

AVIASUD

Aviasud Engineering SARL, Domaine de la Suvrière, route de la Bouverie, 83480 Puget-sur-Argens; tel (94) 40.04.80. Proprietors: François Goethals and Bernard d'Otreppe.

Aviasud Sirocco (Three-axis)

Single-seat single-engined high-wing monoplane with conventional three-axis control. Wing has swept back leading and trailing edges, and constant chord; conventional tail. Pitch control by fully flying tail; yaw control by fin-mounted rudder; roll control by half-span spoilers; control inputs through stick for pitch/roll and pedals for yaw. Wing braced from above by kingpost and cables, from below by cables; wing profile modified TK 7315 McCready; double-surface. Undercarriage has three wheels in tricycle formation with additional tailskid; steel-spring suspension on nosewheel and glass-fibre suspension on main wheels. Push-right go-right nosewheel steering connected to yaw control. Brake on nosewheel. Glass-fibre/polyester fuselage, partially enclosed. Engine mounted below wing driving pusher propeller. Leading edge in stratified glass-fibre/epoxy and tail in stratified glass-fibre/polyester; fuselage spar bidirectional stratified.

1 - GENERAL — The Aviasud company was founded by François Goethals and Bernard d'Otreppe to build and distribute the first model of the single seater *Libellule* three-axis control design by Bernard Broc (see under that name). This machine went into small scale production (three per month) in November 1981 and was replaced at this plant with the present *Sirocco*, the prototype of which made its first flight on the 26 July 1982. It has been on sale since January 1983.

Designed by François Goethals and Bernard d'Otreppe who are both engineers, and laid out with the help of a computer, this *Sirocco* is a result of the experience acquired with the *Libellule* and although it is of a similar configuration it is a completely new machine, despite the confusion generated by its initial title of *Libellule MkII*. It is one of the very few microlights which has undergone a complete flight test programme, both static and in flight, François being a specialist in fluid mechanics and Bernard d'Otreppe in the study of composite structures. Out of this programme has come what they believe is the optimum wing profile for the *Sirocco*, the TK 7315 from the American Paul McCready, with 14% chord thickness.

Amongst the original ideas used on the machine is a foldable wing which can be stored in a tube 19.0ft x 10 inch (5.80 x 0.25 m). The fuselage comes down to 19.0 x 2.0 x 5.0 ft (5.80 x 0.60 x 1.50 m) which makes for easy transport on a trailer, while alternatively, the wing can be carried on a roof rack and the rest of the machine towed on its own undercarriage. Fitted with an adjustable rudder bar to allow for pilot's height, the *Sirocco* also has a trimmer for the elevator. Its spoilers seem particularly efficient and it can

roll from 45° one side to 45° the other side in 4s. A properly engineered drum brake shows the nosewheel brake, in contrast to the crude devices used by some manufacturers.

Price: 64,000FF including tax, ready to fly. Options include an instrument panel, VHF or CB radio equipment and a ballistically deployed parachute (10,650FF).

2 - EXTERNAL DIMENSIONS & AREAS — Length overall 19.0 ft, 5.80 m. Height overall 8.9 ft, 2.70 m. Wing span 33.2 ft, 10.12 m. Constant chord 4.6 ft, 1.38 m. Dihedral 1°. Sweepback 10°. Tailplane span 7.2 ft, 2.20 m. Fin height 3.7 ft, 1.10 m. Total wing area 151 ft², 14 m². Total spoiler area 6.9 ft², 0.64 m². Fin area 4.3 ft², 0.40 m². Rudder area 4.1 ft², 0.38 m². Total elevator area 15.6 ft², 1.45 m². Wing aspect ratio 7.3/1. Wheel track 5.9 ft, 1.80 m. Wheelbase 4.7 ft, 1.40 m. Nosewheel diameter overall 12 inch, 30 cm. Main wheels diameter overall 12 inch, 30 cm. Floats, 10.2 ft, 3.10 m.

