charge would Briscoe make for bringing it out here?

R

22/7/50.

H.C.S. Your message about

(i) Dismantling & crating	£200 - 0 - 0
batage etc to ship	£60 - 0 - 0
Freight to U.K.	950 - 0 - 0
batage on U.K. to J. Briscoe approx.	100 - 0 - 0
Approx.	£1410 0 0

(ii) Cost to ship on J. B. would be £10 per shipment ton. In this respect I would point out that it is unlikely that we will have any room on the J. B. ~~this year~~ as we are now trying to carry all our requirements. In the past we have paid £2000 or so a year to send our stuff by commercial vessel. J. B. Elliott

22/7.

J.E.

AS7: minute at foot of preceding page for information.

Pretty stiff!

22/7/50.

There would be no change in John Birse,
the Dependence being indirectly from the source.

DeHavillands may be able to improve on these
figures but even so it is better than flying the
machine down and re-loading (unrepeatedly) at Monte Video.

W.C.

24/VII

(We have yet to see if the IDS needs the Noseman
again!).

Note.

Squad Capt. P. Donyall is expected to visit the
Falklands in November.

B.U. for discussion with him. 1.11.50.

126 JUL 1950

B.U. 1/11/50.

Miss Sedgwick.

THE DE HAVILLAND AIRCRAFT
OF CANADA LIMITED

POSTAL STATION L. TORONTO

July 28th, 1950.

Our Ref: AFMacD/h.

Mr. Michael R. Raymer,
Colonial Secretary,
STANLEY,
Falkland Islands.

Dear Sir:

Your letter of May 15th to The de Havilland Aircraft Company of Hatfield, England, regarding the price and delivery of The de Havilland DHC-2 BEAVER, has been forwarded to us for reply.

We are enclosing a price list showing the price of the BEAVER Standard Landplane and the various items of extra equipment which are available with it, F.A.F. Toronto.

The cost of packing and shipping a BEAVER Landplane to the Falkland Islands would be approximately \$5,000.00 (U.S.).

We can make delivery of a BEAVER within three weeks of receipt of a firm order with a 25% deposit, subject of course, to the receipt of priority defence orders due to the present world situation.

Our terms are 25% deposit ^{with} order and the balance in U.S. dollars payable by an irrevocable letter of credit deposited with Barclay's Bank of Canada at Toronto.

Our BEAVER production is nearing the 110th mark, and of these, 86 are already in operation and giving unexcelled service in many parts of the world. Very few modifications have been introduced in the BEAVER since last June, but a few in which you may be interested are the following:

Rear windows have been installed in the cabin for the use of passengers in the back seats.

The cabin ventilators which were formally an item of extra equipment are now standard equipment.

A carburettor air filter has been introduced as standard equipment which may be used at the discretion of the ~~operator~~ ^{pilot} to select either filtered air or ram air.

2 SEP 1950

THE DE HAVILLAND AIRCRAFT OF CANADA, LIMITED

DHC-2 BEAVER PRICE LIST

		<u>Can.Dollars</u>	<u>U.S.Dollars</u>
	Standard Landplane, c/w Wasp Jr. Engine (Flyaway - Toronto).	\$25,300.00	\$23,300.00
<i>Required.</i>	Standard Seaplane, less land undercarriage (Flyaway - Toronto).	29,790.00	27,382.00
	<u>Extra Equipment.</u>		
<i>Required</i>	Edo Model 4580 Floats -		
	At Toronto -	4,840.00	4,400.00
	F.O.B. Winnipeg -	4,750.00	4,318.00
	Installation at Toronto -	140.00	127.00
	Skiis - Elliott Bros.		
<i>Not Required.</i>	2 Main Skiis, Shock Absorber Pedestals, Tail Ski, c/w Trimming Gear	1,025.00	932.00
	Installation at Toronto	50.00	45.00
	Ski Trimming Gear only, c/w Tail Ski Pedestal and Trim Cables	140.00	127.00
*	Cabin Heater with Ducts, Controls & Defroster - C2V2A	500.00	455.00
*	Cabin Cold Air Ventilators - C2-V-5A:		
	If ordered for factory installation -	70.00	64.00
	Kit only, for customer installation -	55.00	50.00
<i>Required</i>	Artificial Horizon - AN 5736-1	210.00	191.00
<i>Required</i>	Directional Gyro - AN 5735-1	180.00	164.00
<i>Required</i>	P.8 Aperiodic Compass with Light - A.1719 (Instead of 1821 Dash Type).	25.00	23.00
<i>Required</i>	Rate of Climb Indicator - 1610	125.00	114.00
<i>Not Required</i>	Airspeed Indicator (de Havilland External Type) - 44550A -	6.50	6.00
†	Navigation Lights, Set - E	45.00	41.00
†	Landing Light - 4523	50.00	45.00
†	Anchor Light - SZ	15.00	13.65

