FOXCON
Aviation & Research Pty Ltd

291 Gormley's Road Seaforth Mackay QLD 4741
Ph/Fax: 07 4959 0252 Mobile: 0418 747 751
www.Foxcon.com
Aviation@Foxcon.com

Flight Manual

Terrier T200 LSA

Aircraft Registration Number:	21-5161
Aircraft Serial Number:	#040701
Power plant:	Subaru EA-81
Power plant Serial No:	544848
Propeller:	Bolly BOS3
Date of First Flight:	05.03.08
Current Owner:	
Address:	

Empty Weight	Moment	Date Weighed
323kg	698.26	25.02.08

NOTE: Please keep all the above information current, and notify Foxcon Aviation & Research Pty Ltd of any changes in ownership, address, or aircraft equipment and/or modifications.

You are reminded that as part of the LSA certification, any modifications to the aircraft, including any change in the instrument or engine package supplied from the factory, has to be approved by Foxcon Aviation & Research Pty Ltd.

Table of Contents

1.0 Introduction

This is an Advanced Ultralight Aeroplane of composite construction.

The Foxcon LSA TERRIER T200 aircraft is a factory built aircraft. Each aircraft is subjected to factory flight test program to determine that particular aircraft's performance and characteristics complies with the design standard.

The purpose of this manual is to provide guidance to owners and mechanics who wish to operate, undertake maintenance, repairs, and alterations on the Terrier T200 LSA. **If in any doubt, please contact the manufacturer.**

This Flight Manual applies only to the particular aircraft identified by the registration marking and serial number on the Cover Page and contains the airworthiness limitations and essential operating data for this aircraft.

The Flight Manual shall be carried in the aircraft on all flights.

The pilot in command of the aircraft shall comply with all requirements, procedures and limitations with respect to the operation of the aircraft set out in the Flight Manual for the aircraft.

Amendments shall be issued by Foxcon Aviation & Research Pty Ltd as necessary and will take the form of replacement pages with the amendment date at the bottom of the page.

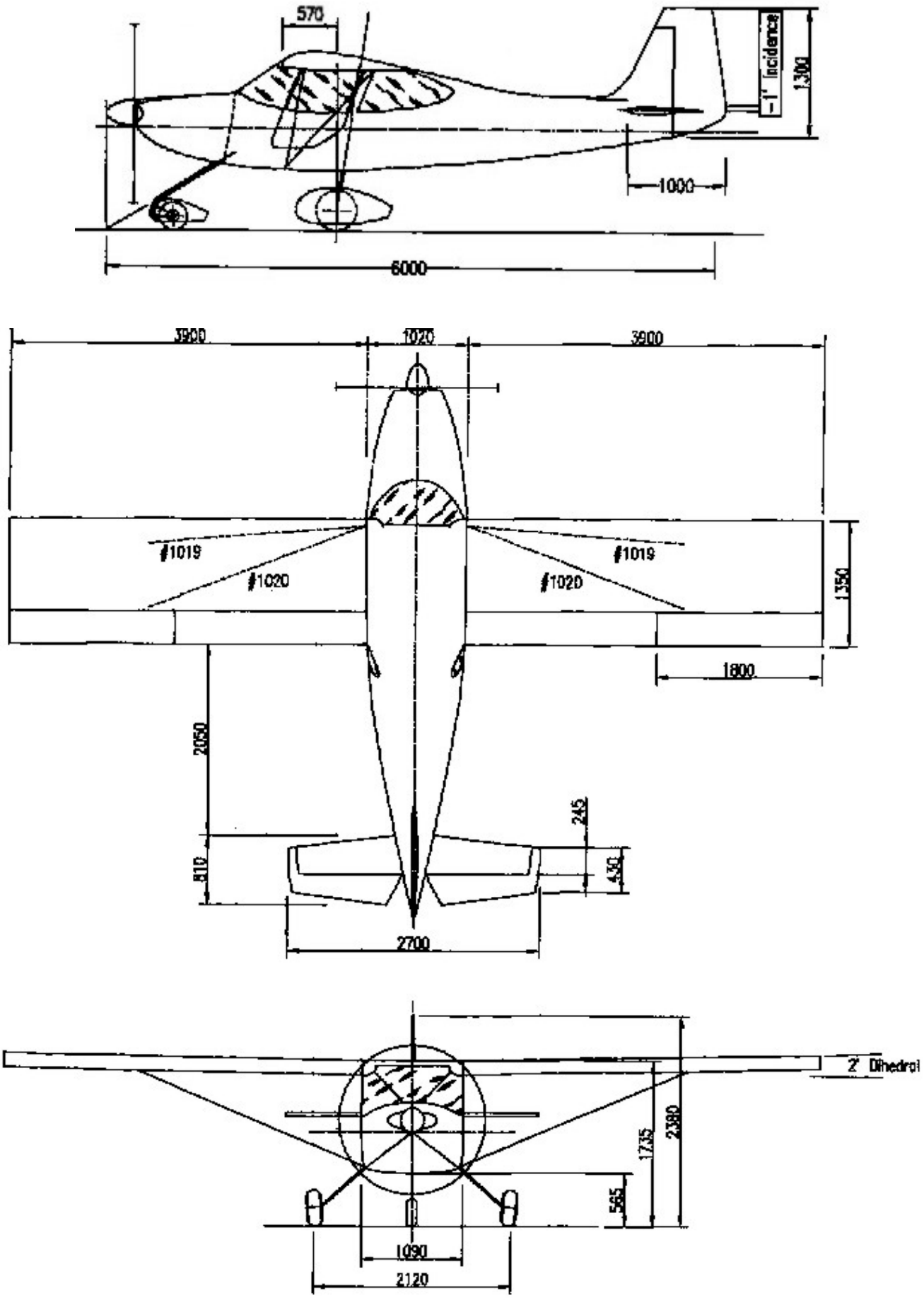
Interim / temporary amendments may be issued in the same manner and are to be inserted as directed. These amendments will be issued on coloured pages and will take precedence over the stated affected page. It is the owner's responsibility to incorporate in this manual all such amendments, and to enter the date of incorporation and his signature on the appropriate Amendment Record Sheet.

