



No 236

SPORTAVIA

FOURNIER

RF-4D

*Drawn by World R/C
Scale Champion.*

MICK REEVES



Flight photo of an RF-4 shows panels where outrigger undercarriages fit from the underside – a feature not evident on Bravo Juliet, the subject of Mick Reeves' model and drawing, as in photo below.

REMEMBER the Jodel D-9 Bebe? Or the Druine Turbulent? Of course – but why? We'll tell you – because whereas once upon a time these pioneer single seaters were the first to use a Volks engine, nowadays we take it for granted that the VW can power *two* seaters – even aerobatics. The b.h.p. has gone up over the years, so has the reliability factor. When the Bébé first flew it was almost a mind over matter situation. Thanks to steady development the airframes have become cleaner, more efficient to improve the breed.

One designer who has contributed greatly to this change is Rene Fournier who first built his VW home-built RF1 in 1960. It was a new approach with bigger wing area than usually accepted yet there was little speed penalty. Then came the RF-2, and the RF-3 which was produced by Alpavia in the South of France.

Though the RF-3 gained enormous popularity, it has been the subsequent refinement of the RF-4, out of the German firm in Sportavia which really established

the Fournier as a type *par excellence*. But it was no longer the inexpensive lightweight single seater, due to a beefed up spar, Frise ailerons (previous RF types have plain 'barn door' ailerons), mechanical starter, etc.

Aviation has produced many ideal 'modellers aircraft', and as a positive modelling subject the Fournier RF-4 is a natural for control line or radio. (The 2 seat RF-5 is better for free flight.)

Shaped to glider-like proportions, the RF-4 is designed as an 'Avions Planeur' and although superficially a powered glider, the aircraft was designed first with the accent on *Avions* (powered aircraft) with *Planeur* (glider) as a secondary consideration.

Its carefully developed aerodynamic shape and excellent structural design have imparted a performance which has taken some of them to remarkable extremes. For example, after switching off the motor at 19,000ft one RF-4 was soared all the way to 35,000ft.

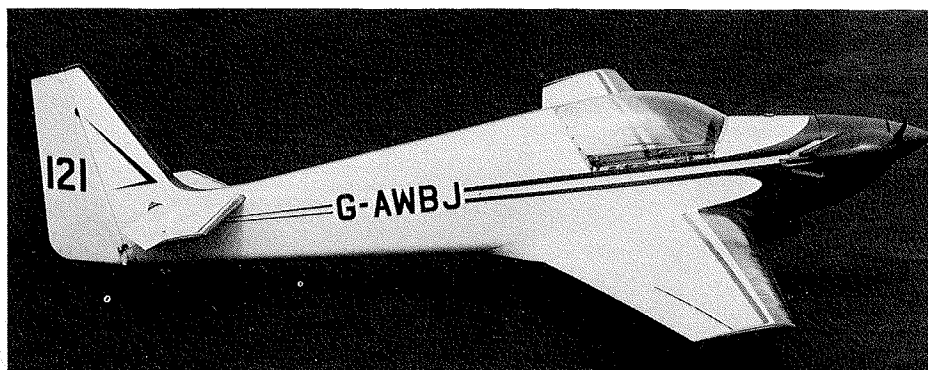
The RF-4 will cruise at 112 mph for 4 hours on just nine gallons of fuel (that's 50 mpg, by the way) yet by use of on/off engine technique the endurance has been extended to a remarkable 15 hours, covering a distance of 1,300 miles in the process – and all on two gallons of fuel! Delivery flights to Africa have spanned 6,000 miles in 500-600 mile hops!