* Depends on the aircraft. The Noseman has a heater which is never used, as the cabin is usually overheated by the engine. (See Reverse Side)

† Depending on conditions of operation.

BEAVER PRICE LIST - PAGE 2.

December 22nd, 1949.

RADIO INSTALLATIONS

LEAR RADIO.

	<u>Can.Dollar</u>	<u>U.S.Dollar</u>
T30AE Transmitter, RCBB Receiver, with 1 Crystal, Microphone, Headphones, Range Filter, Cables, Fixed Aerial and Antenna Tuning Unit (Installed - C2-R-251).	\$1,045.00	\$950.00
Trailing Aerial - Hand Reel - C2-R-335A	108.00	99.00
Extra Crystals for Transmitter or Receiver (Peterson).	13.20	12.00
Directional Loop for Lear Radio - AML (Installed)	232.00	211.00

NOTE:

Quotations on the installation of any other type of radio equipment in the Beaver will be furnished on request.

All prices subject to change without notice.

Sales Tax extra in Canada, if applicable.

December 22nd, 1949.

*Radio equipment for use on normal internal services should be kept to
a bare minimum - R/T only.*

(For Production Aeroplanes having Canadian Type Approval)

Registration VP-FAD

Aeroplane Type HORSYMAN Landplane
 Seaplane
 Model MARK V
 Manufacturer CANADIAN CAR & FOUNDRY CO. LTD. SERIAL No. 129-45
 Skiplane

Certificate of Airworthiness required for:

(Delete categories and subdivisions - not required)

<u>CATEGORY</u>	
Normal	(a - Public transport passenger.
	(b - " " " mails
	(c - " " " goods.
PERSONAL	(PERSONAL
	(e - Aerial work.
EXPERIMENTAL	(EXPERIMENTAL
SPECIAL	(g - Research or experimental

PARTICULARS OF ENGINE (S)

	<u>Left Side</u>	<u>Right Side</u>
Type	PRATT & WHITNEY "WASP"	
Model	S3H1	
Serial No.	P-327609	
Take-off Power	600 HP	
Take-off R.P.M.	2250	
Take-off Manifold Pressure	36" hg.	
Take-off Octane Rating of Fuel	87	
Maximum Power (Continuous operation)	550 HP at 5,000 feet	
Maximum Power R.P.M.	2200 RPM	
Maximum Power Manifold Pressure	32.5 hg.	
Maximum Power Octane Rating of Fuel	87	

PARTICULARS OF AIRSCREWS

Maker **Hamilton Standard Propellor (P & H)**
 Type **2 blade controllable (Constant Speed)**
 Blade Drawing No. **6101A-12**
 Blade Serial Nos. **28245 CPL 28246 CPL**
 Hub Drawing No. **12040-211**
 Hub Serial No. **10492 CPL**
 Blade Settings **Basic 27° Range 16°
Setting 11° - 27°**
 Diameter

PARTICULARS OF ALIGHTING GEAR

WHEELS Make **DAYTON** Model **H-3-44A** Tire **30" smooth contour**
 FLOATS Installation Assembly Drawing No. **16-35100**
 SKIS Installation Assembly Drawing No. **118346 Ser. Nos:**
 Tail Ski **Main Skis 14 IN & 14 IN
Tail Ski 14**

POSITION AND CAPACITY OF FUEL AND OIL TANKS

FUEL		CAPACITY		OIL		CAPACITY	
Position	Imp.	U.S. Gals.	Position	Imp.	U.S. Gals.	Position	Imp.
(1) Right Wing	50.0	(1) Fuselage St. 1 to St. 2	17.0				
(2) Left Wing	50.0	(2)					
(3) Front Belly	37.0	(3)					
(4) Rear Belly	64.0	(4)					
(5) Cabin Auxiliary	31.5	(5)					
(6)		(6)					
TOTAL	232.5		17.0				

