

AirBorne



AUSTRALIA

ABN 28 002 700 398

Tuesday, 18 November 2003

Welcome to the exciting world of microlight flight.

Some pilots choose to fly around their local area whilst others set out on exciting cross country adventure's. Flights to date include circumnavigation of Australia, with several flights from Europe to Australia. On two separate occasions microlight pilots' have taken on the ultimate challenge, circumnavigation of the World, with passenger/navigator! A remarkable achievement.

Airborne is one of the world leaders in microlight design and manufacture. Our microlights are exported to 30 Countries including the U.S.A, Europe and China.

Microlights are mainly used for recreational flying, however Airborne microlights are also used for projects such as, elephant conservation in Africa, bird migration projects in Canada and lately archaeology studies in the Angkor region of Cambodia.

Many of Airborne's customers are farmers; they use their Airborne Outback trikes for things like, crop spraying, dam and fence line inspection and stock mustering, or simply flying over to the neighbours property for a chat and a cuppa.

From the simple open cockpit pull start model of the Redback, or the rugged Outback with the optional tundra undercarriage, to the fully optioned faired model of the Edge X Classic and the XT-912. Airborne have the range of aircraft to suit your needs. All of our microlight aircraft designs are stringently tested and certified to either Australian CAO 95.32 or Section S.

There are now many experienced microlight instructors around the Globe. Many schools operate 7 days per week, weather permitting. All it takes is a phone call to book in for a lesson. It usually takes 15 to 25 hours to reach solo stage. Once solo and having passed your cross-country endorsement you will have the opportunity to take advantage of the cross country trips arranged by different clubs.

Book that flight and see what others only dream about.

Team AirBorne.

Warning: Always seek adequate training from a qualified instructor before attempting to fly. Never fly outside of the aircraft's placarded limitations stated in the owners manual. Never fly before reading the owners manual.

DISCRIPTION OF PRODUCTS

TRIKE WINGS

The wings now called the Wizard 3 and the Streak 2 have been re-designed. The Wizard being the slower of the two wings. Our design team has improved the handling on both the Wizard 3 and Streak 2 over previous models. The Streak now has a mylar PX leading edge. Both wings have a cleaner sail with enclosed battens. Tuning has been simplified by a device in the leading edge tip that allows you to lengthen or shorten the leading edge via an allen key screw.

MICROLIGHTS/TRIKES

The Redback: A 503 Rotax DCI powered two seater. This trike is already developing a cult following amongst trikers both in Australia and the USA. Redback pilots love it's simplicity and the fact it is certified. The trike is finished in red powder coating with a black instrument binnacle, it comes standard with a color-coded Wizard wing and makes for an attractive looking aircraft with the famous Australian Redback spider logo. The Redback offers pilots a certified and tested trike and represents excellent value making it the most affordable model in the Airborne range.

The Outback: Is powered by the 582 DCI Rotax, the Wizard wing is standard. The engine is oil injected and comes standard with the pull start C type gearbox. It can be optioned up with electric start, tow system and silencer kits. Available also is the Tundra undercarriage, this allows pilots to access rougher landing terrain and is an exciting feature for trike adventurers who enjoy beach landings or slightly rougher terrain style landings. The Outback is also the perfect trike to add floats to, due to it's excellent climb rate and light weight.

Airborne is currently testing Krucker aluminium and Anterres fiberglass floats on The Outback base.

The Outback S: As above but with the Streak 2 wing.

The Classic: Is a fully optioned Edge X. Is standard with the 582, oil injected and electric start, and Wizard wing. It is currently still the most popular trike in the Airborne range. The Classic can be optioned up to add silencer kits and a tow system.

