



A new RF6B parked beside the Fournier factory in the 1970s, when production was in full swing for all too short a period

Another Fournier, Bob?

Our serial Fournier rebuilder and enthusiast finds his perfect aerobatic two-seater - or so it seems...

Words: Bob Grimstead

In 2014 and 2015 I restored, re-covered and reassembled my single-seat wood-and-fabric Fournier RF4D RedHawk. During 2016 and 2017 I imported and tinkered with repairing the badly damaged aerobatic prototype two-seat derivative Fournier RF47 because my wife Karen and I wanted to be able to share my airshow weekends. After dismantling everything ahead of the firewall, stripping off its fabric and doing a few easier things like making a new instrument panel and removing the rudder pedal assembly, I came to realise just what a huge task I had undertaken. Then,

unexpectedly, on the last day of 2017, I got an SMS from my long-time friend, former Fournier display pilot and Red Bull Air Race Team Manager, Mike Dentith: 'Tiger Airways is closing down... Tizi is left with an RF6B. I know it can be bought for a good price... I thought of you.' For those who don't know it, René Fournier's RF6B is a wooden masterpiece – a long-low-winged aerobatic monoplane, stressed like his other creations to +6/-3g. Although rather bigger and heavier than my RF4D and fitted with a draggy nosewheel, it has double the power from a 'proper'

100hp Rolls Royce Continental O-200 engine. The RF6B spawned no fewer than 281 Slingsby Firefly trainers used by military forces around the world, but, like so many civilian aeroplanes that **had** been enlarged, strengthened and made heavier for military use, it had become comparatively less pleasant to fly. The Fournier original is said to be much lighter and more nimble than its overburdened military successors, with an MTOM of just 750kg against the T67M260's 1,157kg and, indeed, it is even lighter fully-loaded than the final Firefly model's 794kg empty weight. I had

flown its Slingsby successor with Ultimate High and thoroughly enjoyed that, but I had never sampled an original RF6B. It was time for some research. I perused my collection of *Jane's All the World's Aircraft*. With its short production life, only a couple of issues featured the RF6B, and neither offered much performance information. They confirmed its strength at +9/-4.5g ultimate and gave a cruise speed of 118mph with a stall at 53mph, but there was no mention of a climb rate. Long experience has taught me to be wary of nineteen-seventies aircraft performance claims, plus it was clear that all these numbers had been rounded up in kph, but then very accurately converted into mph, so that more realistic numbers might be a 110mph cruise and 55mph stall. Those were still pretty good of course, and similar to the Cessna 150's with the same engine, plus a long-accepted rule-of-thumb is if the cruise speed in mph exceeds the horsepower, you have an efficient aeroplane. The RF6B's takeoff distance to fifty feet was claimed to be 290 metres, with a slightly shorter landing distance over trees of 250 metres, but again I was sceptical. That would be the best of ten attempts, with a brand new aeroplane and engine, a fine-pitched 'climb' propeller and hard inflated tyres, flown by a skilled test pilot from a smooth runway. I would be better to assume takeoff and landing distances of 350 metres until I was sure. Mind you, less than 500 metres is classed as STOL, so those numbers are still very good. But what I really wanted to know was its climb rate. I know I can fly an Intermediate level sequence without losing height in my RF4Ds with a 600fpm climb, although 1,000fpm would be preferable. I consulted René Fournier's autobiography *Mon Rêve et Mes Combats*. This claimed a '*vitesse ascensionnelle*' of 3.5 metres per second, and in the English version that was predictably accurately translated as 689fpm. But what if that 3.5m/s was rounded up? The actual measured climb rate



ABOVE: glory days for Fournier – the RF6B production line

might have been just a hair over 3.25m/s or 640fpm. Of course, all those numbers were attained at the 750kg maximum takeoff weight, and I would likely be flying aerobatics at around 620kg. But that was offset by the performance figures being obtained in ISA (fifteen degrees