RECORD OF APPROVED MODIFICATIONS EMBODIED SUBSEQUENT TO APPROVAL OF TYPE AIRCRAFT

<u>Drawing and Issue No.</u>	<u>Description</u>
29C71110	INSTALLATION RADIO ALTIMETER
29C51005	INSTALLATION CYC FLUX GATE COMPASS
16-53801	INSTALLATION LIMITERS
29C31767	INSTALLATION CABLE IN EMERGENCY DOOR & DITCH STORAGE
16-65001	INSTALLATION PYROTECHNICS
29C71120	INSTALLATION COMMUNICATION EQUIPMENT (BENZIN TA17B AND BALOD)
16-47002	INSTALLATION OIL TANK (17 IMP. GALS.)
29C54051	INSTALLATION EXTERNAL POWER RECEPTACLE
29C54175	INSTALLATION GENERATOR CONTROL BOX
29C33910	INSTALLATION FIFERAL AIRCRAFT WINGS RETRACTABLE SKIS (HYDRAULICALLY ACTUATED) (TYPE ANA 7550)
29-05052	INSTALLATION REAR CAMERA & CARGO HATCH
16-53002	INSTALLATION PILOT & CREW HELMET TUNES.

RECORD OF BASIC INSTRUMENTS AND EQUIPMENT
(Essential for C. of A. for any class of operation)

See Attached Sheet

DESCRIPTION	MAKER	MODEL	REMARKS
Airspeed Indicator			
Altimeter			
Compass			
Engine Speed Indicator			
Oil Pressure Gauge			
Liquid Thermometer (for liquid cooled engines only)			
Safety Belt(s)			
Fire Extinguisher(s)			

RECORD OF OTHER FIXED INSTRUMENTS AND EQUIPMENT
(Make extra sheets as required using following pro forms and classification)

DESCRIPTION	MAKER	MODEL	REMARKS
<u>Aircraft Instruments</u>			
Flying and Navigation, e.g. Bank and Turn Indicator, etc.			
Aircraft Operating e.g., Cabin Temperature Outside Flap Indicators, etc.			
<u>POWER PLANT INSTRUMENTS</u>			
<u>ELECTRICAL EQUIPMENT</u> other than signalling			
<u>SIGNALLING EQUIPMENT</u>			
<u>SAFETY AND EMERGENCY EQUIPMENT</u>			
<u>AMENITIES</u>			

INSTRUMENTS

<u>NAME</u>	<u>SERIAL NO.</u>	<u>MANUFACTURER</u>
FUEL AIR RATIO	197536	CAMBRIDGE INST. CO.
R.P.M.	AC 42-30945	PIONEER
BELLY FUEL TANK		LIQUIDOMETER CORP.
CYL. HEAD TEMP.	AC-42-10900	DEJUR AMSCO CORP.
OIL TEMP.	24578	M. M. & M.
OIL PRESSURE	24578	M. M. & M.
FUEL PRESSURE	24578	M. M. & M.
RATE OF CLIMB	3211	KOLLSMAN
TURN AND BANK	AF-42-97030	PIONEER
DIRECTIONAL GYRO	44-6421	TRUSTED
ALTIMETER	6099	KOLLSMAN
AIRSPEED	203449	PIONEER
COMPASS	3659	KOLLSMAN
MANIFOLD PRESSURE	6723	M. M. & M.
CARB. TEMP.		WESTON
AIR TEMP.		WESTON
SUCTION GAUGE	AF-43-15101	COLLINS INST. CO.
CLOCK	AF-44-13519	ELGIN
GYRO HORIZON	AF 45-240	TRUSTED
FLUXGATE COMPASS IND.	2381	BENDIX
RADIO ALTIMETER INC.	5648	BENDIX

RECORD OF WEIGHT AND C.G. POSITION

(See Information Circulars M/8/37 and M/1/38)

	<u>LANDPLANE</u>	<u>SKIPLANE</u>	<u>SEAPLANE</u>
MAXIMUM PERMISSIBLE GROSS WEIGHT	7400.00 lbs.	7400.00 lbs.	7540.00 lbs.
Empty weight as determined	4733.00 lbs.	5146.00 lbs.	5179.00 lbs.
Disposable load	2667.00 lbs.	2254.00 lbs.	2361.00 lbs.
Centre of gravity of aeroplane at above empty weight	19.09 inches behind main spar Loading Edge		

used as a reference datum point with aeroplane in flying position,
(The C.G. position may be calculated from the approved loading diagram
of the Type Aeroplane).

