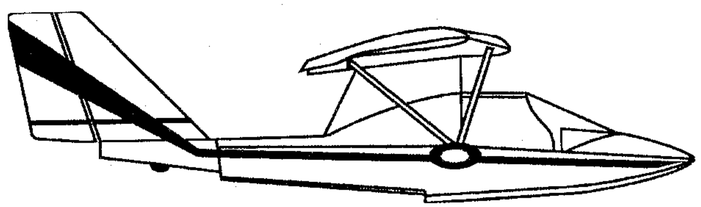

RECOMMENDED FLIGHT MANUAL

COVER PAGE

Nationality and Identification Number:_____

Manufacturer/Builder:_____

Address of Manufacturer/Builder:_____

_____

_____

Aircraft Type:_____

Kit Manufacturer: Progressive Aerodyne, Inc.
520 Clifton St.
Orlando, FL 32808
U.S.A.

Kit Manufacturer's Serial Number:_____

GENERAL AMENDMENT RECORD SHEET

AMENDMENT NUMBER	PARAGRAPH(S) AFFECTED	SIGNATURE	DATE OF INCORPORATION

NOTE: Amendment numbers may not always be consecutive.

INTRODUCTION

This Flight Manual contains material to be supplied by the owner/builder ("Test Aircraft"), as well as supplemental data supplied by Progressive Aerodyne, Inc. Sample data from the Progressive Aerodyne Demonstration SeaRey ("P/A Demo") is included for reference.

This Flight Manual applies only to the particular aircraft identified by the Identification Number and Serial Number on the cover page and contains limitations and essential data for this aircraft.

This aircraft is registered as an experimental-type aircraft on the basis of the equipment fitted at the time of issue of the Airworthiness Certificate. Any changes in equipment must be listed in the aircraft's logbook and appropriate amendments should be made in this Manual.

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MAXIMUM APPROVED WEIGHTS

	Test Aircraft	(P/A Demo)
Gross Weight:	_____	1370 lbs
Max Take-off Weight:	_____	1370 lbs
Max Landing Weight:	_____	1370 lbs
Max Baggage Weight:	_____	55 lbs
Basic Empty Weight:	_____	850 lbs

ABBREVIATIONS & DEFINITIONS

The following shall apply throughout this Manual:

PRESSURE ALTITUDE is the altitude read from an altimeter when the altimeter's barometric scale has been set to 29.92 H.g. (inches of mercury).

IAS (Indicated Airspeed) is the speed shown on the airspeed indicator.

TAKE-OFF SAFETY SPEED is a speed chosen to ensure that adequate control will exist under all conditions, including turbulence and sudden and complete engine failure, during the climb after take-off.

APPROACH SPEED is a speed chosen to ensure that adequate control exists under all conditions, including turbulence, to carry out a normal flare and touchdown.

Vc – NORMAL OPERATING LIMIT SPEED is the speed that shall normally not be exceeded. Operations above Vc shall be conducted with caution and only in smooth air.

Va – MANUEVERING SPEED is the maximum speed at which you may use abrupt control travel.

Vfe – MAXIMUM FLAP EXTENDED SPEED is the highest speed permissible with wing flaps in a prescribed extended position.

Vno – MAXIMUM STRUCTURAL CRUISING SPEED is the speed that should not be exceeded except in smooth air, then only with caution.

ENGINE	Test Aircraft	(P/A Demo)
Manufacturer:	_____	Bombardier Rotax
Model:	_____	Rotax 912UL
Type:	_____	See Engine Manual
RPM Full Throttle:	_____	5800 rpm
PROPELLER		
Manufacturer:	_____	R.P.M.
Type:	_____	2 Blade Wood
Diameter:	_____	70 inches
Pitch:	_____	Fixed 38 inches
FUEL		
Grade:	_____	93 Oct. Auto Gas
Capacity, Total:	_____	18 gal.
Capacity, Useable:	_____	17 gal.
OIL		
Grade:	_____	See Engine Manual
Capacity:	_____	3.5 qt.

SECTION 2 – LIMITATIONS

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Vs – STALL SPEED or the minimum steady flight speed at which the aircraft is controllable.

Vso – STALL SPEED or the minimum steady flight speed at which the aircraft is controllable in the landing configuration at the most forward center of gravity.

AIRCRAFT PERFORMANCE & FLIGHT PLANNING TERMINOLOGY

USABLE FUEL is the fuel available for flight planning.

UNUSABLE FUEL is the quantity of fuel that can not be safely used in flight.

WEIGHT & BALANCE TERMINOLOGY

For complete Weight & Balance terminology, see Section 6 of this manual.

REFERENCE DATUM is an imaginary vertical plane from which all horizontal distances are measured for balance purposes.

ARM is the horizontal distance from the reference datum to the center of gravity of an item.

MOMENT is the product of the weight of an item multiplied by its arm.

CENTER OF GRAVITY (C.G.) is the point at which an aircraft, or equipment, would balance is suspended. Its distance from the reference datum is found by dividing the total moment by the total weight of the aircraft.

CENTER OF GRAVITY LIMITS are the extreme C.G. locations within which the aircraft must be operated at a given weight.

BASIC EMPTY WEIGHT is the weight of the aircraft including unusable fuel, full operating fluids and full engine oil.

GROSS WEIGHT is the maximum weight to which the aircraft can be loaded for taxi, take-off, flight and landing.

AIRSPEED INDICATOR MARKINGS

	Test Aircraft	(P/A Demo)
White Arc:	_____	40-85 mph

Full Flap Operating Range. Lower limit is at Gross Weight. Vso in landing configuration. Upper limit is maximum speed permissible with flaps extended.

Green Arc:	_____	50-100 mph

Normal Operating Range. Lower limit is at Gross Weight. Vs at most forward C.G. with flaps retracted. Upper limit is maximum structural cruising speed.

Yellow Arc:	_____	100-115 mph

Operations must be conducted with caution and only in smooth air.

Red Line:	_____	115 mph

Maximum Speed. Not to be exceeded.

AIRSPEED LIMITATIONS

	Test Aircraft	(P/A Demo)
Va – Design Maneuvering Speed:	_____	85 mph
Vc – Design Cruising Speed:	_____	85 mph
Vfe – Maximum Flap Extended Speed: (Flaps 20°/30°)	_____	80 mph
Vle – Maximum Landing Gear Extended Speed:	_____	None
Vlo – Maximum Landing Gear Operating Speed:	_____	None
Vlof – Lift-off Speed: (Flaps 20°)	_____	52 mph
Vne – Never Exceed Speed:	_____	115 mph
Vno Maximum Structural Cruising Speed:	_____	100 mph
Vr – Rotation Speed: (Flaps 20°)	_____	50 mph
Vso – Stall Speed in Landing Configuration: (Flaps 30°)	_____	38 mph
Vx – Speed for Best Angle of Climb: (Flaps 20°)	_____	65 mph
Vy – Speed for Best Rate of Climb: (Flaps 10°)	_____	70 mph
Best Speed for Approach: (Flaps 10°/20°)	_____	70 mph
Speed to Raise/Lower Landing Gear in Water: (Engine at Idle)	_____	Dead Slow
Best Approach for Short Field Landing: (Flaps 10°/20°)	_____	62 mph

NOTE: Take-off and landing on water should be done using 20° of flaps under all conditions.

EXPERIMENTAL-TYPE CATEGORY

This aircraft is accepted in the Experimental Type Category Only.

Aerobatic maneuvers including spins are not permitted.

WEIGHT LIMITATIONS	**Test Aircraft**	**(P/A Demo)**
Maximum Take-off Weight:	_____	1370 lbs
Maximum Landing Weight:	_____	1370 lbs
Baggage Compartment Loading Max. Permissible Compartment Load:	_____	55 lbs
Maximum Occupant Loading Maximum Combined Occupant Load:	_____	380 lbs
Minimum Occupant Loading Min. Occupant Load to be not less than:	_____	116 lbs

CENTER OF GRAVITY LIMITATIONS
Center of Gravity Range

Forward Limit Aft of Datum:	_____	97.5 in.
Rear Limit Aft of Datum:	_____	105 in.

Datum, Test Aircraft: _____

_____

(P/A Demo Datum used above is 70 inches forward of the wing root leading edge.)

ENGINE LIMITATIONS

Power, Pressure and Temperatures:

	Test Aircraft Minimum	Maximum	**(P/A Demo)** Minimum	Maximum
Take-off Power Setting for 5 min.			---	5,800 rpm
Minimum Safe Idling			1,400 rpm	---
Oil Pressure Green Arc 22-58 psi			22 psi Red Line	58 psi Red Line
Oil Temp. Green Arc 130°-240°F			130° F Red Line	280° F Red Line
Cylinder Head Temperatures			---	300° F Red Line

FUEL LIMITATIONS

	Test Aircraft	**(P/A Demo)**
Take-off/Climb Configuration Unusable Fuel:	_____	.5 Gal.
Cruise Configuration Unusable Fuel:	_____	1.5 Gal.
Landing/Descent Configuration Unusable Fuel:	_____	3 Gal.
Fuel Grades:	_____	See Engine Manual

PLACARDS
The following information must be displayed:

EXPERIMENTAL AMATEUR BUILT AIRCRAFT placard (listing Model, Serial No., Date of Manufacture, Empty Weight, Gross Weight, Engine, Horsepower, and Name and Address of Builder) installed in full view either internally or externally. Recommended installation: on center pylon.

PASSENGER WARNING placard (stating "This aircraft is amateur built and does not comply with the federal safety regulations for standard aircraft"), installed in full view of passenger. Recommended installation: on instrument panel.

EXPERIMENTAL decal installed in full view of passenger. Recommended installation: on lower outboard cockpit tube or floor pan.

DOCUMENTATION
The following documentation must be carried on aircraft and accessible in the cockpit at all times: The Airworthiness Certificate and the Registration. Recommended: waterproof covering.

FLIGHT LOAD FACTOR LIMITS

	Test Aircraft	(P/A Demo)
Normal Category		
Flight Load Factors:	_____	+3.8g, -1.52g

Avoid coarse control movements above Va = 80 mph to ensure these limit load factors are not exceeded.

KINDS OF OPERATION LIMITS
This aircraft is approved for day VFR and may be equipped for night VFR operations.

OTHER LIMITATIONS

Flap Limitations
Flap setting for take-off and landing,
Land & Water, Normal Operations: _____ 20°

Crosswind Component
Maximum permissible crosswind
component for take-off and landing: _____ 17 mph

Smoking
Smoking is not permitted at any time.

AIRSPEEDS FOR EMERGENCY OPERATION

	Test Aircraft	(P/A Demo)
Engine Failure After Take-off:		
Wing Flaps, Up	_____	69 mph
Wing Flaps, Down 20°	_____	64 mph
Landing Without Engine		
Wing Flaps, Up	_____	69 mph
Wing Flaps, Down 20°	_____	64 mph

ENGINE FAILURES

During Take-off Run

1.	Throttle	_____	CLOSE
2.	Brakes	_____	APPLY
3.	Ignition Switch	_____	OFF

Immediately After Take-off

1.	Airspeed – Flaps UP	_____	69 mph
	Airspeed – Flaps DOWN	_____	64 mph
2.	Fuel	_____	OFF
3.	Ignition Switch	_____	OFF
4.	Wing Flaps	_____	AS REQ'D

Other Procedures:

a. If sufficient runway/strip/waterway is available, lower the nose sufficiently to maintain speed and make a normal landing straight ahead.

b. If over the airport boundary and/or in a position where obstacles are in the path of the aircraft and height permits, a slight change in heading may be made to line up on the most suitable landing area.

c. If time permits, carry out the engine failure checks listed on Page 3.2 – *Initial Checks*.