No entries or endorsements may be made to this Flight Manual except in the manner and by persons authorised for the purpose.

It is the responsibility of the owner to maintain this Manual in a current status when it is being used for operational purposes.

Owners should contact Foxcon Aviation & Research Pty Ltd whenever status of their Manual is in question.

2.0 Overall Dimensions



3.0 Specifications

Engine	Subaru EA 81
Wing Span	8.70m
Length	6.10m
Empty Weight	334kg
Gross Weight	600kg
Fuel Capacity	88L
Landing Gear Track	2.12m
Baggage	30kg
Design Load (Ultimate +6g/-4g)	+4g/-2g @ 600kg
Airfoil Section	Modified Chris Mk 4

4.0 Limitations

4.1 Operating limitations, instrument markings and basic placards necessary for the safe operation of the airplane, its engine, standard systems and standard equipment. Observance of these operating limitations is required.

4.2 The aircraft shall be operated so that limitations and instructions included in this section are observed.

4.3 Type of Operation
VFR by Day
NO Aerobatics, including Spins.
Side Slips are not approved with flaps extended (flap MAY blank elevator)

4.4 Airspeed Limitations
Airspeed limitations and their operational significance are shown below.

Speed	Knots	Remarks
VNE Never exceed	125	Do not exceed this speed in any operation.
VNO Normal Operations Speed	38-110	
Caution Range	110-120	Only fly at these speeds in smooth air.
VA Maneuvering speed (at Gross Weight)	85	Do not make full or abrupt control movements above this speed.
VFE Maximum flap extended speed	70	Do not exceed this speed with flaps down.
VSO	38	Full flaps 600 Kg MTOW

4.5 Airspeed Indicator Markings
Airspeed Indicator Markings and their operational significance are shown below.

Marking	Knots	Significance
White Arc	38 -70	Full-flap operating range. Lower limit is max. weight Vso in landing configuration. Upper limit is max. speed permissible with flaps extended
Green Arc	38 -110	Normal operating range. Lower limit is Take-off Safety speed. Upper limit is max. structural cruising speed
Yellow Arc	110 -120	Operations must be conducted with caution and only in still air
Red Line	125	VNE

4.6 Weights and Loading
Do not exceed under any circumstances.

MTOW Maximum Take Off Weight	600kg
Maximum Landing Weight	600kg

4.7 Powerplant Limitations

Instrument	Yellow Arc	Green Arc	Red Radial Line/Arc
Oil temp.	60° -90° C	90° -110° C	140° C
Oil Pressure	0,8 – 2,0 bar	2,0 – 5,0 bar	7 bar
Water Temperature		60° -120° C	130° C

Minimum Oil Temperature for Take Off		50° C
Minimum Oil Pressure	In Level Flight or climb	2 bar
	In Descent	0.8 bar
Maximum Water Temperature		130°C
Maximum RPM for all operations		5000
Full Throttle Static RPM	Not Above	4600
	Not Under	4200

4.8 Other Limitations

4.9 Authorised Maneuvers and Associated Limitations
Aerobatic maneuvers, including spins, are not permitted.

4.10 Engine Start, Operating Temperature
MAX 50° C MIN -20° C

4.11 Smoking
Prohibited.

4.12 Maximum Air Temperature for Operations
50° C for take off at gross weight.

4.13 Maximum Permissible Number of Occupants
Two (including Pilot).

4.14 Flights with Door(s) Open
Not permitted.

4.14a Flights with Door(s) Removed (before take-off)
Exercise caution and limited to 80 knots

4.15 Maximum Crosswind Velocity
20 knots (for experts only)

4.16 Maximum Baggage Weight
30 Kg provided rear Centre of Gravity is not exceeded.

4.17 Maximum G Factors
Limit +6g/-4g

4.18 Centre of Gravity

Forward Limit
2242mm aft of DATUM at 600kg
2227mm aft of DATUM at 440kg or less

Rear Limit
2404mm aft of DATUM at all weights

DATUM 2000mm forward of wing leading edge

5.0 Normal Operations

Speeds for Normal Operation
The following speeds are based on a maximum weight 600 Kg and may be used for any lesser weight.

Takeoff:	**Knots**
Take off, 1st Stage Flap	42
Short Field Take off, 1st Stage Flap	40
When Clear obstacles retract flaps and climb at	60-75
Climb, Flaps Up:	**Knots**
Normal	75
Best Rate of Climb, at low altitude	75
Note: Best Obstacle clearance gradient is with 1st Stage Flaps; but do not maintain this condition for longer than necessary as this may cause excessive engine temperatures	
Landing Approach: (MTOW)	**Knots**
Normal Approach, Flaps Full	45
Short Field Approach, Flaps Full.	42
Missing Approach (go around)	**Knots**
Apply full power; allow speed to increase to	42
Retract Flap to 1st Stage	
Then retract flap fully and continue to climb at or above	60
Maximum Recommended Turbulent Air Penetration Speed	90
Maximum Demonstrated Crosswind Velocity	20

6.0 Checklist & Procedures

Pre-flight Inspection
Prior to flight, the aircraft should be inspected in accordance with the following checklists.

NOTE
Visually check airplane for general condition during walk-around inspection. In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces. Also, make sure that control rods and cables are free of ice and move freely.