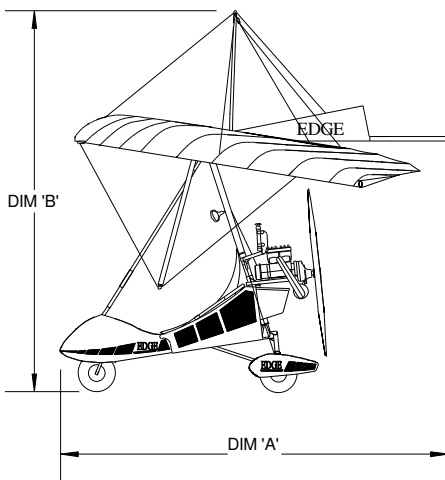
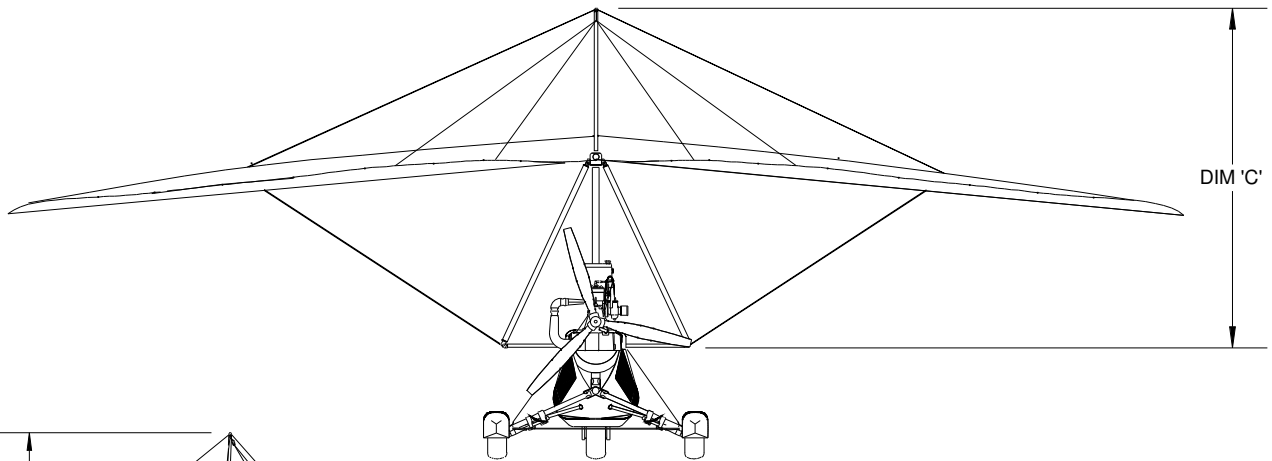
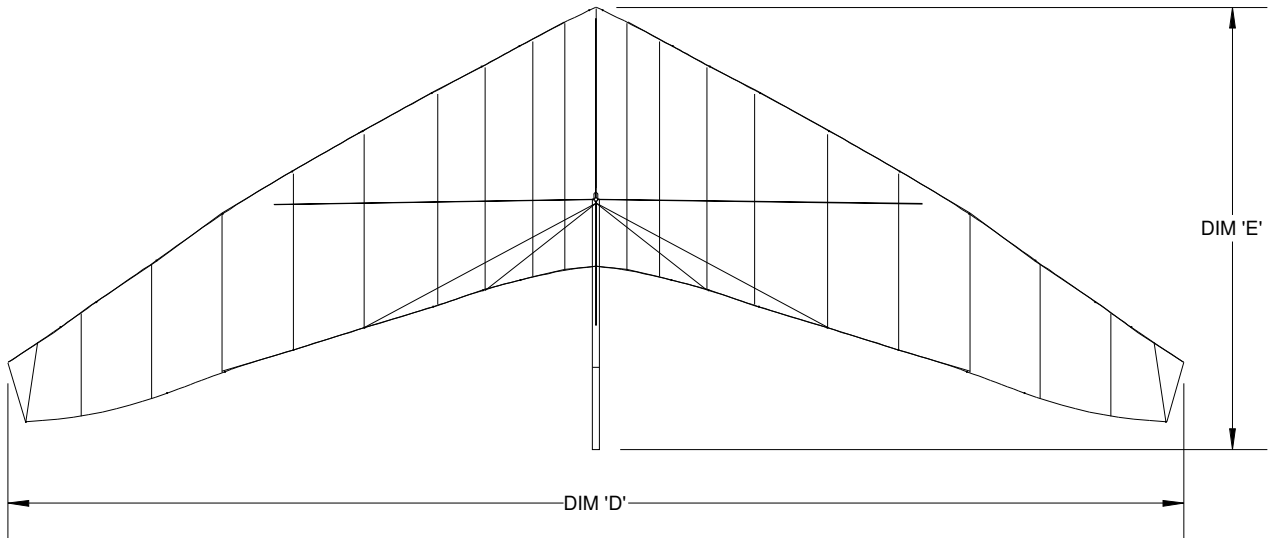
The Classic S: As above with the Streak 2 wing.

