X-AIR Series "H"

Aircraft designed & manufactured by
RAJ HAMSA ULTRALIGHTS PVT LTD, INDIA

Aircraft denomination:
X-air "H" Hanuman (France, Europe)
X-air "H" Hanuman (India)
X-air "H" Hawk (UK,USA,Canada,Australia)

USER'S MANUAL

AND

MAINTENANCE MANUAL

FOR AIRFRAME & JABIRU 2200 AERO ENGINE

SUMMARY

Raj Hamsa Ultralights Pvt Ltd

40, Goshala Road, Mahadevpura P.O. BANGALORE - 560048
Tel: +91(0)8056965835 Fax: +91(0)808518485
Web site: http://www.x-air.in

RAJ HAMSA ULTRALIGHTS PRIVATE LIMITED

X-AIR Series "H"

USER'S MANUAL

AND

MAINTENANCE MANUAL

I. DESCRIPTION & USAGE:

HANUMAN is a fixed wing ultralight aircraft, two-seater side by side, front engine mounted low in a cowling, high wing, tricycle undercarriage, fitted with conventional 3-axis controls: ailerons, elevator and rudder.
In its standard version equipped with complete dual controls, HANUMAN can be used for recreational flying as well as for instruction: the excellent behaviour of this aircraft in terms of responsiveness, docility, forgiveness slow landing speed, make it idealy suitable for this activity.
HANUMAN is an inexpensive aircraft in terms of capital investment and cost of operation: However the controls layout and the feeling in flight are even more similar to those of a light aircraft (example: Cessna 152) than its predecessor, our X-AIR. HANUMAN, although it fits by all criteria in the MICROLIGHT CATEGORY, has nothing to envy from a small aeroplane and as such offers an undisputed alternative for imparting flight training within the constraint of limited budgets.
HANUMAN is fitted in its standard version with the JABIRU 2200 A/J naturally air cooled engine developping 80/55.5 bhp, thus bringing the peace of mind and fuel economy of a 4 stroke engine: an excellent rate of climb at take off with 10 degrees of flaps brings an added safety in routine circuits and there will be that comfortable feeling of always having extra power at one's finger tips, if required.

II. LIST OF CONTROLS, INSTRUMENTS & EQUIPMENT:

1. Controls:

- Control stick 2 Nos : controls elevator (pitch) and ailerons (roll)
- Rudder pedals (2 pairs) : controls rudder (yaw) and nose wheel steering
- Throttle lever 2 Nos, left hand, controls power (push for power)
- Toe brakes: differential, on left hand side rudder pedals only, control 1 brake on each main undercarriage wheel
- Trim handle: located on cabin ceiling centre, controls elevator trim (forward: aircraft nose down)

- Flaps control lever: on cabin ceiling left side (lever down: flaps down)
- Two engine ignition switches (dual electronic ignition, toggle up: on)
- Master switch (key operated, turn clockwise: on)
- Self starter switch (press to start)
- fuel pump switch (toggle up: on)
- Choke lever (lever pulled: choke open)

Please note that all the controls are strictly conventional:

Effects of controls

Action on controls	**Effect obtained**
Press right foot	aircraft yaws to the right
Press left foot	aircraft yaws to the left
Stick to the right	aircraft banks to the right
Stick to the left	aircraft banks to the left
Stick forward	aircraft nose down
Stick back	aircraft nose up
Throttle forward	increase power
Throttle back	reduce power

2. Instruments (Standard):
- ASI (air speed indicator)
- Altimeter
- Ball
- Compass
- Tachometer (RPM) / Hour meter
- CHT
- Oil temperature & pressure gauge
- Charge indicator

Options: Intercom, VHF radio and additional engine monitoring instruments, GPS, etc..

3. Fuel tanks:
- Standard capacity, 80 liters in 1 single FRP tank located behind the seats
- Drain
- Breather
- Tank transparency ensures visual fuel level check.

