

meets

JIM SCHOFIELD



From Bristol Fighter and SE5a to the F-35 Lightning II, this test and display pilot's spread of fighter experience from the past century of development is unique

WORDS: BEN DUNNELL

In April this year, the RAF's centenary month, Jim Schofield flew his 100th different aircraft type. The mount in question was the Royal Aircraft Factory SE5a, specifically the Shuttleworth Collection's example F904, which dates from 1918 and is now known to have shot down a German Fokker D.VII over Belgium while in service with No 84 Squadron the day before the armistice. With both Shuttleworth's Bristol F2B and, through his previous job as an RAF test pilot, the Lockheed Martin F-35 Lightning II in his logbook, this surely makes Jim unique in having piloted production front-line fighter types 100 years apart.

Today, apart from flying at Old Warden and other activities in the historic aircraft and display worlds, he works part-time for a major UK airline flying the Airbus A320, and as a freelance flight test consultant. We met over lunch in the café at Elstree airfield, a convenient venue as Jim was on his way to the reopening of the new-look RAF Museum London.

He had shared his experiences of the F-35 for some of the museum's revamped displays.

Jim is the son of Carl Schofield, a Tiger Club stalwart, British aerobatic team member, and warbird display pilot for the Old Flying Machine Company and The Fighter Collection among others. "I ended up flying with him quite a lot in my formative years, and that definitely sowed the seed. From the age of four I've known exactly what I wanted to do. You don't realise how much of a blessing that is until you're surrounded by people who haven't had that luxury.

"I used to fly around Europe in the back of warbirds when I could. The one that stands out is flying from Duxford down to Turin in the back of a P-40. At times we had the Mustang and MH434 with us. The cloud was low-ish, so we were flying through the Alps at low level out of necessity. I watched the airshow there and we flew back at the end of the weekend. I don't think this is apocryphal — my parents had a message from school on



A practice display in Shuttleworth's SE5a during the collection's training week this April. DARREN HARBAR

BELOW: Not exactly standard fit for a Bulldog... Jim, then a member of the University of Wales Air Squadron, at St Athan in 1993. VIA JIM SCHOFIELD



"Like a cross between Top Gun and a holiday", says Jim of this No 4 Flying Training School air combat training detachment of Hawk T1s to Gibraltar in 2000. He is on the right of the back row. VIA JIM SCHOFIELD



ABOVE: Taking a Harrier GR9 vertical over Wiltshire in 2006 during trials of this upgraded variant.

QINETIQ

TOP RIGHT: Preparing for the second Gulf War in his No 3 Squadron Harrier GR7 during 2003. VIA JIM SCHOFIELD

ABOVE RIGHT: ETPS use of Swedish Air Force JAS 39B Gripens saw Jim gaining experience of this excellent Swedish combat jet. He's airborne in this one en route to 2008's cancelled Royal International Air Tattoo. QINETIQ

the Monday morning along the lines of, 'James has been lying again. In his 'what did you do at the weekend?' essay, he said he flew to Italy in a Second World War fighter...'

"We had a field behind the house with a Citabria in it, and I used to fly out of there as an 18-year-old. I was fortunate enough to be able to take a PPL when I was 18, and then went to Swansea University where I was taught to fly 'properly' by the University Air Squadron. Even until the end of my third year, I wasn't sure if I wanted to join the air force. I knew I wanted to fly aeroplanes, I just wasn't sure about taking orders and marching around.

"I graduated in 1995. I'd failed to get a flying scholarship, I'd failed to get a sixth-form scholarship, I'd failed to get a cadetship through university, so I was starting to get the message at this point. Happily, I got in at the fourth attempt with a direct-entry application after leaving university, but it took a year for that to happen. By that time I'd gone down the commercial pilot licence route, and I got my air force acceptance letter on the day I passed my instrument rating test."

Jim says, "My philosophy has always been that I'd hate to go through life thinking, 'I could have, but didn't.'" He duly joined the RAF, going through officer training at Cranwell and then flying training, first on the Bulldog — which he'd already flown at the UAS — followed by the Tucano

and the Hawk T1. "The Tucano at Linton-on-Ouse was wonderful flying, because it was the first time you fly a truly exciting aeroplane. It was at a time in your training where it's not dead-serious just yet, so there was a lot of fun to be had. It started to get a bit more serious at Valley on the Hawk, with everyone stressing that you could be off to war as soon as you finish training on your front-line type.