6.1 Pre-flight Inspection Checklists

1 Fuel		
1	Fuel Quantity	Check level in tank through visual
2	Water Check	Before first flight of the day & after each refuelling, drain small quantity of fuel from fuel drain valve & check for water & sediment.
3	Fuel Filler Cap	Check secure on each wing
2 Empennage		
2	Control Surfaces	Check freedom of movement & security
3		Check freedom of movement & security
3 Right Wing – Trailing Edge		
1	Aileron	Check freedom of movement & security
2	Flap	Check security
3	Control Rods	Check aileron & flap control bolts & nuts & flap control rod for security. Check rod ends for freedom of rotation & excessive movement
4 Pitot Tubes		
1	Static & Dynamic Source	Remove cup, check for blockage
5 Right Wing		
1	Wing	Control for damages
2	Main Wheel & Tyres	Check for security. Proper tyre inflation & wear or damage
3	Wing Mount Bolts and Struts	Check for security
6 Nose		
1	Propeller & Spinner	Check for nicks & security
2	Cowling	Remove and check security of engine components & systems, particularly mounts, spark plugs, wiring, fuel lines, baffles, check for oil leaks.
3	Engine Oil & Cooling Liquid Level	Check & top up if necessary. Clean up any spilt oil.
4	Cowling	Replace and check clips fastened & secure
7 Left Wing		
1	Main Wheel & Tyre	Check for security. Proper tyre inflation or damage
2	Wing Mount Bolts and Struts	Check for security
3	Wing	Control for damages
8 Left Wing – Trailing Edge		
1	Aileron	Check freedom of movement & security
2	Flap	Check security
3	Control Rods	Check aileron & flap control bolts & nuts & flap control rod for security. Check rod ends for freedom of rotation & excessive movement
9 -Cabin		
1	Flight manual	Available in the aircraft
2	Ignition Switches	OFF
3	Master Switch	OFF

4	Fuel Shutoff Valve	ON
5	Seatbelts and Shoulder Harnesses	Check condition and security
6	Ailerons	Check for free rotation & excessive movement.
7	Elevator	Check for free rotation & excessive movement,
8	Rudder	Check free security & free movement.
9	Flap Control	Check for free movement & bolts secure.
10	Throttle controls	Check for full & free travel
11	Brake lever	Check for free travel & pressure.

6.2 Before Starting Engine

1	Pre-flight Inspection	COMPLETE
2	Seatbelts & Harness	ADJUST & LOCK
3	Fuel Shutoff Valve	Both ON
4	Radio/Intercom	OFF
5	Brakes	TEST & SET
6	Set Instruments	Instruments SET

6.3 Starting Engine – Cold Engine

1	Carburettor Heat	OFF
2	Choke	ON
3	Throttle	25%
4	Fuel Boost Pump	ON
5	Propeller Area	CLEAR
6	Master Switch	ON
7	lgnition Switches	ON
8	Joystick	FULL BACK
9	Start Button	PRESS
10	Check all engine instruments for function	
11	Choke	CLOSED after warm up completed

IMPORTANT: Check the engine oil pressure. If you do not see oil pressure within 10 seconds, shut down the engine immediately and check the cause.

6.4 Starting Engine -Hot Engine

Proceed as for cold engine above, but choke to be closed

6.5 Warm-Up and Functional Check

Warm-up the engine with a fast idle of 1500 -2000 RPM until the oil temperature reaches 50 degrees C. During this phase, the cooling is insufficient due to reduced airflow. It is therefore advisable not to shorten the warm-up time by running the engine at higher RPM. The aircraft should be pointed into wind to allow additional cooling air. As soon as the oil reaches 50° C, it is possible to do the run-up.

6.6 Before Take Off

1	Brakes	CHECK
2	Cabin Doors	CLOSED & LATCHED
3	Flight Controls	FREE & CORRECT
4	Flight instruments	SET
5	Fuel Shutoff Valve	Both ON
6	Elevator Trim	NEUTRAL (if present)
7	Flaps	SET FOR TAKEOFF
8	Ignition Check	Throttle to 2000 RPM Switch OFF No. 1 Ignition (key switch) and check if engine still running. Switch ON the No. 1 Ignition & switch OFF the No. 2 Ignition and check if engine still running Switch No. 2 Ignition ON.
9	Power Check	Throttle to 4500 RPM Open the throttle fully & slowly to check the maximum RPM being produced. Wind conditions may effect, but as an average 4300 RPM should be seen.
NOTE If the RPM is found to be more than 300 RPM lower than normal, the engine should be examined to determine the reason.		
10	Idle Check	Throttle to idle position & check that the engine runs smoothly. With too low an idle speed, or rough running, the cause must be located & corrected to avoid the potential for an in-flight stoppage
11	Carburettor Heat Check	Throttle up to 4000 RPM Pull out the Carburettor Heat Control. Return the Carburettor Heat Control to the Full IN or cold position.

6.7 Taxi Instructions

Normal taxi is provided with throttle, nose wheel and brakes. The right application and coordination makes taxying easy. Let the speed of the airplane increase slowly and check the brakes operation and direction of operation. The front wheel is used to control normal operations on the ground. All taxi operations must be carried out under the lowest speed to ensure non-overloading of the landing gear. Be sure, that along the landing field are no obstacles during the taxi operation.

6.8 Taxi with headwind

Keep the joystick slightly forward to ensure that the nose wheel will be firmly on the ground and allow for easier operating.

6.9 Taxi with tail wind

Keep the joystick in the neutral position to avoid the wind making the aircraft “nose dive" flight due the wind lifting the tail.

6.10 Taxi with cross wind

Keep the joystick "into the wind" to hold balanced wings. The directions will be held by correctly use of vertical rudder.