4. Other features:
- cockpit doors, luggage boot (20 kg max) behind seats and wheel pants are standard.

III. PRE-FLIGHT CHECK:

A good pre-flight is the foundation of safe flying.

We suggest that you go through the following checks before **each** flight session.

1.Engine:

Stand in front of the engine with top cowling open, and check:

- the propeller and its bolts
- the engine supporting frame (ensure that the rubber foundations are in good condition)
- aspect of the ignition units and adjoining leads.
- spark plug caps properly fitted.
- exhaust fittings.
- no cracks developing in the exhaust
- throttle and choke cables for fray or misadjustment.
- carburetor and air filter properly secured.

An aircraft engine should always be spotless clean!

2.Airframe:

Start towards left looking at the aircraft from front and check the following stations:

- Cowling properly secured
- Fork/nose wheel assembly & front tyre pressure
- check the right wing:
- the wing struts surface from top to bottom and the stainless steel tangs secured with pins/safety rings.
- the jury struts and pins/safety rings
- the sail condition at the leading edge
- the wing tip tube fully secured
- the sail condition at the trailing edge
- battens properly positioned
- the compression struts at both ends (inside the sail: open zip). Have a look at the ailerons push-pull rods too.
- the root attachements of the trailing edge and leading edge: pins/safety rings
- check aileron connexion
- check flap connection
- follow the fuselage up to the tail and check the following attachments :
- check for damages in sail
- the elevator hinges & the sail condition
- the stabiliser cables on top and bottom: proper tension is required, these cables should never be loose
- the elevator control plates as well as connection to push-pull rods (fork)
- the rudder hinges & the sail condition
- the rudder cables connection with the rudder plate
- the trim tab connections
- go on observing the left side of the fuselage
- look into the cockpit and check:
- the sticks and corresponding pulleys/cables
- ailerons cables, fittings, turnbuckles and pulleys on top
- the rudder cables condition especially between the seats and

make sure that they are crossed in the fuselage (ref. annex 4)

- the throttle cable and choke cable connections in the cockpit, free-moving and exempt of fray or damage
- the fuel tank cap is closed and the content is sufficient for the anticipated flight
- the fuel filter condition
- the fuel line connections
- check the left wing in the same manner as you did the right one.

You are back at the nose: your tour is now complete and you may fly with peace of mind.

3. Instruments:

- verify ASI functioning and set altimeter
- verify the proper functionning of all installed instruments
- before take-off for a cross-country flight the reading of the compass must be checked against a known reference: runway markings for example.

IV. STARTING THE ENGINE (Jabiru 2200):

If you respect the following procedure, you will avoid problems while starting your engine:

a. Cold engine:

1. Check throttle **closed (Lever back)**
2. Prime the carburetors by mean of electric pump
3. Keep ignition **off** and choke **closed**
4. Press starter button & rotate the propeller for a few seconds
5. Choke fully **closed** (pulled up). Throttle **closed**
6. Both ignition switches on
7. Check for **CLEAR PROP !**
8. Press the self starter button; the engine should start at once
9. As soon as started, open throttle slowly up to 1300 RPM and, upon CHT reaching about 100 degree C, re-open progressively the choke till fully opened (pushed down).
10. Warm up the engine till CHT reaches about 150 deg C. Oil temperature should reach about 80 deg C

!! WARNING !!

Never forget to close the choke, failing which your power will be drastically affected in flight.

Never forget to switch off the electric pump : a pump permanently on increases fuel consumption by 30 %! This pump is a primer or else a back-up to be used only in the 2 following cases:

1. emergencies due to engine misbehaviour related to fuel starvation whatever the cause.
2. as a preventive measure in case of marginal take off in hostile surroundings, for a brief duration, say 1 minute.

b. Warm engine: throttle idle position, pressing the starter is sufficient to restart. Do NOT use the choke.

V. TAXIING & THE VITAL ACTIONS :

Before anything, you should have investigated your aircraft limitations! Please refer to annex 1.

