Transport Canada Approved Flight Manual Supplement
For

AEROCET MODEL 3400 AMPHIBIOUS FLOATS

This supplemental manual is applicable to Aerocet Model 3400 amphibious float equipped FBA-2C2 airplanes or Aerocet Model 3400 amphibious float equipped FBA-2C1 airplanes with Mod 1043 installed. Mod 1043 replaces the plain flap system on the model FBA-2C1 airplane with a slotted Fowler-type flap system (commonly referred to as "Fowler Flaps"). Therefore where 2C2 is used in this manual it is acceptable to read 2C1 with Mod 1043 installed.
This Supplement must be attached to the Transport Canada Approved Airplane Flight Manual when the airplane is modified by the installation of Aerocet Model 3400 amphibious floats in accordance with Found Aircraft Canada drawing D241 Issue 2 or later approved revision.
The information contained herein supplements or supersedes the basic flight manual, airplane markings and/or placards only in those areas listed herein.
For Limitations, Procedures, and Performance information not contained in this Supplement, consult the airplane markings and placards and/or basic Airplane Flight Manual, (P/N: FAC2-M400).

Approved: 

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Page	Date		Page	Date
1	DEC. 19, 2003		35	DEC. 19, 2003
2	SEPT. 15, 2004		36	DEC. 19, 2003
3	SEPT. 15, 2004		37	DEC. 19, 2003
4	DEC. 19, 2003		38	DEC. 19, 2003
5	DEC. 19, 2003		39	DEC. 19, 2003
6	DEC. 19, 2003		40	DEC. 19, 2003
7	DEC. 19, 2003		41	DEC. 19, 2003
8	DEC. 19, 2003		42	DEC. 19, 2003
9	DEC. 19, 2003		43	DEC. 19, 2003
10	DEC. 19, 2003		44	DEC. 19, 2003
11	DEC. 19, 2003		45	DEC. 19, 2003
12	DEC. 19, 2003		46	DEC. 19, 2003
13	DEC. 19, 2003		47	DEC. 19, 2003
14	DEC. 19, 2003		48	DEC. 19, 2003
15	DEC. 19, 2003		49	DEC. 19, 2003
16	DEC. 19, 2003		50	DEC. 19, 2003
17	DEC. 19, 2003		51	DEC. 19, 2003
18	DEC. 19, 2003		52	DEC. 19, 2003
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25	DEC. 19, 2003		59	DEC. 19, 2003
26	DEC. 19, 2003		60	DEC. 19, 2003
27	DEC. 19, 2003			
28	DEC. 19, 2003			
29	DEC. 19, 2003			
30	DEC. 19, 2003			
31	DEC. 19, 2003			
32	DEC. 19, 2003			
33	DEC. 19, 2003			
34	DEC. 19, 2003			

TABLE OF CONTENTS

SECTION 1
GENERAL

INTRODUCTION

This supplemental manual is applicable to Aerocet Model 3400 amphibious float equipped FBA-2C2 airplanes or Aerocet Model 3400 amphibious float equipped FBA-2C1 airplanes with Mod 1043 installed. Mod 1043 replaces the plain flap system on the model FBA-2C1 airplane with a slotted Fowler-type flap system (commonly referred to as "Fowler Flaps"). Therefore where 2C2 is used in this manual it is acceptable to read 2C1 with Mod 1043 installed.

This supplement provides information and limitations not included in the Transport Canada approved markings and placards, and/or Airplane Flight Manual (P/N: FAC2-M400).

The aircraft is to be operated under the "NORMAL CATEGORY" only.

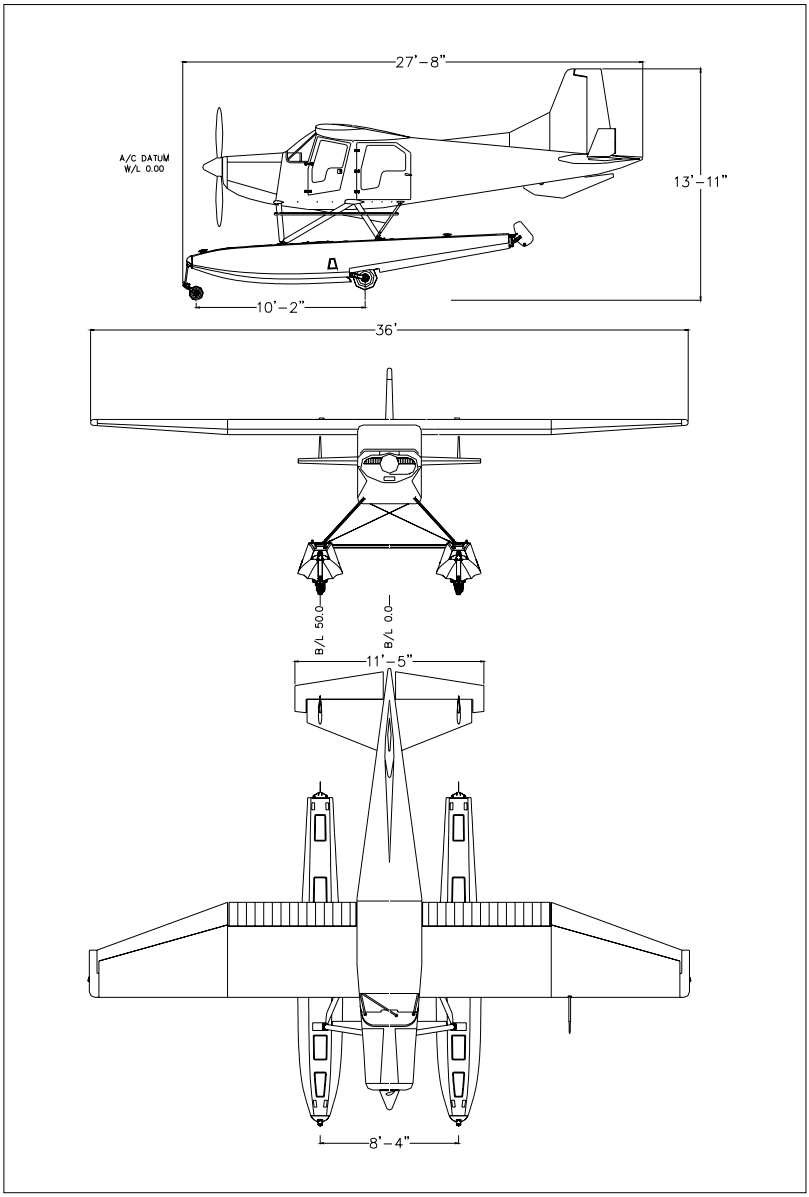


Figure 1 Three View - Normal Ground Attitude

DESCRIPTIVE DATA

MAXIMUM CERTIFICATED WEIGHTS

Maximum Weight for Water Operations:	3775 lbs
Maximum Weight for Wheels Operations:	3735 lbs

STANDARD AIRPLANE WEIGHTS

Standard Empty Weight:	2450 lbs *
Maximum Useful Load:	1285 lbs *

* the above weights may vary depending on configuration.

SPECIFIC LOADINGS

Wing Loading:	20.8 lbs/sq.ft.
Power Loading:	12.5 lbs/hp

SECTION 2
LIMITATIONS

INTRODUCTION

The FBA-2C2 Bush Hawk-XP Aerocet floatplane must be operated in accordance with the limitations contained in this section. These include operating limitations, instrument markings, colour coding and basic placards, powerplant, systems and equipment limitations. The limitations shown in this section apply only to operations of the FBA-2C2 Bush Hawk-XP equipped with Aerocet Model 3400 amphibious floats.

AIRSPEED LIMITATIONS

Airspeed limitations and their operational significance are shown below.

	SPEED	KCAS	KIAS	REMARKS
V_A	Maneuvering Speed	118	121	Do not make full or abrupt control movements above this speed.
V_{LO}	Maximum Landing Gear Operating Speed	158	159	Do not extend or retract landing gear above this speed.
V_{LE}	Maximum Landing Gear Extended Speed	158	159	Do not exceed this speed with landing gear extended.

NOTE

Since the operating speeds for the float installation are within 2 knots of those for the standard wheel installation, no changes to the airspeed indicator markings have been made.