6.11 Take Off
The take off methods depend on various coefficients: height and distance of the next obstacle, kind of the wind, surface, outside temperature, maximal weight at take off. In addition it's necessary to note, that under the speed of 30 knots it is not possible to read airspeed indicator correctly.

6.12 Normal takes off (fully loaded)
Check for airplanes in the area and on final approach and taxi to the middle of the runway, put flaps into take-off position, slowly introduce the throttle to maximum.. As the take off speed is reached, let the airplane take off and help with a gentle pull backwards on the joystick normally at about 40-45 knots.

6.13 Short Take Off
Set one notch of flaps, this gives the best gain in lift with the lowest increase in drag. Apply full brake, feed full throttle, release brakes at full RPM and as the airspeed hits 40 Kts, pull the stick back. As soon as the wheels leave the ground, relax the back pressure ***slightly*** until the airspeed reads 60 Kts, (the increase in speed will generate more lift). Once past the obstacle, relax the back pressure ***gradually*** until airspeed gets to 75 Kts, then slowly retract the flaps. Continue normal climb out. **NEVER use full flap for take off.**

6.14 Take Off with Obstacles
Follow instructions as by the short take off after the T.O. rise up and increase the speed in ground effect to 56 – 60 knots, be sure that you will miss the obstacle.

6.15 Take Off with Cross Wind
Keep the flaps in the neutral position and follow the instructions for a normal takeoff (except for flaps) keep the runway direction with the rudder pedals. Rise the nose up gently, as usual and operate the joystick and rudder pedals in accordance with the wind direction, keeping the windward wing down.

6.16 After Take Off
At a safe altitude, decrease the engine RPM and monitor the speed. Operate the airplane as necessary, retract the flaps (recommended height 500 ft) and trim the plane.

6.17 Climb
The best climb will be reached at the speed of 75 knots, obtained under full engine speed. This will provide the greatest altitude gain in the shortest time.

6.18 Cruising Flight
4500 RPM (75 % power) speed 110 knots

6.19 Take Off

Normal Take Off		
1	Wing Flaps	1st Stage
2	Carburettor Heat	COLD – if present
3	Throttle	FULL.....OPEN
4	Elevator Control	Raise the nose
5	Climb Speed	50 knots until flaps retracted, then 70 knots.
6	At top of Climb, Fuel Boost Pump	OFF – if fitted

Short Field Take Off		
1	Wing Flaps	1st Stage
2	Carburettor Heat	COLD – if present
3	Brakes	APPLY
4	Throttle	FULL OPEN
5	Brakes	RELEASE
6	Elevator Control	Raise the nose
7	Take off Speed	40 knots

6.20 Landing
Warning: In case of protracted descent with minimal engine speed, the engine can sometimes rapidly cool and ice can be formed in the carburettor. Therefore we remind you to be aware of carburetor icing.

6.21 Normal Landing (at MTOW)
Fly the descent with power off and with flaps on the second position. During this phase keep the speed at 55-60 knots. After landing (which will be reached in approx. 40 knots), brake carefully with brakes. After the landing retract the flaps.

Note: Remember, that the landing is not finished after the landing, but after the engine is off. Be careful in this phase.

6.22 Short Landing
In the final landing phase use full flaps, decrease the descending speed to 40 knots and start to "flare" at about 2 ft. Remember that the stalling speed with full loading is in this case 38 knots. Land on main wheels.

6.23 Landing with Cross Wind

Use the wing method into the wind (joystick is in the wind direction) and apply opposite pedal to keep the runway direction.

Shortly before the landing, which should be done only on one main wheel, put the joystick in the middle and land on all 3 wheels under the gentle wind and on the main landing gear in a strong wind. In case of the strong wind keep the nose lowered and let the airplane slow down (don't brake). Provide the direction of the airplane by operation of vertical rudder.

The landing speed with cross wind should be increased. Maximum cross wind limit is 20 knots.

Note: As the airplane will be affected with the cross wind, it leads to rotation around its vertical axis with the wind direction. The application of flaps increases this tendency. For this reason the application of flaps in cross wind landings should be limited to prevent ground loops.

6.24 Aborted Landing
If it is necessary to abort the landing use full power. At the moment when sufficient speed or height is reached retract the flaps.

6.25 Stall
This airplane has good stability and flight features. The features of the stall of this airplane are normal and gentle. It will be possible to notice the stall coming on by the pull of the joystick.

6.26 Balancing the Stall
The construction philosophy of this plane is to climb at speeds just above the stall. For this reason the recovery from stall will be with minimal height loss. The airplane could be recovered from the stall very quickly by reducing pressure of the joystick, but absolutely avoid too sudden a manoeuvre to avoid unwanted tilt, and at the same time apply full throttle.

6.27 After Landing
Leave the runway and park the airplane.
Switch off the second ignition switch and stop the engine with keyed switch. Turn off all switches and fuel taps. Pull out the starter key and chock the wheels. Cover the pitot tube. Secure the airplane. Tie as required.

6.28 Enroute Climb

1	Airspeed	75 knots
2	Throttle	FULL OPEN
	NOTE: During climb, monitor the water & oil temperatures to avoid exceeding their limits. The aircraft has been tested to ensure adequate cooling in climb, therefore any excessive readings may indicate a malfunction. Should this occur, decrease the rate of climb in order to increase the airspeed for improved cooling.	