You are now sitting on board, you have tightened your shoulder harness. The front wheel control is coupled with the rudder. Push the left pedal to turn left, the right pedal to turn right.

On rough surface we recommend to taxi faster with stick back (front wheel up). Steering control with the rudder becomes efficient from 15 Km/h onwards.

At the end of the taxiway, and before take off...

you are invited to perform the vital actions :

1. open doors and VISUALLY check for free and correct directional movement of all control surfaces.
2. doors locked.
3. no obstructions/loose objects in the cockpit which could interfer with the controls.
4. mag check: maximum drop permitted = 200 rpm. In normal conditions both ignitions should be ON while flying.
5. instruments check
6. choke closed
7. fuel quantity check: do NOT take off with less than 10 liters in the tank. Make sure your fuel is sufficient for the intended flight duration.
8. flaps lowered in take-off position, first notch, 10 degrees
8. no aircraft in approach.
9. line up.

Everything in order, you may take off.

VI. TAKE OFF:

!! WARNING !!
PILOT QUALIFICATION

It is clear that the following advices are not a flying course and that you are supposed to have passed with success the theoretical and practical tests under an authorised Instructor as required in your Country. **Furthermore we wish to warn conventional aeroplane pilots that a few hours of conversion to the type is recommanded before flying solo. The particular behaviour of a microlight — related to its comparatively low wing loading — demands some acclimatation.**

Well, The breeze is gentle. The aircraft is lined up. Push progressively the throttle to full open and gradually release the pressure on the front wheel. At 60 Km/h IAS, pull back progressively on the stick, maintaining your heading by foot control. At 80 Km/h indicated you are rotating; ease the stick forward to level off and increase your speed,

then climb at 95 Km/h up to 100 meters (300 ft) full throttle: the rate of climb is about 4 meters per second with passenger.

Note: The normal engine RPMs in the take-off run should be in the range of 3000 to 3300. In the event of your engine not reaching at least 3000 rpm at full throttle YOU MUST ABORT TAKE-OFF and investigate the cause of lack of power.

When you reach the altitude of 100 meters, retract the flaps, reduce throttle keeping at 110 Km/h airspeed and climb gradually up to the safe altitude of 300 m AGL (1000 ft). At this altitude you may level off, reducing throttle to 2800 rpm, and maintaining a circuit speed of 110-120 Km/h IAS.
This air speed is also the best handling speed and should be given preference in turbulent air.

Note: Tree top height circuits are not recommended. 200 m (600 ft) is just fine.

In the case of loss of power, or worst, of engine failure during take off, push immediately the stick forward to maintain maneuvrable speed and try to land ahead. Avoid steep banks which will increase your loss of altitude. Do not fiddle with the engine but concentrate on your landing, face the wind and keep an eye on your ASI.
It will help you to relax if you remember that HANUMAN glides very well engine off and remains perfectly maneuvrable. For safety, do maintain an air speed of at least 90 Km/h. If they have already been retracted, Do not forget to lower the flaps in final, which is of prime importance for short landing. Third notch (35 deg) is usefull in case of a congested landing area featuring obstructions in approach and short runway, or while performing a field emergency landing.
However it is good to keep in mind that your engine reliability is fairly high provided that you scrupulously observe the maintenance schedule given by the manufacturer.

VII. TURNS & EVOLUTIONS:

- HANUMAN responds neatly to any stick input in roll.
- Be very gentle with the stick: the effect is immediate.
- Keep the banked attitude as long as you need; then simply come back to neutral coordinating the maneuver with your feet.
- To begin with, limit yourself to a gentle bank of not more than 10° to the horizon. Watch the ball and seek for perfection.
- Never forget that while banking the stall speed of the aircraft increases with the angle. From a mere 50 Km/h in horizontal flight, it shoots up to 70 Km/h in a 60° bank!
- You will quickly enjoy the superb maneuvrability of HANUMAN but never forget that, in spite of the fact that the aircraft may eventually endure the loads applied while executing drastic maneuvres, it has not been designed in view of performing aerobatics and furthermore:

aerobatic maneuvers are prohibited with an ultralight aircraft

VIII. FLYING IN TURBULENCE:

Thanks to the dihedral, the sweep-back and the washout induced in the wing design, Hanuman is self-stable and when disturbed from its course will return to a normal attitude on its own: therefore it is important for the pilot to understand that tension is not necessary; just let the aircraft fly and do the least possible corrections. While landing in strong wind conditions, never forget the gradient effect which may induce unexpected stalls at low altitude — particularly in the last turn: misjudment of gradient is a too frequent cause of accident in light aircraft, so beware... avoid steep banks and at low height, do fly at 80 Km/h or more.

IX. STALL:

To understand perfectly the flight envelope of your machine, you must perform a few stalls.
To do so, climb at 1000 ft AGL and begin with stalls, engine idle. At about 60 Km/h the aircraft (clean) becomes less responsive. If you pull the stick further backwards, the aircraft will execute a gentle stall break. Allow the stick forward, open throttle and the aircraft will recover by himself.
At higher power settings, the high nose attitude will be more impressive and the break rougher: the maximum altitude loss will be 30 meters in a fully loaded two seater. An assymmetrical stall generates a larger loss of altitude: recovery comes with stick forward followed by opposite aileron.

By design, HANUMAN is reluctant to enter into spin, but beware, if you call loud for it, you will get it..

Spin recovery is standard: stick forward, opposite rudder.

X. FLYING AT HIGH SPEED :

Beyond 100 Km/h IAS the back pressure on the stick due to the longitudinal self stability will force you to maintain a forward pressure on the stick to maintain level flight or to make use of the elevator trim in order to cancel the nose-up tendency (please note that the trim is capable of taking care of all the longitudinal situations in the flight enveloppe). However high speeds are not fuel efficient and submit your engine to unnecessary stress. Do avoid them.

XI. APPROACH & LANDING:

To begin the descent, reduce throttle and set 90 to 100 Km/h indicated air speed in the final: Remember that **you adjust the speed with the stick and the approach angle with the throttle**. If the aircraft tends to overshoot, reduce throttle and vice versa if you undershoot, but in both cases **do maintain your airspeed constant**. It is airspeed which will give you protection against turbulence and gradient while landing.
Maintain a safe altitude before the threshold of the runway, then come-in, with flaps down second notch (25°), throttle reduced at 1400 RPM (no less to keep a clean prop-wash and airflow on the tail surfaces) and execute a neat flare avoiding fiddling with

ailerons but rather using rudder if you have to correct course at the last moment. This method is the safest for landing on unprepared fields.
A speed reserve will allow you to keep clear of non visible obstacles such as fences, wires, big rocks etc.. and it will also be your protection against turbulence and wind gradient.
A shallow angle, powered approach should be used only for landing on full fledge aerodromes with a clear and safe approach.
After touch-down, maintain your stick up till your front wheel naturally touches the ground. This is a way to protect your front wheel from hitting roughly a stone or a clod of earth.
In case of a small field with obstructions, a side-slip may come handy: HANUMAN is perfectly fit for this maneuver, at the condition again that you watch your airspeed: 80 km/h and no less.

ADVICE: If you have this creepy feeling that your final has become a mess, don't hesitate to overshoot and start a fresh circuit.

XII. FLYING IN CROSS WIND:

Don't fly in cross winds in excess of 20 Km/h unless you have a good experience of your aircraft. Take off is not a problem: just keep a bit of stick into the wind.
While landing, do a crabwise final and first touch the ground with the wheel in the wind, then rectify your heading while bringing the second wheel on the ground. Keep nose wheel up and steer with rudder for as long as possible, till your speed has dropped so much that the wheel will drop on its own. Taxi with stick towards the wind.
In any event, relax, since HANUMAN's behaviour in cross wind is examplary and in many cases, thanks to the short rolling distance required , you will be able to take- off and land head-wind, eventually across a runway... Also, stronger the wind, shorter the rolling distance.