WEIGHT LIMITS

Maximum Weight for Water Operations:	3775 lbs.
Maximum Weight for Wheels Operations:	3735 lbs.
Maximum Weight in Baggage Compartment	250 lbs. (Arm = 94")
Maximum Weight in Float Baggage Compartments	100 lbs. each (Arm = 10")

CENTER-OF-GRAVITY LIMITS

WATER OPERATIONS

Center-of-Gravity Range:	
Forward:	17.0 inches aft of datum at 2750 lbs or less. 20.5 inches aft of datum at 3775 lbs max. GW with linear variation with weight in between.
Aft:	23.5 inches aft of datum at all weights.
Reference Datum:	Lower forward corner of the front door

WHEELS OPERATIONS

Center-of-Gravity Range:	
Forward:	17.0 inches aft of datum at 2750 lbs or less. 20.5 inches aft of datum at 3735 lbs max. GW with linear variation with weight in between.
Aft:	23.5 inches aft of datum at all weights.
Reference Datum:	Lower forward corner of the front door

OTHER LIMITATIONS

FLAP LIMITATIONS

Approved Takeoff Range:
From Land or Water..... 0^o to 20^o
Approved Landing Range:..... 0^o to 30^o

WATER RUDDER LIMITATIONS

Water rudders must be retracted for all flight operations.

AMPHIBIAN OPERATIONS

Landing on water is PROHIBITED unless all four landing gears are fully retracted.

PLACARDS

The following information is displayed in the form of composite or individual placards.

1. Above the airspeed indicator:

MANEUVER SPEED = 121 KIAS

2. The following placard is located on the centre instrument panel below the throttle control

FLOAT EQUIPPED AIRCRAFT WATER RUDDER ALWAYS UP EXCEPT WHEN TAXIING

3. Located to the left of trim wheel

DO NOT LAND ON WATER UNLESS GEAR IS FULLY RETRACTED

4. Located near the emergency hand pump

EMERGENCY HANDPUMP OPERATION
1. PULL GEAR MOTOR CIRCUIT BREAKER
2. LANDING GEAR POSITION SWITCH TO DESIRED POSITION
3. EMERGENCY GEAR SELECTOR VALVE TO DESIRED GEAR POSITION
4. PUMP GEAR TO DESIRED POSITION

5. Located along Emergency Hand Pump and on Hand Pump handle

WATER RUDDER CONTROL

DOWN UP

6. For aircraft equipped with AEROCET MODEL 3400 floats, the following placard must be located on the centre instrument panel below the throttle control.

FOR AIRCRAFT EQUIPPED WITH AEROCET MODEL 3400 FLOATS, MAX. GROSS WEIGHT FOR WATER OPERATIONS = 3775 LBS WHEELS OPERATIONS = 3735 LBS REFER TO AFM SUPPLEMENT M400-S10

SECTION 3
EMERGENCY PROCEDURES

NOTE

These items supplement the FBA-2C2 emergency procedures. Be sure to follow the FBA-2C2 procedures in Flight Manual P/N FAC2-M400 except as noted below.

INTRODUCTION

This section provides the operational checklists that are specific to FBA-2C2 with Aerocet Model 3400 amphibious floats in abnormal circumstances and emergencies that may occur on the water or during flight. Only the sections that are affected by the Aerocet floats are included in this supplement.

Emergency landings on water should be done with water rudders up, aircraft should be established in a normal water landing attitude with the tail slightly low. On touchdown on the water, gently pull the elevator back to the full up position allowing the floatplane to come off the step and decelerate. If damage occurs to the floats causing compartments to flood, open doors, get life vest on, and taxi aircraft to shallow water as quickly as possible.

Emergency landings on land should be done with water rudders up, aircraft in a normal landing attitude on touchdown, and the control wheel full aft after contact.

AIRSPEEDS FOR EMERGENCY OPERATION

Engine Failure after Takeoff	
Wing Flaps - Up	80 KIAS
Wing Flaps - 15°	75 KIAS
Wing Flaps - 20°	70 KIAS
Maneuvering Speed	121 KIAS
Maximum Glide (Flaps - Up)	75 KIAS
Precautionary Landing With Engine Power	
Wing Flaps - Up	80 KIAS
Wing Flaps - 30°	70 KIAS
Landing Without Engine Power	
Wing Flaps - Up	80 KIAS
Wing Flaps - 30°	70 KIAS

EMERGENCY PROCEDURES CHECKLISTS

ENGINE FAILURES

ENGINE FAILURE DURING TAKEOFF RUN (ON WATER)

1. Throttle ..... IDLE
2. Control Wheel..... FULL AFT.
3. Flaps ..... RETRACT
4. Mixture ..... IDLE CUT OFF.
5. Ignition Switch ..... OFF
6. Master Switch ..... OFF
7. Alternator Switch..... OFF

ENGINE FAILURE DURING TAKEOFF RUN (ON LAND)

1. Throttle ..... IDLE
2. Brakes ..... APPLY
3. Flaps ..... RETRACT
4. Mixture ..... IDLE CUT OFF.
5. Ignition Switch ..... OFF
6. Master Switch ..... OFF
7. Alternator Switch..... OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

1. Land..... LAND or WATER
   (Straight ahead turning only to avoid obstacles)
2. Airspeed..... 80 KIAS (Flaps UP)
   70 KIAS (Flaps 20°)

If time permits:

3. Mixture ..... IDLE CUT-OFF
4. Fuel Shutoff Valve..... OFF
5. Ignition Switch ..... OFF
6. Master Switch ..... OFF
7. Alternator Switch..... OFF
8. Flaps ..... AS REQUIRED

FORCED LANDINGS

EMERGENCY LANDING ON WATER WITHOUT ENGINE POWER

1. Landing Gear ..... UP
2. Seats ..... SECURE
3. Seat belts ..... FASTENED
4. Loose Articles ..... SECURE
5. Airspeed ..... 80KIAS (Flaps UP)
   70 KIAS (Flaps 30^{o})

WARNING!!
DO NOT LAND ON WATER UNLESS ALL (4) LANDING GEARS ARE FULLY RETRACTED.

Before touchdown:

6. Doors ..... UNLATCH PRIOR TO TOUCHDOWN
7. Mixture ..... IDLE CUT-OFF
8. Auxiliary Fuel Pump Switch ..... OFF
9. Fuel Shutoff Valve ..... OFF
10. Ignition Switch ..... OFF
11. Water Rudders ..... UP
12. Master Switch ..... OFF
13. Alternator ..... OFF
14. Touchdown ..... SLIGHTLY TAIL LOW
15. Control Wheel ..... HOLD FULL AFT

EMERGENCY LANDING ON LAND WITHOUT ENGINE POWER

1.	Landing Gear	DOWN for firm and smooth terrain UP for soft and rough terrain
2.	Seats	SECURE
3.	Seat belts	FASTENED
4.	Loose Articles	SECURE
5.	Airspeed	80 KIAS (Flaps - UP) 70 KIAS (Flaps - 30^{o})

Before touchdown:

6.	Doors	UNLATCH PRIOR TO TOUCHDOWN
7.	Mixture	IDLE CUT-OFF
8.	Auxiliary Fuel Pump Switch	OFF
9.	Fuel Shutoff Valve	OFF
10.	Ignition Switch	OFF
11.	Water Rudders	UP
12.	Master Switch	OFF
13.	Alternator	OFF
14.	Touchdown Attitude	LEVEL if gear up TAIL LOW if gear extended

After touchdown:

15.	Brakes	APPLY AS REQUIRED
16.	Control Wheel	FULL AFT (after contact if gear is up)

PRECAUTIONARY LANDING WITH ENGINE POWER

1. Seats ..... SECURE
2. Seat Belts..... FASTENED
3. Loose Articles ..... SECURE
4. Airspeed ..... 80 KIAS Minimum
5. Flaps ..... UP
6. Selected Field ..... FLY OVER
   Note terrain and obstructions.
7. Radio & Electrical Switches..... OFF
8. Flaps ..... 10~20^{o} (or 30^{o} for steep approach)
9. Water Rudders .....UP
10. Airspeed ..... 75 KIAS (Flaps 10^{o})
    70 KIAS (Flaps 30^{o})
11. Propeller ..... HIGH RPM
12. Doors..... UNLATCH PRIOR TO
    TOUCHDOWN

After touchdown:

