PERFORMANCE and SPECIFICATIONS

MODEL 172 FLOATPLANE

GROSS WEIGHT:	2220 lbs
SPEED:	
Top Speed at Sea Level and Rated RPM	108 mph
Cruise, 75% Power at 6500 ft	106 mph
RANGE:	
Cruise, 75% Power at 6500 ft	485 mi
39 Gallons, No Reserve	4.6 hr
	106 mph
Optimum Range at 10,000 ft	570 mi
39 Gallons, No Reserve	6.5 hr
	88 mph
RATE OF CLIMB AT SEA LEVEL	580 fpm
SERVICE CEILING	12,000 ft
TAKE-OFF:	
Take-off Run	1620 ft
Total Distance Over 50-ft Obstacle	2390 ft
LANDING:	
Landing Run	590 ft
Total Distance Over 50-ft Obstacle	1345 ft
EMPTY WEIGHT: (Approximate)	1430 lbs
WING LOADING: Pounds/Square Foot	12.8 lbs
POWER LOADING: Pounds/HP	15.3 lbs
FUEL CAPACITY: Total	42 gal. 160ℓ
OIL CAPACITY: Total	8 qts
PROPELLER: Fixed Pitch, Diameter	80 inches
POWER: Continental Engine	
145 rated HP at 2700 RPM	
Model 172	O-300-C
Skyhawk	O-300-D

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INTRODUCTION

This supplement, written especially for operators of the Cessna Model 172 floatplane, provides information not found in the 172 Owner's Manual. It contains procedures and data required for safe and efficient operation of the floatplane. Information contained in the Owner's Manual for the 172 landplane, which is the same as that for the 172 floatplane, is not repeated in this supplement.

DESCRIPTION

THE FLOATPLANE.

Your Cessna floatplane is identical to the landplane with the following exceptions:

(1) Floats, incorporating a water rudder steering system, replace the landing gear wheels, struts, and springs. A water rudder retraction handle, connected to the water rudder by cables and a spring, is located on the cabin floor tunnel. A hook for securing the handle in the "water rudder up" position is located near the elevator trim tab control wheel.

(2) Additional fuselage structure is added to support the float installation.

(3) The standard propeller is replaced with a propeller of larger diameter and flatter pitch.

(4) An oil radiator is installed in the engine rear vertical cooling baffle.

(5) An additional structural "V" brace is installed between the top of the front door posts and the cowl deck.

(6) Hoisting provisions are added to the top of the fuselage.

(7) A floatplane placard is added.

(8) The airplane has additional corrosion-proofing and stainless steel cables.

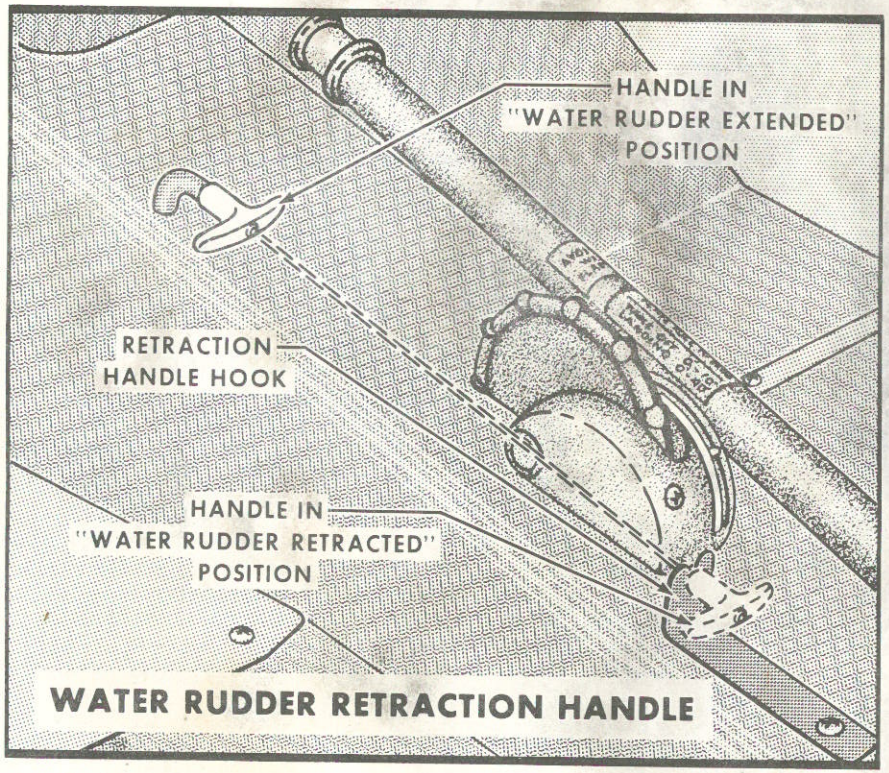
WATER RUDDER STEERING SYSTEM.