During Flight

1.	Airspeed	_____	69 mph
2.	Fuel (Troubleshoot)	_____	CHECK ON
3.	Electric Fuel Pump, if installed	_____	ON
4.	Ignition Switch – If Propeller is stopped	_____	START

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FORCED LANDINGS

Emergency Landing Without Engine Power

		Test Aircraft	(P/A Demo)
1.	Airspeed	_____	69 mph
2.	Fuel	_____	OFF
3.	Ignition Switch	_____	OFF
4.	Radio, if available	_____	Transmit Distress Call
5.	Transponder, if available	_____	Set code 7700
6.	Wing Flaps	_____	20°
7.	Sliding Canopies	_____	Unlatched, Partially Open
8.	Touchdown	_____	LAND-Brake hard
		_____	WATER – As normal, if short, back stick

Other procedures:

a. Convert any excess speed to height and at the same time perform the checks listed on Page 3.2, *Initial Checks*.
b. Place the aircraft at optimum gliding angle/attitude/speed.
c. Select the most suitable field/waterway, bearing in mind height above the ground, wind speed and direction and the availability of assistance after landing.
d. Plan descent in relation to the selected field/waterway – aiming to reach a base leg position – as for a normal glide approach.
e. Keeping within easy gliding distance of the field/waterway, carry out the *Troubleshoot* on Page 3.2, *Initial Checks*.
f. If the engine cannot be restarted, continue as planned, brief the passenger and send distress signal, if radio is available.
g. During descent, use flaps intelligently. Aim to have 10° of flap on base leg – use 20° when you are sure of making the field/waterway – turn off all fuel and electrical switches at a time early enough not to interfere with concentration over the final stages of the emergency landing. Refer to Page 3.2, *Safety Check*.

Note: If intending to use the aircraft radio for communication, make a thorough inspection to ensure that no fuel is spilled that would be likely to cause a fire if the electrical circuits are reactivated.

Restarting The Engine in Flight

General – It is unlikely that the engine will stop during normal maneuvers. However, in the event of the engine stopping in flight the following procedures will normally allow the engine to be restarted without problems.

Using Starter Motor

	Test Aircraft	(P/A Demo)
1. Throttle	_____	OPEN ½"
2. Fuel	_____	CHECK ON
3. Electric Fuel Pump, if Installed	_____	ON
4. Master Switch	_____	ON
5. Ignition	_____	BOTH L & R ON
5. Starter	_____	Turn Key & Start

CAUTION

Because of the high compression ratio of the Rotax four-cycle engines, the propeller will not windmill, even in a steep dive. If the engine cannot be restarted by using the starter motor, carry out the procedure as set out in "*Emergency Landing Without Power*" on Page 3.3.

Engine Failure Checks

Initial Check

Fuel ON – Check contents – Fuel filter bowl, if installed.

Troubleshoot

1. Fuel ON – Contents sufficient
2. Oil pressure & temperature normal
3. Switches – Both ON – Check L & R Ignition
4. Throttle checked for operation – Open

Safety Check

1. Brakes OFF
2. Switches, Ignition and Master OFF
3. Fuel OFF
4. Harness secure – All occupants
5. Canopies/Hatches set for landing
6. Undercarriage – set for landing

FIRE

Action in the Event of Fire
General – due to the high octane fuel carried by the aircraft, there is always the possibility of a violent explosion occurring if an aircraft catches fire. Personnel are therefore warned not to take undue risks in attempting to save an aircraft which is obviously well alight. A small fire extinguisher is only meant to be used on small fires. For large fires, trained personnel with appropriate equipment are required.

Engine Fire on the Ground
1.	Throttle	CLOSED
2.	Ignition	OFF
3.	Fuel	OFF
4.	Master Switch	OFF
5.	Evacuate the aircraft	
6.	Use fire extinguishers as applicable.	

Engine Fire In Flight
Engine Fire – Symptoms confirmed – Shut Down Immediately

1.	Throttle	CLOSED
2.	Ignition	OFF
3.	Fuel	OFF
4.	Landing	Plan EMERGENCY descent and landing
5.	Radio, if available	TRANSMIT MAYDAY CALL
6.	Emergency landing	Refer to Page 3.2, *Safety Check*

Electrical Fire In Flight
1.	Master Switch	OFF
2.	Troubleshoot	Identify and Isolate Faulty Circuit
3.	Canopy	CLOSED
4.	Fire Extinguisher	ACTIVATE (if available)

WARNING: After discharging extinguisher within closed cabin, open sliding canopies to ventilate cabin.

5. Carry out an emergency landing at the nearest appropriate airport/waterway or landing ground.
6. If the fire persists, sideslip away from the flames. Instruct the passenger as necessary and proceed to an early landing.

Electrical Power
Do not turn the generator (if installed) off in flight, except in an emergency.

Precautionary Landing With Engine Power
In the event of a landing having to be made by virtue of deteriorating weather conditions, or for any reason where it is impossible to continue a flight and where no engine malfunction has occurred, proceed as follows:

		Test Aircraft	(P/A Demo)
1.	Airspeed	_____	69 mph
2.	Wing Flaps	_____	20°

Other Procedures:
a. Aim to land the aircraft at the nearest airfield/waterway or authorized landing ground, suitable for the type.
b. If worsening flying conditions make this impossible or a proper landing ground is unavailable, select the largest and best open area for landing (as close as possible to habitation).
c. Where any area other than a recognized airport or waterway is to be used, make dummy runs over the selected approach and landing path. The dummy runs should be flown at various heights where possible. Never carry out dummy runs up and down sloping terrain, always fly across the slope.
d. Where appropriate, carry out a short field landing.

Ditching
1.	Landing Gear:	UP POSITION
2.	Radio, if available:	TRANSMIT DISTRESS CALL
3.	Transponder, if available:	SQUAWK 7700
4.	Baggage, etc.:	SECURE OR JETTISON
5.	Approach:	HIGH WINDS/HEAVY SEAS – Into Wind LIGHT WINDS/HEAVY SWELL – Parallel to swell
6.	Wing Flaps:	20°
7.	Power:	100 FT/MIN DESCENT AT 60 MPH
8.	Passenger	Brief – Headset, Seat Belts, Canopy, Orientation, Cockpit Exit, Life Jacket/Raft, Face Protection, Clothing

ROUGH ENGINE OPERATION OR LOSS OF POWER

Carburetor Icing
A gradual loss of RPM and eventual engine roughness may result from the formation of carburetor ice. If carburetor heat is available: To clear the ice, apply full throttle and pull the carburetor heat knob full out until the engine runs smoothly. Then remove the carburetor heat and adjust the throttle.

Spark Plug Fouling
A slight engine roughness in flight may be caused by one or more spark plugs becoming fouled. This may be verified by turning the ignition switch from BOTH to either L or R position. An obvious power loss in a single ignition operation is evidence of spark plug trouble.

Low Oil Pressure
If low oil pressure is accompanied by normal oil temperature, there is a possibility the oil pressure gauge or relief valve is malfunctioning. If the condition persists a landing at the nearest airport would be advisable to inspect the source of trouble.

If a total loss of oil pressure is accompanied by a rise in oil temperature, there is every reason to suspect an engine failure is imminent. Reduce engine power immediately and select a suitable forced landing field, using only the minimum amount of power application to carry out the landing.

SPINS

DELIBERATE SPINS ARE PROHIBITED
If an inadvertent spin is encountered, proceed as follows:

1.	Throttle	CLOSED
2.	Ailerons	NEUTRAL
3.	Spin Direction	IDENTIFY
4.	Rudder	FULL OPPOSITE to direction of spin
5.	Stick	Progressively forward until rotation ceases
6.	When rotation ceases	Level wings and recover from dive

ICING

Inadvertent Icing Encounter
1. Turn pitot heat switch ON if installed.
2. Alter course or change altitude to obtain an outside air temperature that is less conducive to icing.
3. Open throttle to increase engine speed and minimize ice buildup on propeller blades.
4. Watch for signs of carburetor icing and apply carburetor heat, if installed, as necessary. Loss in engine RPM could be caused by carburetor ice buildup.
5. If airframe ice formation is rapid or buildup is significant, plan a landing at the nearest airport.
6. Be prepared for a higher stall speed.
7. With ice buildup, make faster landing approach, 69-75 mph.

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

Ammeter Shows Excessive Rate of Charge

1.	Generator	OFF
2.	Generator C/Breaker	PULL OFF
3.	Avionics & High Load Equipment	OFF
4.	Flight	TERMINATE

Generator "Out" Light (if fitted) Illuminates During Flight – Ammeter Indicates Discharge

1.	Non-essential Equipment	OFF
2.	Generator C/Breaker	CHECK – IN
3.	Master Switch	OFF
4.	Master Switch	ON
5.	Low Voltage Light	CHECK OFF
6.	Avionics & Equipment	TURN ON AGAIN

If low voltage light illuminates again:

7.	Generator	OFF
8.	All Non-essential Equipment	OFF
9.	Flight	TERMINATE

SECTION 4 – NORMAL PROCEDURES

This Section contains essential information relating to performance and handling characteristics for conducting normal operation of the aircraft.

SPEEDS FOR NORMAL OPERATIONS

	Test Aircraft	(P/A Demo)
Va – Design Maneuvering Speed:	_____	85 mph
Vc – Design Cruising Speed	_____	85 mph
Vfe – Maximum Flap Extended Speed: (Flaps 20°/30°)	_____	80 mph
Vle – Maximum Landing Gear Extended Speed:	_____	None
Vlo – Maximum Landing Gear Operating Speed:	_____	None
Vlof – Lift-off Speed: (Flaps 20°)	_____	52 mph
Vne – Never Exceed Speed:	_____	115 mph
Vno Maximum Structural Cruising Speed:	_____	100 mph
Vr – Rotation Speed (Flaps 20°):	_____	50 mph
Vso – Stall Speed in Landing Configuration: (Flaps 30°)	_____	38 mph
Vx – Speed for Best Angle of Climb (Flaps 20°):	_____	65 mph
Vy – Speed for Best Rate of Climb (Flaps 10°):	_____	70 mph
Best Speed for Approach (Flaps 10°/20°):	_____	70 mph
Speed to Raise/Lower Landing Gear in Water: (Engine at Idle)	_____	Dead Slow
Best Approach for Short Field Landing: (Flaps 10°/20°)	_____	62 mph

NOTE: Take-off and landing on water should be done using 20° of flaps under normal conditions.