13. Ignition Switch ..... OFF
14. Master Switch..... OFF
15. Alternator ..... OFF
16. Brakes..... APPLY AS REQUIRED.

LANDING GEAR MALFUNCTION PROCEDURES

LANDING GEAR FAILS TO RETRACT

1. Master Switch ..... ON
2. Landing Gear Handle..... CHECK (handle full up)
3. Gear Motor Circuit Breaker..... IN
4. Emergency Hand Pump Selector Valve..... CHECK
   (in off position – towards co-pilot seat)
5. Gear Control Circuit Breaker..... IN
6. Gear Advisory Circuit Breaker..... IN
7. Gear Up Lights ..... CHECK bulb operation
   (press-to-test)
8. Main Gear Visual Indicators..... VISUALLY CHECK
   (at float inspection openings)
9. Landing Gear Handle..... RECYCLE
10. Landing Gear Motor ..... CHECK operation
    (motor indicator light, ammeter and noise)
11. Rotate the Emergency Hand Pump Selector Valve briefly into the UP position (this reduces pressure in the system allowing the pressure switches to sense low pressure allowing the pump to cycle)

If the landing gear still does not retract and a water landing is desired:

12. Gear Motor Circuit Breaker..... PULL
13. Landing Gear Handle..... UP
14. Emergency Hand Pump Selector Valve..... ROTATE
    (to UP position-clockwise 90 deg.)
15. Emergency Hand Pump ..... PUMP
    (up and down until gear is in UP position - approximately 165 strokes -- there should be significant force on the pump handle with the final stroke)
16. Gear Up Lights ..... CHECK
    ILLUMINATED
17. Main Gear Visual Indicators..... VISUALLY CHECK
    (at float inspection openings).
18. Nose Gear ..... VISUALLY CHECK
    (gear is nested in the bow of the float)

LANDING GEAR FAILS TO EXTEND

1. Master Switch ..... ON
2. Landing Gear Handle ..... CHECK (handle full down)
3. Emergency Hand Pump Selector Valve .. CHECK
   (in off position – towards co-pilot seat)
4. Gear Motor Circuit Breaker ..... IN
5. Gear Control Circuit Breaker ..... IN
6. Gear Advisory Circuit Breaker..... IN
7. Gear Down Lights ..... CHECK bulb operation
   (press-to-test)
8. Main Gear Visual Indicators ..... VISUALLY CHECK
   (at float inspection openings)
9. Landing Gear Handle ..... RECYCLE
10. Landing Gear Motor..... CHECK operation
    (motor indicator light, ammeter and noise)
11. Rotate the Emergency Hand Pump Selector Valve briefly into the DOWN position (this reduces pressure in the system allowing the pressure switches to sense low pressure allowing the pump to cycle)

<u>If the landing gear still does not extend and a wheels down landing is desired:</u>

12. Gear Motor Circuit Breaker .....PULL
13. Landing Gear Handle .....DOWN
14. Emergency Hand Pump Selector Valve .....ROTATE
    (to DOWN position-counter clockwise 90 deg.)
15. Emergency Hand Pump.....PUMP
    (up and down until gear is in DOWN position - approximately 230 strokes -- there should be significant force on the pump handle with the final stroke)
16. Gear Down Lights .....CHECK
    ILLUMINATED

GEAR UP OR PARTIALLY EXTENDED LANDING
(ON GROUND ONLY)

1.	Seats	SECURE
2.	Seat Belts	FASTENED
3.	Loose Articles	SECURE
4.	Runway	SELECT longest smooth ground or grass surface available
5.	Flaps	30 degrees
6.	Airspeed	70 KIAS
7.	Master Switch	OFF
8.	Doors	UNLATCH PRIOR TO TOUCHDOWN
9.	Touchdown	LEVEL ATTITUDE AT MINIMUM RATE OF DESCENT
10.	Control Wheel	FULL AFT (after touchdown)
11.	Mixture	IDLE CUT OFF (after touchdown)
12.	Fuel	OFF (after touchdown)
13.	Ignition Switch	OFF

AMPLIFIED EMERGENCY PROCEDURES

MECHANICAL FAILURE

If it is ascertained that a mechanical failure has occurred and the gear will not achieve either a gear up or a gear down position with visual confirmation, the best course of action will be dependent upon the nature of the failure and the choices of landing surfaces available. In the unlikely event that a landing gear has failed in an intermediate position, and cannot be moved to either a Gear Up or Gear Down position, the amphibian should **be landed on land only.**

WARNING

DO NOT LAND IN THE WATER WITH THE WHEELS EITHER PARTIALLY OR FULLY EXTENDED. IF THE LANDING **MUST** BE ACCOMPLISHED ON WATER AND THE GEAR IS PARTIALLY OR FULLY EXTENDED, IT IS SUGGESTED THAT A POWER-ON FULL STALL LANDING WITH FULL FLAPS (30°) WOULD BE THE BEST PROCEDURE.

DURING DECELERATION AFTER TOUCHDOWN, WITH THE GEAR EXTENDED, THE FLOAT BOWS WILL SUBMERGE AND THERE IS A HIGH PROBABILITY OF FLIPPING THE AMPHIBIAN ONTO ITS BACK CAUSING EITHER FATAL OR SERIOUS INJURY.

SECTION 4
NORMAL PROCEDURES

NOTE

These items supplement the FBA-2C2 normal procedures. Be sure to follow the FBA-2C2 procedures in Flight Manual P/N FAC2-M400 except as noted below.

AIRSPEEDS FOR NORMAL OPERATION

Unless otherwise noted, the following airspeeds are based on a maximum weight of 3775 lb. and may be used at a lesser weight.

CONDITION	KIAS
TAKEOFF	
Normal Climb Out	75-85
Short Field Takeoff, Speed at 50 feet:	
Takeoff on Land, Flaps 15 deg.	66
Takeoff on Water, Flaps 20 deg.	65
ENROUTE CLIMB, FLAPS UP	
Normal – Sea Level	75-85
Best Rate-of-Climb - Sea Level	79
Best Rate-of-Climb - 10,000 feet	71
Best Angle of Climb - Sea Level	63
Best Angle of Climb – 10,000 feet	67
LANDING APPROACH	
Normal Approach - Flaps Up	80-90
Normal Approach – Flaps 30 deg	70-80
Short Field Approach – Flaps 30 deg	70
BALKED LANDING	
Maximum Power – Flaps 30 deg	80
MAXIMUM RECOMMENDED TURBULENT AIR PENETRATION SPEED	121
MAXIMUM DEMONSTRATED CROSSWIND VELOCITY	
Takeoff or Landing	15

NORMAL PROCEDURES CHECKLISTS

PREFLIGHT INSPECTION

BEFORE ENTERING FLOATPLANE

1. Floatplane Approved Flight Manual Supplement with Airplane Flight Manual should be available in the airplane.
2. Floats, Struts, and Float Fairings.... INSPECT for dents, cracks, etc.
3. Float Compartments ..... INSPECT for water accumulation.
4. Pump out each float compartment. Ensure the rubber pump out stoppers are replaced after pumping and they are seated with a snug fit. Inspect the floats for leaks if there appears to be an excess amount of water in any of the compartments. If there is red hydraulic fluid in any compartments, investigate fittings and lines in that bay before proceeding and check level of hydraulic fluid in the pump reservoir.
5. Water Rudders..... CHECK actuation cables
6. Landing Gear..... INSPECT
   Check the main wheel oleo struts for proper inflation; check the tires for cuts, bruises and proper inflation.

NOTE

Refer to placards on the main wheel oleo struts for strut inflation procedures. Proper tire inflation for 6.00-6 main wheel tires is 55 psi; tire inflation for the 10-3.50 nose wheel tires is 70 psi.

PRIOR TO ENGINE START

1. Landing Gear Switch..... DOWN (on land); UP (on water)
2. Water Rudder Operation ..... CHECK VISUALLY
3. Water Rudders..... DOWN for taxing on water (lever full forward)
   UP for taxing on land (lever full aft)
4. Water Rudders..... CHECK freedom of movement and security

TAKEOFF

NORMAL TAKEOFF ON WATER

1. Doors ..... CLOSED, UNLOCKED
2. Landing Gear ..... UP (all blue lights on)
3. Water Rudders ..... UP (retraction lever full aft)
4. Wing Flaps..... 10~20 deg (20 deg recommended)
5. Pitch Trim ..... SET to NEUTRAL
6. Mixture ..... RICH
7. Control Wheel..... HOLD FULL AFT
8. Power..... FULL THROTTLE at 2700 RPM
9. Elevator Control ..... MOVE FORWARD gently when the nose pitches up and stops rising to attain planing attitude. APPLY LIGHT BACK PRESSURE to lift off at airspeed of 60-65 KIAS.
10. Wing Flaps..... UP at Safe Speed and altitude
11. Climb Speed ..... 75-85 KIAS

NOTE

To reduce takeoff water run, the technique of raising one float out of the water may be used.

NOTE

If the flap indicator is non-functional, for example, flap indicator reads zero when flaps are deployed, use flaps up for all takeoffs.