BELOW: the Continental O-200 engine bestowed just sufficient power



Celsius) whereas my European displays are occasionally in temperatures up to 35°C. Then I found a contemporary *Flight* magazine 'Flight Impressions'. Cliff Barnett said 'The RF6B climbed at 700fpm at 60 knots. At 1,500 feet 2,500rpm produced an indicated 92kts (105mph).' That was two-up although he didn't specify the weight or fuel load, but it was independent corroboration, and 700 feet per minute was similar to my RF4Ds' climb, so I was convinced. So, this type did seem to have enough performance for my needs, although it would probably benefit from a little more thrust – but then what aerobatic pilot ever complained that he (or she) had too much power? So I contacted Tizi. I was keen to meet her because she was a fellow member of that élite club of just six pilots worldwide with the skills to display the low-powered, low-drag RF4D in formation aerobatics – a task I knew to be at the very pinnacle of piloting ability. She invited us to see and sample G-BKIF, her RF6B. A week later, on a cold and misty January afternoon, Karen and I arrived at Staverton. With a deteriorating forecast we quickly looked around her all-yellow aeroplane, I flew it, and Karen got as far as the threshold with Tizi before fog closed in. We→

... a classic, nimble Fournier design...

both liked it. Yes, it was perhaps a little underpowered, but what a delightful aeroplane—a classic nimble Fournier design with light and responsive controls. What this sweet thing really needed was more power. Depending on who you ask, you'll be told the nominally 100hp Continental O-200 actually produces between 85 and 97 horsepower, but installing high-compression C-85

pistons can perhaps increase this quite a lot. Fit a bespoke Hercules propeller and you could have significantly improved performance.

Tizi and I flew sixty minutes of general handling and aerobatics. Burning just twenty litres per hour, the RF6B was clearly an economical two-seater, but my primary requirement was to fly display aerobatics in it. My first impression was that, although

its roll-rate might be regarded as slow, it was still better than my RF4Ds'. But did it have a good enough power-to-weight ratio for me to be able to maintain height through a five-minute routine?

Up at 4,000 feet where we were cavorting, the game little Continental was probably only producing about eighty per cent of its nominal power, and I had to keep throttling it back to stay within allowable rpm,

RIGHT: "What about that one?" G-BLWH's fuselage sitting at the back of the hangar...

BELOW RIGHT: ... not far away from its single-piece wing

BELOW: Karen with Tizi in G-BKIF, the aeroplane Bob had gone to see

but I lost only a few hundreds of feet in my first attempt at a simple sequence incorporating basic, positive-G manoeuvres. So I reckoned this could be the ideal type for us, although there were several drawbacks to this particular example. Its ARC expired within the week and it needed quite a lot of work to bring it up to snuff, plus it didn't have an .833Mhz radio, then an expensive impending requirement. Tizi's £15,000 asking price seemed rather a lot under the circumstances.

Just before we left Staverton, Karen spotted another airframe by the hangar wall. "What a smart black-and-yellow colour scheme," exclaimed my artist wife. "What about that one?" It turned out this was Tizi's other RF6B, G-BLWH which she called *WhoreHouse*. It hadn't flown for decades, during which it had been undergoing a slow but thorough rebuild, latterly in the hands of Britain's 'Mr Fournier' and another old mate of mine, Dave Bland. Whisky Hotel's unusual black and yellow colours were eventually chosen as a compromise by Tizi who had really wanted it painted in yellow and black tiger stripes appropriate to their Tiger Airways company.

Across the road I popped, to Dave's hangar for a chat. He explained that 'WH had been repaired, rebuilt and re-covered at Booker more than a decade earlier, but he had undertaken the subsequent cosmetic and completion work. He assured me that everything was present including all the instruments, so it 'only' needed an engine and radios plus reassembly. Tizi was asking £5,000 for it, but with all that required work, this seemed rather a lot.