SECTION 4 – NORMAL PROCEDURES

TABLE OF CONTENTS PAGE

DAILY PREFLIGHT INSPECTION

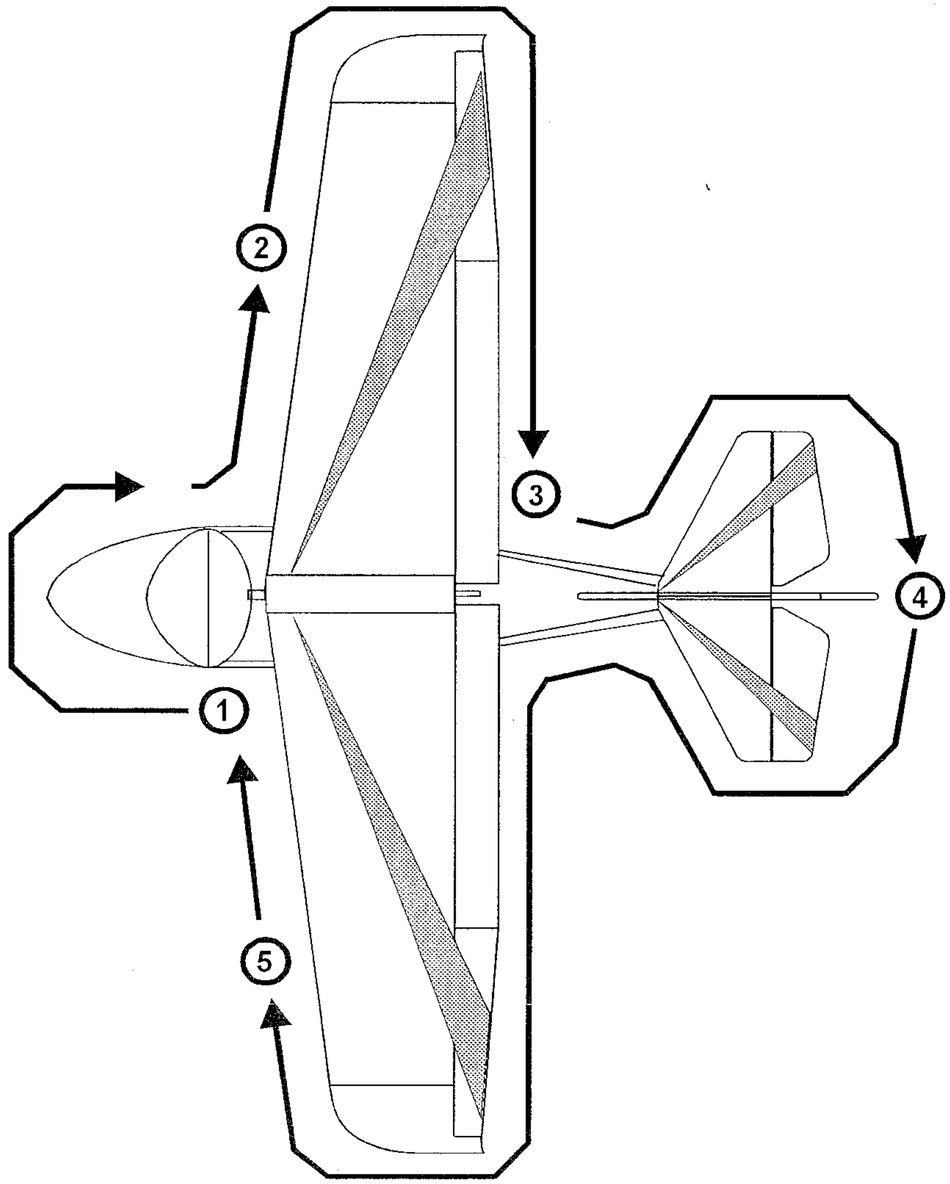
1. Cockpit & Forward Fuselage

		Test Aircraft	(P/A Demo)
1.	Flight Manual & Aircraft Documentation	_____	AVAILABLE
2.	Control Lock (if fitted)	_____	REMOVE
3.	Ignition Switch	_____	OFF
4.	Master Switch	_____	ON
5.	Fuel Quantity Visual Quantity & Gauge	_____	CHECK
6.	Electric Trim Operation	_____	CHECK
7.	Bilge Pump Operation & Hull Water - Drain Any Accumulated Water	_____	CHECK
8.	Master Switch	_____	OFF
9.	Carburetor Heat Actuation (if fitted)	_____	FREE
10.	Undercarriage Overcenter	_____	LOCKED
11.	Flight Control Full & Free Movement	_____	CHECK
12.	Aileron Push Rods, Bolt Ends & Cables	_____	SECURE
13.	Fuel Filter/Glass Bowl-Leaks, Contamination	_____	CHECK
14.	Check Fuel for Contamination if Fitted with Fuel Drain or Gascolator	_____	N/A
15.	Instruments Free of Damage & Secure	_____	CHECK
16.	Static Ports Clear of Blockage & Obstruction	_____	CHECK
17.	Windshield Cracks & Clean	_____	CHECK
18.	Seat Belts, Inertia Reels Secure & Functional	_____	CHECK
19.	Hull Sides & Underside Free of Damage	_____	CHECK

2. Starboard Wing

1.	Starboard Tire Inflation, Condition, Attachment	_____	CHECK
2.	Lower Strut/Fuselage Attachment Bolts	_____	SECURE
3.	Outer Strut & Jury Strut Attachment	_____	SECURE
4.	Wing Float, Braces & Secure Attachment	_____	CHECK
5.	Aileron Outer Push-Pull Rod Attachment	_____	SECURE
6.	Aileron Movement	_____	FREE
7.	Flap & Push-Pull Attachment	_____	SECURE
8.	Wing to Aft Fuselage Brace Cable	_____	SECURE
9.	Wing Tie-Down	_____	REMOVE

AIRCRAFT SKETCH – PREFLIGHT INSPECTION



COCKPIT SECURITY

Before starting the engine and conducting any operation, ensure that all articles and equipment are stowed safely and secured.

This is of particular importance in the event of any object exiting the cockpit, which could cause damage to the propeller because of the pusher configuration of this aircraft.

BEFORE STARTING ENGINE

		Test Aircraft	(P/A Demo)
1.	Preflight Inspection	_____	Complete
2.	Pull Through Prop – Minimum 2 Revolutions	_____	Complete
3.	Seat Belts & Shoulder Harnesses Adjusted	_____	CHECK
4.	Fuel Selector Valve	_____	ON
5.	All Radio Equipment & Avionics Power	_____	OFF
	CAUTION – Damage to avionics equipment can occur during engine start if avionics are left on.		
6.	Brakes or Chocks as Required	_____	SET
7.	Circuit Breakers In	_____	CHECK

STARTING ENGINE

1.	Master Switch	_____	ON
2	Prime (none if engine warm)	_____	AS REQD
3.	Electric Fuel Pump, if Fitted	_____	ON
4.	Throttle ½" approx.	_____	OPEN
5.	Propeller Area	_____	CLEAR
6.	Ignition Switch to Both Position, then	_____	START
7.	Oil Pressure	_____	CHECK
8.	Radio & Electrical Equipment as Required	_____	ON

DAILY PREFLIGHT INSPECTION, CONTINUED

3. Engine

		Test Aircraft (P/A Demo)	
1.	Oil Level (Run engine 3 min prior to checking)	_____	CHECK
2.	Propeller – Nicks, Cracks & Security	_____	CHECK
3.	Carburetor Attachment & Induction System	_____	SECURE
4.	All Pipes & Hoses – Leakage, Wear & Security	_____	CHECK
5.	Exhaust & Muffler Springs, Cracks, Attachment	_____	CHECK
6.	Coolant Level & Color	_____	CHECK
7.	Engine Mounts	_____	SECURE
8.	Electrical Cables – Wear & Security	_____	CHECK

4. Empennage

1.	Stabilizer Leading Edge Trim Attachment	_____	CHECK
2.	Elevator Push-Pull Tubes & Horn Attachment	_____	CHECK
3.	Elevators & Rudder – Free Movement, Security	_____	CHECK
4.	Upper & Lower Tail Cables	_____	SECURE
5.	Tail Wheel for Inflation & Wear	_____	CHECK
6.	Tail Tie-Down	_____	REMOVE

5. Port Wing

In addition to carrying out checks as for the Starboard Wing:

1.	Fuel Cap Securely Attached	_____	CHECK
2.	Pitot Tube Clear of Obstruction-Cover Removed	_____	CHECK

BEFORE TAKE-OFF

Test Aircraft (P/A Demo)

1.	Hatches as Required (closed but not locked during water operation)	_____	CHECK
2.	Seat Belts & Shoulder Harness On	_____	SECURE
3.	Trim – Full Up for Take-off	_____	SET
4.	Fuel – Double Check	_____	ON
5.	Electric Fuel Pump, if Fitted	_____	ON
6.	Flaps - 20°	_____	SET
7.	Engine Run Up 3500 RPM	_____	COMPLETE
	L & R Ignition - RPM drop-not less than 300	_____	CHECK
	Carb Heat, if fitted – note RPM drop	_____	CHECK
	Engine Instruments (Temps) & Ammeter	_____	CHECK
	Minimum Oil Temperature 130 ° F	_____	CHECK
8.	Throttle Reduced to Idle	_____	1700 RPM
9.	Radios Frequencies etc., if Fitted	_____	SET
10.	Transponder (if fitted)	_____	SET
11.	Strobe Lights (if fitted)	_____	ON
12.	Clearance	_____	AS REQD

BEFORE TAKE-OFF – (ADDITION FOR WATER OPERATION)

1.	Undercarriage UP & LOCKED	_____	CHECK
2.	Bilge Pump	_____	ON/OFF

TAKE-OFF

1.	Throttle Maximum 5800 RPM	_____	OPEN
2.	LAND ONLY: Elevator Control Forward to Lift Tail	_____	AS REQD
3.	Lift Off	_____	46-52 mph
4.	Accelerate to	_____	65 mph
5.	Climb Out and When Established Retract Undercarriage (Ground Operation)	_____	COMPLETE
6.	At Safe Height Reduce Flaps to 10°	_____	

ENROUTE CLIMB

1.	Airspeed	_____	63 mph
2	Throttle	_____	5500 RPM
3.	Flaps Set	_____	UP
4.	Fuel Pump	_____	OFF

CRUISE

1.	Throttle As Required	_____	4900 –5200 rpm
2.	Speed	_____	80-90 mph
3.	Trim	_____	AS REQD

DESCENT

Test Aircraft (P/A Demo)

1.	Fuel Contents	_____	CHECK
2.	Throttle Set	_____	AS REQD
3	Carb Heat to Prevent Icing	_____	AS REQD

BEFORE LANDING – DOWN WIND CHECK

1.	Canopies Closed but Not Locked	_____	CHECK
2.	Seat Belts & Shoulder Harnesses	_____	SECURE
3.	Carburetor Heat (if fitted)	_____	AS REQD
4.	Fuel Contents	_____	CHECK
5.	Fuel Pump	_____	ON
6.	Undercarriage for GROUND LANDING	_____	**DOWN**
	Over Center Lock	_____	CHECK
	Undercarriage for WATER LANDING	_____	**UP**
	Over Center Lock	_____	CHECK
7.	Flaps Set	_____	10°

LANDING – LAND OPERATIONS

1.	Airspeed Approach	_____	65-75 mph
2	Flaps Set	_____	20°
3.	**Undercarriage – DOUBLE CHECK**	_____	**DOWN**
4.	Touchdown	_____	46-52 mph

LANDING – WATER OPERATIONS

1.	Airspeed Approach	_____	65-75 mph
2	Flaps Set	_____	20°
3.	**Undercarriage – DOUBLE CHECK**	_____	**UP**
4.	Canopies Closed But Not Locked	_____	CHECK
5.	Touchdown – CARE in Glassy Water Conditions	_____	46-52 mph

AFTER LANDING

1.	Wing Flaps	_____	UP
2.	Fuel Pump	_____	OFF
3.	Strobe Lights	_____	AS REQD

SECTION 5 – PERFORMANCE

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AFTER LANDING – Water Operations – Docking & Beaching

In the case of Docking or Beaching the following points are recommended to assist in effective & safe operation.

		Test Aircraft (P/A Demo)
1.	Radio	_____ OFF
2.	Headsets	_____ REMOVE
3.	Seat Belts & Harnesses	_____ RELEASE
4.	Undercarriage DOWN/UP & LOCKED	_____ AS REQD
5.	Canopies	_____ OPEN
6.	Ropes	_____ READY
7.	Ignition – When Required	_____ OFF
8.	Master Switch	_____ OFF

SHUT DOWN

1.	Radio	_____ OFF
2.	All Electrical Equipment	_____ OFF
3.	Ignition Switch	_____ OFF
4.	Master Switch	_____ OFF

SECURING AIRCRAFT

1.	All Radio & Electrical Equipment	_____ OFF
2.	Ignition Switch	_____ OFF
3.	Master Switches	_____ OFF
4.	Controls Tethered with Seat Belt	_____ SECURE
5.	Canopies	_____ LOCKED
6.	Pitot Tube Cover	_____ FITTED
7.	Chocks	_____ LOCATED
8.	Tie-Downs	_____ SECURE
9.	Cockpit/Engine Covers Fitted	_____ AS REQD

TAKE-OFF PERFORMANCE CHART – TEST AIRCRAFT

Pressure Altitude – 0 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet						
Distance to 50 Feet						

Pressure Altitude – 2,500 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet						
Distance to 50 Feet						

Pressure Altitude – 5,000 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet						
Distance to 50 Feet						

Pressure Altitude – 7,500 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet						
Distance to 50 Feet						

PERFORMANCE CHARTS – INTRODUCTION

The charts in this Section contain data establishing runway and waterway lengths for take-off, landing and climb performance at a gross weight of 1370 lbs.