LIST OF STANDARD OR ALTERNATIVE EQUIPMENT NOT INCLUDED IN EMPTY WEIGHT

DESCRIPTION	LBS.	DESCRIPTION	LBS.
Engine Nose Cover	13.50	Upholstered Chair complete with belts	14.00
Dinghy	82.00	Nails for Upholstered Chair	1.90
Radio Installation including Altimeter	87.50	Cabin Auxiliary Tank	21.00
Flare Pistol	3.50		

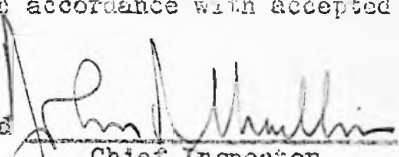
LIST OF MOVEABLE EQUIPMENT INCLUDED IN ABOVE EMPTY WEIGHT

DESCRIPTION	LBS.	DESCRIPTION	LBS.
Rear Double Seat c/w Belts	14.00	Main wheel U/C c/w Spacing Assembly	346.50
R.R. Side Triple Seat c/w Belts	16.00	Tail wheel assembly	43.50
L.H. Side Triple Seat c/w Belts	16.00	Main & Tail Ski U/C Installation	413.00
Pyrene Fire Extinguisher	8.00	Float Undercarriage complete	836.00
Pilot Seat c/w Belts	15.00		
Co-Pilot seat c/w belts	15.00		
Battery	75.00		
Methyl Bromide Extinguisher	14.00		
H.A.C.A. cow! c/w air scoop	58.00		
Generator	20.50		

CERTIFICATES OF CHIEF FACTORY INSPECTOR

I hereby certify that the aeroplane described herein has been constructed under my supervisory inspection, that it conforms to the drawings and specifications of the approved Type aeroplane, that the materials entering into its construction conform to those specifications, that all workmanship is sound and in accordance with accepted aircraft practice.

Signed


 Chief Inspector

Date

SEPT 1-49

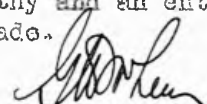
CANADIAN CAR & FOUNDRY

Co. Ltd.

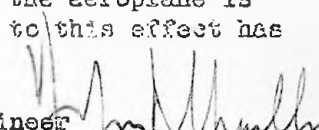
(The following certificate to be executed on the day of the test flight)

I hereby certify that the completely assembled aeroplane described herein has been inspected by me, that the complete control system has also been inspected by another licensed Air Engineer and that the aeroplane is airworthy and an entry in the log book to this effect has been made.

Signed



Air Engineer



Chief Inspector

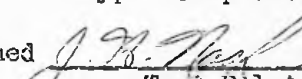
SEPT 2-49

Date

CERTIFICATE OF FACTORY TEST PILOT

I hereby certify that I have flown the aeroplane described herein and that its performance, flying qualities and functioning of controls, power plant, and landing gear are up to the standard of the type Aeroplane.

Signed



Test Pilot

Date

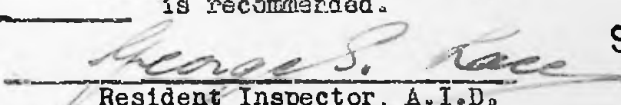
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Co. Ltd.

RECOMMENDATION OF RESIDENT INSPECTOR, A.I.D. DEPT. TRANSPORT

The aeroplane described herein has been properly inspected, weighed and tested and the issue of a Certificate of Airworthiness in Category NORMAL Subdivision A B C & D is recommended.

Signed



 Resident Inspector, A.I.D.
 Department of Transport.

SEP 7 1949

CONCURRENCE OF DISTRICT INSPECTOR, CIVIL AVIATION

I concur in the recommendation for issue of a Certificate of Airworthiness for one year as from (date) _____

Signed


 District Inspector, Civil Aviation