Spitfire delight

Key.Aero

Dave Unwin

Images by Duncan Cubitt and Steve Fletcher

In your hand you hold a lottery ticket with all six numbers - it's a roll-over jackpot and there's only one winner. You are suddenly several million pounds richer than you were this morning - what will you buy? I think that a nice clean Spitfire Mk IX with a new Permit and a recently overhauled Merlin would be near the top of many pilots' shopping lists - but who's going to teach you how to fly it?

That's where John Romain and the Aircraft Restoration Company come in. One of the Spitfires the company looks after is the two-seat T9 owned by Historic Flying Ltd., but what makes this one unique is that it is used for training. And, let's face it, as we're talking about flying a piece of history, the training needs to be of the very highest quality.

As a result, John has drawn up a comprehensive training scheme for would-be Spitfire pilots. Essentially, it is structured so that you start off in the back of a Chipmunk; move up to the rear seat of a Harvard, and then progress into the aft cockpit of the T9. Then you move to the front, before ultimately (as long as you're good enough) going solo. Now, you might be thinking that the market for this machine would be quite small - well, you'd be wrong. In excess of 22,000 Spitfires were produced, and around 50 are still airworthy, with more aircraft being returned to airworthiness every year. Clearly, there is a significant demand for Spitfire training.

In 2005 I was lucky enough to be invited to attend to ARC's training day at Duxford to fulfil one of my childhood dreams and fly a Spitfire. Why the Spitfire still retains such a firm hold on the British public's collective consciousness is easy to understand - it is quite simply one of the most beautiful flying machines ever made. And as for me, well, like most kids, the first model I ever made was a 1/72 scale Airfix Spitfire, and my childhood heroes were the Battle of Britain Spitfire aces Alan Deere, Robert Stanford Tuck and, of course, George 'Grumpy' Unwin.

The Spitfire has a typically ‘British’ cockpit.

First off - some ground school. I’d spent the previous week assiduously studying the ‘Pilot’s Notes’ for the Spitfire Mk IX, so when John gave me an exam paper on the aircraft’s systems I already knew most of the answers without having to refer to the ‘Pilot’s Notes’. John then gave me an excellent briefing on the T9’s general handling characteristics, with special emphasis on the speeds and ‘angles’ that I’d be looking for in the circuit. We also discussed the aircraft that we’d be flying first - the DH Chipmunk T10. As mentioned earlier, the back seat of a Chipmunk is where you start the Spitfire syllabus. In many respects, the Chipmunk is an ideal lead-in machine; it is a taildragger fitted with a castoring tailwheel, and has a typically ‘British’ cockpit (i.e. poor ergonomics, unusual systems and a plethora of black-faced instruments).

One minor disadvantage is that its Gipsy Major engine turns in the opposite direction to the T9’s Merlin. On the plus side, it is relatively inexpensive to operate and has excellent handling! Most importantly, it is ideal for learning the all-important curved approach. As I soon found out, mastering this technique is fundamental if you are learning to fly a Spitfire, which has a very long nose, and using a curved approach is the only way you can keep the touchdown area in sight.

Briefing complete, John and I took off and climbed to the north for some general handling. It had been more than 30 years since I’d last flown a Chipmunk, but the handling really is so delightful that I soon got the hang of it. After some turns of varying degrees of steepness and an exploration of the Chipmunk’s slow flying characteristics, we returned to Duxford for some circuits.

Later it was time for the all-important briefing on the Spitfire. John explained that this sortie would follow the same format as the first, in that we’d take off, climb away to the north for some general handling and slow flight, before returning to Duxford for some circuits. He

emphasised that careful management of the big V12 engine was imperative, and that I should 'fly' the throttle just as much as the stick. "You wouldn't bang the stick around, would you?" he asked. I shook my head emphatically. "Well," he continued, "don't bang the throttle around either!" He then explained that he'd start the engine and perform the first takeoff, before moving on to describe the circuit procedure. "Basically," he began, "when flying a Spitfire you typically enter the circuit via a 'run and break' in order to bleed off some energy. Having turned downwind at 800ft, look out the side and ensure that the wingtip is just touching the nearside edge of the runway. Continue downwind while maintaining 800ft, then at the midfield point check that the IAS is 160mph or less, then lower the undercarriage and open the oil cooler and radiator shutters." Note that the 'Pilot's Notes' for the T9 are in mph.

"Passing abeam the numbers," he continued, "you want to be indicating 140mph or less, then pull the power back to minus four on the boost gauge with the prop set for 2,000rpm. Lower the flaps and then trim out the resultant pitch down - and it does pitch down! Aim to fly a steady curved approach with the angle to the threshold remaining constant. Use power as required - it'll be around about minus four boost - and aim to start going round the corner at 120mph, then dropping back to 105. Slowly roll the wings level with the speed steadily reducing towards 90, and push the prop lever to fully fine on short final. 'Last look' speed on very short final is 85," he emphasised. "Check the descent carefully - remember the elevator is quite sensitive - and hold off while slowly closing the throttle and looking for a three-point landing".