The XT 912: Powered by the Rotax 912, the design team started from scratch on this one and the trike has many CNC engineered parts included in its design. High quality rear and front gas shocks are included. A wider and more comfortable seat adds to pilot and passenger comfort. The mast folds independent of the engine and uses a gas lift strut to get the wing up, which can be done by one person with ease. The XT is coupled with the Streak 2 wing, and carries 72 litres plus of fuel.

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EDGE X - THREE VIEW DRAWING

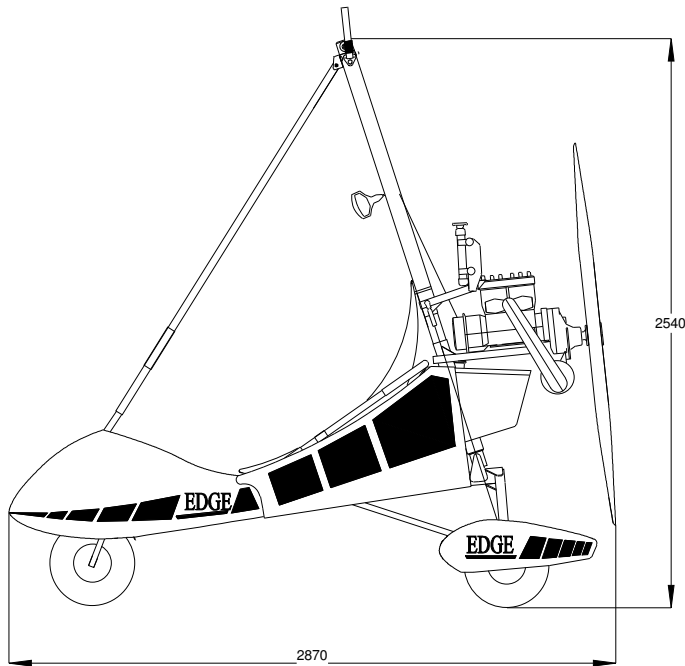
This drawing is representative only and is not intended to be used to identify the various configurations in which the aircraft is available.



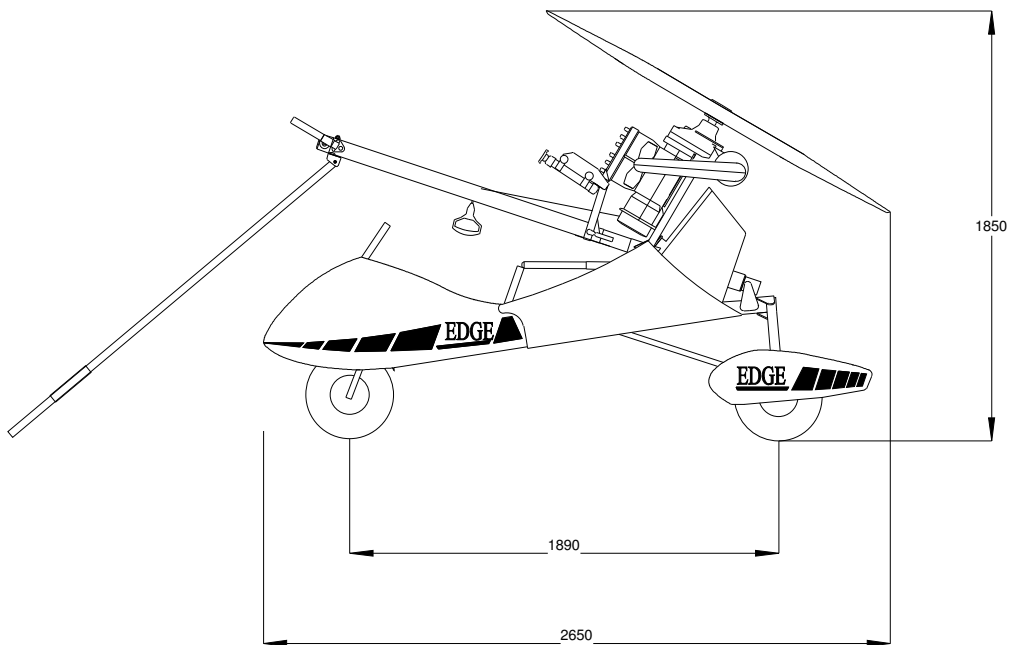
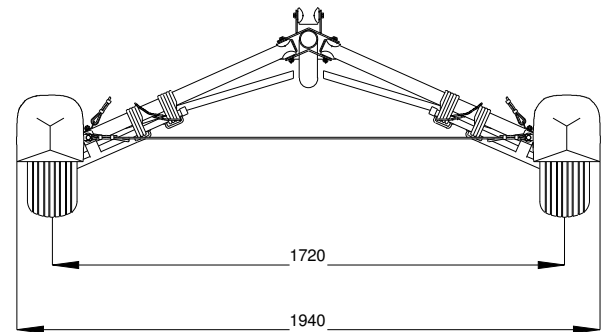
	Edge Wing	Wizard Wing	Streak Wing
DIM 'A'	3.995M	3.460M	3.500M
DIM 'B'	3.885M	3.600M	3.600M
DIM 'C'	2.930M	2.830M	2.830M
DIM 'D'	10.140M	9.960M	9.970M
DIM 'E'	3.812M	3.360M	3.200M