During the succeeding days I made further 'due diligence' enquiries about that airworthy yellow 'IF. For years I had only been involved with aeroplanes operating on LAA Permits to Fly, with which an owner can do much of the maintenance and devise modifications himself, greatly reducing the costs. Much as I was attracted to this RF6B, I had to accept that it operated on an EASA C of A with all

the onerous requirements of AMO, CAMO, ARC, professional maintenance and two inspections every year. Worse, even simple modifications like rearranging the dated instrument layout or fitting spats, let alone installing

a wingtip smoke system or high-compression pistons, would be so time-consuming, expensive and arduous as to be impractical, while fitting a Hercules propeller would be, if not impossible, very difficult. **and expensive**



Furthermore, as well as lacking an .833MHz radio, 'IF had several u/s instruments and its nose leg oleo seemed low. A few phone calls to local maintenance establishments revealed that these comparatively small issues might cost a lot to fix—perhaps as much as £5,000—maybe even more. All this convinced me that Tizi's requested price added to the cost of its imminent annual inspection would immediately make my total outlay more than the aeroplane was worth.

Still tempted but undecided, I phoned my friend and former colleague Rich Sims, operator of the delightful group flying club SportAir at Goodwood to ask his estimate of its value. "In full flying condition with a new ARC and no snags, not a penny more than £15,000," came the disappointing reply. But that was the asking price with significant imminent outlays, so reluctantly I passed.

Disheartened but not yet discouraged, I now tackled Tizi about that dismantled black-and-yellow Whisky Hotel. Previous research revealed that there had been four British-registered RF6Bs but that only Tizi's G-BKIF was still flying thanks to the difficulties and expense of rebuilding under EASA. I drove over to see my friends at LAA headquarters in Turweston.

What chance was there of getting this second airframe on to a Permit to Fly so that I could reassemble it myself and achieve my required modifications via the LAA's far less onerous and more practical system? Long discussion ensued, but their eventual response was, 'We would like to help you, and we sympathise that in 43 years there has never been any factory support for these aeroplanes, so it would be appropriate that they operate under LAA Permits to Fly. But RF6Bs didn't qualify for any of the exclusion clauses that allow some types to operate under national control—for example it was designed in the late seventies rather than before 1955, it was not ex-military nor historically significant. It was an EASA type and, having been factory-built in Europe, EASA won't relinquish their firm grasp on the



ABOVE: improving G-BKIF's 'dated' instruments and avionics *would have been expensive*

What chance was there of... a Permit to Fly?

design's C of A status.' Now I was discouraged.

I vacillated for months, until the next April when I heard that EASA was making moves against several Type Certificate holders. The RF6B's Type Certificate had always been held by René Fournier himself, but lacking a factory or his former subcontractors, he had never been able to offer much more than moral support and the occasional drawing. René was now in his late nineties, and a couple of years previously EASA had arbitrarily introduced significant annual fees for Type Certificate holders for no more reason than because, as unelected dictators, they could.

René was obviously unable to pay this outrageous new imposition, so in retaliation EASA revoked the RF6B's Type Certificate (among others). This seemed to indicate that they were now truly orphans, so surely they would be eligible to be operated under Permits to Fly? Further discussions with the LAA's hierarchy led me to believe that as 'an orphan' it might indeed become possible to operate one here on a Permit to Fly. But that would be an unfamiliar EASA Permit rather than the more familiar LAA one. This wouldn't provide the same degree of

flexibility for my intended modifications. I called Tizi again.

Yes, yellow G-BKIF had been sold, but she still had black Whisky Hotel. Yes, several maintenance companies had approached her to buy it, but no, she had not been prepared to accept their 'derisory' offers. I could see her point. The rebuild work seemed to have been completed to an excellent standard, and would clearly have cost Tiger Airways a lot of money over the years.

But the simple fact was that, even if I could complete the remaining work myself, the cost of transportation, an engine, radios, storage, additional components, inspections and completion on certified premises would soon add up to more than the finished aeroplane's value. I asked her the amount of those 'derisory' offers and she told me £1,000 so, after chatting for a while, I offered her £2,000 plus the opportunity for her to fly it when it was finished.

She accepted and, slightly to my surprise, I had bought Whisky Hotel. So does anybody out there in Pilot-land know where I can get an *italian* old but serviceable Continental O-200 engine from a low-winged aeroplane (so it has a fuel pump lobe on its camshaft)?