The retractable water rudder is mounted at the aft end of the right float (left float water rudder is available as optional equipment) and is connected by a system of cables and springs to the airplane rudder pedals. When the water rudder is extended, normal operation of the pedals moves the water rudder to provide steering control for taxiing.

A water rudder retraction handle, located on the cabin floor, is used to manually raise and lower the water rudder, through cables and a spring. During take-off, landing, and in flight, the retraction handle is normally stowed on the water rudder retraction handle hook, located on the control tunnel near the elevator trim tab control wheel.

When the water rudder retraction handle is stowed on the retraction

handle hook, the water rudder is up. Removing the handle from the hook will extend the water rudder to the operating position.



WATER RUDDER RETRACTION HANDLE

OPERATING CHECK LIST

BEFORE ENTERING FLOATPLANE.

(1) Inspect the floats for dents, cracks, scratches, etc.
(2) Remove the cover plates and inspect the floats for water, removing accumulation with a sponge or pump. Reinstall cover plates, tightening only enough for a snug fit.

BEFORE STARTING ENGINE.

(1) Operate and visually check water rudders for proper retraction and rudder action.
(2) Water rudder -- Down for taxiing.

TAKE-OFF.

(1) Water rudder -- Up.
(2) Set wing flaps 10° (first notch).
(3) Hold the control wheel full back and advance the throttle slowly.
(4) Place the airplane in a planing attitude (on the step) by slowly moving the control wheel forward when the bow wave moves aft of the wing strut position.
(5) As airplane accelerates, apply light control wheel back pressure and allow airplane to fly off smoothly.
(6) Climb at 60 MPH IAS to clear obstacles.

NOTE

To reduce take-off water run, the technique of raising one float out of the water may be used. This procedure is described on page 5 under "Minimum Run Take-off."

CLIMB.

The maximum rate of climb is obtained at full throttle and 71 MPH IAS (see the TAKE-OFF AND CLIMB DATA chart on page 11).

BEFORE LANDING.

(1) Water rudder -- Up.
(2) Maintain 65-70 MPH with flaps extended.

LANDING.

(1) Touchdown in conventional manner at desired flap setting.
(2) Maintain full up elevator as floatplane decelerates to taxi speed.

CAUTION

With forward loading, a slight

nose-down pitch may occur if the elevator is not held full up as floatplane comes down off step.

AFTER LANDING.

(1) Water rudder -- Down.

OPERATING DETAILS

TAXIING.

Taxi with water rudders down. It is best to limit the engine speed to 1000 RPM for normal taxi because water piles up in front of the float bow at higher engine speeds. Taxiing with higher engine RPM may result in engine overheating and will not appreciably increase the taxi speed.

For minimum taxi speed in close quarters, use idle RPM with full carburetor heat and a single magneto. This procedure is recommended for short periods of time only.

Although taxiing is very simple with the water rudders, it is sometimes necessary to "sail" the floatplane in close quarters. In addition to the normal flight controls, the wing flaps, ailerons, cabin doors, and water rudder will aid in "sailing."

To taxi great distances, it may be advisable to taxi on the step with the water rudder retracted. Turns on the step may be made with safety providing they are not too sharp and if ailerons are used to counteract the overturning tendency.

TAKE-OFF.

NORMAL TAKE-OFF.

The use of 10° flaps (first notch) throughout the take-off run is recommended (take-off distances are given on page 11).