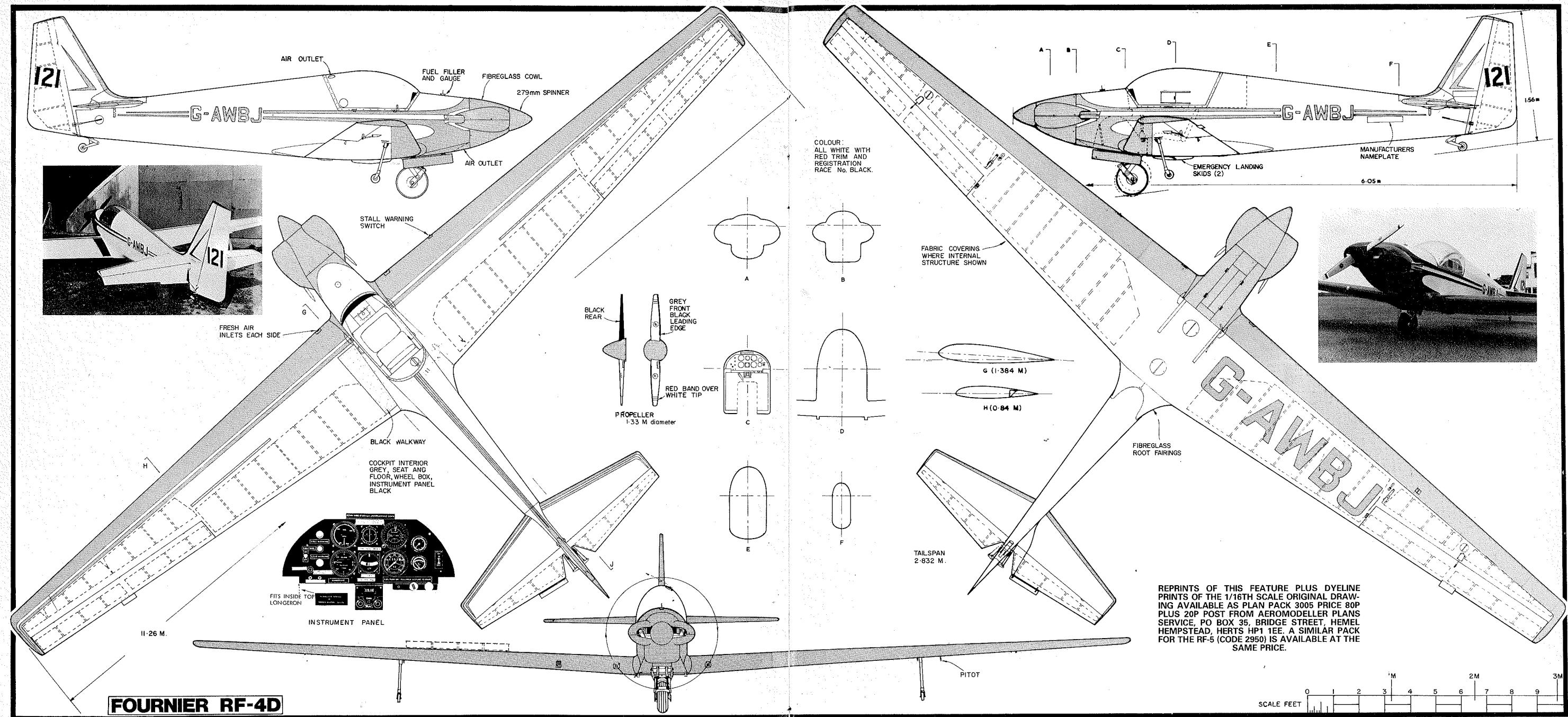
Yet performance does not end there – the RF-4 is also an aerobatic aircraft, stressed to +6 and -3g at gross weight it is capable of most normal manoeuvres. The airframe has been tested to destruction at 13.8g.

Maximum level speed at take-off weight is 118 mph (190 Kph), it can be dived to a maximum of 168 mph (270 Kph) and it stalls at a gentle 43.5 mph (70 Kph). Yet all of this performance envelope is achieved on the power of a 40 hp 1200cc modified Volkswagen engine.

CONSTRUCTION

Wing of the RF-4 uses the NACA 23015 section at the root, tapering to 23012 at the wing tip. With an aspect ratio of 11.2 the wings are all wood, single spar construction, with plywood and fabric covering. The wing is built as a single assembly and fitted to the fuselage using four bolts. Ailerons are wood and fabric covered, the aircraft is without flaps, but an air-brake is installed in each wing panel in three sections to extend from a slot in the upper surface.





FOURNIER RF-4D

The fuselage is also of all wood construction and entirely plywood skinned, while the tailplane has wood framework and fabric covering.

A single, fuselage centre line mounted main undercarriage retracts manually forward into a cowl and employs rubber chord shock absorption. The remainder of the undercarriage includes a steerable tailwheel and fixed wing tip outriggers, adequate for grass field operation. Access to the cockpit is via the side hinged Plexiglass canopy which offers unrivalled visibility and comparative comfort for so small an aircraft. In fact one RF-4 was ferried from Germany to California over the Greenland Icecap by Mira Slovak – and

that cannot be achieved without a draught proof cockpit.

The four cylinder 1200cc Rectimo Volkswagen engine delivers 40hp with single ignition and carb, driving a Hoffman two blade wooden propeller, with a clockwise rotation.

Factory colour scheme has always been overall white, with red trim in the form of fuselage cheat lines and wing leading edge. Very few variations have been seen, but the registrations cover almost every nation where sport flying abounds. A popular aircraft with modellers, the RF-4 is a regular mount for well-known personalities in the German, American and British model trade.