NORMAL TAKEOFF ON LAND

1. Doors ..... CLOSED, UNLOCKED
2. Landing Gear ..... DOWN (all amber lights on)
3. Water Rudders ..... UP (retraction lever full aft)
4. Wing Flaps ..... 10~20 deg (15 deg recommended)
5. Pitch Trim ..... SET to NEUTRAL
6. Mixture ..... RICH
7. Power..... FULL THROTTLE at 2700 RPM
8. Control Wheel..... APPLY LIGHT BACK PRESSURE to lift off airspeed of 60-65 KIAS
9. Wing Flaps..... UP at Safe Speed and altitude
10. Climb Speed ..... 75-85 KIAS
11. Landing Gear ..... UP

SHORT FIELD TAKEOFF ON LAND

1.	Doors	CLOSED, UNLOCKED
2.	Landing Gear	DOWN (all amber lights on)
3.	Water Rudders	UP (retraction lever full aft)
4.	Wing Flaps	20 deg
5.	Brakes	APPLY
6.	Pitch Trim	SET to NEUTRAL
7.	Mixture	RICH (Above 3000 feet, LEAN to obtain maximum RPM)
8.	Power	FULL THROTTLE at 2700 RPM
9.	Throttle	FULL OPEN
10.	Brakes	RELEASE
11.	Climb Speed	(Until Obstacles are Cleared) 65 KIAS for 20 degree flap THEN 70-80 KIAS
12.	Wing Flaps	UP at Safe Speed and Altitude
13.	Landing Gear	UP

ENROUTE CLIMB

1.	Airspeed	75-85 KIAS
2.	Mixture	RICH (Above 3000ft, LEAN as required)
3.	Power	FULL THROTTLE at 2600 RPM
4.	Auxiliary Fuel Pump Switch	OFF

BEFORE LANDING

BEFORE LANDING ON WATER

1. Landing Gear ..... UP
2. Landing Gear Lights ..... CHECK ON (4 BLUE)
3. Landing Gear Position ..... CONFIRM VISUALLY
4. Water Rudders ..... UP
5. Wing Flaps ..... AS DESIRED
   (30 deg for short approach)
6. Doors ..... CLOSED, UNLOCKED
7. Airspeed (Flaps Up) ..... 80-90 KIAS @ 3775 lb
8. Airspeed (Full Flap) ..... 70-80 KIAS @ 3775 lb
   (Reduce 1 knot for each 80 lb Below 3775 lb)

BEFORE LANDING ON LAND

1. Landing Gear ..... DOWN
2. Landing Gear Lights ..... CHECK ON (4 AMBER)
3. Landing Gear Position ..... CONFIRM VISUALLY
4. Water Rudders ..... UP
5. Wing Flaps ..... AS DESIRED
   (30 deg for short approach)
6. Doors ..... CLOSED, UNLOCKED
7. Airspeed (Flaps Up) ..... 80-90 KIAS @ 3735 lb
8. Airspeed (Full Flap) ..... 70-80 KIAS @ 3735 lb
   (Reduce 1 knot for each 80 lb Below 3735 lb)

LANDING

LANDING ON WATER

1. Touchdown ..... SLIGHTLY TAIL LOW (Normal float landing attitude)
2. Control Wheel ..... HOLD FULL AFT THROUGH DECELERATION

NOTE

With forward loading, a slight nose-down pitch may occur if the elevator is not held full back as floatplane comes down off the step.

LANDING ON LAND

1. Touchdown ..... SLIGHTLY TAIL LOW (Normal float landing attitude)
2. Control Wheel ..... LOWER NOSEWHEELS to runway slowly
3. Brakes ..... MINIMUM REQUIRED

BALKED LANDING

1. Throttle ..... FULL OPEN and 2700 RPM
2. Flap ..... 20^{o}
3. Climb Speed ..... 80 KIAS
4. Flaps ..... SLOWLY RETRACT to FLAPS UP

AFTER LANDING

1. Water Rudders ..... DOWN (except on land)

SECURING AIRPLANE

1. Fuel Selector Valve ..... OFF

AMPLIFIED NORMAL PROCEDURES

WATER TAXIING

The water rudders should be in down position when taxiing. Engine speeds lower than 800 rpm should be used for normal taxi. Taxiing with higher RPM may result in engine overheating and the taxiing speed will not be appreciably increased. Also, higher taxiing speeds may cause excess water spray to strike the propeller tip and cause more propeller tip erosion.

During all low speed taxi operations, the elevator should be positioned to keep the bows of the floats out of the water as far as possible. Normally, this requires holding the elevator control full aft except when taxiing downwind in high wind conditions. For minimum taxi speed in close quarters, use idle RPM 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 under high wind condition. In addition to the normal flight controls, the wing flaps, ailerons and cabin doors will aid in sailing. Water rudders should be retracted during sailing.

To taxi great distances, it may be advisable to taxi on the step with the water rudders retracted. Turns on the step from an upwind heading may be made with safety providing they are not too sharp and if ailerons are used to counteract any overturning / rolling tendency.

CROSSWIND OPERATIONS

In most floatplane operating areas, crosswind operating conditions are limited - either the water channel is narrow and the body of water is not greatly stirred up by winds or the body of water is large enough to allow pilots to minimize the crosswind and accept greater wave action. In higher winds where waves have been stirred up, spray may be developed during the early part of the takeoff run which is aggravated under increasing crosswinds. To minimize the adverse impact of spray on visibility and in extreme cases on engine operation, takeoffs should be made as nearly into the wind as possible.

TAKEOFF ON WATER

Start the takeoff by applying full throttle smoothly while holding the control wheel full aft. When the nose stops rising, move the control wheel forward slowly to place the floats on the step. Slow control movement and light control pressures produce the best results. Attempts to force the floatplane into the planing attitude will generally result in loss of speed and delay in getting on the step. The floatplane will assume a planing attitude which permits acceleration to takeoff speed, at which time the floatplane will fly off smoothly.

Takeoff flap between 10^{o}~20^{o} can be used and 20^{o} is recommended throughout the takeoff run. When the airplane reaches a safe altitude and airspeed, retract the wing flaps slowly especially when flying over glassy water as a loss of altitude cannot be easily defined due to the loss of reference over glassy water.

If porpoising is encountered while on the step, apply slight positive backpressure to the yoke to reduce and stop the porpoise. If this does not correct the porpoising, immediately reduce power to idle and allow the floatplane to slow to taxi speed, at which time the takeoff can again be initiated.

To clear an obstacle after takeoff with 20 degrees wing flap, use an obstacle clearance speed of 65 KIAS for maximum performance. Under some adverse combinations of higher takeoff weight, pressure altitude, and high air temperature or operation on glassy water, the airplane may require significantly longer takeoff distances to accelerate to lift-off speed and extra takeoff distance should be allowed when any of these conditions exist.

If lift-off is difficult due to high lake elevation or glassy water, the following procedure is recommended. With the floatplane in the planing attitude, apply ample aileron as required to raise one float out of the water. When one float leaves the water, apply slight elevator backpressure to complete the takeoff. 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 downwind wing. With one float out of the water, the floatplane should accelerate to takeoff speed much more rapidly.

For a crosswind takeoff, start the takeoff with wing flaps up, ailerons deflected partially into the wind and water rudders extended for better directional control. Flaps should be extended to 20 degree and the water rudders retracted when the floatplane is planing on the step. The remainder of the takeoff is normal. If the floats are lifted from the water one at a time, the downwind float should be lifted first.

TAKEOFF ON LAND

With the flaps extended to 15º and the pitch trim and elevator at the neutral position, gradually open the throttle to full power. As the speed increases and the aircraft feels lighter, apply gentle aft pressure on the control yoke and the aircraft will fly smoothly off the runway. To clear an obstacle after takeoff, establish a trimmed speed of 75~85 KIAS. When a safe altitude is reached, retract the flaps slowly and incrementally, trimming as necessary. Retract landing gear once a wheel extended runway landing is impractical.

NORMAL LANDING

Normal landings can be made power on or power off using approach speeds of 80~90 KIAS with flaps up and 70~80 KIAS with flaps down. For a restricted landing area, use an approach speed of 70 KIAS with flaps 30 degrees.

GLASSY WATER LANDING

With glassy water conditions, flaps should be extended to 20 degrees and enough power used to maintain a low rate of descent (approximately 200 feet per minute). The floatplane should be flown onto the water in a slightly nose up normal float landing attitude at this sink rate with no flare attempted since height above glassy water is impossible to judge. Power should be reduced to idle and control wheel backpressure increased upon contacting the surface. As the floatplane decelerates off the step, apply full backpressure on the control wheel. If this glassy water technique is used in conjunction with an obstacle clearance approach, allowance should be made for appreciably longer total landing distances than are typical of normal water conditions.