3 - POWER PLANT — JPX PUL425 engine. Max power 26 hp at 4600 rpm. Propeller diameter and pitch 39 x 18 inch, 1.00 x 0.45 m. No reduction. Max static thrust 150 lb, 68 kg.

Power per unit area 0.17 hp/ft², 1.9 hp/m². Fuel capacity 5.3 US gal, 4.4 Imp gal, 20.0 litre.

4 - WEIGHTS & LOADINGS — Empty weight 232 lb, 105 kg. Max take-off weight 461 lb, 209 kg. Payload 229 lb, 104 kg. Max wing loading 3.05 lb/ft², 14.9 kg/m². Max power loading 17.7 lb/hp, 8.0 kg/hp. Load factors NC design; +6.7, -3.6 ultimate.

5 - PERFORMANCE* — Max level speed 71 mph, 115 kph. Never exceed speed 75 mph, 120 kph. Max cruising speed 65 mph, 105 kph. Economic cruising speed 53 mph, 85 kph. Stalling speed 24 mph, 40 kph. Max climb rate at sea level 680 ft/min, 3.5 m/s. Min sink rate 240 ft/min at 31 mph, 1.2 m/s at 50 kph. Best glide ratio with power off 12/1 at 40 mph, 65 kph. Take-off distance 115 ft, 35 m. Landing distance 165 ft, 50 m. Service ceiling 10,500 ft, 3200 m. Range at average cruising speed 186 mile, 300 km.

*Under the following test conditions — Airfield altitude 0 ft, 0 m. Ground temperature 59°F, 15°C. Ground wind speed 0 mph, 0 kph. Pilot weight 199 lb, 90 kg. Engine as above.

BARDOU

R Bardou, Bugard, 65220 Trie-sur-Baise; tel (62) 35.54.50.

Robert Bardou Choucas/Suitable Rogallo (Weight-shift)

Single-seat or two-seat single-engined flex-wing aircraft with weight-shift control. Rogallo wing. Pilot suspended below wing in trike unit, using bar to control pitch and yaw/roll by altering relative positions of trike unit and wing. Undercarriage has three wheels in tricycle formation; glass-fibre/carbon-fibre suspension on all wheels. Nosewheel steering independent from yaw control. Glass-fibre/Kevlar/carbon-fibre trike unit, partially enclosed. Engine mounted below wing driving pusher propeller. Other data dependent on customer's specification — see text.

1 - GENERAL — Robert Bardou is a craftsman who specialises in the fabrication and building of single-seat and two-seat trike units suitable for fitting to unmodified hang-gliders

without modification to them. Called *Choucas*, these 'chariots' are built according to the desires and requirements of the purchaser.

Each model is designed according to the power pack chosen, virtually all engines being suitable, and each *Choucas* is built of laminated glass-fibre and epoxy with reinforcements of uni-directional Kevlar and carbon-fibre. The legs of the main landing gear and the nosewheel fork (steerable and fitted with a brake), are also made of uni-directional glass-fibres, criss-crossed with reinforcement of carbon-fibre. The engine mountings are formed from Duralumin inserts incorporated at the time of moulding wherever bolts are considered necessary.