IMPORTANT ADVICE:

Never forget that an ultralight aircraft due to its very concept has a lower engine reliability than a certified aircraft and may be submitted to unexpected engine failure.
Therefore, maintain sufficient altitude to have the choice of a safe emergency landing field.

Never fly over a congested area or a hostile area at a low height, particularly over **city, forest, lake, hills**.

Make it a rule to be always within gliding distance of a safe field, as it was customary in the old days of Aviation.

XIII. BEHAVIOUR OF THE AIRCRAFT WITH RESPECT TO WEIGHT:

By the very concept of the aircraft, it is impossible to locate any load out of the C.G range and all normal situations will be taken care of by the trim.

However, there is a slight tendency towards tail-heaviness increasing with load to be aware of, although the C.G. remains always well within limits. (Refer to the Weight and Balance Schedule of your aircraft). The elevator trim (a standard feature) is there to take care of these small variations and allow you to fly hands-off at any load and speed (within the respective permitted ranges: refer to aircraft limitations, annex 1.)
Of course it is clearly understood that:

1. The luggage boot behind the seats has not been designed to carry gold bars! **20 kg max please..**

2. The volume of fuselage behind the boot and the fuel tanks is NOT a cargo bay!
The cockpit rear partition is there to remind everyone that NOTHING should be stored behind, a further complication being the possible interference with the control push-pull rods and cables.

When flown at lower weights, solo for example, be prepared for a short take off and steep rate of climb; while landing you should avoid any abrupt flare to prevent the aircraft from ballooning (remember that an important characteristic of a microlight is its low wing loading)

XIV. EMERGENCY PROCEDURES & FORCED LANDINGS:

a. Emergency Procedures:
Before attempting a forced landing:

- Stay cool, relax, there is nothing to fear, it's NORMAL
- Pick the largest field available, aligned with the wind
- Fasten seat belts full tight (except over water)
- Lower the flaps 2 notches (25°), third notch only if landing space is very congested
- Switch both ignitions OFF
- More important than anything else, **WATCH YOUR AIRSPEED & LAND INTO WIND**
- After touch down keep nose wheel up if you can avoid braking immediately
- If the field is ploughed, do land along the furrows

b. On Corns and Crops:
Bring the aircraft in final at the lowest possible speed and stall when your wheels are almost to touch the corns or crops. This will protect you from a violent braking effect due to the plants.

c. On Water:
Height over water is difficult to judge!

- Release your safety belt.
- Face the wind
- Make a mental preparation for your landing and try to figure out the best direction to swim away. Touch the water as slow as you can, slightly nose up.
- Once in the water, don't panic, leave the aircraft without haste (the aircraft will not start sinking before a couple of minutes) and don't try to take anything with you.

d. In the Trees:
If possible, select preferably low and dense trees, fasten your safety belt full tight. Keep good speed in final: the air is often turbulent over trees. As soon as you hear the first leaves brushing your wheels, pull the nose up full stick back to cut the speed and... good luck !

XV. DISMANTLING FOR LAND TRANSPORT:

We suggest to operate on grass or a soft surface to avoid damaging tubes or spoiling the sail.

A. Dismantling:

The stabilisers/elevators:
The rudder and the tail plane will remain in place or the horizontal surfaces may be removed:
1. Release cables tension by turning clockwise the tensioner on the fin leading edge
2. Take out the lower cables
3. Pull out the stabilisers from their sockets. Store safely

Removal of the wings:
Each wing is fixed in 3 points: Leading edge/cockpit ; Trailing edge/cockpit ; Wing struts/cockpit
1. Remove 1 safety ring (inside cockpit) from each pin
2. 1 helper holds the wing where the struts meet with the wing
3. Pull out the 3 pins
4. Pull the wing out
5. for transport remove the wing altogether and store safely.
6. All components should be handled with care and wrapped in plastic or cloth for transport. Salient fittings should be further protected with foam.

NOTE: It is a well known fact that careless transportation generates more wear and tear than lots of flying hours.