CROSSWIND LANDING

The wing-low slip method should be used with the upwind float contacting the surface first while maintaining a slightly nose up normal float landing attitude.

BEACHING-HEELING IN

(Stern of the floats on the beach)

The amphibian may be heeled into a beach, but with caution. The wheel well area can scoop sand, mud, rocks, or clay. A rock (deflector) shield is provided to help ramp the debris from collecting underneath the front of the gear truck. If one leaves the plane secured with the step area embedded in the sand, wave action can help bring sand into the wheel well area. Clay or mud can also stick into this area posing a problem. The problem comes from not having clearance, because of debris buildup, for the main gear truck to fully extend to the full gear down position. The main landing gear has tremendous leverage as it travels into its over center position and can damage the float and gear truck if there is a restriction.

A method (no guarantees) of cleansing this area is proposed. With the gear still retracted, after leaving the beach, aggressively plow the floats to flush this area. This puts the plane at a high angle of attack and introduces water for flushing. Do this a couple of times and even go up on the step for a moment.

After washing the area and the airplane is at idle power lower the gear. Assure that all the amber lights illuminate, indicating gear down position is achieved. If a main gear light does not illuminate, proceed to inspect the problem. Ideally, finding a float dolly which will lift the floats out of the water with the gear retracted, will give opportunity to investigate the problem.

SECTION 5
PERFORMANCE

HEIGHT LOSS IN STALLS

The height loss of up to 200 ft. may occur in stalls.

AIRSPEED CALIBRATION

The airspeed calibration is slightly changed due to the float installation and the weight increase from the landplane configuration. The following table supplements the data in Flight Manual P/N: FAC2-M400.

NORMAL STATIC SOURCE

CONDITIONS:
Power required for level flight or maximum power descent

	KCAS			
KIAS	Flaps 0°	Flaps 10°	Flaps 20°	Flaps 30°
55	---	---	52	53
60	57	57	57	58
70	67	67	67	68
80	77	77	77	78
90	87	87	87	88
100	97	97	98	98
110	107	107	108	108
120	118	---	---	---
130	128	---	---	---
140	138	---	---	---
150	148	---	---	---
160	158	---	---	---

Figure 2 Airspeed Calibration

STALL SPEED
AT 3775 POUNDS

CONDITIONS:
Power Off

MOST FOWARD CENTRE OF GRAVITY

FLAP SETTING	ANGLE OF BANK							
	0 °		30 °		45 °		60 °	
	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
UP	58	61	62	65	69	72	82	86
10	54	57	58	61	64	68	76	80
15	51	54	55	58	61	64	72	76
20	49	53	53	57	58	63	69	75
30	48	52	52	56	57	62	68	74

NOTES:
1. Altitude loss during stall recovery may be up to 200 ft.
2. KIAS values are approximate.

Figure 3 Stall Speeds

SHORT FIELD TAKEOFF DISTANCE ON LAND AT 3735 POUNDS

CONDITIONS:
FLAPS: 15 degree
FULL THROTTLE PRIOR TO BRAKE RELEASE, 2700 RPM
PAVED, LEVEL, DRY RUNWAY
ZERO WIND
LIFT OFF SPEED 64 KIAS
50FT SPEED 68 KIAS

	0°C		10°C		20°C		30°C		40°C	
PRESS. ALTITUDE	GND DIST.	TOTAL DIST.	GND DIST.	TOTAL DIST.	GND DIST.	TOTAL DIST.	GND DIST.	TOTAL DIST.	GND DIST.	TOTAL DIST.
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
0	891	1520	956	1620	1026	1731	1101	1849	1181	1976
1000	988	1678	1061	1793	1140	1919	1225	2054	1316	2201
2000	1100	1865	1183	1997	1273	2142	1370	2299	1474	2471
3000	1233	2089	1327	2243	1431	2413	1543	2599	1665	2804
4000	1381	2342	1490	2523	1610	2725	1740	2947	1883	3192
5000	1558	2652	1685	2869	1825	3111	1980	3382	2149	3684
6000	1773	3039	1923	3306	2091	3606	2276	3944	2481	4325
7000	2039	3536	2221	3875	2426	4258	2654	4696	---	---
8000	2378	4286	2604	4743	---	---	---	---	---	---

NOTES:

1. Decrease total distance by 10% for each 10 knots headwind.
2. In tailwinds, increase total distance 10% for each 2 knots.
3. For operation on dry glass runways, increase above ground roll distances by 15%
4. For operation in outside air temperatures colder than this table provides, use coldest data shown.
5. For operation in outside air temperatures warmer than this table provides, use extreme caution.

Figure 4 Short Field Takeoff Distance

BEST ANGLE-OF-CLIMB AT 3775 POUNDS

CONDITIONS:
Flaps Up
2600 RPM
Full Throttle
Mixture at Best Power Schedule

PRESS ALT	CLIMB SPEED	BEST ANGLE OF CLIMB (deg)				
FEET	KIAS	-20°C	0°C	15°C	20°C	40°C
S.L	63	8.3	7.6	7.0	6.8	6.2
2,000	63	7.1	6.4	5.9	5.8	5.1
4,000	64	5.9	5.2	4.8	4.6	4.1
6,000	64	4.7	4.1	3.7	3.5	3.0
8,000	66	3.6	3.0	2.7	2.5	2.1
10,000	67	2.5	2.1	1.7	1.6	1.2
12,000	67	1.6	1.2	0.9	0.8	0.4

Figure 5 Best Angle-of-Climb

BEST RATE-OF-CLIMB
AT 3775 POUNDS

CONDITIONS:
Flaps Up
2600 RPM
Full Throttle
Mixture at Best Power Schedule

PRESS ALT	CLIMB SPEED	RATE OF CLIMB (FPM)				
FEET	KIAS	-20°C	0°C	15°C	20°C	40°C
S.L	79	921	869	828	815	760
2000	77	817	765	724	711	656
4000	75	696	644	603	590	536
6000	73	575	523	482	469	415
8000	72	455	403	362	349	295
10,000	71	337	284	244	230	176
12,000	69	221	167	127	113	- - -

Figure 6 Best Rate-of-Climb

TIME, FUEL AND DISTANCE TO CLIMB AT 3775 POUNDS

CONDITIONS:
Flaps Up
Full Throttle
2600 RPM
Mixture at Best Power Schedule
Standard Temperatures
At Best Rate of Climb

PRESS ALT FEET	TEMP °C	CLIMB SPEED KIAS	RATE OF CLIMB FPM	FROM SEA LEVEL		
				TIME IN MIN	FUEL USED U.S GAL	DIST IN NM
S.L	15	79	829	0	0.0	0
1000	13	78	789	1	0.5	2
2000	11	77	735	3	1.0	3
3000	9	76	680	4	1.5	5
4000	7	76	625	5	2.1	7
5000	5	75	570	7	2.7	9
6000	3	74	514	9	3.3	11
7000	1	74	459	11	4.0	14
8000	-1	73	405	13	4.7	17
9000	-3	72	351	16	5.5	21
10000	-5	72	297	19	6.5	25

NOTES:
1. Add 7.5 litres (2 US gallons) of fuel for engine start, run-up, taxi and take off allowance.
2. Mixture leaned to climb schedule.
3. Increase time, fuel and distance by 10% for each 10^0 C above standard temperature.
4. Distances shown are based on zero wind.

Figure 7 Time, Fuel and Distance to Climb

SECTION 6
WEIGHT AND BALANCE

The Bush Hawk-XP equipped with slotted Fowler-type flap and Aerocet floats must be loaded in accordance with the limitations in Section 2. These are shown as an aircraft weight/moment envelope or an aircraft weight versus c.g. locations chart on the following pages.

WARNING
IT IS THE RESPONSIBILITY OF THE AIRPLANE OWNER AND PILOT TO ENSURE THAT THE AIRPLANE IS LOADED PROPERLY.

FLOAT BAGGAGE COMPARTMENTS

Baggage may be carried in the float baggage compartments in accordance with the following limitations.

Compartment	Max. Weight	Arm	Moment/1000
LEFT	100 lbs	10 in.	1.0
RIGHT	100 lbs	10 in.	1.0

FLOATPLANE REFERENCE DATUM

The floatplane reference datum for the purpose of weight and balance is the lower forward corner of the front doors.