Apply full throttle smoothly and hold the control wheel full back. Watch the point where the bow wave leaves the float, and move the control wheel forward slowly as this point moves aft of the wing strut. Slow control movement and light control pressures produce the best results. Attempts to force the airplane into the planing attitude will generally result in loss of speed and delay in getting on the step. The airplane will assume a planing attitude which permits acceleration to take-off speed (50 to 60 MPH IAS) at which time the airplane will fly off smoothly.

MINIMUM RUN TAKE-OFF.

To shorten the take-off run, the following procedure is recommended: With the airplane in the planing position, allow the airspeed to build up to 40 MPH IAS, at which speed one float can be raised out of the water

by slowly applying full aileron. When one float leaves the water apply slight elevator back pressure to complete the take-off. Care must be taken to stop the rising wing as soon as the float is clear of the water, and in crosswinds, raise only the down-wind wing. With one float out of the water, the airplane accelerates to take-off speed almost instantly.

If porpoising is encountered while on the step, apply additional back pressure to correct the excessively nose-low attitude.

CROSSWIND TAKE-OFF.

Start run with flaps up and water rudder extended for better directional control. Flaps are lowered to 10° and the water rudder retracted when the airplane is on the step and the remainder of the take-off is normal. If the floats are lifted from the water one at a time, the down-wind float should be lifted first.

CLIMB.

Best rate of climb is obtained with the floatplane at 71 MPH IAS (see chart on page 11) with the flaps up and full throttle. Full rich mixture is used below 5000 feet for engine cooling. For obstruction clearance with 10° flaps, climb at 61 MPH IAS. Such climbs should be of short duration due to reduced cooling at less than best rate-of-climb speeds.

CRUISE.

Observe the same engine speed limits as for the landplane. This allows 69% power for a floatplane equipped with a McCauley 1A175/SFC 8040 propeller. Speed, range and endurance are shown in the CRUISE PERFORMANCE chart on page 12.

WEIGHT AND BALANCE

The information presented in this section will enable you to operate your floatplane within the prescribed weight and center of gravity limitations.

In figuring your loading problems, be certain that you use the Licensed Empty Weight of your particular floatplane as shown on its Weight and Balance Data Sheet. This sheet, plus an Equipment List, is included with each floatplane as it leaves the factory. When the floats have been installed by anyone other than the factory, the Repair and Alteration Form FAA-337 must be consulted for proper weight and balance information.

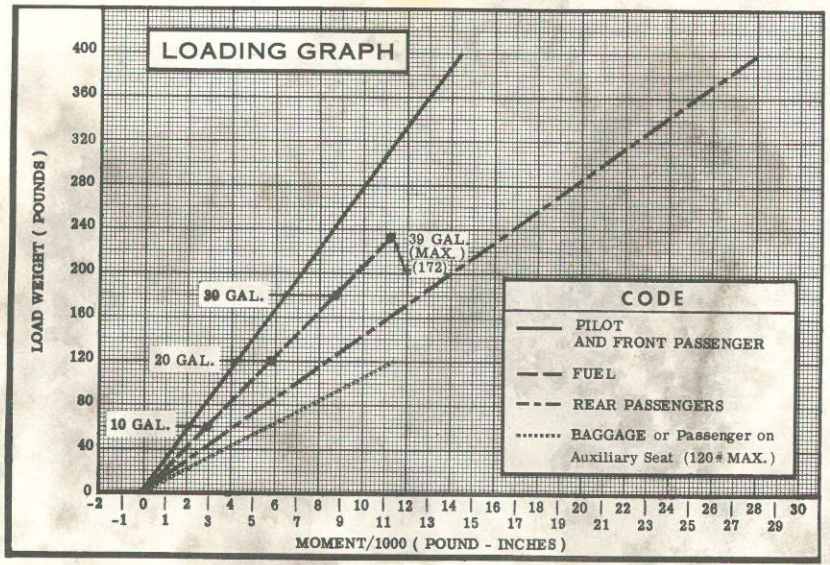
The loading instructions given in the 172 Owner's Manual for the landplane should be used as a guide when figuring floatplane weight and balance problems. In conjunction with the instructions, use the Sample Problem, Loading Graph, and Center of Gravity Moment Envelope in this supplement.