EDGE X - TRIKE BASE DIMENSIONS

This drawing is representative only and is not intended to be used to identify the various configurations in which the aircraft is available.



EDGE X	
Front Wheel Diameter	420mm
Front Wheel Width	95mm
Rear Wheel Diameter	355mm
Rear Wheel Width	155mm



EDGE X - SPECIFICATIONS

	Trike Base	Streak Wing	Wizard Wing
Rigging time	5 minutes	20 minutes	15 minutes
Wing weight		49 kg	47 kg
Trike empty weight from	118 kg (See Note 1)		
Aircraft total empty weight from		167 kg (See Note 1)	165 kg (See Note 1)
Max. take off weight	401 kg	401 kg	401 kg
Airframe	Aluminium Tube	Aluminium Tube multi-sleeved	Aluminium Tube multi-sleeved
Wing span		9.97 metres	9.96 metres
Wing area		15.0 square metres	17.6 square metres
Aspect ratio		6.6:1	5.6:1
Nose angle		130°	121°
No. of seats	2		
Fuel tank capacity			
Edge & Edge E	48 litres		
Edge X	44 litres		
Minimum useable fuel	(See Note 2)		
Edge & Edge E Series	41 litres		
Edge X Series	37 litres		
Maximum useable fuel	(See Note 3)		
Edge & Edge E Series	46 litres		
Edge X Series	43 litres		
Fuel tank sump capacity			
Edge & Edge E	500 millilitres		
Edge X Series	350 millilitres		

Notes

- 1** The weights shown are approximate and can vary according to the equipment fitted to the aircraft.
- 2** The minimum useable fuel is defined by the first evidence of engine malfunctioning occurring at the full power setting, climbing at the safety take off speed with minimum aircraft weight.
- 3** The maximum useable fuel is defined by the first evidence of engine malfunctioning occurring at the power setting established for level flight in the cruise configuration with maximum weight.

EDGE X TRIKE BASE - STOCK COLOUR SCHEMES

Stock Base Colour Scheme	Pod / Binnacle and Spats		Seat		Softsides
	Fibreglass Components	Trim Stickers	Standard	Tweed Cloth Option	
Red	Red	White	Black	Grey	Red
White	White	Red	Black	Grey	Red
Blue	Blue	White	Black	Grey	Blue
Yellow	Yellow	Black	Black	Grey	Yellow
Black	Black	Red	Black	Grey	Red

Note: Customers are free to choose alternative base colour schemes. See price list for additional costs involved. Selection of non stock colour options may also increase delivery times. The base frame is available powder coated in white only.

STREAK WING - STOCK COLOURS

Stock Wing Colour	Leading Edge	Front Undersurface Panel (US1)	Rear Undersurface Panel (US2)	Keel Pocket	Recommended Trike Base Stock Colour Scheme
White/Red	PX White	White	Red (3125)	Red (3125)	Red/White/Black
FluroYellow/Blue	PX White	Fluro Yellow (5280)	Blue (7352)	Blue (7352)	Blue/White/Black
White/Blue	PX White	White	Blue (7352)	Blue (7352)	Blue/White/Black
Yellow/Red	PX White	Yellow (5076)	Red (3125)	Red (3125)	Red/White/Black
Fl Yellow/Lavender	PX White	Fl Yellow (5280)	Lavender (7924)	Lavender (7924)	Red/White/Black/ Yellow

Note: Customers are free to choose alternative Streak Wing colour schemes. See price list for additional costs involved. Selection of non stock colour options may also increase delivery times.