6.29 Cruise

1	Power	Not above maximum continuous power of 4800 RPM. 4200 – 4500 Normal
2	Elevator Trim	ADJUST (if fitted)

6.30 Before Landing

1	Seatbelts & Harnesses	ADJUST & LOCK
2	Carburettor Head	As required
3	Fuel Boost Pump	ON

6.31 Landing

Normal Landing		
1	Airspeed	50 knots
2	Wing flaps	1 stage
3	Touchdown	Main wheels first
4	Braking	Minimum required
Short Field Landing		
1	Airspeed	45 knots
2	Wing Flaps	2 stage
3	Power	REDUCE to idle as obstacle is cleared
4	Touchdown	Main wheels first
5	Brakes	APPLY AS REQUIRED
6	Wing Flaps	RETRACT AFTER THE STOP

6.32 Missed Approach

1	Throttle	FULL OPEN
2	Carburettor Heat	OFF
3	Airspeed	60 knots until clear of obstacles
4	Wing Flaps	Retract

6.33 Fuelling

SAFETY WARNINGS
Never prepare fuel in an area that is enclosed or where fumes could reach ignition point. DO NOT SMOKE or allow open flames or sparks in the vicinity. Never add fuel while the engine is running.

Use only approved fuel containers. Never transport fuel in an unsafe manner.

Always check for fuel contamination. Contamination is a major cause of engine failure. The best place to avoid contamination is at the source. Once your fuel is in the container a very hazardous potential exists. Use a clean safety approved storage container. Do not overfill the container -allow for expansion.

We recommend the use of a funnel filter.

The engine is designed for use with unleaded MOGAS and AVGAS.

Always earth the aircraft through the Earthing Point provided at the engine muffler.

Before first flight of the day, and after each refuelling, use a sampler cup and drain a small quantity of fuel from the fuel drain valve -check for water, sediment and contamination.

6.34 Filling the Tank
When fuelling from a pump to a full tank condition lift the nozzle out slightly for the last four litres and slow the speed down as you can create a siphon motion that will dump the last four litres out until the vent is above the fuel level. If this happens quickly remove the fuel cap to break the siphon. (**TAKE CARE OF WINDOWS!**)

6.35 Propeller Care
Full throttle run up over loose gravel is especially harmful to propeller tips. When takeoffs must be made over a gravel surface, it is very important that the throttle is advanced slowly. This allows the airplane to start rolling before high RPM is developed, and the gravel will be blown behind the propeller rather than pulled into it. When unavoidable small nicks appear in the propeller, they should be immediately fixed.

6.36 Noise Abatement
Increased emphasis on improving the quality of our environment requires renewed effort on the part of all pilots to minimize the effect of airplane noise on the public.

As pilots, we can demonstrate our concern for environmental improvement by application of the following procedures:

1 At altitudes under 2000 feet, avoid flying in close proximity to houses or over parks and recreational areas

2 During approach to or departure from an airport, climb after takeoff and descent for landing should be made so as to avoid prolonged flight at low altitude near noise sensitive areas.

6.37 Cleaning Of Windows
Cleaning only with window cleaner and a clean chamois. To prevent scratching move the chamois up and down, not in a circular movement. In this case we do not take any responsibility for damages.

6.38 Stopping the Engine
To stop the engine, turn OFF the second ignition switch and turn OFF the keyed switch or master switch.

7.0 Emergency Procedures

Emergencies caused by aeroplane malfunctions are rare if proper pre-flight inspections and maintenance are practiced. En route weather emergencies can be minimised or eliminated by careful flight planning and good judgement when unexpected weather is encountered. However, should an emergency arise, the basic guidelines outlined in this section should be considered and applied as necessary to correct the problem.

7.1 Airspeeds for Emergency Operation

Engine Failure After Takeoff	50 knots
Manoeuvring Speed (at all weights)	75 knots
Maximum Glide Distance, Still Air	75 knots
Precautionary Landing Approach with Engine Power	45 knots
Landing Approach Without Engine Power Landing Flaps Up Landing Flaps Down	 50 knots 45 knots

Note: A slightly higher speed may give better distance over the ground if gliding into wind; a slightly lower speed if gliding downwind.

8.0 Operational Checklists

8.1 Engine Failures

8.2 Engine Failure during Takeoff Run

1	Throttle	Idle
2	Brakes	Apply
3	Ignition Switches	OFF
4	Master Switch	OFF

8.3 Engine Failure Immediately After Takeoff

1	Move the control stick FORWARD to maintain Airspeed	45 knots at least
2	Fuel Shutoff Valves	Both OFF
3	Ignition Switches	OFF
4	Wing Flaps	as required
5	Master Switch	OFF

Note: A slightly higher speed may give better distance over the ground if gliding into wind; a slightly lower speed if gliding downwind

8.4 Airstart & Limitations

In the event that the engine is stopped during flight, it may be restarted by application of fuel & ignition.

Note : The engine cools quickly with the Propeller stopped. Choke may need to be used to start if time between restart is longer.

8.5 Fire

8.6 Fire during Start on Ground

1	Cranking	CONTINUE to get a start that would suck the flames and accumulated fuel through the carburettor and into the engine.	
If engine starts,			
2	Power	2500 RPM	
3	Fuel	OFF & allow engine to empty carburettor	
4	Engine	Inspect for damage	
If engine fails to start,			
5	Cranking	CONTINUE in an effort to obtain a start. If no start in 15 seconds : Shut off fuel & continue to crank for another 15 seconds.	
6	Engine	SECURE.	
		A Second Ignition Switch	OFF
		B Master Switch	OFF
		C Fuel Shutoff Valves	Both OFF
7	Fire	Extinguish using fire extinguisher, wool blanket, or dirt.	
8	Fire Damage	Have authorised people inspect, repair damage or replace damaged components or wiring before conducting another flight.	

8.7 Engine Fire in Flight

1	Throttle	CLOSED
2	Fuel Shutoff Valves	Both OFF
3	Ignition Switches	OFF
4	Master Switch	OFF
5	Cabin Air	CLOSE
6	Airspeed	75 knots (if fire is not extinguished, increase glide speed to find an airspeed which will provide an incombustible mixture).
7	Forced Landing	Execute (as described in Emergency Landing Without Engine Power).