B. Reassembling:
Follow exactly the same procedure in the reverse: at the end make sure that all pins & safety rings are in place and proceed with a careful and complete preflight check as described in para III. Make sure that the stabiliser/elevator ring is nicely tight (NO loose rigging cable)

XVI. MAINTENANCE:

We cannot insist enough on the importance of the maintenance of your aircraft: only a strict maintenance discipline applied to both engine and airframe will give you peace of mind in flight...
In addition to the daily inspection schedule (Preflight Check para III), you will find in annex 3 a comprehensive maintenance schedule for both engine and airframe; this schedule is based on our long standing experience of flying under tropical conditions:

observing scrupulously this shedule will give you the best possible garantie of trouble-free operation.
You may also refer to the JABIRU engine manual for more details specific to your engine.
It is also important that you maintain an up to date **AIRCRAFT MAINTENANCE LOG BOOK** where you will record any problem, work, modification, etc.. related to your aircraft:

This is a mandatory DGCA requirement.

You will have to comply with the maintenance schedule of annex 3, then sign & date the sheets in the bottom box after having executed and ticked the respective operations.

! ATTENTION !

At the time of renewal of your PERMIT TO FLY you will have to provide an up to date Journey Log Book and an up to date Maintenance Log Book along with the duly filled Maintenance Shedule sheets (ann.3)

The in-between 1000 hours operations of maintenance are simple, and anyone with a sense of cleanliness and method can do it. On the other hand:

We recommand that you send your engine to us
For **OVERHAUL EVERY 1000 HOURS**.

We have the expertise for decarbonising and overhaul and it is easy enough for you to remove the engine and crate it to us: the work will be done quickly and safely at a reasonnable fee.
To make our task easier, we request you to send your Maintenance Log Book along with the engine.

XVII. CONCLUSION:

We have tried to give a maximum of usefull informations in this manual, however, it is possible that in the course of your flying activities some questions will raise in your mind. When in doubt, do not hesitate to contact us at the phone numbers given at the beginning of this manual. Always remember that in our sport, mistakes may be heavy in consequences, so check and recheck your aircraft till you are fully satisfied: **as the pilot, YOU are entirely responsible -- NO one else, NO Government Organisation, NO Maintenance Engineer -- for your maintenance, your aircraft airworthiness, your flying** ! This axiome is the foundation of Ultralight Aviation and we, at RAJ HAMSA, wish to promote this spirit. So, never take anything or anyone (whatever his qualification) for granted, do not underestimate situations, keep your judgement sharp at all time, and, above all, NEVER SHOW OFF !

We wish you many happy landings!

*****

Annex 1
AIRCRAFT LIMITATIONS

Maximum all up weight permitted:	**450 kg**
Maximum load in luggage compartment:	20 kg
VNE:	200 km/h (IAS)
Maximum speed for flaps 1st notch 10°:	110 km/h
Maximum speed for flaps 2nd notch 20°:	100 km/h
Maximum speed for flaps 3rd notch 35°:	90 km/h
Maximum engine revs:	3300 rpm
Maximum revs in constant utilisation:	3300 rpm
CG range: refer to weight & balance schedule	
Maximum cross wind component:	30 km/h