WIZARD WING - STOCK COLOURS

Stock Wing Colour	Leading Edge	Undersurface Panel (US1)	Keel Pocket	Recommended Trike Base Stock Colours Scheme
Red/Black	Red (3125)	Black (2100)	Red (3125)	Red Black
Red/White	Red (3125)	Red (3125)	Red (3125)	Red White
Red/Yellow	Red (3125)	Yellow (5076)	Red (3125)	Red Yellow
Blue/Yellow	Blue (7352)	FL Yellow (5280)	Blue (7352)	Blue
Blue/Red	Blue (7352)	Red (3125)	Blue (7352)	Blue White

Note: Customers are free to choose alternative Wizard Wing colour schemes. See price list for additional costs involved. Selection of non stock colour options may also increase delivery times.

AIRBORNE MICROLIGHT WINGS

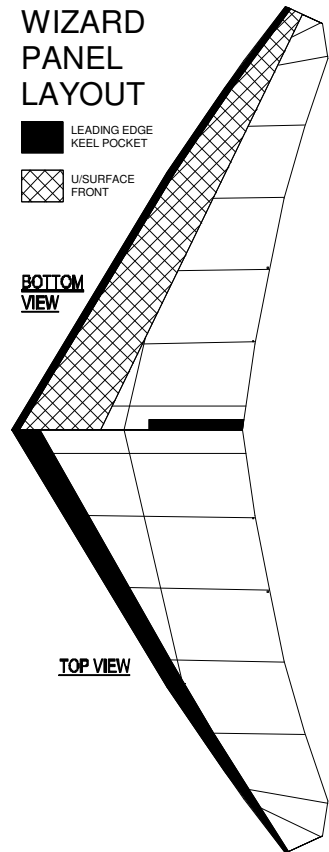
NOTE: 1/ Microight wing specifications may vary from complete aircraft specifications.
2/ Microlight wing prices vary from the option price list for complete aircraft.

- ◆ Load tested to 6G Positive and 3G Negative
- ◆ Built to Australian Civil Aviation Safety Authority approved QA system
- ◆ Quality Assurance system ensures the highest quality wings

Wizard[★]

- ◆ Ideal all round wing

- ◆ Stable and easy to fly
- ◆ Exceptional handling at minimum speed
- ◆ Extremely fast set up
- ◆ Sets up flat or on control frame
- ◆ Virtually maintenance free 7075 -T6 Battens
- ◆ Great training and tug wing
- ◆ Load tested to 2334 kg (5144 pound) for MTOW
430kg (948 pound)



STREAK

- ◆ Standard with in flight trim adjustment
- ◆ Light and predictable roll and pitch
- ◆ Exceptional speed range and acceleration
- ◆ True cross country performance
- ◆ Extremely stable even in the most adverse conditions
- ◆ Easy tensioning for one person (2:1 mechanical advantage)
- ◆ Sets up flat or on control frame
- ◆ Virtually maintenance free 7075 -T6 Battens
- ◆ Aerotow capable
- ◆ Load tested to 2465 kg (5432 pounds) for MTOW 450 kg (992 pound)

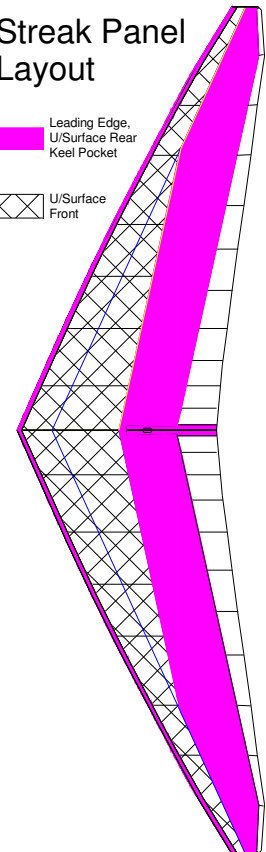
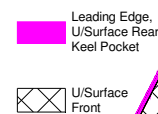
MICROLIGHT WING WING SPECIFICATIONS