TAKE-OFF PERFORMANCE – GENERAL

The maximum gross weight for take-off shall not exceed the maximum take-off weight specified in Section 2 of this Manual.

The take-off distance (ground run in feet) with full throttle, flaps deflected 20° and a take-off safety speed of 50 mph can be determined from the following chart. The take-off distances are for a hard surface runway and/or waterway. Soft ground and/or wet grass will increase the land take-off distance and pilots should satisfy themselves that adequate runway is available to cover these conditions.

The take-off distance can be read from the table, at the appropriate values of pressure altitude and outside air temperature. For values of temperature and altitude not listed, interpolation between the values in the table is permitted.

Ground Take-off: Before commencing the take-off roll, check that the gear is in the fully "down" and locked position. To do this check that the over center lock indicator is in the full forward position. After take-off retract the gear only after the take-off safety speed is reached and the aircraft is established in the climb.

Water Take-off: The aircraft may be taxied slowly in the water with the gear in the down position, when transitioning from land or water. Check that the gear is retracted before commencing the take-off run.

CLIMB PERFORMANCE

The climb performance can be determined from the following chart. This chart assumes that maximum take-off power is used.

CLIMB PERFORMANCE CHART

	Test Aircraft	(P/A Demo)
Altitude Feet	ROC f.p.m.	ROC f.p.m.
O	_____	400
1,000	_____	373
2,000	_____	348
3,000	_____	323
4,000	_____	299
5,000	_____	276
6,000	_____	254
7,000	_____	233
8,000	_____	212
9,000	_____	192
10,000	_____	173
11,000	_____	154
12,000	_____	137
13,000	_____	120
14,000	_____	104

Note: Climb Data is for Standard Atmospheric Conditions.
i.e. 59° F and 29.92 H.g.

SAMPLE TAKE-OFF PERFORMANCE CHART – (P/A DEMO)

Pressure Altitude – 0 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet	522	312	155	546	326	163
Distance to 50 Feet	1078	742	459	1128	776	480

Pressure Altitude – 2,500 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet	683	408	203	714	427	213
Distance to 50 Feet	1411	970	600	1476	1015	628

Pressure Altitude – 5,000 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet	906	541	270	948	566	282
Distance to 50 Feet	1872	1287	796	1958	1347	833

Pressure Altitude – 7,500 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet	1237	739	368	1294	773	385
Distance to 50 Feet	2555	1757	1087	2673	1839	1137

LANDING PERFORMANCE – GENERAL

	Test Aircraft	(P/A Demo)
Minimum Approach Speed 20° Flap	_____	58 mph
Normal Approach Speed: 20° Flap	_____	63 – 69 mph

The landing distances (ground run in feet) that appear in the chart have been calculated by using the gross weight of 1370 lbs.

The landing distance can be read from the table, at the appropriate values of pressure altitude and outside air temperature. For values of temperature and altitude not listed, interpolation between the values in the table is permitted.

These distances are derived using the above minimum approach speed with 20° of flap and engine at idle. After touchdown maximum braking is used to bring the aircraft to a stop. These distances are for a hard level surface. Wet and/or slippery surfaces will increase these distances and pilots should satisfy themselves that adequate runway length is available to cover these conditions.

In the case of water landings, full reduction of power after touchdown and application of full up elevator below 25 mph will result in best speed reduction and reduced landing distance covered.

Ground Landing: Check that the gear is fully extended in the "down" and locked position. To do this, check that the over center lock indicator is in the full forward position. In the event that the gear cannot be extended, use a grass runway and land the aircraft on the hull. Minimal damage will result.

Water Landing: Check that the gear is fully retracted and locked in the "up" position.

Note: In the interest of safety and good airmanship, pilots should include in the pre-landing check schedule, the habit of double-checking the undercarriage for correct position, particularly when carrying out water landings. This practice is of particular importance.

CLIMB PERFORMANCE

The climb performance can be determined from the following chart. This chart assumes that maximum take-off power is used.

CLIMB PERFORMANCE CHART

	Test Aircraft	(P/A Demo)
Altitude Feet	ROC f.p.m.	ROC f.p.m.
O	_____	400
1,000	_____	373
2,000	_____	348
3,000	_____	323
4,000	_____	299
5,000	_____	276
6,000	_____	254
7,000	_____	233
8,000	_____	212
9,000	_____	192
10,000	_____	173
11,000	_____	154
12,000	_____	137
13,000	_____	120
14,000	_____	104

Note: Climb Data is for Standard Atmospheric Conditions.
i.e. 59° F and 29.92 H.g.

SAMPLE LANDING PERFORMANCE CHART – (P/A DEMO)

Pressure Altitude – 0 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet	655	438	265	685	459	277
Distance to 50 Feet	1492	1123	798	1522	1144	810

Pressure Altitude – 2,500 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet	718	480	290	751	503	304
Distance to 50 Feet	1555	1165	823	1588	1187	836

Pressure Altitude – 5,000 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet	787	527	319	824	551	333
Distance to 50 Feet	1624	1212	851	1661	1236	866

Pressure Altitude – 7,500 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet	856	579	350	905	606	366
Distance to 50 Feet	1702	1264	883	1742	1291	899

LANDING PERFORMANCE CHART – TEST AIRCRAFT

Pressure Altitude – 0 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet						
Distance to 50 Feet						

Pressure Altitude – 2,500 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet						
Distance to 50 Feet						

Pressure Altitude – 5,000 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet						
Distance to 50 Feet						

Pressure Altitude – 7,500 Feet						
	59° F. OAT			86° F. OAT		
Wind – mph	0	10	20	0	10	20
Ground Roll – Feet						
Distance to 50 Feet						

WEIGHT AND BALANCE INFORMATION

All aircraft are structurally and aerodynamically engineered for certain load conditions which result from specific weights and forces anticipated to occur in normal operations within its specified flight envelope. An aircraft's handling qualities and structural integrity may be seriously compromised if the weight and balance limits are exceeded in normal operations.

It is the pilot's responsibility to make sure the weight and balance limits are not exceeded as to weight, its location, distribution and security prior to any flight.

DEFINITIONS

EMPTY WEIGHT: The actual weight of the individual aircraft, including the structure, power plant, fixed equipment, any fixed ballast, unusable (in-flight) fuel, lubricants and coolant.

Original Empty Weight is determined by actually weighing the new aircraft before it is flown.

Any time a major alteration, modification, or repair is performed on the aircraft, its new Empty Weight must be determined by either weighing the aircraft again, or by accurate calculation of the weight changes and their effect on Empty Weight Center of Gravity (EWCG) location.

A major alteration or modification results from the addition, deletion, or redistribution of existing equipment and accessories, or from a repair which results in a significant increase of weight of the airframe or engine. For example, addition or removal of battery, radios, installation of a larger fuel tank or engine, painting the airframe, installation of heavier wheels and tires, etc.

GROSS WEIGHT: The maximum total weight for which an aircraft's structure and performance have been approved for normal operations by its manufacturer. It is the maximum weight (Empty Weight plus useful load) at which an aircraft can be safely operated. Maximum take-off weight must never exceed the published Gross Weight.

USEFUL LOAD: The total amount of weight available for pilot, passengers, baggage, cargo and in-flight usable fuel.

MAXIMUM/MINIMUM WEIGHTS: Due to certain balance, structural and aerodynamic considerations, sometimes a maximum or minimum weight may be specified for certain locations on the aircraft.

CENTER OF GRAVITY (C.G.): A point along an aircraft's longitudinal axis at which all the loads and forces are perfectly concentrated and balanced.

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PROCEDURE

All permanent equipment, options and accessories should be installed on the aircraft prior to weighing. All equipment options and accessories installed in the aircraft must be listed on the "installed Equipment List". That list becomes part of Weight and Balance Documents.

Be sure to remove any loose equipment, tools, etc. from the aircraft prior to weighing.

The fuel tank should be empty except for unusable fuel. If the fuel tank is not empty, then the exact amount of usable fuel in the tank must be determined. Usable fuel weight and its moment must be deducted from the empty weight calculations before E.W.C.G. can be accurately determined.

Oil and coolant tanks and reservoirs must be properly filled before weighing. These and any other liquids necessary for normal operations are considered part of an aircraft's empty weight.

If weighing id done outdoors, make sure there is no wind to affect the weight measurements. For best results, weigh indoors.

The scales must be calibrated correctly. All scales must be set on level ground.

Any equipment placed on the scales when weighing the aircraft, such as chocks or blocks, should be weighed separately and the weight deducted from the scale reading. These weights should be noted for reference, if necessary.

The aircraft must be weighed in a level flight attitude, both longitudinally (front to back) and laterally, as shown in the Weight and Balance Data Sheet.

Place a scale under each wheel of the aircraft. Record the weight of each scale on the "Empty Weight and Balance Form", as shown in the Weight and Balance Data Sheet.

Measure the exact horizontal distance from the datum line to center of spindles of wheel axles, as shown in Figure 2. Record these measurements on the Empty Weight and Balance Form.

If only one scale is used for weighing, be sure to level the wheels not being weighed before taking the scale readings. Remember, the aircraft must be in proper level flight attitude to ensure accuracy.

CENTER OF GRAVITY RANGE: The horizontal distance, along an aircraft's longitudinal axis, within which an aircraft has been found to be fully maneuverable at all specified design speeds, weights and loading configurations. All aircraft are designed to operate within a specific center of gravity range.

MAXIMUM FORWARD/MAXIMUM AFT C.G. LOCATIONS: Every aircraft has specified a forward most and rear most center of gravity location, along its longitudinal axis. These center of gravity location limits are given from a convenient reference (datum) on the aircraft.

DATUM: A convenient reference point along the longitudinal axis of an aircraft from which all horizontal measurements are taken.

WEIGHT: Actual individual weight of each item such as airframe, persons, fuel, baggage, cargo, etc., in pounds or kilograms.

ARM: Horizontal distance, along the longitudinal axis, measured between centroids of an object in the aircraft and the datum line.

MOMENT: Obtained by multiplying the weight of an item by its arm.

INSTALLED EQUIPMENT: All optional accessories and equipment permanently installed on an airframe or engine at the time of weighing. These items must be listed in the "List of Installed Equipment". Additions and deletions must be noted in the list each time they are made and new weight and balance calculations performed to determine the magnitude and effect of weight change. Ballast, if permanently installed, must also be listed.

BALLAST: A specific amount of weight attached in a specific location, which can be temporarily or permanently installed in an aircraft, to help bring its center of gravity within the required limits. If temporary ballast must be used for certain operations, the exact amount and its location must be placarded on the instrument panel within clear view of the pilot. The use of ballast increases empty weight and reduces useful load.

LOADING CHART: Used to calculate the actual center of gravity location of a ready to fly aircraft. Care must be taken not to exceed the maximum/minimum weight and balance limits stipulated for the aircraft. These limits are determined by structural, stability and control considerations of a particular design.

Sometimes it is necessary to adjust or reduce fuel, cargo, or passenger weights to remain at or below maximum allowable gross weight. A temporary or permanent ballast is sometimes necessary to bring the C.G. within specified limits. However, the maximum allowable gross weight should not be exceeded under any circumstances.

EMPTY WEIGHT CENTER OF GRAVITY CALCULATIONS

Complete each horizontal line of calculation by multiplying Weight by Arm to find the Moment.

Total the Weight and Moment columns.

Divide the Total Moment by the Total Empty Weight to determine the Empty Weight Center of Gravity Location, from the Datum.

In the example of Figure 1, the Empty Weight Center of Gravity (EWCG) is 114.02 inches aft of Datum. This distance in also known as the Empty Weight Arm.