8.8 Electrical Fire in Flight

1	Master Switch	OFF
2	All Other Switches	OFF
3	Vents/cabin air (*)	OPEN THE CABIN DOOR
If fire appears out and electrical power is necessary for continuance of flight:		
4	Master Switch	ON
5	Second Ignition Switch	ON
6	Fuses	CHECK for faulty circuit, **DO NOT** reset or replace.
7	Radio/Electrical Switches	ON one at a time, with delay after each switch until short circuit is localised.
8	Land as soon as possible to inspect for damage	

8.9 Cabin Fire

1	Master Switch	OFF
2	Vents/Cabin Air (*) / Door	OFF
3	Land as soon as possible to inspect for damage.	

8.10 Forced Landings

8.11 Airfield or Airstrip Emergency Landing without Engine Power

1	Airspeed	75 knots (flaps UP) Approach 45 knots (flaps DOWN)
2	Fuel Shutoff Valve	OFF
3	Fuel Pump	OFF
4	Ignition Switches	OFF
5	Wing Flaps	As required
6	Master Switch	OFF
7	Touchdown	Main wheels first
8	Brakes	As required

8.12 Open Field Precautionary Landing with Engine Power

1	Initial Airspeed	45 knots
2	Wing Flaps	1st Stage
3	Fuel Pump	ON
4	Selected Field	FLY OVER Note terrain and obstructions
5	Radio and electrical Switches	ON
6	Wing Flaps	2nd Stage (on final approach)
7	Touchdown	Main wheels first as for airfield soft landing
8	Second Ignition Switch	OFF
9	Master Switch	OFF
10	Brakes	as required

8.13 Ditching (Forced Water Landing)

1	Radio	Transmit MAYDAY on area frequency, giving location and intentions.
2	Heavy Objects	Secure
3	Approach	High winds, heavy seas INTO wind. Light winds, heavy swells parallel to swells
4	Wing Flaps	Full Flap
5	Touchdown *	Near Stall Speed * Ditch must be done first with the tail.
6	Face	Cushion at touchdown with folded coat or cushion
7	Aeroplane	Release seat belts, evacuate through door access
8	Life vests	Inflate

8.14 Maximum Glide

For Maximum Distance in Still Air: 75 knots

To maximize distance achieved into wind, increase glide speed by approximately 1/3 of wind velocity.

8.15 Recovery from an Inadvertent Spin

While inadvertent spins are highly unlikely, should this occur, proceed as follows:

1	Throttle	IDLE
2	Ailerons	NEUTRALISE
3	Rudder	Opposite direction of spin and HOLD ON
4	Just AFTER rudder reaches the stop, move the control stick FORWARD far enough to break the stall.	
5	HOLD these control inputs until rotation stops. Premature relaxation of control inputs may extend the recovery.	
6	As rotation stops, neutralise rudder and make a smooth recovery from the resulting dive	

9.0 Other Procedures

9.1 Ignition Malfunction

A sudden engine roughness or misfiring is usually evidence of ignition problems. Switching from both ON to alternately switching each system OFF will identify which system is malfunctioning. Switch to the good system and proceed to the nearest airport for repairs.

9.2 Low Oil Pressure

1	**A rapid drop from normal indicated pressure to indication " 0 "**	
	Action	Observe for smell of oil
		Open cabin air vents
		Observe for signs of spilt oil on cowls, windscreen, and wing surface.
		If strong smell of oil and oil appearing on airframe, reduce power to minimum to sustain level flight and proceed to nearest landing area.
		Be prepared to make an emergency landing enroute, should the engine fail.
2	**Gradual reduction in oil pressure below observed normal position:**	
	Action:	Observe oil temperature indications
		If oil temperature is higher than normal indications and all other engine functions are normal, proceed to the nearest landing area, land and check oil levels and external oil system for leaks
		If oil level is low, top-up to full mark on dipstick
		Allow engine to cool, start engine, run to full power and recheck oil pressure
		If oil pressure readings are normal, proceed with flight, observing both oil pressure and temperature readings.
		If, after the run-up check, the oil pressure remains low, have the engine checked by an authorised person.

10. Performance

10.1 Stall Speeds
(In Knots and power off condition -Maximum Takeoff & Landing Weight)

Flap Setting	Zero	Stage 1 Takeoff	Stage 2 Landing
Vs	40-44 knots	38-42knots	36-40knots

10.2 Nature of Stall

Aircraft buffeting announce the stall.

10.3 Take Off & Landing Distances

Take Off	100 metres
Landing (Full Flap)	100 metres

10.4 Engine

Engine	Indicated Airspeed	Fuel
Cruise @ 4000 rpm	95 knots	13 LPH
Cruise @ 4300 rpm	100 knots	14 LPH
Top Speed 4500 rpm	110 knots	15 LPH

10.5 Weight & Balance

Why is weight and balance important?

Every airplane, to fly right, actually has to balance on a point (roughly 25% back from the leading edge of the wing). We will not go into the laws of physics here, just talk about the practicalities. If you grab a ball point pen and balance it on your finger, then mark the point of balance, tomorrow, putting your finger at the same spot will have it balance again. UNLESS someone has stuck a lump of putty on one end, then you would have to move your finger (airplane wings) to make it balance again, or get a SAME weight lump on the other end (if they were HEAVY lumps of putty, your finger/wings may now bend).

Same story with an airplane. Put a really heavy lump of luggage in, and you will either have to move the wings back to regain balance (very hard) or resort to some other means.