	STREAK		WIZARD	
	METRIC	IMPERIAL	METRIC	IMPERIAL
SAIL AREA	15.0 sq meter	160 sq ft	16.8 sq meter	180 sq ft
WING SPAN	9.97 m	32.8 feet	9.96 m	32.7 feet
ASPECT RATIO	6.6		5.6	
NOSE ANGLE	130 degrees		121 degrees	
DOUBLE SURFACE %	80%		40%	
BATTENS	35		15	
WING WEIGHT	49 kg	108 pound	47 kg	104 pound
ASSEMBLY TIME	20 min		10 min	
PACK UP LENGTH	5.6 meter	18.37 feet	6.0 meter	19.5 feet
SHORT PACK LENGTH	4.2 meter	13.5 feet	4.0 meter	13.0 feet
MAXIMUM TAKE OFF WEIGHT (MTOW)	450 kg	992 pounds	430 kg	948 pounds
VNE (Velocity Never to Exceed)	150 km/h	81 knots 93 mph	100 km/h	54 knots 62 mph
MAXIMUM LEVEL SPEED	148 km/h	80 knots 93 mph	83 km/h	45 knots 52 mph
TRIM SPEED	74-101 km/h	40-55 knots 46-63 mph	56-67 km/h	30-36 knots 35-41 mph
STALL SPEED AT (MTOW)	56 km/h	30 knots 35 mph	52 km/h	28 knots 32 mph

STOCK COLOURS FOR FAST DELIVERY

Stock Wing Colour	Leading Edge	Front U/Surface	Rear U/Surface	Keel Pocket
STREAK				
White/Red	PX White	White	Red (3125)	Red (3125)
Fl Yellow/Blue	PX White	Fl Yellow (5280)	Blue (7352)	Blue (7352)
White/Blue	PX White	White	Blue (7352)	Blue (7352)
Yellow/Red	PX White	Yellow (5076)	Red (3125)	Red (3125)
Yellow/Grey	PX White	Yellow (5076)	Grey (2328)	Grey (2328)
WIZARD				
Red/Black	Red (3125)	Black (2100)	N/A	Red (3125)
Red/White	Red (3125)	Red (3125)	N/A	Red (3125)
Blue/Yellow	Blue (7352)	Fl Yellow (5280)	N/A	Blue (7352)
Red/Yellow	Red (3125)	Yellow (5076)	N/A	Red (3125)
Blue/Red	Blue (7352)	Red (3125)	N/A	Blue (7352)

Streak Panel Layout



Note: Stock colours may vary. Additional charge applies for non stock colours

The Role of Trike Ultralight Aircraft in

The Elephants of Timbuktu Research and Conservation Program



Elephants populations in West Africa have declined precipitously in the past several decades, with less than 6,000 now thought to remain in scattered pockets across 14 countries. Extinction is now considered imminent for most populations of elephants in West Africa, but exceedingly little is known about the ecology, social organization, genetic makeup, and behavior of these animals. The Elephants of Timbuktu Research and Conservation Program was begun in 1998 to provide lasting conservation and management for the northernmost population of elephants left in Africa, and one of the few viable populations in West Africa.

The “elephants of Timbuktu” are the last population remaining in the Sahelian region of Africa, existing in extremely remote wilderness at the edge of the Sahara desert. This roadless region is inhabited mostly by nomadic pastoralists and their livestock herds, and has very few water sources or settlements. The primitive nature of the terrain and extensive migration of the elephant population (~600 miles/year) makes vehicular travel limited, establishment of a base camp impossible, and no facilities exist for fueling, storing, or maintaining conventional aircraft.

Ultralight aircraft is in use, as the only viable means for following, studying, and monitoring the elephant population long-term. A flex-wing (trike) ultralight is used due to its absolute portability, ease of set-up and maintenance, mechanical simplicity and overall ruggedness. The aircraft is hauled on a small trailer behind a Land Rover, with the wing strapped to the roof, or is preferentially flown to wherever the aircraft is needed.

This trike has surpassed all our requirements and expectations for performance, reliability, durability, and practicability in rugged conditions. Furthermore, this versatile aircraft has quickly become the backbone of our field research program, offering us new and innovative possibilities for viewing the landscape, elephant habitat, documenting elephant behavior, collecting data, and effectively answering integral research questions.

Our research focuses on understanding the factors that lead the elephants to use their habitat in the way that we observe: frequently moving enormous distances in a complex circular pattern. What resources are most important for elephants, what resources are limiting, what are the needs of different members of the population? We began analyzing vegetation, soils, and water sources by sampling in hundreds of random plots along a multitude of transect lines, spending months in the thorny brush with little resultant information (and occasionally with the threat of unfriendly elephants).