ITEM	WEIGHT	ARM	MOMENT
LEFT WHEEL	292	85"	24,820
RIGHT WHEEL	294	85"	24,990
TAIL WHEEL	135	240"	32,400
TOTALS	721	- -	82,210

EWCG Location = 82,210 (Total Moment) ÷ 721 (Empty Weight) = 114.02 inches aft of Datum.

Figure 1

LOADED WEIGHT AND BALANCE CALCULATIONS

Write the Empty Weight, the Empty Weight Arm and the Moment in the top line of the Loading Chart located in the Weight and Balance Form.

Fuel weight is calculated at 6 lbs. per U.S. gallon.

Write in the actual Fuel Arm for your aircraft. See Weight and Balance Data Sheet for the correct distance to use.

Write in the actual weight of pilot/passenger. Be sure not to exceed the maximum recommended pilot/passenger weights.

Complete the Loaded Center of Gravity calculations as was done for the Empty Weight Center of Gravity Chart.

Complete this chart for each of critical loading conditions to be sure that your final Loaded C.G. position falls within the allowable C.G. limits, at all times, for all operations.

CRITICAL LOADING CONDITIONS

Each of the following eight critical loading conditions should be investigated for each aircraft, along with any other possible loading condition which may affect the weight and balance envelope of the aircraft. This is particularly important for those aircraft operated close to the C.G. limits.

Be sure the maximum individual weights and the gross weight are not exceeded at any time.

Be sure all loaded items are placed in approved locations aboard the aircraft.

1. Minimum Pilot Weight, with:
   a) Full Usable Fuel, Maximum Cargo
   b) Full Usable Fuel, Zero Cargo
   c) Zero Usable Fuel, Maximum Cargo
   d) Zero Usable Fuel, Zero Cargo

2. Maximum Pilot/Passenger Weight, with:
   a) Full Usable Fuel, Maximum Cargo
   b) Full Usable Fuel, Zero Cargo
   c) Zero Usable Fuel, Maximum Cargo
   d) Zero Usable Fuel, Zero Cargo

The Loaded Center of Gravity must fall within the specified Maximum Forward and Maximum Aft Limits for each particular aircraft.

An aircraft log book entry should be made whenever a weight and balance calculation is performed, indicating date, nature of change, results and name of person performing the calculation.

This document, in its entirety, is part of the Aircraft Legal Documents. It must be preserved and made available for inspection by interested parties upon request.

INTRODUCTION

This Section provides a general description and overview of the SeaRey and its systems

AIRCRAFT GENERAL DESCRIPTION

Type: Two Seat High Wing Amphibian

Engine Installation: Single Engine Pusher. Engine mounted up behind wing.

Wing: Strut braced, 2 spar, fabric covered. Full span flaps and ailerons.

Fuselage: Bolted aluminum tubular frame, bolt mounted into composite fiberglass hull and enclosed in fiberglass front deck and aft turtle deck.

Landing Gear: Conventional taildragger configuration. Mains and tail wheel retractable.

Tail Surfaces: Aluminum tube frame, fabric covered. Stabilizer incidence electrically adjustable for trim. Tail surfaces cable braced.

Control System: Dual control sticks and rudder pedals.

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DIMENSIONS

	Test Aircraft	(P/A Demo)
Wing Span	_____	30' 10"
Wing Chord – Tip	_____	48"
Wing Chord – Root	_____	76"
Wing Area – Incl. Ailerons	_____	157 sq ft
Overall Length	_____	22' 5"
Overall Height	_____	7' 2"
Aileron Area	_____	12 sq ft
Elevator Area	_____	8 sq ft
Stabilizer Area	_____	16 sq ft
Rudder Area	_____	7 sq ft
Fin Area	_____	10 sq ft
Aspect Ratio	_____	6.06
Wheel Track	_____	78"
Tire Size – Mains	_____	480/400 x 8"
Tire Size – Tail	_____	280/250 x 4"
Cockpit Height	_____	3' 10"
Cockpit Width	_____	3' 10"
Cockpit Length	_____	4' 6"

FUSELAGE

General: The fuselage is basically an aluminum structure assembled from tube and fittings by bolting and riveting. This aluminum structure carries the structural loads in flight and during landings on the ground. The fuselage frame is bolted into the molded fiberglass hull which is then enclosed with a fiberglass forward deck and a fiberglass turtle deck, located aft. The molded hull carries the water loads during water landings.

Hull: The hull is molded from #1708 grade biaxial 45° woven fiberglass cloth and polyester resin and is coated on the outside surface with gelcoat. Typically, the hull is made up of fiberglass laminations with a foam or balsa sandwich core.

WINGS

General: The wing is constructed of aluminum tubes, riveted and bolted together. Some fiberglass and sheet aluminum fairings are used to define the airfoil contour at the leading edge and wing tips. The entire wing is covered with fabric. The wing has internal drag bracing and two external lift struts. The outboard section of the leading edge is fitted with a leading edge fiberglass extension to ensure good behavior during stalls.

Drag Bracing: Each wing is braced in the drag plane by two multi-stranded stainless steel cables which are located between the root rib and a compression member at approximately BL 105". Compression loads between the forward and rear spar are carried by three major aluminum tube compression members. A wing brace diagonal strut is also located between the inner and middle compression strut members. Two of these compression members are located at each end of the drag brace bay. The other is located mid way between the two in the center of the drag bay.

Wing Ribs: The wing ribs, ten of which are used in each wing panel, are constructed from aluminum tube and riveted to the forward and rear spars. Each rib consists of an upper and lower section which is attached to the spars separately. A vertical compression member is then located between the top and bottom sections. Pop rivets are used for all rib assembly and attachments.

Leading Edge: The leading edge of the wing is formed by the forward spar aluminum tube. A leading edge cuff is installed on the outer section of the leading edge of each wing. This is formed from sheet aluminum and pop riveted to the wing structure.

Wing Tip Bow: The wing tip bow is formed by an aluminum tube bolted to the wing structure. The wing tip is faired with a fiberglass fairing riveted to the aluminum wing structure.

CONTROL SURFACES, CONTINUED

WING FLAPS: The manual flaps are actuated by a central lever which is located above the pilot's right shoulder. This lever actuates the flaps by a pushrod system. A single pushrod connects the lever to an idler near the rear wing spar attachment. This idler is then connected to the flaps by two pushrods, one to each side of the fuselage. The idler acts as an interconnection between the flaps.

Alternatively: The optional electric flaps are activated by a three-position switch which activates a linear actuator motor.

Extension of the wing flaps is achieved by pulling down on the flap lever and selecting the appropriate setting by inserting the lever under one of the locating bolts.

Alternatively: The optional electric flaps are extended by activating the three-position switch

AILERONS: The aileron system is a combination of a bellcrank, tension cables, torque tubes and six push-pull rods.

A push rod runs from the lower end of each control stick to a central bellcrank, located under and between the two seats. Cables also connected to the bellcrank run back under and between the seats and connect to a torque tube which rises vertically, immediately in front of the forward main pylon structure and is located just aft of the front wing spar attachment. This torque tube extends from the bottom of the fuselage to a nylon bearing which is located on the underside of the square aluminum tube which is attached to the main pylon section and to which the wings attach. The torque tube has a horn at the upper end. This is connected by a push-pull tube to a horn which exits the wing. Inside the wing is a torque tube which runs out to about half the semispan. This is supported by nylon bearings. The outer end of the wing torque tube is fitted with another horn which connects to the aileron horn via a push-pull rod.

VERTICAL FIN: The lower end of the leading edge tube and rudder posts plug into holes in the end of the tail boom aluminum tube. These are secured with AN bolts. The vertical fin is secured by tensioned stainless steel cable bracing which spans from the leading edge and aft vertical post of the fin to the outside edges of the stabilizer.

RUDDER: The rudder pedals are connected directly to the rudder by a stainless steel cable system, which runs down each side of the main fuselage tube structure. The rear section of the cables run inside plastic sleeves which act as guides.

WINGS, CONTINUED

Lift Struts: The wing struts are extruded anodized aluminum. The struts have a streamline section.

Wing Attachment Fittings: Both the forward and rear main spars attach to the fuselage by bolting to an aluminum fitting located on the center line of the aircraft.

Fabric: The fabric system used to cover the wings and tailplane surfaces is Stits Polyfiber.

CONTROL SURFACES – GENERAL

All control surfaces are constructed from aluminum tube and covered with Polyfiber fabric. The control surfaces are assembled by bolting and/or riveting aluminum tubes together using AN hardware. In several locations, the tubes are separated and supported by using plastic saddles and/or spacers at joints. The control surfaces all have similar hinges. These are small stainless steel 'U' brackets that are bolted to the surfaces to be hinged.

FLIGHT CONTROLS – SURFACE DEFLECTIONS

Control Surface Deflections: The control surface deflections are as follows:

Ailerons:	17° up
	14° down
Elevators:	23° up
	24° down
Rudder:	30° left and right
Flaps:	Neutral Flap Position - 0°
	First Flap Position - 13°
	Second Flap Position - 24°
	Third Flap Position - 35°

Note: All control surface deflection tolerances are + or - 3°

These should be checked using a protractor and the control linkages and stops adjusted as necessary to ensure that these deflections are achievable. The angles are all measured from the neutral control position which in all cases is the center line of the surface to which they are attached. A moveable stabilizer is used to provide longitudinal trim. The leading edge is moved up and down by an electric servo motor. When measuring the elevator deflection angles, the leading edge of the stabilizer should be positioned in the maximum upward position.

CONTROL SURFACES, CONTINUED

STABILIZER: The stabilizer is attached to the vertical fin by small brackets, approximately 6" above the main fuselage tube. Additionally, the stabilizers are secured by stainless steel cable bracing which are bolted to the vertical fin and the underside of the main fuselage boom tube. The leading edge of the stabilizer is also connected to a cable on the outboard end and has an electric linear actuator which acts as the aircraft trim system.

ELEVATORS: The elevator is actuated by an aluminum push-pull tube. This runs straight back from the control stick assembly to the elevator horn. The push rod exits the rear of the fiberglass hull where a rubber boot is provided to seal the opening at the transom.

ELECTRIC TRIM SYSTEM: The adjustable leading edge of the stabilizer acts as the aircraft trim system. An electric servo motor is located at the forward base of the lower leading edge of the vertical fin and is mounted to the top of the fuselage boom tube. The trim motor is connected to the leading edge of the stabilizer by way of a scissors action lever mechanism. The entire stabilizer is moved positively up and down at the leading edge to trim the aircraft.

The electric trim is operated by using the trim switch which is located on the top of the throttle handle between the two cabin seats (or alternatively on top of pilot-side control stick).

Forward movement of the switch will cause nose down trim and rearward movement will create nose up trim. **Note:** Full up trim should be used for all take-offs.

UNDERCARRIAGE

General: The landing gear is of the conventional taildragger configuration. The main gear and tail wheel are manually retractable for water operations. The main gear swings upward and the tail wheel swings forward and upward when retracted. NOTE: The tail wheel is extended downward by a stainless steel cable linked to the undercarriage system. Care should be taken when moving the aircraft backward, as damage may result if excessive pressure is exerted on the cable.

The Gear Retract Lever is in the full forward position when the undercarriage is "down". When the undercarriage is "up" the Gear Retract Lever is in the full rearward position.

Alternatively, the optional Hydraulic Gear Retraction is activated by an electrically driven hydraulic pump which drives two hydraulic cylinders to raise and lower the landing gear. There is no gear retract lever with the hydraulic configuration.

UNDERCARRIAGE, CONTINUED

Retraction Mechanism: The landing gear is manually retractable and is actuated with a lever located forward and center of the seats. Rubber boots are provided at the two openings in the hull sides where the main gear legs extend from the retraction mechanism.