FLOATPLANE WEIGHING PROCEDURES

1. Preparation:

a) Inflate tires to recommended operating procedures.
b) De-fuel airplane. Refer to FAC2-M200 Maintenance Manual.
c) Service engine oil as required to obtain a normal full indication.
d) Move sliding seats to the most forward position.
e) Raise flaps to the fully retracted position.
f) Place all control surfaces in neutral position.
g) Remove all non-required items from airplane.

2. Levelling:

a) Deflate the main wheel and/or lower or raise the nose wheel to properly level the aircraft fuselage floor (aft seat compartment).
b) Drop plumb lines from both front door datum points. Mark the locations on the floor. Connect the points and extend the line out to the centre of both floats.
c) Place scales under each wheel. A minimum scale capacity of 1500 pounds is recommended for the main scales and 1000 pounds for the tail scale. If only three scales are available, place the nose wheels on a common platform and a scale below the platform to get the total weight at the nose wheel.

3. Weighing:

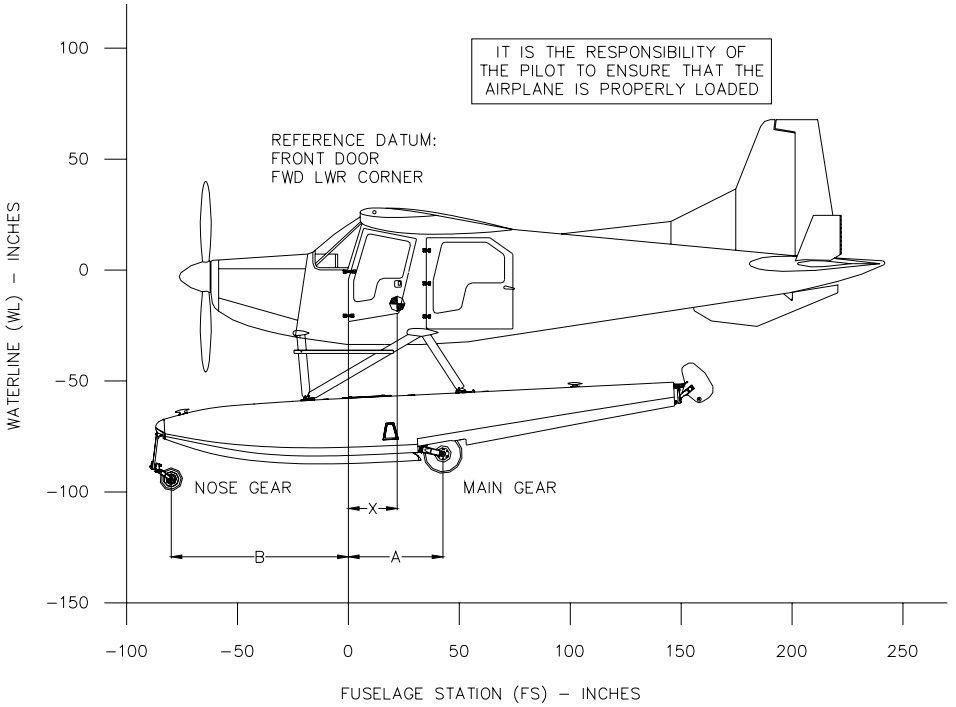
a) With the airplane level and, record the weight shown on each scale. Deduct the tare, if any, from each reading.

4. Measuring Arms:

a) Obtain measurement **A** and **B** by measuring horizontally (along the floor) from the floatplane reference datum line previously drawn on the floor (Item 2b) to the main wheel and to the nose wheel. See the illustration below.

5. Calculate CG and Weight:

a) Using weights from Item 3 and measurements from Item 4, the airplane Basic Empty Weight and C.G. can be determined by completing the following table.


IT IS THE RESPONSIBILITY OF THE PILOT TO ENSURE THAT THE AIRPLANE IS PROPERLY LOADED
REFERENCE DATUM:
FRONT DOOR
FWD LWR CORNER
NOSE GEAR
MAIN GEAR
X
B
A
WATERLINE (WL) – INCHES
100
50
0
–50
–100
–150
–100
–50
0
50
100
150
200
250
FUSELAGE STATION (FS) – INCHES

Weighing Point	Tare (lbs)	Scale Reading (lbs)	Net Weight (lbs)	Arm (inches)	Moment (in-lbs)
R Nose				***B*** =	
L Nose				***B*** =	
R Main (Float)				***A*** =	
L Main (Float)				***A*** =	
Total (Weighed)				**CG=**	
CG = Total Moment / Total Net Weight Use spaces below to add or subtract items from weighed condition.					
Empty Weight				**CG=**	
Drainable Unusable Fuel (6 lbs/USG), 1.7 USG			10.2	21.8	222.4
Basic Empty Weight					

Net Weight = Scale Reading - Tare
Moment = Net Weight * Arm
Arm is measured from the aircraft datum (front door forward lower corner).
If only three scales are available, place the nose gears on a common platform. Place a scale under this common platform and make one reading.

FLOATPLANE WEIGHT AND BALANCE PROCEDURES

The following information will enable you to operate your FBA-2C2 within the prescribed weight and centre of gravity limitations. To figure weight and balance, use the Sample Loading Problem, Loading Graph (in Section 6 of M400), and Centre of Gravity Moment Envelopes as follows:

1. Take the Basic Empty Weight and Moment from appropriate weight and balance records carried in your airplane and enter them in the column titled YOUR AIRPLANE on the Sample Loading Problem.

NOTE

In addition to the Basic Empty Weight and Moment noted on these records, the C.G. arm (fuselage station) is also shown, but need not be used on the Sample Loading Problem. The moment which is shown must be divided by 1000 and this value used as the moment/1000 on the loading problem.

2. Use the Loading Graph to determine the moment/1000 for each additional item to be carried; then list these on the loading problem.

NOTE

Loading Graph information for the pilot, passengers and baggage is based on seats positioned for average occupants and baggage loaded in the centre of the aft baggage compartment as shown on the Loading Arrangements diagram. For loadings which may differ from these, the Sample Loading Problem lists fuselage stations for these items to indicate their forward and aft C.G. range limitations (seat travel and baggage compartment limitation). Additional moment calculations, based on the actual weight and C.G. arm (fuselage station) of the item being loaded, must be made if the position of the load is different from that shown on the Loading Graph.

3. Total the weights and moments/1000 and plot these values on the centre of Gravity Moment Envelope to determine whether the point falls within the envelope, and if the loading is acceptable.

SAMPLE LOADING PROBLEM FOR FLOATPLANE	WEIGHT AND MOMENT TABULATION				
	SAMPLE AIRPLANE			YOUR AIRPLANE	
	WEIGHT (lbs)	MOMENT (lb-in /1000)	ARM (in)	WEIGHT (lbs)	MOMENT (lb-in /1000)
1. Basic Empty Weight (Use the data pertaining to your airplane as it is presently equipped. Includes unusable fuel and full oil).	2450	38.1	15.6		
2. Usable Fuel (At 6.0 lbs/USG) 98 USG Maximum 50 USG (used for example)	300	6.5	21.8		
3. Pilot and Front Passenger (Station 17.8 & 200 pounds each)	400	7.1	17.8		
4. Rear Passenger (Station 55.0 & 200 pounds each)	400	22.0	55.0		
5. Main Baggage Area (Station 76 to 114; 250 pounds. max. @ Station 94)	50	4.7	94.0		
6. Ramp Weight and Moment (add columns)	3600	78.5			
7. Fuel Allowance for Engine Start, Taxi and Run-Up	-7	-0.2	21.8		
8. Takeoff Weight and Moment (Subtract Step 7 from Step 6)	3593	78.4	21.8		
9. Locate this point (3593 at 78.4) on the Centre of Gravity Moment Envelope, and since this point falls within the envelope, the loading is acceptable.					