With the ultralight aircraft, we have now developed methods of capturing geographically referenced photographs of food, water, and soil resources that can be compared across months, seasons, and years. Multi-spectral aerial photography now allows us to determine the protein levels of vegetation across entire regions, and track the drying of waterholes with real volume measurements. We are also able to document the numbers, sexes, and often the individual identities of elephants within groups with digital and still images taken from the ultralight.

In this way, we can confidently determine the number of elephants in the population, monitor birth and loss rates, and monitor the health of the population. The ultralight was essential to safely locating, tranquilizing, and fitting 9 elephants with GPS/radio tracking collars, and is needed almost daily to find the collared elephants in their vast landscape.

At the same time, other biologists are recognizing and quickly developing the uses of ultralight aircraft for counting large mammals, monitoring wildlife populations and threats such as poaching in undeveloped areas, monitoring resources, vegetation, human and livestock populations, and studying the interactions between wildlife and their habitats.

Generally, biologists hire conventional aircraft to track radio-collared animals one to two times a week. Ultralight aircraft is able to track these animals, fly for one-third (or less) the cost of conventional aircraft, land and take-off without requiring a conventional airstrip or specialized fuel, get closer to the animal allowing the biologist to document the habitat in which the animal is located, and offer an unobstructed view of the land below, allowing cameras to be mounted without having to cut a hole into the floor of an aircraft. Biologists with the Wildlife Conservation Society working in the rainforests of northern Congo are mounting videocameras on aircraft to census and spot elephants, gorillas, and bongo, and to document poaching incidents in inaccessible forest clearings frequented by wildlife. National parks in Ghana and Nigeria are now using ultralight aircraft to survey and monitor wildlife, illegal grazing and planting of crops within parks, and poaching in regions that are without roads or passable terrain.

Ultralights offer an extremely effective yet noninvasive tool for managing wild areas without the expense and disturbance of building airstrips and maintaining highly technical aircraft. The integrity of wildlands can be maintained, while still allowing protection and research of ecosystems. Aerial video and photo analysis methods are developing quickly, including systems that automatically map visual images, and software that measures landscape features and changes over time. We have found our aircraft to hold limitless potential for dealing in a logistically challenging environment, and for conducting completely unprecedented methods of research at low cost and with great immediate scientific and conservation benefit. Ultralight aircraft have heretofore been regarded mainly as recreational craft, but their enormous potential for scientific and management pursuits is being increasingly recognized and developed. We are personally excited about the potential contributions of these craft and hope to promote and advance these uses well into the future.



Frequently Asked Questions

Do microlights require much physical effort to fly?

Microlights are controlled by weightshift. Having said that little effort is required by the pilot to initiate a 45degree bank turn. A microlight is stable and will fly hands off the controls. The control bar, hands off, sits in a neutral and comfortable position for the pilot, this is called the 'trim' position. This position is used when flying cross-country and requires the least amount of effort by the pilot. When pushing the control bar forwards or pulling it rearwards of the trim position, pressure is felt and the control bar wants to return to the trim position. The same can be said when pushing the control bar to the left or right.

Can anyone learn to fly a microlight?

Almost anyone can learn to fly a microlight, people from 16 to 70 already fly them, men and women. There is no need to have a flying background prior to learning to fly a microlight.

How long does it take to learn to fly a microlight and do I need a licence?

Generally it takes between 15 and 25 hours to solo, the time may be less if you have previous flying experience. The licence is specific to the type, e.g. weight shift microlight licence. Because the control movements are opposite to 3 axis or conventional types of aircraft training is still necessary for pilots who are licensed on other types.

What happens if there is loss of power on a microlight?

The glide performance on the Airborne range of microlights is more than 10:1. This means that providing you fly with caution and always keep a lookout for possible landing area, loss of power should not be an issue. During training the instructor should take you through emergency landing procedures. Landing a microlight engine off in smooth air is as easy as landing with power.

Can microlights carry more than one person?

The current Airborne range are all certified to carry a pilot and passenger.

What is the range on one tank of fuel?

The Airborne Edge X has a 44 litre fuel tank and has a possible range of 300kms (200 miles) or 3 hours duration depending on weather conditions and loading.

Can I fly the microlight if it is windy?

A microlight can fly in winds in excess of 20 knots, and has good cross wind landing capability (up to 15knots depending also on pilot skill).

Is there storage capacity for camping gear etc?