Gear Retraction: To retract the landing gear, reach forward to the gear retract handle and squeeze the gear retract lever that is located on the handle, to release the over center locks and pull the handle in a rearward motion. Once the handle is about half way back, release the gear retract lever and complete the cycle of raising the undercarriage by pulling the handle all the way back until the gear locks in the "up" position. Then push the over center lock indicator fully forward to make sure that the undercarriage is fully up and locked. If one or both of the over center lock indicator cables are under tension and are not fully forward, this indicates that a gear leg is not fully locked.

Alternatively, for the Hydraulic Gear Retraction: To retract the landing gear, the gear retraction switch is set to the "up" position, then push the gear lock release handle fully forward and hold for at least 5 seconds, or until there is visible upward movement of the main gear taking place, before releasing the gear release handle.

Gear Extension: To extend the gear down, first squeeze the gear retract lever to release the over center locks, then in a forward motion, push the gear retract handle forward and at the same time releasing the gear retract lever while continuing to push the gear retract handle all the way forward until the gear locks in the "down" position. Then check that the over center lock indicator is fully forward which indicates that the gear is fully down and locked.

Alternatively, for the Hydraulic Gear Retraction: To extend the gear down, set the gear retraction switch to the "down" position. Listen for the two individual clicks indicating that the landing gear locks have locked the gear in the "down" position.

WARNING

WATER LANDINGS

Pilots should make absolutely certain that the undercarriage is in the **"UP"** and locked position at all times, when carrying out water landings. Serious aircraft damage and personal injury may result if this is not observed.

UNDERCARRIAGE, CONTINUED

Main Wheels: The wheel rims are two piece split hub aluminum alloy. The two halves of the wheels are 8" in diameter and are assembled with bolts.

Tires: The tires are 480/400 x 8". Inflate to 20 - 25 psi for operation on sealed runways.

Tail Wheel: The tail wheel is a standard Maule wheel assembly. The tire is a 280/250 – 4". Inflation pressure is 20 – 25 psi. Lubricate all bearings frequently. The tail wheel is steerable and has a break-away feature which allows 360° rotation of the wheel.

Wheel Brakes: Mechanical cable actuated brakes are fitted to the main gear. The brake drums are bolted to the wheel hubs with AN bolts. Brakes are cable actuated drum brakes.

The hand-operated brakes are applied by squeezing the brake lever which is located on the throttle handle.

Alternatively, for Hydraulic Brakes: The brakes are stainless steel discs which have hydraulically activated calipers.

The Hydraulic Brakes may be activated by either a single hydraulic lever on the control stick, or two foot-operated actuators

GROUND CONTROL

Effective ground control while taxiing is accomplished through the tail wheel steering using the rudder pedals. When a rudder pedal is depressed a spring tensioned stainless steel cable (which is also connected to the fin and water rudder) will turn the tail wheel.

Note: Because of the break-away capability of the tail wheel and the possibility of this occurring as a result of forces incurred during water operations, it is advised that when returning to a land operation, the rudder pedals be pushed left and right on finals, to re-engage the locking device of the tail wheel, thereby ensuring it is steerable.

BAGGAGE COMPARTMENT

The baggage compartment consists of two areas, each extending aft from behind the two passenger seats. Access to both areas is gained through the cabin over the passenger seats. When loading baggage or cargo into the compartments, measures should be taken to ensure that all items are adequately secured to avoid any potentially dangerous movement of baggage or cargo.

SEAT BELTS & INERTIA REELS

Each passenger seat is fitted with a seat belt. Optional inertia reel shoulder harnesses may also be installed.

To use the seat belts, insert the seat belt link connector into the seat belt buckle.

To remove the seat belt, simply lift the lever on the seat belt buckle.

SLIDING CANOPIES

The SeaRey aircraft can be flown with the Sliding Canopies in the open or closed position. It should be noted that if the canopies are fully opened in flight some minor buffeting may occur from disturbance to the airflow to the propeller and elevator system.

It is recommended that the canopies are in the closed but not locked position for all take-off and landing.

CONTROL LOCKS

The SeaRey does not have a control lock device. However, if the aircraft is parked in the outdoors, it is desirable that the seat belts or a bungee cord are used to secure the control column.

ENGINE – GENERAL

For more detailed information on the Rotax Engine and Systems, reference should be made to the Rotax Operators Manual.

The SeaRey is powered by a horizontally-opposed, four cylinder, liquid cooled heads, air cooled cylinders, carburetored engine with dry sump forced lubrication.

The engine is fitted with an electric starter, AC generator and a mechanical fuel pump (in case of Rotax 914, electric fuel pumps are used).

The propeller is driven via a reduction gear box with integrated shock absorber.

Fuel mixture is automatic and is controlled by an altitude compensating diaphragm in the carburetor.

ENGINE CONTROLS

Engine power is controlled by a throttle handle which is located between the two occupant seats. There are two cables attached to the throttle handle with both cables being linked to the two carburetors. The throttle operates in a conventional manner with the throttle being fully open when the handle is in the full forward position and in the full aft position the throttle is closed.

ENGINE INSTRUMENTS

Engine operation is monitored by the following instruments:

1 x Oil Pressure gauge
1 x Oil Temperature gauge
1 x Cylinder Temperature/Water Temp gauge
1 x Ammeter
1 x Tachometer

ENGINE OIL

Oil for engine lubrication is supplied from an oil collector reservoir and is circulated throughout the engine by an engine driven oil pump.

Oil is sucked by the oil pump from the reservoir to the engine with the oil returning under pressure to the collector reservoir. An oil filler cap and dip stick area located on the top of the collector reservoir. After extended engine shutdown (i.e. longer than 1 day) to ensure an accurate oil dip reading, the engine should be started and run for approximately 1 minute. The difference between Max and Min oil on the dip is 1 quart.

To drain the oil from the system, the oil line fittings (pickup and return) may be disconnected from the collector reservoir. The two reservoir retaining clamps can be loosened to allow removal of the collector reservoir. Remove reservoir and change oil. Reinstall reservoir and reconnect fittings. A new oil filter should also be fitted at each oil change. Reference should be made to the Engine Operator's Manual.

IGNITION SYSTEM

Engine ignition is provided by two solid state breakerless capacitor discharge units with interference suppression.

STARTER SYSTEM

The 12 volt electric starter motor is a reduction gear type with overrunning clutch. ATTENTION: Activate starter for periods no longer than 10 seconds with a 1 minute cooling interval.

CARBURETORS

The engine is fitted with 2 x Bing constant depression carburetors type 64/32. Mixture control is automatic and is governed by an altitude compensating diaphragm.

PRIMING SYSTEM

The carburetor is primed by fuel which is independently supplied to the carburetors. The primer draws fuel from its own fuel line pickup which accesses the tank. The fuel is pumped by a small manual primer pump located between and aft of the two occupant seats in the cabin. For the first start up of the day, 5 – 8 strokes of the primer are required prior to engine start up. For hot engine no further priming is necessary. For cold engine 2 – 3 strokes.

FUEL SYSTEM

Fuel Tank: The fuel tank is a polyethylene plastic molding. It is attached to the fuselage primarily by a nylon strap with additional location support provided by aluminum angles. Capacity of the tank is 18 gallons. A vertical pick up stem with filtering screen is located at the top and aft of the tank with approximately ½" clearance from the bottom end of the stem and the tank bottom.

Fuel Lines: Plastic fuel lines are used in the fuel system (in the Rotax 914 system, a combination of plastic and rubber hose e.g. MIL-H-6000 ¼" I.D. is used). Alternatively the MIL – 6000 ¼" I.D. hose can be used for the whole system.

Fuel Filter: A fuel filter is located directly behind the pilot's seat where it is readily visible and inspectable by the pilot. The filter has a clear bowl for ease of inspection

ELECTRICAL SYSTEM

General: The SeaRey operates on a 12 volt DC electrical system.

Battery: A 12 volt, 31 amp Hr sealed lead acid battery is used for the aircraft power supply. The aircraft is not fitted with a battery box. The battery is located in the forward fuselage in front of the rudder pedals.

Master Switch: The Master Switch is a split-rocker type switch labeled MASTER and is ON in the UP position and OFF in the DOWN position. The right half of the switch controls all electrical power to the aircraft. The left half controls the generator and power to the starter.

Normally both sides of the master switch should be used simultaneously, however the Battery side of the switch may be turned on separately to check or operate equipment while on the ground. The generator side of the switch, when placed in the OFF position, isolates the generator from the electrical system. With the switch in this position the entire electrical load is placed on the battery. Continued operation with the generator switch OFF will reduce battery power and cause electrical system failure.

A diagram of the Electrical System appears on the following page.

SECTION 8 – AIRCRAFT HANDLING, SERVICE AND MAINTENANCE

TABLE OF CONTENTS

ELECTRICAL SYSTEM

INTRODUCTION

This section contains recommendations for the proper ground handling and routine care, preventative maintenance and servicing of the SeaRey.

It is good practice to follow a planned schedule of lubrication and preventative maintenance based on climatic, environmental and flying conditions encountered in the locality where the aircraft is based and operated.

GROUND HANDLING

The aircraft is most easily and safely maneuvered by hand.

SINGLE PERSON HANDLING: The aircraft is easily moved by one person pushing on the trailing edge of the rudder. Because the rudder is also connected to the steerable tail wheel, gentle positioning of the rudder will also turn the tail wheel, thereby providing directional control.

TWO PERSON HANDLING: By positioning one person at each of the leading edges of the forward wing strut, forward or backward movement of the aircraft can be easily managed. Directional control is managed by differential pushing or pulling by the two people.

For turning the aircraft on a tight axis the break-away tail wheel feature will facilitate excellent maneuverability.

WATER HANDLING – MOORING & BEACHING

Proper handling and securing of the SeaRey in water operations can vary considerably, depending on the type of operation involved and the facilities available. Each operator should use the method most appropriate for his or her operation. Some of the more common mooring or beaching alternatives are as follows:

1. The aircraft can be moored to a buoy, using a suitable line attached to a stainless steel U hook bolted to the lower nose of the hull. The aircraft can then weather-cock into the wind.
2. The aircraft can be connected forward and aft to an endless line which is attached to a pulley and tied off from a beach, jetty, or marina.
3. With the aircraft's undercarriage lowered, it can be taxied up onto a ramp or beach. When carrying out this form of beaching, ensure that the control column is in the full elevator "UP" position when applying power to taxi the aircraft up the beach or ramp.

PARKING

When parking the aircraft it is always desirable to face the aircraft into the wind. If leaving the aircraft for any time or in stronger wind conditions, it is strongly recommended that the aircraft be securely tied down. Chocks front and back of the main landing gear is also recommended.

TIE-DOWN

Proper tie-down procedure is the best precaution against damage to the aircraft when parked in gusty or strong wind conditions. When tying down, the following points should be observed:

1. Tie-down ropes should be attached to both wings at the leading edge of the forward strut at the wing connection point.
2. A rope should also be secured to the tail wheel.
3. The front of the aircraft fuselage can also be tied down using the stainless steel U hook as an attachment point.
4. The control column can be secured by using the seat belts or a bungee strap.
5. Fit a suitable cover to the pitot tube.

JACKING

When a requirement exists to raise the aircraft off the ground, e.g. for the purposes of testing the undercarriage retraction, use of multiple jacks is necessary. Support points that may be used for jacking the aircraft include the extreme aft end of the hull at the transom, and the underside of the hull in the location of the landing gear. Cover jacks with soft material to avoid damage to hull.

If an individual main gear requires jacking, a suitable motor vehicle jack may be used by locating it securely under the axle assembly. Make sure the other main wheel and tail wheel are chocked forward and aft.

SERVICING & PREVENTATIVE MAINTENANCE

In addition to the Daily Preflight Inspection as set out in Section 4, complete servicing, inspection and maintenance requirements and recommendations are set out in the Airworthiness Maintenance Program at the end of this Section.

ENGINE SERVICING

For correct engine servicing and maintenance, reference should be made to the Rotax Operators Manual.