"During all of these courses you're always left feeling wanting, because in the debriefs they don't hold back. Even if you're the best guy they've had through, they will still find holes, and you will still be left in no doubt as to your ability in the big scheme of things. But you could always find someone in the course ahead who's an idiot, concentrate on him and go, 'If he can do it, I can do it'."

"We didn't have GPS, so you'd be rushing around at low level, getting bounced by another Hawk, which would take you off your timeline. This was all based on getting to a time on target, simulating bombing a target within so many seconds. Having been knocked off that plan you'd have to cut corners to get back on time, all with a map and a stopwatch. I couldn't do that now. A real challenge.

"Just prior to graduation from Valley they let you choose three types that you want to go and fly, your 'dream

list'. I chose the Jaguar — the idea there was that although the aircraft wasn't the best at the time, the guys on the 'Jag' force had such a lot of fun, notwithstanding the inadequacies of their platform. That was my top choice, because I wanted to enjoy life. Then there was the Tornado F3, because if I couldn't be a single-seat guy I could be a fighter pilot, and then the Tornado GR4. Obviously, having a sense of humour, the air force gave me the Harrier.

"My impression at the time — and it hasn't changed to this day — was that there's always one fleet where people who want to get to the top of any organisation go, be that a certain type in the airlines or be that the Harrier, as was, in the air force. You have people climbing over each other to get to the top, which leads to an atmosphere which, at times, isn't as much fun as it could be. I was by no means disappointed to get the Harrier; I was delighted. I was just curious to see what life on the Harrier force would be like.

"The Harrier is an aircraft with a lot of mystique around it, and rightly so. It's a very capable aeroplane, but if you take any liberties with it, particularly in the V/STOL regime, it'll give you a good slap. A lot of the rules on the Harrier force at the time were written in blood, so if there was an accident there would be a new rule to prevent you from doing that sort of

thing. A big part of learning to fly the Harrier" — which Jim did with No 20 (Reserve) Squadron at Wittering — "was learning the book verbatim. For example, a rolling vertical landing doesn't look that complicated when you're outside watching the aircraft do it, but from inside there are about five different control strategies going on at different times in the approach. It's a particularly high workload."

Going operational, with Cottesmore-based No 3 Squadron on the Harrier GR7, was little different. "Everyone asks me whether my career in high-risk flight test, doing things that have never been done before, was really dangerous. It might have been dangerous, but because we mitigated all of those risks to the nth degree, with luck we thought about everything beforehand, so everything had a get-out plan. Most of my near-death experiences happened on the Harrier front line, and I was only there for three years. I had seven birdstrikes in one year... I nearly hit someone at night at low level — same target, 900kt of closure, I never saw him. That was, having reviewed the HUD [head-up display] tape afterwards, very close. About five minutes later I nearly flew into a ridge that was hidden in moon shadow. The only thing that alerted me to that was the radalt [radar altimeter] warner going off. I got down to a handful of feet."

One of the birdstrikes was in a T10 two-seater, at low level during an over-water range sortie. "I saw the seagull coming for my head, so instinctively bunted a little — obviously you can't push that much at 100ft. The seagull went just over my head, through my canopy, and hit the blast screen between the two cockpits with enough force to shatter the back canopy as well. A lot of my canopy went down the engine, and the back canopy ended up in bits. After I landed we had a look at the first stage of the LP fan in the engine, and the chunks taken out of the engine were eye-watering. But it held together..."

When he joined the RAF, Jim could hardly have expected to find himself flying off an aircraft carrier, but — with the RAF/Royal Navy Joint Force Harrier concept now a reality — he ended up doing exactly that. "I went out to HMS *Invincible* for my initial carrier qualification... It was a formation of eight aircraft. There were probably three of us who hadn't done it before, so they scattered the nervous chaps amongst the formation. But the ship wasn't ready when we got there, so we had to orbit in the overhead at 10,000ft for maybe half an hour,

looking down at this postage stamp with a wake behind it, thinking, 'Oh my God, we've got to land on that'.