Right now -to put theory into practice, grab a sheet of paper and fold your favourite paper plane and fly it, then stick a lump of chewing gum on the tail and see if it still flies well.

So we need a way to discover how our airplane is balanced, and while you will not need to use this every flight, initially when you are planning a flight that may be near your maximum load, it would be a good idea to print the ready reckoner at the back of this manual and use it.

“What if I fly too far forward”? The aircraft will be hard to maintain a set altitude where you can relax in flight. When coming in to land, as the airplane slows and the elevators become less effective, it CAN plunge in nose first. Too far to the rear, flies very soggy, and as you are coming in to land, tail can stall abruptly, forcing the wing to stall as the tail falls away.

10.6 Weight and centre of gravity:

A wide centre of gravity range makes loading your Terrier easy. Set out below is a sample W & B sheet

See Appendix for blank weight and balance sheet and directions for use.

Easy Calculator - Is it Legal & In Balance			
Max Flight Weight 600Kg Fwd Limit 2242 mm behind DATUM, Aft 2404 mm At weights below 440 Kg, fwd limit 2227 mm			
EXAMPLE			
Item	**Wt Kg**	**Arm**	**Moment**
Basic Empty Wt.	345		787910
Front seat occupant 1	80	x 2390	191200
Front seat occupant 2	65	x 2390	155350
Baggage	10	x 3100	31000
Zero Fuel TOTAL	**500**	**Zero Fuel Moment**	**1165460**
Add Fuel (0.71 Kg per L)			
61 L x 0.71 Kg	**43**	x 2540	110007
Gross Weight	**543**		**1275467**
C of G Calculation		Divide by Weight	543
		RESULT	2348.9
At 2349 mm, (the **result** of above sum), the aircraft is between the limits of 2242 and 2404, so is safe to fly. (AND LEGAL)			

It is the pilot's responsibility to operate the aircraft within these limits

11.0 Definitions

11.1 Aircraft Flight Manual (AFM)
A document for each individual aircraft that contains the information necessary to operate that aircraft at the level of safety established by the applicable airworthiness requirements, with any additional instructions and information necessary. The certificated flight manual for the aircraft type forms the basis of the AFM, plus any other applicable amendments or supplements. Certain portions of a manufacturer's Pilot Operating Handbook (POH) may be approved as the AFM.

11.2 Light Sport Aircraft (LSA)
Light Sport Aircraft (LSA) regulations introduce a new category of aircraft. The category covers various types of sport aircraft for take off weights up to 600 kilograms (650 kgs for floatplanes). The regulations apply to both production built aircraft and kit built aircraft. Specification F2245

11.3 Speeds

11.3.1 Airfield Pressure Altitude
The Airfield Pressure Altitude is that altitude registered at the surface of the aerodrome by an altimeter with the pressure subscale set to 1013 millibars

11.3.2 Indicated Airspeed (IAS)
Indicated airspeed, which is the reading obtained from an airspeed indicator having no calibration error

11.3.3 Take Off Safety Speed
The 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 takeoff

11.3.4 Landing Safety Speed
The Landing Safety Speed is the speed chosen to ensure that adequate control will exist under normal conditions, including turbulence, to carry out normal flare and touchdown

11.3.5 Normal Operating Speed
This speed shall not normally be exceeded. Operations above the Normal Operating Speed shall be conducted with caution and only in smooth air

11.3.6 Maneuvering Speed (VA)
Maximum for maneuvers involving an approach to stall conditions or full application of the primary flight controls

11.3.6 Maximum Flap Extended Speed (VFE)
The highest speed permissible with wing flaps in the extended position

11.3.7 Maximum Structural Cruising Speed (VNO)
The speed that should not be exceeded except in smooth air, and then only with caution

11.3.8 Never Exceed Speed (VNE)
The speed limit that may not be exceeded at any time

11.3.9 Stalling Speed (VSO)
The stall speed or minimum steady flight speed at which the airplane is controllable in a specified configuration

11.3.10 Landing Configuration
Configuration at the most forward centre of gravity

11.3.11 Best Angle-Of-Climb Speed (VX)
The speed which results in the greatest gain of altitude in a given horizontal distance

11.3.12 Best Rate-Of-Climb Speed (VY)
The speed which results in the greatest gain in altitude in a given time

11.4 Meteorological Terminology

11.4.1 Outside Air Temperature (OAT)
The free static air temperature. It is expressed in either degrees Celsius or degrees Fahrenheit.

11.4.2 Standard Temperature
Standard Temperature is 15 degrees C at sea level pressure altitude.

11.4.3 Pressure Altitude
The altitude read from the altimeter when the altimeter's barometric scale has been set to 1013 mb (29.92 inches of mercury).

11.5 Engine Power Terminology

11.5.1 Brake Horsepower
The power developed by the engine.

11.5.2 Revolutions Per Minute (RPM)
Engine speed

11.5.3 Static RPM
The engine speed attained during a full-throttle engine run-up when the airplane is on the ground and stationary.

11.6 Airplane Performance and Flight Planning Terminology

11.6.1 Maximum Crosswind Velocity
The velocity of the crosswind component for which adequate control of the airplane during take off and landing was actually demonstrated during the certification tests.