ENGINE CARE

The engine can be rinsed down with fresh water and sprayed with an anti-corrosion lubricant.

Particular care should be given to engine cleanliness and maintenance and more details on this can be found in the Rotax Operators Manual and the Airworthiness Maintenance Program.

INTERIOR CARE

Vacuuming of the seats, carpets and baggage compartment will keep these surfaces looking good. Occasional hosing out of the floor and pumping out with the bilge pump will keep this area fresh and clean.

SALT WATER MAINTENANCE AND CARE:

The following preventative maintenance is recommended for the SeaRey aircraft operated in salt water.

Preventative Corrosion Treatment
Prior to operating the SeaRey in salt water the following Preventative Corrosion Treatment is recommended:

Airframe
Apply Spray Lithium Grease to:

- All exposed AN nuts and bolts
- Control surface hinges
- Push-pull ball joints and threads
- Stainless steel swage ends
- Inside nylon stainless steel cable guides in aft boom tube underside area

Apply Anti-corrosion Lubricant to:

- Wing struts, strut attachment plates, jury struts, inside strut ends
- Wing float attachment tubes
- Push-pull rods
- Inside undercarriage legs
- Wheel housing, hubs and external brake mechanism
- Stainless steel cables
- Inside upper bulkhead cross tube
- All around and inside the aft boom tube area
- Spray down the main boom from the cockpit end
- Using a cloth dampened with Anti-corrosion Lubricant, wipe over all reachable aluminum surfaces of the fuselage frame in the cockpit area
- Water rudder springs
- AN Nuts and bolts in the aft boom tube under area

PROPELLER CARE

Preflight inspection should include a close examination of the propeller blades for nicks, cracks and any other damage. Wiping the blades with "Mr. Sheen" or a similar cleaner will remove oil, insects and stains. The application of a light film of Valvoline Lithium Grease on the aluminum leading edge of the blades will assist in preventing possible corrosion.

Checking for satisfactory propeller bolt tension should be included as part of the preflight inspection.

Regular and thorough inspection of the propeller will assist in long trouble free service.

LANDING GEAR

MAIN WHEEL TIRE (480/400 x 8) Pressure Range: 20 – 25 psi
TAIL WHEEL TIRE (280/250 x 4) Pressure Range: 20 – 25 psi

CLEANING AND CARE

Windshield and windows: The lexan windshield and windows should be cleaned with mild soapy water, rinsed in fresh water and wiped dry with a chamois.

Caution: Do not use any solvent based cleaners, spirits, fuel, glass cleaner, acetone, alcohol, etc. on the Lexan windows. If fuel should accidentally spill on the Lexan, flush quickly and liberally with water. Lexan will craze and rapid cracking will occur if fuel comes into contact with the Lexan.

PAINTED FABRIC AND FIBERGLASS SURFACES

Generally, all the painted surfaces can be kept bright and clean by washing with mild soapy water, rinsing with fresh water and wiping dry with a chamois.

For spot cleaning and removal of general stains, oil marks, insects, etc., Windex window cleaner is an excellent cleaning agent.

The central and aft location of the engine exhaust system results, over a period of time, in a buildup of a brownish exhaust deposit on the vertical fin and rudder. This deposit can be cleaned off with Windex and cloth.

SALT WATER MAINTENANCE AND CARE, CONTINUED

After each flight:

To minimize corrosion, wash the aircraft down liberally with fresh water at the conclusion of each day of salt water operations and wipe dry with chamois.

While hosing down pay particular attention to:

- All cracks, crevices and surfaces where salt can accumulate
- Windshield and canopy Lexan and rivets
- Canopy tracks
- Undercarriage legs, wheel and brake assembly
- Tail wheel mechanism
- Under side and inside of entire aft boom tube area
- Flush the boom tube by inserting hose in cockpit end of boom tube
- Flush around bilge area and pump out
- Struts and strut attachment points
- Flaps and ailerons, hinge attachments and push-pull rods
- Wing float attachment tubes

Recommended Corrosion Prevention Materials

Boeshield T-9 Anti-corrosion Lubricant
Corrosion X Anti-corrosion Lubricant
INOX Anti-corrosion Lubricant
CRC Lithium Spray Grease
Valvoline Lithium Grease
Ardrox

SALT WATER MAINTENANCE AND CARE, CONTINUED

Apply Valvoline Lithium Grease to:

- Stainless steel cables on the under side of the stabilizer
- Aluminum angles in the aft boom tube under area
- Tail wheel retract and rudder cables

Undercarriage

- Spray Anti-corrosion Lubricant down the inside of the undercarriage legs – it is recommended that this be done after every flight when the undercarriage has been extended into salt water
- Spray aluminum wheel hubs and outside brake assembly with Anti-corrosion Lubricant
- Spray all of the tail wheel support and retract mechanism with Anti-corrosion Lubricant
- Spray Lithium Grease on all undercarriage mechanism AN nuts and bolts, ball joint threads and ball ends. A topcoat of Valvoline lithium grease will provide added protection.
- Apply regular and liberal amounts of Valvoline lithium grease to all wheel bearings and spindles.
- Paint the main and tail wheel tires with silicone tire preserver. This will help prevent perishing of the rubber. Apply a similar material to the main gear rubber boots and transom rubber boot to prevent perishing.

Note: When the aircraft is on the water and the undercarriage is lowered, a small volume of water may seep up into the undercarriage leg. With the undercarriage selected in the down position, spraying of Anti-corrosion Lubricant into the top of the undercarriage leg will act to disperse moisture and prevent corrosion.

Engine

- Spray all major nuts and bolts including mounting bolts with Spray Lithium Grease.
- Spray exhaust pipe springs with Spray Lithium Grease.
- Spray propeller nuts and bolts with Lithium Grease.
- Spray Anti-corrosion Lubricant over exhaust pipes and muffler – mop excess with cloth.
- Spray cast aluminum crank case and reduction gear box with Anti-corrosion Lubricant
- Spray Anti-corrosion Lubricant around spark plugs
- Treat throttle cables with Anti-corrosion Lubricant
- Apply Valvoline Lithium Grease to carburetor linkages
- Spray linkage springs with Spray Lithium Grease

CONTINUING AIRWORTHINESS MAINTENANCE PROGRAM, CONTINUED

PROPELLER

- ❑ Check propeller blades and hub for nicks, splits, cracks, excessive wear or other damage.
- ❑ Check for correct balance and tracking.
- ❑ Check propeller bolt condition.
- ❑ Check for proper propeller bolt torque. (AN4 bolt torque value: 10 ft. lbs. 8mm bolt torque value: 16 ft. lbs.)

ELECTRICAL SYSTEM

- ❑ Clean and re-gap spark plugs. Replace spark plugs at engine manufacturer's specified intervals.
- ❑ Check spark plug caps and spark plug wires for condition and security.
- ❑ Check ignition switches, wires and ignition coil leads for condition and security.
- ❑ Check electric starter for condition.
- ❑ Check battery for condition and security.
- ❑ Check battery cables for condition and security.
- ❑ Remove and clean battery terminals if corrosion is visible.
- ❑ Clean battery mount and check for security.
- ❑ Check battery mount area for evidence of corrosion or acid leakage.
- ❑ Check alternator wiring for security and condition.
- ❑ Check EGT, CHT and water temperature probes and wiring for security and condition.

FUEL SYSTEM

- ❑ Check fuel tank for secure placement, leaks, cracks, abrasions or interior contamination.
- ❑ Check fuel tank venting for proper operation and security.
- ❑ Check fuel hoses and primer hoses for condition (pliability, leaks, blockage, etc.) and security.
- ❑ Check fuel primer bulb and fuel pump(s) for condition and security.
- ❑ Check fuel filters for condition (blockage, leaks, etc.) and security.
- ❑ Replace fuel filters every 50 hours or as needed.
- ❑ For Rotax 582 and 618: Check rotary valve lubrication system tank and hoses for condition and security.
- ❑ For Rotax 581 and 618: Check oil injection system tank and hoses for condition and security.
- ❑ For Rotax 912, 912S and 914: Check oil tank and hoses for condition and security.

CONTINUING AIRWORTHINESS MAINTENANCE PROGRAM

Perform the following every 100 hours or annually, whichever comes first, unless noted otherwise:

ENGINE

- ❑ Refer to and follow your engine manufacturer's manual for maintenance procedures on engine.

ENGINE MOUNTING

- ❑ Inspect engine mounting parts, hardware and bolts for condition (wear, distortion, cracks, etc.) and security.
- ❑ Check engine mount bolts and nuts for security.
- ❑ Inspect rubber engine mounts for condition (deterioration, distortion, cracking, etc.). Replace if necessary.

LUBRICATION

- ❑ For Rotax 912, 912S, 914: Drain engine oil and replace with fresh oil (every 50 hours)
- ❑ Check engine drain plug and oil sump plug for metal particles.
- ❑ Replace oil filter each time oil is changed.
- ❑ For Rotax 582 and 618: Drain gearbox oil and replace with fresh oil after first 10 hours and every 100 hours thereafter. Check gearbox drain plug for metal particles. If present, remove gear box and check for any obvious wear to gears or bearings. If worn, replace. If not, clean and reassemble.

CARBURETION AND AIR INTAKE SYSTEM

- ❑ Clean and re-oil or replace air filters.
- ❑ Check carburetors for proper position and security.
- ❑ Check throttle linkage for condition and operation.
- ❑ Remove and clean float bowls.
- ❑ Check for carburetor synchronization.
- ❑ For Rotax 582 and 618: Check needle jet, jet needle and retaining clip for condition. Replace if necessary.

EXHAUST SYSTEM

- ❑ Check exhaust system for cracks, leaks and security (every preflight). Replace manifold gasket if necessary.
- ❑ Check mounting hardware and springs for condition (cracks, wear, spring fatigue) and security (every preflight).
- ❑ Apply a bead of silicone rubber on springs to extend spring life.
- ❑ Lubricate exhaust joints with high temperature anti-seize compound.
- ❑ Check for adequate clearance from other parts, hoses, wires, etc.

CONTINUING AIRWORTHINESS MAINTENANCE PROGRAM, CONTINUED

CABIN

- ❑ Check seats for security.
- ❑ Check seat belts for condition, secure attachment, and proper operation.
- ❑ Check rudder cables, rudder pedals and attachments for operation, condition and security.
- ❑ Check control sticks and mounting hardware for freedom of movement and security.
- ❑ Check flap control mechanism for condition and security.
- ❑ Set aircraft hull carefully on proper supports. Check landing gear retraction mechanism and over center locks for proper operation, condition and security.
- ❑ Check instruments for security and for proper operation and clear markings.
- ❑ Check instrument panel for condition and security.
- ❑ Check instrument panel wiring for condition and security.
- ❑ Check stabilizer trim actuator mechanism for proper operation and wear.
- ❑ Check bilge pump switch for proper operation of bilge pump.
- ❑ Check pitot system plumbing for proper operation, condition (obstructions) and security. Note: Never blow directly into pitot tube while it is connected to the airspeed indicator.
- ❑ Check radios and antennas for condition and security.
- ❑ Check throttle cables and attachment hardware for wear, proper tension and freedom of movement.
- ❑ Check aileron push-pull rods and torque tube, mounting hardware and control horns for binding, obstacle clearance, security, etc.
- ❑ Check tie rod ends for freedom of movement, security and condition.
- ❑ Check rudder cables for adequate clearance from obstruction, chafing, and freedom of movement.
- ❑ Lubricate all cables that go through plastic nylon guides with a lithium or silicone lubricant to prevent friction in these areas.
- ❑ Check fuel filler cap for proper seal and condition.
- ❑ Check fuel hoses for proper routing, condition and security. Replace if cracked or deteriorated.