PHYSICAL DATA

Wing Span	36ft 11in (11.26m)
Length Overall	19ft 8in (6.05m)
Weight Empty	562lb (255kg)
Max. Take-off Weight	
(Aerobatic)	794lb (360kg)
(General purpose)	838lb (380kg)

PERFORMANCE (at Max. Take-off Weight)

Max. Level Flight	118mph (190kph)
Max. permitted Diving Speed	168 mph (270 kph)
Max. Cruise Speed	112 mph (180 kph)
Stall	43.5 mph (70 kph)
Service Ceiling	19,700ft (6000m)
Range with Full Fuel Load	410 miles (660 km)

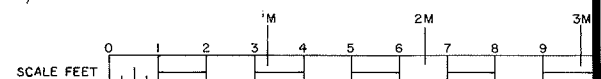
The Sportavia Fournier RF4 has proved to be very popular with light plane pilots. Here Bravo Juliet, our subject aircraft fires up her 4 cylinder air cooled VW engine as a fellow pilot does likewise. They are ideally suited to the small grassy airfields typical of the local flying clubs.

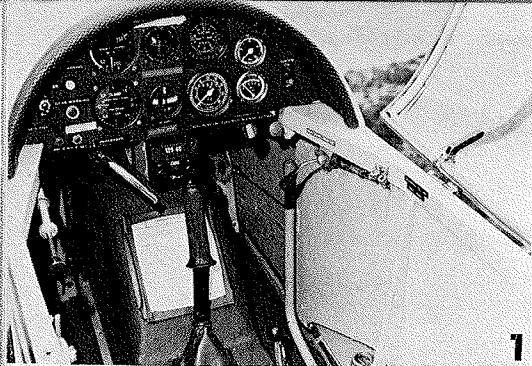
Aeromodeller



May 1979

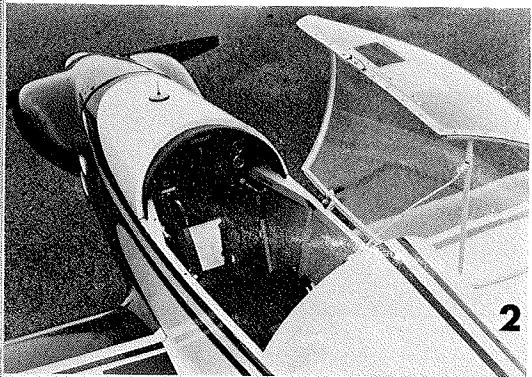
REPRINTS OF THIS FEATURE PLUS DYELINE PRINTS OF THE 1/16TH SCALE ORIGINAL DRAWING AVAILABLE AS PLAN PACK 3005 PRICE 80P PLUS 20P POST FROM AEROMODELLER PLANS SERVICE, PO BOX 35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS HP1 1EE. A SIMILAR PACK FOR THE RF-5 (CODE 2950) IS AVAILABLE AT THE SAME PRICE.



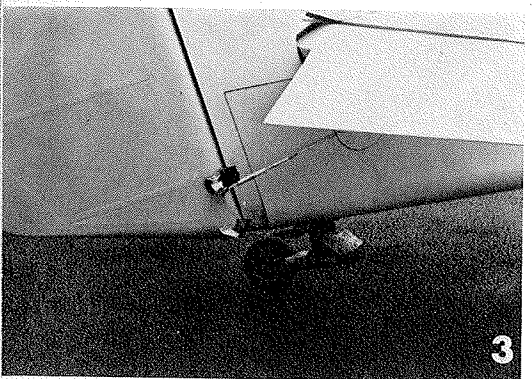


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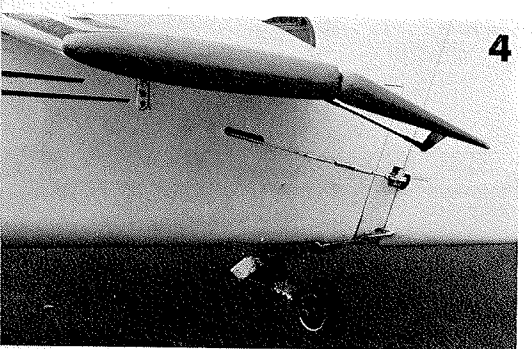
1. Under the instrument panel, left to right. Throttle is push-pull, brake the umbrella handle type, radio in centre and at right, the big lever for wheel retraction. Interior is a grey with blue tinge – almost pale blue. 2. Side hinged canopy has numerous screws holding it to frame, a prominent scale-point. 3. Shrouded rudder and elevator hingelines rudder cable and return link to steerable tailwheel. 4. Port view of same shows elevator balance tab link plus external tail mount bracket.