"The other thing they said was that they were going to clear 'Goofers', the viewing promenade, so that we were under no pressure. I got alongside and 'Goofers' was just full of people, 50ft away. No pressure, then. When you're hovering you choose two references, normally at 90° to keep you in the same place over the ground. I had one directly in front of me, down the

“ The Harrier has a lot of mystique around it, and rightly so... if you take any liberties, it'll give you a good slap ”

line of the deck, and one directly abeam, a guy in a yellow jacket on 'Goofers'. I moved across the deck, at which point this guy must have got bored, and he wandered off. I ended up in this wobble, thinking,

'Argh, my reference has just left!' But I made it."

Soon afterwards came Operation 'Telic', as the UK dubbed the second Gulf War. "There were some tense moments. Releasing live weapons in support of allied troops under attack, not far from their position, really concentrated the mind. I also nearly ran into quite a large missile, which flew vertically past at great speed. You're supposed to come up with this very precise, brief terminology over

ABOVE: Harrier GR9 handling trials with the Paveway IV laser-guided bomb in 2006 used test aircraft ZD319, pictured refuelling in Jim's hands from RAF VC10 C1K XV810 off the Isle of Man. BAE SYSTEMS

the radio to alert your wingman to exactly what's happened, but it felt like I couldn't say anything for about 30 seconds, which in reality was probably about five.

"At the end of my Harrier tour, the two traditional paths were to stay on the Harrier and become a weapons instructor — I fancied a bit more variety than that — or go to Valley and become a Hawk instructor, but I wanted to do something different. I was scratching around for a third option and someone said, 'What about test pilot?' I thought that'd never happen. I'd only done a tour. But I applied anyway, and was very surprised to be accepted."

He started on the Empire Test Pilots' School course at Boscombe Down in 2004. "At the time it was known as the 'divorce course' — six days a week for 12 months, and on the seventh day you didn't really rest. A real team spirit built up amongst the students". But despite the demands, the chance to fly 20-25 different types that year was not to be missed, "seeing some things, both good and bad, in terms of aircraft design that have occurred through the years that you take with you through your career as a test pilot". Those types were as diverse as Air Atlantique's DC-3 and Twin Pioneer, and a Swedish Air Force Saab Viggen and Gripen. "My end-of-course project was flying the F-15 in Florida, which was a real hardship", Jim smiles. "What a wonderful aeroplane that is. Just looking in the mirrors at those vertical tails..."

"On graduation I became the Harrier project pilot on the Fast Jet Test Squadron in 2005-06, and I helped introduce the GR9 into front-line service. It was a great project to be a part of. The three main testing disciplines are performance, handling and systems. Some people, because of where their platform was in its life, focused on one of those aspects. Not many got to look at all three, but on

the Harrier team we did. There were ski-jump trials, rocket trials, systems regression testing, and handling with [the] Paveway IV [laser-guided bomb].

"There are two things people say to you when you say you want to be a test pilot. One is that it's career suicide, and the other is that everyone will hate you from now on. It is career-limiting, but not necessarily career suicide if you never saw your career going anywhere anyway! And I didn't do too badly. As for everyone hating you, it's all too easy to see Boscombe as delaying the introduction of capability to the front line. But the testers are just making sure that the necessary changes are made to the aircraft before it's released to the front line, because you want the best and the safest kit given to your mates on the squadrons.

“I'd had my eyes opened to some quirky behaviour, but the Bristol Fighter is a delightful aeroplane”

"I got to fly the Harrier, the Jaguar and the Alpha Jet. The Jaguar was a great aeroplane to experience, because there was so much you would have done differently had you gone back to the SEPECAT days. The fuel system was a disaster, the view out was terrible, no thrust, no lift, you had to refuel in partial reheat, but it really made you concentrate on flying the aeroplane well. On take-off you had to rotate to 14° angle of attack — 13° wasn't enough lift, so you'd just carry on going without climbing; 15° was too much drag so you'd slow down.