CONTINUING AIRWORTHINESS MAINTENANCE PROGRAM, CONTINUED

COOLING SYSTEM

- ❑ Check all coolant lines and hoses for security and condition. Replace hoses if deteriorated.
- ❑ Tighten all hose clamps.
- ❑ Drain and replace coolant with a mixture of 50% coolant and 50% distilled water.
- ❑ Remove radiator cowling and check radiator for security and condition.
- ❑ Clean radiator fins if dirty or obstructed. Reinstall cowling.

FUSELAGE AND EMPENNAGE

- ❑ Check all fabric covering for tears, punctures and tautness.
- ❑ Check drain grommets for proper drainage.
- ❑ Check fiberglass hull, deck and turtle deck for cracks, condition and security.
- ❑ Check bilge pump and hose for condition and security. Clear any blockage away from bilge pump and hose.
- ❑ Check windshield, sliding canopies and windows for visibility, condition and security. Clean lexan surfaces with soft chamois cloth only.
- ❑ Check fuselage frame for signs of distortion, fatigue, cracking and corrosion.
- ❑ Check boom tube for condition (straight, distortion, wear, cracking, etc.) and for security.
- ❑ Check canopy tracks and latches for condition and operation.
- ❑ Check elevator hinge pins and bushings for excessive play.
- ❑ Check rudder hinge pins and bushings for excessive play.
- ❑ Check rudder control cables for security and condition (wear, fraying, elongation, etc.).
- ❑ Check horizontal stabilizer mounting bolts for condition and security.
- ❑ Check horizontal stabilizer support cables for security and condition (wear, fraying, elongation, etc.).
- ❑ Check stabilizer trim mechanism for proper operation.

CONTROL SYSTEM

- ❑ Check aileron, flap, rudder and elevator hinges for excessive play or wear.
- ❑ Check rudder cables for clearance, freedom of movement, fraying, wear, etc.
- ❑ Check control surfaces for proper operation, freedom and range of movement.
- ❑ Check control attachment bolts, nuts, tie rod ends, etc. for visible wear and security.
- ❑ Check aileron, flap, rudder and elevator control horns for cracks, elongated holes, wear, etc.
- ❑ Remove and inspect for wear (replace as necessary) all control attachment bolts, nuts, hinge pins, brackets, etc.
- ❑ Check aileron control system for condition and proper operation. Replace components as necessary to keep excess play to a minimum.
- ❑ Check flap control system for condition and proper operation.
- ❑ Check elevator control system for condition and proper operation.
- ❑ Lubricate all tie rod ends, torque tube bearings, cables and hinge bolts with lithium grease or lithium spray grease every 25 hours.

WINGS

- ❑ Check wing struts for distortion, cracks, damage, etc. and for security.
- ❑ Check wing strut attach points for condition and security.
- ❑ Check wing spar attach points for condition and security.
- ❑ Check fabric for tears, punctures, and tautness.
- ❑ Check wing tips and leading and trailing edge spars for security and condition.
- ❑ Check wing spars and wing ribs for visible deformation or overstressing.
- ❑ Check top surface of wing for wrinkles and irregularities that could indicate possible rib or spar damage.
- ❑ Remove all inspection covers and check interior of wing structure for condition and security.
- ❑ Check drain grommets for proper drainage.

CONTINUING AIRWORTHINESS MAINTENANCE PROGRAM, CONTINUED

LANDING GEAR

- ❑ Check entire main landing gear structure, steel tubes and attach points for wear, cracking, bending, etc.
- ❑ Check main gear legs for adequate drainage.
- ❑ Take weight off main gear legs and check for play at attachment fittings.
- ❑ Remove main gear legs and spindles and inspect for fatigue, cracking or excessive wear every 100 hours.
- ❑ Check main gear leg spindle and spindle housing retaining bolts for security.
- ❑ Check brakes for cleanliness, and for drum and pad wear.
- ❑ Check brakes for proper operation and security.
- ❑ Check tires for proper air pressure and tread wear.
- ❑ Check hubs for cracking or damage.
- ❑ Check main wheel and tail wheel bearings for wear, end play and smooth rotation every 100 hours, replacing if necessary.
- ❑ Check tail wheel for cleanliness, condition and proper operation, freedom of travel and security.
- ❑ Check tail wheel steering mechanism for condition and security.
- ❑ Check tail wheel/airframe mounting points for fatigue, cracking, and security.
- ❑ Take weight off tail wheel and check swivel operation and for play at attachment fittings.
- ❑ Check tail wheel strut for condition (cracks, etc.) and for security.
- ❑ Check tail wheel retraction bungee cords for stretching, chafing, fraying, and security. Replace every 200 hours or annually, whichever comes first.
- ❑ Check tail wheel retraction and extension cables for condition and security.

DOCUMENTS AND MARKINGS

- ❑ Check aircraft registration, airworthiness certificate, radio licenses, and weight and balance data for currency and accuracy.
- ❑ Check insurance documents, as required.
- ❑ Check for proper display of registration markings, "experimental" marking, passenger warning labels, instrument/gauge markings and placards, etc.

GENERAL

Flight Manual Supplements covering the special operations for which this aircraft is approved are listed below.

The operations listed shall be conducted in accordance with the limitations and instructions contained in the appropriate Supplements included in this Manual.

SUPPLEMENT TITLE

TABLE OF CONTENTS

LIST OF INSTALLED EQUIPMENT

Aircraft Model: ______________________ Date Weighed: ______________________

Aircraft Serial Number: ______________________ Weighed By: ______________________

Registration Number: ______________________ ______________________

All equipment installed in the aircraft at the time of weighing must be listed on this form. The back of this sheet may be used and additional sheets attached, if necessary. All Sheets used become the official list of installed equipment and the list becomes part of the official aircraft records. This list should be kept with the aircraft documents at all times.

INSTALLED EQUIPMENT

REF	ITEM	WEIGHT	ARM	MOMENT

WEIGHT AND BALANCE FORM

Aircraft Serial Number:_____ Date:_____

Registration Number:_____ Owner:_____

LOADING CHART

ITEM	WEIGHT SOLO	WEIGHT DUAL	ARM	MOMENT SOLO	MOMENT DUAL
Empty Weight					
Fuel			108″		
Pilot			73″		
Passenger			73″		
Baggage			110″		
TOTALS			- - -		

SOLO: Loaded C.G. Location = Total Moment/Total Weight =_____inches aft of Datum.
DUAL: Loaded C.G. Location = Total Moment/Total Weight =_____inches aft of Datum.

WEIGHT AND BALANCE LIMITS
SeaRey

	Maximum Weight	Minimum Weight
Pilot Weight	250 lbs/114 kilos	130 lbs/59 kilos
Passenger Weight	250 lbs/114 kilos	0 lbs/0 kilos
Maximum Fuel Weight	108 lbs/49 kilos	
Maximum Gross Weight	1370 lbs/623 kilos	
Maximum Forward C.G. Limit	97.5 inches Aft of Datum	
Maximum Aft C.G. Limit	105 inches Aft of Datum	
Datum:	70 inches in front of wing leading edge (from root of wing to front of fiberglass nose)	

WEIGHT AND BALANCE DATA SHEET

Aircraft Model:_____ Date Weighed:_____
Aircraft Serial Number:_____ Weighed by:_____
Registration Number:_____

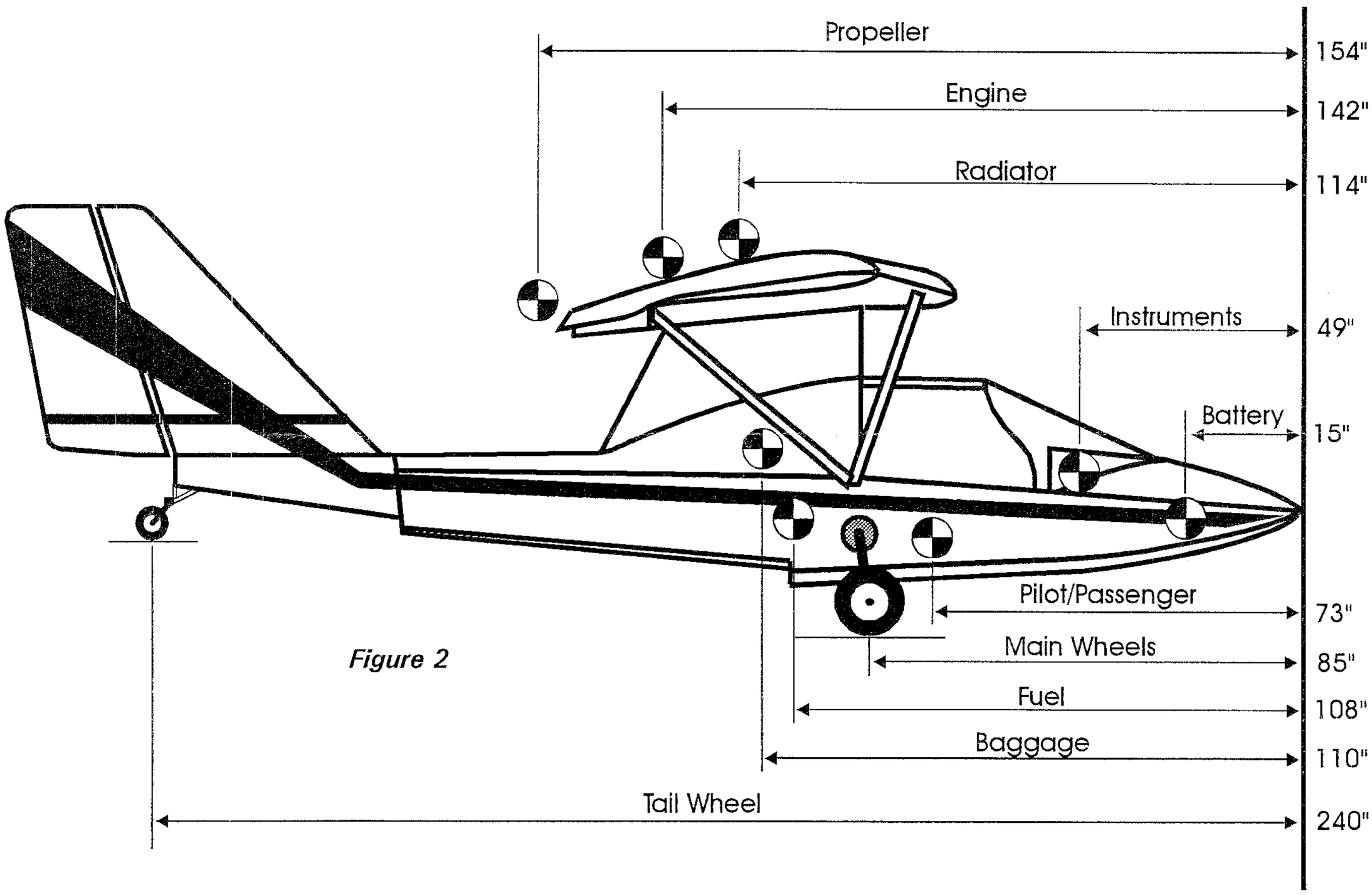

Figure 2

EMPTY WEIGHT AND BALANCE FORM

ITEM	WEIGHT	ARM	MOMENT
Left Wheel			
Right Wheel			
Tail Wheel			
TOTALS			

TAKEOFF CHECKLIST (WATER / LAND)

1: Set flaps to second position down.

2: Set trim to full nose up (for two occupants).

3: (WATER TAKEOFF) Check for landing gear UP

4: Electric fuel pump on (if equipped).

5: Rotate for liftoff at 50 mph and climb at 70 mph

6: Reduce flaps to first position for climb after safe altitude over any obstacle is achieved.

7: Reduce flaps to zero position once desired altitude is attained.

LANDING CHECKLIST (WATER / LAND)

1: <u>WATER LANDING</u>: Check gear UP
<u>LAND LANDING</u>: Check gear DOWN

2: Set flaps to second position down.

3: Set approach speed (70 – 80 mph)

4: Electric fuel pump on (if equipped).

5: Adjust trim to comfortable setting.