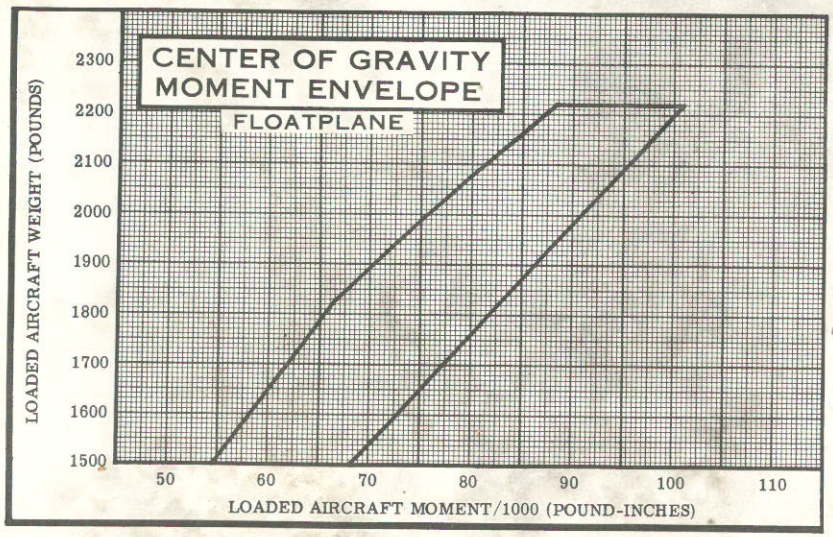
SAMPLE LOADING PROBLEM	Sample Airplane		Your Airplane	
	Weight (lbs) kg	Moment (lb - ins. /1000)	Weight	Moment
1. Licensed Empty Weight (Sample Airplane) ...	1476 670	55.8		
2. Oil - 8 Qts.*	15 6.8	-0.3	15	-0.3
3. Pilot & Front Passenger	340 154	12.2		
4. Fuel- (30 Gal at 6#/Gal) ..... 114 l	180 82	8.6		
5. Rear Passenger (1)	170 77	11.9		
6. Baggage	39 18	3.7		
7. Total Aircraft Weight (Loaded)	2220 1008	91.9		

8. Locate this point (2220 at 91.9) on the center of gravity envelope, and since this point falls within the envelope the loading is acceptable.

*Note: Normally full oil may be assumed for all flights.

1 lbs = 0,454 kg
1 US gall = 3,79 l





OPERATIONAL DATA

In the Cruise Performance Chart on page 12, range and endurance are given for lean mixture, from 2500 feet to 12,500 feet. All figures are based on zero wind, 39 gallons of fuel for cruise, McCauley 1A175/SFC 8040 propeller, 2220 pounds gross weight, and standard atmospheric conditions. For lean mixture figures, the mixture was leaned to maximum RPM.

Allowances for fuel reserve, headwinds, take-off and climb, and variations in mixture leaning technique should be made and are in addition to those shown on the charts. Other indeterminate variables such as carburetor metering-characteristics, engine and propeller conditions, and turbulence of the atmosphere may account for variations of 10% or more in maximum range.

NOTES

FLOATPLANE *Airspeed Correction Table* FLOATPLANE

FLAPS UP

IAS	40	50	60	70	80	90	100	110	120	130	140	
CAS	48	54	62	70	79	88	98	107	117	126	136	

FLAPS DOWN

IAS		40	50	60	70	80	90	100				
CAS		45	54	62	71	80	90	99				

FLOATPLANE *Stalling Speeds*

POWER OFF — MPH CAS

AFT GROSS C.G.

Gross Weight 2220 lbs.

CONDITION	ANGLE OF BANK 0°	20°	40°	60°
FLAPS UP	59	61	67	83
FLAPS 20°	53	55	61	75
FLAPS 40°	50	52	57	71

FLOATPLANE TAKE-OFF DATA

TAKE - OFF DISTANCE WITH 10° FLAPS

GROSS WEIGHT POUNDS	HEAD WIND MPH	IAS AT 50 FT	AT SEA LEVEL & 59°F		AT 2500 FT. & 50°F		AT 5000 FT. & 41°F		AT 7500 FT. & 32°F	
			WATER RUN	TO CLEAR 50' OBS.	WATER RUN	TO CLEAR 50' OBS.	WATER RUN	TO CLEAR 50' OBS.	WATER RUN	TO CLEAR 50' OBS.
1700	0	58	805	1260	985	1515	1215	1840	1530	2300
	15		425	745	535	915	670	1130	870	1440
	30		155	350	210	445	280	575	385	760
1950	0	60	1135	1715	1405	2105	1750	2625	2240	3390
	15		625	1045	775	1290	1010	1665	1320	2190
	30		255	520	345	675	460	895	635	1230
2220	0	64	1620	2390	2020	3010	2570	3900	3360	5370
	15		930	1505	1190	1940	1545	2560	2070	3625
	30		420	800	565	1070	770	1470	1070	2170