"When I left the Fast Jet Test Squadron I was asked if I wanted to go back to ETPS to instruct. At the back of my mind I had this knowledge that it's very difficult to get back to the front line as a test pilot [TP]. When you start as a TP you've got a bucket of credibility that will only ever empty from then on. Every time you screw something up, the bucket empties, and when it's completely empty the front line won't listen to you anymore. You also need recent operational experience; I thought if I could get back to the front line I could top it up... but at the time there were no openings on the front line, and I quite fancied instructing."

Jim spent two years at ETPS, the second of them as principal tutor on

the fixed-wing side. With a view to his future, he then "bit the bullet" and took a desk job as an F-35 and Harrier staff officer at No 1 Group's High Wycombe headquarters. "The people got me through it, but every day I missed the flying". Thankfully it stood him in good stead for an exchange posting to the F-35 programme.

In March 2011, Jim moved to Maryland, in order to fly the Lightning II from NAS Patuxent River. He took to the air in the F-35B, the STOVL (short take-off and vertical landing) variant previously chosen by the UK, later that year. By then, though, the British government's order had been changed to the F-35C carrier variant. "It was a challenging time in the programme", he recalls. Having become the first British military pilot to fly the C-model, a volte-face saw a switch back to the F-35B. Jim's past experience came into play, and he ended up doing a lot of the STOVL testing. During July 2012 he took delivery of the UK's first Lightning, flying in the media's full glare from the Lockheed Martin factory airfield at Fort Worth, Texas, to Eglin AFB, Florida. A great deal more testing followed, including a period aboard the USS *Wasp* which proved how much easier the F-35B is to fly to and from a ship than the Harrier had been. In Jim's words, "It was a revelation."

Going out to the States had interrupted Jim's British air display activities. For several years he had been part of the Compton Abbas-based Yakovlevs team in its Yak-50s and Yak-52s, and then in 2010 he joined the Shuttleworth pilot roster, initially on its trainers. "It was the first time I'd flown aircraft like the Chipmunk, would you believe? Until you fly one, you don't know how nice it is."

In some ways, piloting the collection's aircraft was quite a culture shock — open cockpits, for instance. "The first time I looped the Tiger Moth I stopped the manoeuvre before I pulled back on the stick because it felt all wrong. At 115mph, which is the entry speed for a loop, to my closed-cockpit sensibilities it felt like the aeroplane was going to destroy itself. Then I had a think about it and thought, 'Yeah, that must be about right'. I tried it again and it worked". By the time he flew Peter Holloway's Bücker Jungmeister, he was much more comfortable, and revelled in the German aircraft's qualities. "The handling was exquisite", he says. "It's in my top three aeroplanes."

Returning home in 2014, Jim resumed flying at Old Warden. A



Leading the Yakovlevs team near Blackpool. VIA JIM SCHOFIELD



With father Carl — who was flying Hurricane R4118 for Peter Vacher — at the 2009 Kemble show. VIA JIM SCHOFIELD



Returning to earth after a trip in Shuttleworth's Bristol F2B, D8096. DARREN HARBAR



Jim became the first British military pilot to fly the F-35C carrier variant of the Lightning II, which the UK was briefly going to procure. US NAVY



Studiously preparing to fly the SE5a, which became the 100th different type in Jim's logbook. DARREN HARBAR

couple of years later, around the time he left the RAF as a wing commander working on F-35 requirements, came a chance he couldn't pass up: to check out in the Spitfire with the Boulton Flight Academy. "I had been pestering the right people at the right time. Getting someone to let you fly their Spitfire is a real challenge. You need hours on type before you're insurable, but how to get them? Boulton needed to change the engine on G-ILDA, their two-seat Spitfire. I had a call from [the operator's managing director] Matt Jones saying, 'What are you doing on Monday?' 'I've got wall-to-wall

meetings'. 'Can you be at Duxford at 9am?' 'Absolutely'. The meetings got rescheduled, and I went off to fly it at Duxford."

Shuttleworth's World War One types also entered the picture, beginning in late 2016 with the Bristol Fighter. Before that, the earliest of the collection's aeroplanes he'd flown was the 1932-vintage Parnall Elf tourer. "What I'd never heard of before was, because of the vintage handling qualities, you roll with your feet using the secondary effect of yaw — you then put the stick where the bubble is

on the inverted slip ball in the cockpit, and the aileron drag puts the aircraft straight again. It's the strangest thing.