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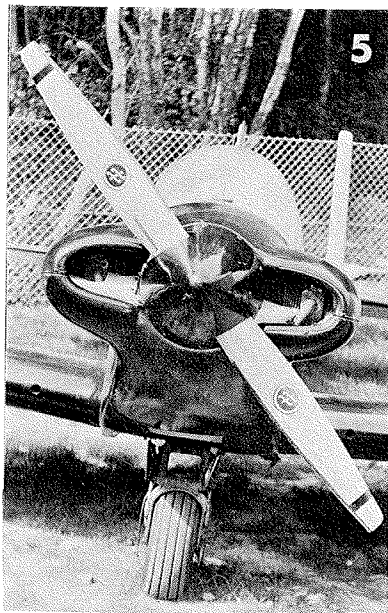
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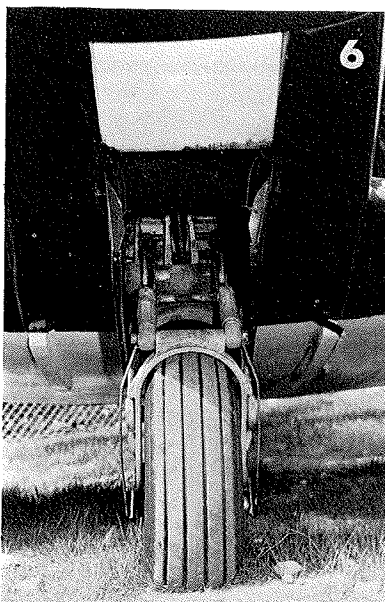
8. External stiffeners on wheel doors, wire guides in front of wheel yoke, and expanding hub brake detail. 9. Air brakes extend from upper surface as spoilers, in four elements each side. Wing fabric has light gloss finish. 10. Outrigger started as a hoop, then had single strut (flexible) with small solid wheel. 11. Vent at upper rear starboard side; clear view and opening ventilator is on port side only. Decal in red and black is for attendance at Aspenair Int'l Air Race.

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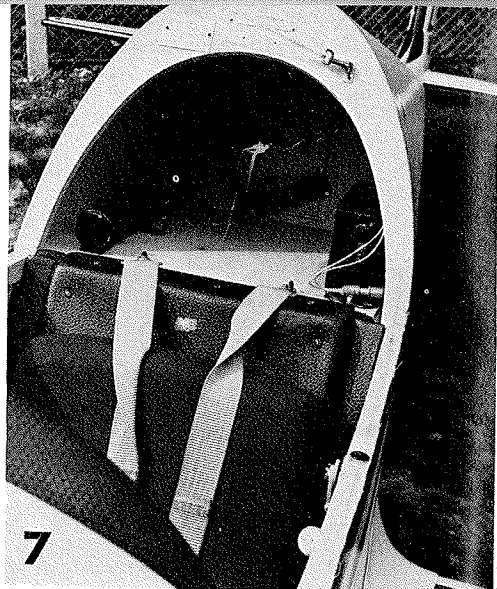


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5. Hoffman prop has trademarks on each blade. Cowlings are slightly different Port and Starboard due to staggered cylinders. 6. Wheel close up, plus two external skids (in case of wheel failure!) Wire guides either side of wheel yoke open the spring-loaded doors. White area is engine air outlet. 7. Rear of cockpit, red cushion on black vinyl, seat luggage area has extinguisher clip and radio. Constructor's number plate on bulkhead at top.



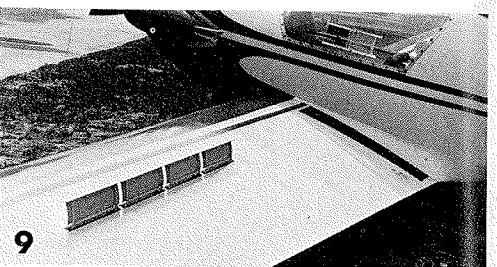
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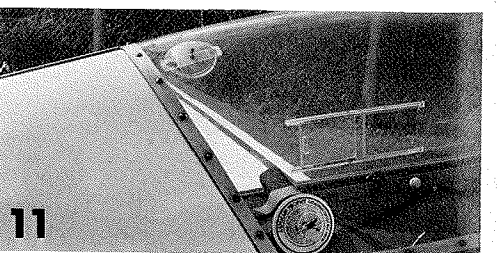
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