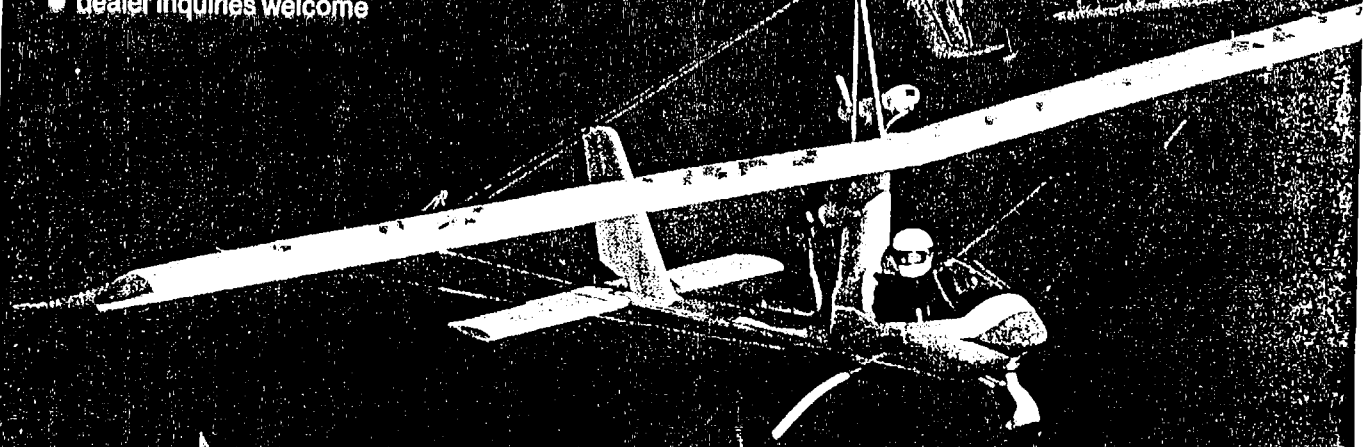
Of remarkable lightness — around 44 lb (20 kg) for a single-seater without power pack, these *Choucas* trike units attach to the wing with a fork built of two Duralumin struts, forming an inverse V. Each of these tubes is held to the shell of the trike unit by two bolts through the strong points. De-rigging the two lower bolts allows these two struts to fold forward onto the trike unit for transport. The price of a *Choucas* single-seater, complete except for wing and engine, is around 8000FF.

As no two of Robert's products are alike, it is impossible to quote a standard specification, so we have omitted paragraphs 2-5 in this case.

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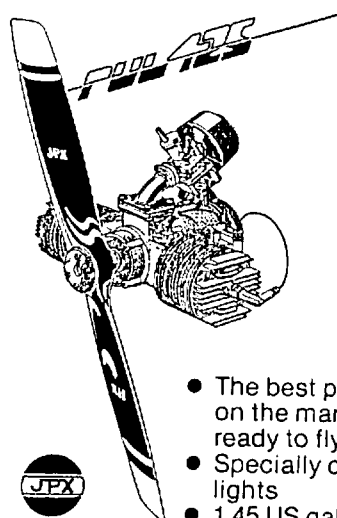
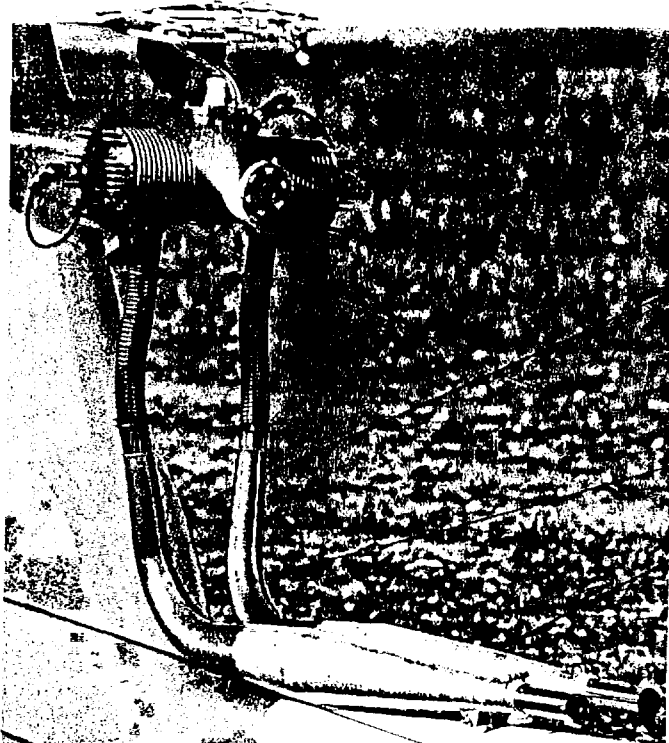


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