CENTER OF GRAVITY MOMENT ENVELOPE FOR WATER OPERATIONS
MAX. GW = 3775 LBS

Figure 8 Loaded Airplane Moment/1000 (pound-inches)

CENTER OF GRAVITY RANGE ENVELOPE FOR WATER OPERATIONS
MAX. GW = 3775 LBS

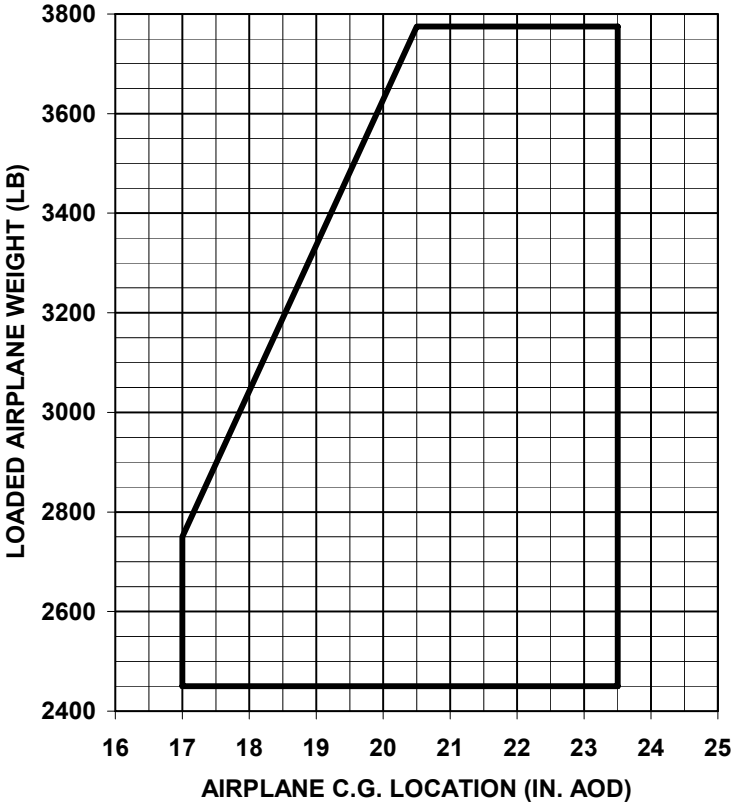


Figure 9 Airplane CG Location (Inches AFT of Datum)

CENTER OF GRAVITY MOMENT ENVELOPE FOR WHEELS OPERATIONS
MAX. GW = 3735 LBS

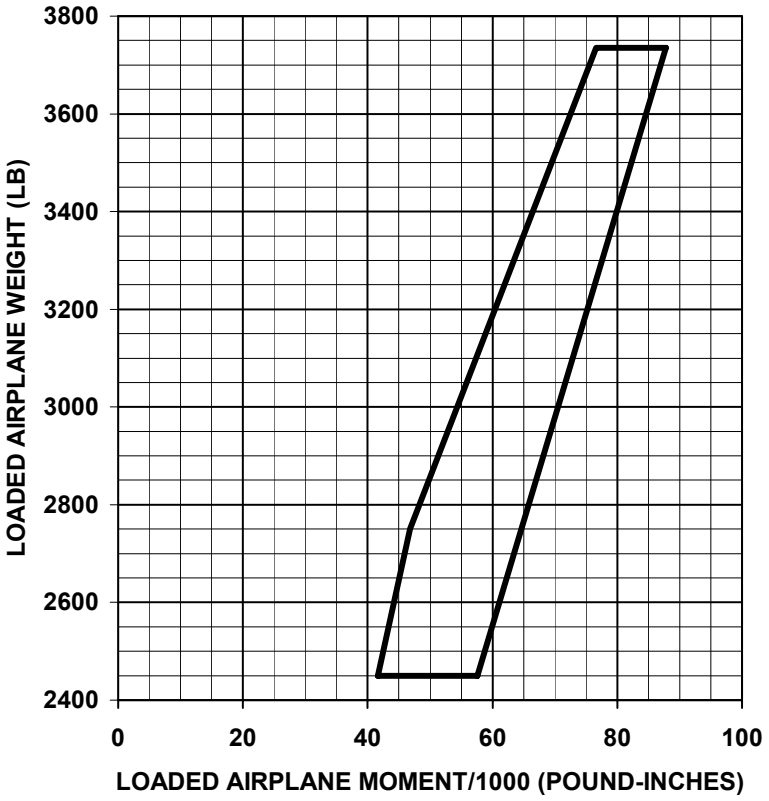


Figure 9 Loaded Airplane Moment/1000 (pound-inches)

CENTER OF GRAVITY RANGE ENVELOPE FOR WHEELS OPERATIONS
MAX. GW = 3735 LBS

Figure 10 Airplane CG Location (Inches AFT of Datum)

SECTION 7
AIRPLANE AND SYSTEMS DESCRIPTION

In addition to the Aerocet Model 3400 floats installation, the aircraft must incorporate the Found Aircraft Canada Inc. approved floatplane kit. With either of these installations, the floatplane is identical to the landplane with the following exceptions:

FOUND AIRCRAFT CANADA MODIFICATIONS

1. Floats, incorporating retractable landing gear and water rudder steering system, replace the landing gear.
2. Water rudder steering cables for retraction and steering control of the water rudders.
3. A water rudder retraction lever connected to the dual water rudders by cables is located on the cabin floor between the front seats.
4. Hydraulic system to support the retractable landing gear system.
5. Ventral fin located on the bottom of the fuselage and two finlets on top of the stabilizer.
6. Loading steps, which are mounted to the float struts.
7. Floatplane placards.
8. Amphibian placards.

WATER RUDDER SYSTEM

Retractable water rudders, mounted at the aft end of each float, are connected by a system of cables and springs to the rudder pedals. Normal rudder pedal operation moves the water rudders to provide steering control for taxiing on the water. A water rudder retraction lever, located on the cabin floor between the front seats, is used to manually raise and lower the water rudders. The handle should be in the UP (full aft) position during takeoff, landing, and in flight. With the handle in this position, the water rudders are up. When the lever is rotated forward to the DOWN position, the water rudders extend to the full down position for water taxiing.

AMPHIBIOUS LANDING GEAR SYSTEM

The landing gear incorporated within the amphibious floats on this airplane is a retractable, quadricycle type with two full swivelling nose (or bow) wheels and two main wheels. Shock absorption is provided by nitrogen oil shock struts for the main gear and composite leaf springs for the bow gear. Each main wheel is equipped with a hydraulically-actuated disc-type brake.

Normal landing gear extension and retraction is accomplished by hydraulic actuators for each gear. The hydraulic system is powered by a reversible, electrically-driven hydraulic pump located just forward of fuselage station 195 (aft fuselage). Hydraulic system fluid level should be checked at 25-hour intervals by viewing the sight glass on the side of the pump. Fill to within ½" of the top of the sight glass by removing the vented plug and using MIL-H-5606 hydraulic fluid. Hydraulic pump operation is initiated by moving the landing gear switch on the gear advisory (see figure 9) to either the up or down position. The landing gear will travel to the position indicated, cycling the electrically-driven hydraulic pump. The pump is shut off by pressure switches. When the pressure switch senses a certain amount of pressure in the hydraulic line, while the electric pump is forcing fluid through, it will send a signal to the motor relay shutting the pump down. The pressure increases at the end of operation when all the actuators have traveled to the end of their stroke. Eight position-indicator lights (four gear up and four gear down) are provided to show landing gear position. An additional indicator light shows landing gear motor operation. The landing gear system is also equipped with an emergency hand pump selector valve and hand pump.

LANDING GEAR HANDLE (SWITCH)

The landing gear handle is an electrical switch mounted within a control unit (gear advisory) on the instrument panel, and has two positions (UP for gear up and DOWN for gear down) which give a mechanical indication of the gear position selected. From either position, the handle must be pulled out to clear a detent before it can be repositioned. Moving the handle to UP or DOWN will start the reversible, electrically-driven hydraulic pump in the selected direction of gear travel. Operation of the landing gear system will not begin until repositioning of the handle is complete.