ALL AEROBATIC MANOEUVERS ARE PROHIBITED ON THIS AIRCRAFT
NO INTENTIONAL SPIN

*****

Annex 2
TECHNICAL DATA & PERFORMANCE

Wings:	
- Leading edge	: 64 x 2 mm (sleeved with 60 x 2)
- Trailing edge	: 50 x 2 mm (sleeved with 45 x 1.5)
- Compression struts	: 38 x 1.5 mm
- Thrust/drag	: cables 3 mm
- Wing tip	: 25 x 1.5 mm
- Wing struts	: special Raj Hamsa aerofoil tube
- Profile	: 20 ribs per wing 12.7 x 1.2 mm T.S + aluminium root
- Sail fabric (for all)	: Stabilised Sailcloth (Polyant) 185 gr/sq.m.
Ailerons & flaps:	
- Leading edge	: 38 x 1.5 mm
- Trailing edge	: 12.7 x 1.2 mm
- Profile	: ribs 12.7 x 1.2 mm inserted
Fuselage and tail surfaces:	
- Fuselage tubes	: 25 x 1.5 mm & 12.7 x 1.2
- Tail surfaces	: 25 x 1.5 mm
- Seat	: Upholstered bucket seats adjustable, with 4 points safety harness
- Nose and main wheels	: Aluminium cast alloy, 8"
- Tyres	: 4 plys 3.50 x 8
- Landing gear	: Bunjee front & rear
- Brake	: Drum brakes on main landing gear

Controls:

- Type : 3 Axis conventional
- Rudder pedals : dual, acting on front wheel through connecting rods and on rudder through cables dia 3 mm
- Stick : dual, between legs
- Throttle : dual, at left hand
- Stick to elevator connection : By push-pull rod
- Stick to aileron connection : By cables dia 3 mm + push-pull rods

Miscellaneous:

- Bolts : High tensile grade 8.8
- Fitting tangs : Stainless steel 2,3 and 4 mm thickness
- Paint : Powder coating

Structural stress resistance:

at 450 Kg all up weight : + 6G and - 3G

Maximum load on controls: Rudder : 1400 NEWTON
Elevator : 1500 NEWTON
Aileron : 1300 NEWTON

Weight and dimensions:

- Empty weight : 280 kg
- Empty weight to power ratio : 3.5 Kg/hp
- Total weight to power ratio : 5.6 Kg/hp
- Maximum All Up Weight : 450 kg
- Length : 6.0 m
- Overall height : 2.3 m (rudder top)
- Wing span : 10.0 m
- Chord : 1.45 m
- Wing area : 13.7 m²
- Dihedral angle : 1°
- Sweep back angle : 2°
- Washout angle : 2°
- Vertical stabiliser area : 0.4 m²
- Rudder area : 0.5 m²
- Horizontal stabiliser area : 1.1 m²
- Elevator area : 0.8 m²
- Aspect ratio : 7.3
- Wheel base : 1.5 m
- Wheel track : 1.7 m

C.G. Load Displacement : Ref. to Weight & Balance Report provided with the aircraft

Engine:

Brand : JABIRU
Type : 2200 A/J
Cooling : ram air cooled
Power Maximum : 80/55.5 bhp
At : 3300/3100 RPM
Duration maximum : 5 minutes

Capacity	: 2200 Type of fuel: ordinary automotive petrol, best octane available
Fuel tank capacity	: 80 liters
Self starter	: Electric
Ignition	: Dual electronic
Carburetor brand and number	: Single BING
Reduction gear type	: Direct drive
Generator output	: 10 amps continuous
D.C. supply	: 12 volts
Propeller:	
Type	: Two blades, Carbon "DUC"
Rotational speed max	: 3300 rpm
Maximum static thrust	: 200 Kg
Time Between Overhaul	:1000 hours

Performances, standard version (410 kg AUW at seal level)

Minimum speed	
flaps up	: 65 km/h
flaps down	: 60/55/50 km/h
Maximum speed, level flight	: 170 Km/h
Turbulent air best speed	: 120 Km/h
Economic cruise speed	: 120 - 130 Km/h
Stall speed	
flaps up	: 60 Km/h
flaps down	: 55/50/45 km/h
Best climb rate	: 3 m/sec
Glide ratio engine off	: 10 to 1
Take off roll without wind	: 60 m
Take off distance to clear a 15 meter obstacle	: 230 m
Landing roll with brakes	: 100 m
Landing distance to clear a 15 meter obstacle	: 250 m
Useful cealing	: 3000 m (10.000 ft)
bank 30° to 30 °	: 2 sec
Fuel consumption at full load	: 13 l/h
Endurance	: 6 h (approx)
range	: 600 Km (approx)

*****