"I'd had my eyes opened to that sort of quirky behaviour, but the Bristol Fighter is a delightful aeroplane. The only disappointment with it is in roll. To get any kind of decent roll rate you need both hands, and even then it's pretty pitiful, but it pitches wonderfully, and the V12 Rolls-Royce Falcon is a joy to sit behind. It's well-mannered on the ground, once you are briefed on the castoring tailskid... whichever way you land, it will end up pointing into wind. It's less of a problem on take-off because you've

BELOW:
After delivery of the UK's first F-35B at Eglin AFB, Florida, in 2012.
LOCKHEED MARTIN





ABOVE:
The displays Jim has given in Shuttleworth's newly restored Spitfire LFVc, as here at the collection's Family Airshow in August, have won a great deal of praise.

DARREN HARBAR

got some slipstream over the tiny fin and rudder. My overriding impression is a lovely aeroplane to fly, but I don't know how anyone ever got a kill in it with the forward-firing gun.

"It's an aeroplane that engenders confidence. From 13 years after the Wrights first flew, you've got an aircraft that, by and large, a PPL could fly today. Nothing is that different, other than some aspects of controllability. And the SE5a, which is only slightly later, flies almost like a Chipmunk. It's got the perfect balance of performance, stability and control. If you were in an SE5a, you would have been pretty well-placed in World War One. The only thing I did find was that I had bruises half-way down my upper arms, because the sides of the cockpit are really narrow."

Having flown Spitfires for Boulton — the two-seat IXT and, more recently, single-seat MkIX RR232 — Jim was a natural choice to become a regular display pilot for Shuttleworth's LFVc AR501 when it returned to the skies earlier this year. "I remember my first MkV display at low level. From what I've experienced, read and heard from other people, the MkV had the best balance of performance and handling across the Spitfire line, although some say the MkIX. I finished that first display and thought, 'I can die happy now'. I'd experienced the

Spitfire absolutely in its element. Sure, I'd love to fly a Bearcat, I'd love to fly a Sea Fury, but I'm happy now.

"The 'C' wing on AR501 has noticeable aileron friction, because of the way the control runs need to be in that wing, but in the air you don't notice it. The MkV feels much more like a racer with guns, whereas the MkIX feels like a more substantial aeroplane, but really the differences between the two are very minor. I'd be fascinated to have a go in some more marks, if anyone's offering..."

Given his 100-year spread of fighter experience, how does Jim characterise the progression — what's changed, what's stayed the same? "As aircraft got more refined and had higher performance", he reflects, "the ground handling challenges remained whereas the aerial ones evolved. Whilst airborne, you had to think about energy management more — or, at least, you had the luxury of having a higher-energy aircraft. In the Bristol Fighter and the SE5a, if you're manoeuvring at all, you're cruising around at max continuous rpm just to try and offset some of the drag from the biplane configuration. The Spitfire really is a slippery aeroplane, and you can easily convert a lot of speed to a lot of height, and pull a lot of g in the process. Almost jet-like.

"There are different physiological concerns for the pilots, and they were looking at a different subset of aeronautical challenges, but I think the hand-eye co-ordination required would have been similar between a World War One cavalry officer who was plucked off his horse and put in an RFC aeroplane, and the World War Two pilots. I would contrast that with today's breed of pilots. With our fighter force very shortly of purely Typhoon and F-35, where the aircraft looks after you, gone is the need for really good stick and rudder skills. You much more need to be a systems operator, to be able to assimilate an awful lot of information very quickly and accurately. And as you'd expect, because the required output of training has changed, so the input has had to change. They're taking a very different guy these days to the guys they would have recruited even 10 years ago."

Stick and rudder skills are something Jim certainly doesn't lack, and he's put them to good use in an exceptional array of types. "I have been blessed with the opportunity to fly some incredible aeroplanes — and some not-so-incredible aeroplanes. Each of them has presented unique learning opportunities, and I just look forward to the next chapter. I'm very humbled by what people have let me fly so far, and I hope that never dries up."