Note ..... INCREASE DISTANCES 10% FOR EACH 25°F ABOVE STANDARD TEMPERATURE FOR PARTICULAR ALTITUDE.

FLOATPLANE CLIMB DATA

GROSS WEIGHT POUNDS	AT SEA LEVEL & 59°F			AT 5000 FT. & 41°F			AT 10,000 FT. & 23°F			AT 15,000 FT & 5°F		
	BEST CLIMB IAS MPH	RATE OF CLIMB FPM	GALS. OF FUEL USED	BEST CLIMB IAS MPH	RATE OF CLIMB FPM	GALS. OF FUEL USED	BEST CLIMB IAS MPH	RATE OF CLIMB FPM	GALS. OF FUEL USED	BEST CLIMB IAS MPH	RATE OF CLIMB FPM	GALS. OF FUEL USED
1700	66	960	1.0	65	720	2.1	64	475	3.3	63	240	5.6
1950	68	760	1.0	67	540	2.4	66	320	4.1	66	100	7.6
2220	71	580	1.0	70	380	2.9	69	175	5.6	-	-	-

Note ..... FLAPS UP, FULL THROTTLE, MIXTURE LEANED FOR SMOOTH OPERATION ABOVE 5000 FT. FUEL USED INCLUDES WARM-UP AND TAKE-OFF ALLOWANCE.

172 & SKYHAWK CRUISE & RANGE PERFORMANCE

Gross Weight-2220 Lbs. • Standard Conditions • Zero Wind • Lean Mixture • 39 Gal. of Fuel (No Reserve)

FLOATPLANE

ALT.	RPM	% BHP	TAS MPH	GAL./ HOUR	ENDR. HOURS	RANGE MILES
2500	2700	84	108	9.5	4.1	440
	2600	76	103	8.5	4.6	470
	2500	68	98	7.7	5.1	495
	2400	60	93	6.9	5.6	520
	2300	54	87	6.3	6.2	540
	2200	48	81	5.8	6.7	550
	2100	43	76	5.4	7.2	550
5000	2700	78	107	8.8	4.4	470
	2600	70	102	8.0	4.9	500
	2500	63	97	7.2	5.4	525
	2400	57	91	6.5	6.0	545
	2300	51	85	6.0	6.5	555
	2200	46	80	5.6	7.0	555
	2100	42	75	5.3	7.4	550
7500	2700	73	106	8.3	4.7	500
	2600	66	100	7.5	5.2	525
	2500	59	95	6.8	5.7	545
	2400	53	89	6.2	6.3	560
	2300	48	84	5.8	6.7	565
	2200	44	78	5.5	7.1	560
	2100	41	74	5.2	7.5	550
10,000	2700	68	104	7.7	5.1	525
	2600	61	99	7.0	5.5	550
	2500	56	93	6.5	6.0	565
	2400	50	88	6.0	6.5	570
	2300	46	82	5.6	6.9	570
	2200	43	77	5.4	7.3	560
	2100	40	73	5.2	7.5	555
12,500	2700	64	103	7.3	5.4	550
	2600	58	97	6.7	5.8	565
	2500	53	91	6.2	6.3	575
	2400	48	86	5.8	6.7	575
	2300	45	81	5.5	7.1	570
	2200	42	77	5.3	7.3	565
	2100	40	74	5.2	7.5	555

MAXIMUM RECOMMENDED CRUISE IS 75% BHP

LANDING CONDITIONS

APPROACH IAS - 54 MPH @ 1700 LBS.
66 MPH @ 2220 LBS.

WING FLAPS 40°
POWER OFF
SMOOTH WATER, ZERO WIND

NOTE
REDUCE LANDING DISTANCE 10% FOR EACH 6 MPH HEADWIND