Microlights are a great and adventurous way to travel. There are accessories that clip onto the frame and allow capacity for storage of camping gear and even extra fuel. People often fly off on holidays covering 1000's of miles and get to see views that many others only dream about.

How safe are microlights?

At Airborne we certify our designs to a Civil Aviation Safety Authority Approved Standard. Our microlights are tested to 6G positive and 3G negative. We have an approved quality control system that is audited by CASA on a regular basis. Many people that buy our microlights are from a general and commercial aviation background.

Where can I fly a microlight and are they useful for farm work?

Radio equipped microlights can be flown from or into CTAF airports. They can also be flown around private properties with the owner's permission. Farmers often use microlight for fence or stock inspection. Farmers in some countries use microlights for crop spraying and mustering.

How much does a microlight cost to buy?

AUD\$23,000 US\$14,000 will get you into a new Airborne microlight. You will need to allow some extra funds for intercoms and training.

Where can I store my new microlight?

One of the reasons weightshift microlights are so popular is because they are so transportable. The base and the wing can be detached. The wings, after taking the battens out, can be folded in and put into its pack-up bag. The trike base can be carried as is on a small trailer; the wing can be carried on a set of car roof racks or on trailer racks. It is a simple matter to take your microlight away on holidays.

Where can I learn to fly a microlight?

There are schools in many parts of the USA, **see the back of this page** for a list of flight training centres. Some flight schools also offer a two-week live in course.

XT-912/Streak 11-XT PERFORMANCE

	Australian	European	USA
VNE Max level Speed	81 kts	150 km/hr	93 mph
Max trim Speed (Cruise Speed)	65 kts	120 km/hr	75 mph
Stall Speed @ MAUW	34 kts	63 km/hr	39 mph
Best Climb Rate @ MAUW	1100 ft/min	6 m/sec	1100 ft/min
Best Climb Speed	50 kts	93 km/hr	58 mph
Take off Distance to 15 mts (Note 1)	180 m	180 m	591 ft
Landing Distance from 15 mts (Note 1)	175 m	175 m	574 ft
Min Sink Rate @ MAUW	500 ft/min	3 m/sec	500 ft/min
Fuel Capacity	70 lt	70 lt	18.5 gal
Typical Fuel Burn @ Cruise	12 lt/hr	12 lt/hr	3.2 gal/hr
Range @ Cruise	702 km	702 km	436 miles

NOTE 1: Take off and landing distances were measured from a short grass runway.

The data does not include the reserve factor of 1.3 as stated in the manual.

NOTE 2: Fuel consumption figures should not to be used for planning purposes.

DESIGN LOADS	Australian	European	USA
Max Take Off Weight (MTOW)	450 kg	450 kg	992 lbs
Ultimate Load @ MTOW	+6g / -3g		
Flight Limits @ MTOW	+4g / -0g		
Max Occupant Weight	100 kg	100 kg	220 lbs
Max Weight per Seat	100 kg	100 kg	220 lbs
Min Occupant Weight	65 kg	65 kg	143 lbs
Typical dry Weight (Note 3)	216 kg	216 kg	476 lbs

NOTE 3: Typical empty weight includes Water, Oil and no Fuel. Weight varies depending on options fitted.

DIMENSIONS	Australian	European	USA
Wing Span	9.97 m	9.97 m	32.7 ft
Wing Area	15 sq mts	15 sq mts	161.5 sq ft
Aspect Ratio	6.6		
Wing Weight	49 kg	49 kg	108.03 lbs
Overall Height (Control Bar Fwd)	3.65 m	3.65 m	11.98 ft
Trike Width	1.91 m	1.91 m	6.27 ft
Trike Length	2.745 m	2.745 m	9.01 ft
Wheel Track	1.7 m	1.7 m	5.58 ft
Wheel Base	1.89 m	1.89 m	6.20 ft
Trike Height	2.53 m	2.53 m	8.30 ft
Cockpit Width	0.7 m	0.7 m	2.30 ft
Wing (Packed) Length	5.6 m	5.6 m	18.37 ft
Wing Length (Short Packed)	4.2 m	4.2 m	13.78 ft

POWER PLANT		PROPELLOR	
Make	Rotax	Propellor	Bolly
Model	912 UL 2	Type	Bos 3
Power	80 Hp	Diameter	66 "
Type	4 Stroke		
Ignition System	Dual Electronic		
No Cylinders	4		
Electric Start	Standard		
Reduction Ratio	2.43:1		