11.6.2 Useable Fuel
The fuel available for flight planning

11.6.3 Unusable Fuel
The quantity of fuel that cannot be safely used in flight

11.6.4 Lph Litres Per Hour
The amount of fuel (in litres) consumed per hour

11.6.5 NMPL Nautical Miles Per Litre
The distance (in nautical miles) which can be expected per litre of fuel consumed at a specific engine power setting and/or flight configuration

11.6.6 g
The acceleration due to gravity

11.7 Weight and Balance Terminology

11.7.1 Station
Only two load stations are specified: i.e. Seat Station which is the centre of the fixed seats and Fuel Station which is the centre of the fixed fuel tank

11.7.2 C.G. Centre Of Gravity
The point at which an airplane, or equipment, would balance if suspended

11.7.3 C.G. Limits
The extreme centre of gravity locations within which the airplane must be operated at a given weight

11.7.4 Standard Empty Weight
The weight of a standard airplane, including unusable fuel, full operating fluids and full engine oil

11.7.5 Basic Empty Weight
The standard empty weight of optional equipment

11.7.6 Useful Load
The difference between the MTOW and the basic empty weight

11.7.7 MTOW Maximum Take Off Weight
The maximum weight approved for the start of the takeoff run

12.0 Abbreviations

AC	Advisory Circular
ACR	Aircraft Register
AD	Airworthiness Directive
AFM	Aircraft Flight Manual
ASTM	American Standard Testing Method
CoA	Certificate of Airworthiness
CoR	Certificate of Registration
CAO	Civil Aviation Order
CAR	Civil Aviation Regulation
CAS	Calibrated Airspeed
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation
FAA	Federal Aviation Administration (of the USA)
FAR	Federal Aviation Regulations (of the USA)
FM	Flight Manual
GIR	Ground Inspection Report
IAS	Indicated Airspeed
IoA	Instrument of Appointment
LSA	Light Sports Aircraft
MSB	Mandatory Service Bulletin
MTOW	Maximum Take-Off Weight
POH	Pilot Operating Handbook
RSOL	Radio System Operating Limitations
SAAA	Sport Aircraft Association of Australia
TC	Type Certificate
TAC	Type Acceptance Certificate
TACDS	Type Acceptance Certificate Data Sheet
TCDS	Type Certificate Data Sheet
VFR	Visual Flight Rules

13.0 Revision History

Enter and sign the list of revised pages in the manual into the spaces provided below. All revised pages should be clearly designated in the upper right corner of the page, also, any changes in page content should be clearly visible (e.g. marked with a bold vertical line)

Revision Number	Name of Revision	Date	Description	Signature	Date
1.0	Spelling corrections	15 Apr 08	Spelling Corrections - Various		

It is the responsibility of the owner to maintain this Manual in a current status when it is being used for operational purposes. Owners should contact Foxcon Aviation & Research Pty Ltd whenever status of their Manual is in question.

14.0 List of Valid Pages

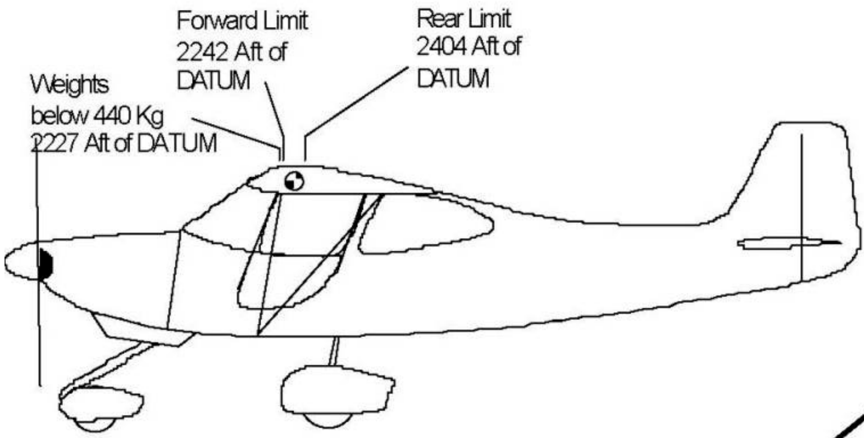
This manual contains_____31_ __original and_____0___revised pages listed below.

	Pages	State
Cover	1	Original
Table of Contents	2	Original
Introduction	3	Original
Overall Dimensions	4	Original
Specifications	5	Original
Limitations	6-7	Original
Normal Operations	8	Original
Checklist & Procedures	9-17	Original
Emergency Procedures	18	Original
Operational Checklists	19-21	Original
Other Procedures	22	Original
Performance	23-24	Original
Definitions	25-27	Original
Abbreviations	28	Original
Revision History	29	Original
List of Valid Pages	30	Original
Appendix	31	Original

Caution:
This manual is valid only if it contains all of the original and revised pages listed above.
Each page to be revised must be removed, shredded and later replaced with the new, revised page in the exact same place in the manual.

15.0 Appendix

15.1 Weight and Balance Worksheet



Fill in the basic empty weight and moment, from the Registration Documents or page 1

Enter the pilots weight, multiply by the arm (2390) and put the result in the Moment column.
Do the same with passenger and baggage
then add these columns. This gives us the weight of all the things to fly, and tells us how much weight allowance is left for fuel.
Add sufficient fuel to arrive at the permitted gross weight, and multiply this by the arm,
you can now get a final total (Take-off Condition).

Divide this total moment by the total weight, and you have the resulting arm.

Providing this is between the stated limits, the airplane is in balance..

Easy Calculator - Is it Legal & In Balance

Max Flight Weight 544 Kg
Fwd Limit 2242 mm behind DATUM, Aft 2404 mm
At weights below 440 Kg, fwd limit 2227 mm

Item	Wt Kg	Arm	Moment
Basic Empty Wt.			
Front seat occupant 1		X 2390	
Front seat occupant 2		X 2390	
Baggage		X 3100	
Zero Fuel Weight		**Zero Fuel Moment**	
Add Fuel (0.71Kg per L)			
☐ **L x 0.71 Kg**		X 2540	
Take-off Condition Total Weight		**Total Moment**	
C of G Calculation	Divide by Weight		
		RESULT	

If the answer is between the limits listed above, it is safe to fly. (AND LEGAL)
See page 17 for a sample filled out form