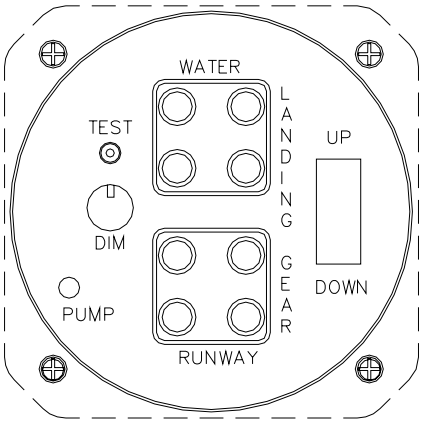


Figure 11 Landing Gear Advisory System

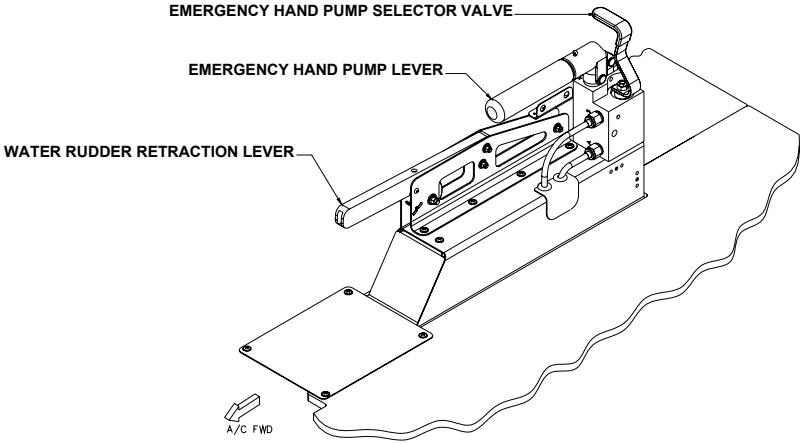


Figure 12 Emergency Hand Pump and Water Rudder Retraction System

INDICATOR LIGHTS

Eight indicator lights are mounted on the Landing Gear Advisory Unit adjacent to the landing gear handle. The four blue indicator lights, labelled WATER, (positioned respective to their location on the float, i.e. top left – front left gear) show by their illumination that the landing gear is up. The four amber indicator lights, labelled LAND, illuminate when the landing gear is down. Neither set of lights is illuminated when the landing gear is in transit. The single red indicator light, labelled PUMP, comes on when current is being supplied to the landing gear motor. If the motor continues running during flight or goes on and off repeatedly, the motor should be shut off by pulling the LANDING GEAR MOTOR circuit breaker, since continual running of the motor can result in premature motor failure. Prior to landing, the circuit breaker should be pushed in to reactivate the circuit. All the indicator lights can be dimmed for night operation using the dimmer knob on the Landing Gear Advisory Unit. If an indicator light should fail to come on when pressed for testing, remove bulb for a new bulb or double check the circuit by interchanging a bulb from a lit indicator light. The WATER, LAND, and PUMP light circuits are protected by the Landing Gear Advisory circuit breaker, and will function when the Gear Motor circuit breaker is pulled as required when operating the gear using the emergency hand pump.

NOTE

The pilot should always visually check the nose gear before attempting a water landing to assure himself that it is up regardless of lights. If the pull ram mechanically fails, it could travel and show a light but not be connected to the nose gear itself leaving the nose gear in the down position.

AUDIO ADVISORY OPERATION

The Landing Gear Advisory Unit includes an audio output that may be connected to an audio input source (i.e. radio or audio panel) for verbal pilot information regarding gear position. The verbal notification of gear position is not mandatory, thus, it may be inoperable. However, if available, a static and pitot pressure source is connected to the Unit which determines airspeed. The Landing Gear Advisory Unit has a trigger point set at approximately 75 knots. This adjustment is set using a small slotted screwdriver in the hole above the gear handle on the face of the Advisory. Clockwise turn increases the trigger speed. As the airplane passes through this speed the system is armed. When the airplane slows back through this speed an audio voice will announce the position of the gear and what kind of landing it is suited for. With the gear up the message will say, "Gear up for water landing". With the gear down the message will say, "Gear down for runway landing". This message will continue and repeat until acknowledged by the pilot cancelling the message by depressing the button on the optional dash mount or on the Landing Gear Advisory Unit itself. Upon operational start-up, the Landing Gear Advisory Unit will announce all three messages at once to indicate their availability and this should be cancelled using the buttons provided.

NOTE

It should be clearly noted that the audio advisory side of the Landing Gear Advisory Unit by Aerocet, Inc. does not alleviate the pilots responsibility to visually check the location of the landing gear prior to landing, especially to assure the gear is up when making a water landing. Audio systems may be turned down or fail.

NOTE

The pilot should always visually check the nose gear before attempting a water landing to assure that it is up regardless of audio indication. If the pull ram mechanically fails, it could travel and show a light or give an audio indication but not be connected to the nose gear itself leaving the nose gear in the down position.

LANDING GEAR OPERATION

To retract or extend the landing gear, pull out on the landing gear handle and move it to the desired position. When the handle is positioned, electrical power is directed to one of two solenoid relays, which energize the reversible electric motor. The Emergency Hand Pump lever must be in the OFF position (handle pointed toward the copilot seat) in order for the electric pump to pump fluid. The electric motor powers the hydraulic pump and actuates two hydraulic gear actuators in each float in the appropriate direction. During operation of the landing gear motor, the "PUMP" indicator light is illuminated. When the hydraulic rams have enough resistance on them, typically by achieving full travel of the ram, pressure will build and trigger the electric pressure switches that activate the relays to turn the pump off. Proximity sensors are located on all four gear, feeding appropriate gear position to the Landing Gear Advisory Unit illuminating the appropriate (WATER or LAND) lights. Again, the pressure in the system turns the pump on and off, not the proximity sensors.

The cycle time for the gear in either direction requires approximately 22 seconds. Longer cycles may indicate gear problems and should be investigated.

EMERGENCY HAND PUMP SELECTOR VALVE AND HAND PUMP

A three position emergency hand pump selector valve and a single action hand pump is located between the crew seats and is for use in the event the normal hydraulic system fails. Figure 11 illustrates this system. The selector valve has three positions, labelled UP, DOWN, and OFF which points the handle toward the copilot seat. To select gear position with the emergency hand pump selector, rotate the handle to UP (clockwise 90 degrees) or DOWN (counter clockwise 90 degrees).

NOTE

The emergency hand pump selector valve must be rotated to the OFF position (pointing toward the copilot seat) during normal system operation. If the selector valve is in any other position, it provides a by-pass for hydraulic pressure and the landing gear will not function properly.

Prior to utilizing the emergency hand pump, pull the LANDING GEAR MOTOR circuit breaker to ensure deactivation of the electric hydraulic pump, then rotate the hand pump selector valve to the desired position (UP or DOWN). Actuate the hand pump up and down (approximately 230 strokes for extension and 165 strokes for retraction) until the landing gear reaches the selected position. When the gear reaches the selected position, the appropriate gear position indicator lights will illuminate and the hand pump should be pumped until there is significant force on the pump handle with the final stroke. For complete emergency procedures, refer to Section 3 of this supplement.

SECTION 8
AIRPLANE HANDLING, SERVICE, AND MAINTENANCE

Airplane handling, service, and maintenance in the basic handbook apply, in general, to the amphibian. The following recommended procedures apply specifically to amphibian operation. (Cleaning, servicing and maintenance of the amphibious floats should be accomplished as suggested in the Aerocet, Inc. 3400 amphibian Service and Maintenance Manual.)

MOORING

Proper securing of the amphibian can vary considerably, depending on the type of operation involved and the facilities available. Each operator should use the method most appropriate for his operation. Some of the most common mooring alternatives are as follows:

1. The amphibian can be moored to a buoy, using a yoke tied to the forward float cleats, allowing it to freely weathervane into the wind.
2. The amphibian can be secured to a dock using the fore and aft cleats of either float. This method is generally not recommended unless the water is calm and the amphibian is attended.
3. The amphibian may be removed from the water (by use of a hydraulic lift under the spreader bars) and secured by using the wing tie-down rings and float cleats. If conditions permit the amphibian to be beached (with the landing gear retracted), ensure that the shoreline is free of rocks or abrasive material that may damage the floats.
4. The amphibian may be taxied from the water onto land if a hard surface ramp is available by extending the landing gear just prior to reaching the ramp area. The amphibian should then be tied down using procedures similar to the landplane.

SERVICING

Service the airplane in accordance with the basic handbook. Special attention should be given to engine oil and landing gear servicing of the amphibian. The following service information is contained in Found Aircraft Maintenance Manual Supplement P/N 32-05 and Aerocet Service Manual and ICA File No. A-10031.

AMPHIBIOUS LANDING GEAR

NOSE WHEEL TIRE PRESSURE

70 PSI on 10-3.50, 4-Ply Rated Tires.

MAIN WHEEL TIRE PRESSURE

55 PSI on 6.00-6, 6-Ply Rated Tires.

MAIN GEAR SHOCK STRUTS

Keep filled with MIL-H-5606 hydraulic fluid and inflated with nitrogen to 425 PSI for main gear shock struts with no load.

HYDRAULIC FLUID RESERVOIR

Check and service with MIL-H-5606 hydraulic fluid every 25 hours of flight time. Fill to within ½" of the top of the sight glass by removing the vented plug.

CAUTION

WHEN SERVICING THE LANDING GEAR SYSTEM, THE PROCEDURES AND PRECAUTIONS CONTAINED IN THE SERVICE AND MAINTENANCE MANUAL FOR AMPHIBIOUS FLOATS MUST BE FOLLOWED.

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