John gave me an excellent briefing on the T9's general handling characteristics, with special emphasis on the speeds and 'angles' that I'd be looking for in the circuit.

We then walked out to the waiting Spitfire, where I adjusted the seat and pedals before strapping myself in under John's watchful eye. He then returned to his office, leaving me alone in the cockpit to familiarise myself with the overall layout of the controls and instruments. John soon returned, jumped in and prepared to start the engine. I'll freely admit that at this point I was more than a little excited at the prospect of fulfilling a lifetime's ambition. I know that I'm supposed to be a professional, but as the giant prop dissolved into a shimmering blur with a crackle from the exhausts, my blood pressure was rising along with the oil pressure! As we were taking off on runway 24 it was a very short taxi from the hangar to the run-up point, yet

by the time we got there I couldn't help but notice that the temperature of the coolant was already rising rapidly, despite the fact that this was the first flight of the day! John mentioned that on some days it can be difficult to get the oil temperature to 40°C (the minimum for running up the engine) before the coolant reaches the maximum allowable ground temperature of 110°C! All checks complete, he let the Spitfire roll forward a few metres (to ensure that the tailwheel was straight) and then smoothly opened the throttle while I followed through on the controls. The noise was phenomenal - it was something more than sheer sound, and became almost physical, battering the senses as the Spitfire surged forward.

As this photo clearly shows, forward visibility on the ground is very poor.

We were off the ground after a fairly short ground roll, and John retracted the undercarriage, pulled the power down to 2,000rpm and +2 boost, and then said those magic words: "You have control!" Fantastic! As we'd been slicing upwards past the clouds, I'd been sneaking the occasional glance at the famous elliptical wing, but now I'd got control I settled down to the job in hand. I'm flying a Spitfire! However, once the initial excitement died down I have to admit that as I began to analyse the controls I was slightly disappointed. Although all three of the primary controls were very light, the control harmony was not perfect, as the elevator is lighter than the ailerons. I mentioned this to John, who confirmed my assessment, observing "The single-seaters are better." Of course! I'd forgotten that this machine was not designed as a two-seater - the extra cockpit would obviously have an impact on the handling characteristics. After several graceful, sweeping turns, I slowly reduced power, lowered the undercarriage and dropped the flaps. As John had indicated, there is a marked pitch down with flap selection, and also significant deceleration. John told me to maintain altitude until the speed had dropped to 80mph, and then to descend in a gentle spiral so I could see what the prerequisite curved approach would look like. Even at this very slow speed, all the controls still felt authoritative, and there seemed to be plenty of lift left in the wings. John then directed me to raise the flaps and retract the undercarriage before gently opening the throttle. He then took control and we scorched towards Duxford for a 'run and break'.

The wind was still quite blustery, and despite what appeared to be a text-book approach with the speeds and heights 'nailed' all the way round, the actual landing was definitely on the firm side. John was not pleased, and we powered back up into the sky for another go. The

second one was a lot better, so John advised me to add an extra five miles an hour for the gusts, and handed it over to me. As I swung the Spitfire onto the downwind leg I concentrated hard, and was pleased to note that as we passed the midfield point I was at 800ft and 160mph, with the wingtip just touching the runway. So far, so good! I lowered the undercarriage and opened the oil cooler and radiator, then rolled in just a bit of nose-up trim.

The Spitfire is quite simply one of the most beautiful flying machines ever made.

Abeam the numbers, I pulled the power back to minus four on the boost gauge, waited for the speed to drop below 140mph, then lowered the flaps and added some more nose-up trim before curving back towards the runway. The speed, sink rate and angle all looked good, and as the speed continued to drop I slowly rolled the wings level and pushed the prop lever to fully fine on short final. As I find is so often the case, a combination of intense concentration and beginner's luck produced a landing that really was quite good. However, the 'go' part of the 'touch and go' was less satisfactory - as I smoothly brought the power back up while concentrating on keeping straight, the Spitfire pitched and bucked a bit on the rough ground. Overall, though, I was very pleased with myself, and John also seemed reasonably happy.

But pride comes before a fall, and my second circuit was nowhere near as tidy. What's worse is that I inadvertently extended the downwind leg too far downwind before beginning my turn in. This had the knock-on effect of forcing me to roll the wings level while still downwind of the airfield boundary. As John had predicted, the giant nose now blocked my view of the runway, and the approach deteriorated into an exercise in faith as I groped blindly for the ground. We all know that good landings come from good approaches, and this was not a good approach. The landing was adequate, but only just. John said nothing as we taxied back and shut down.

Although there are several two-seat Spits currently airworthy in the UK, what makes this one unique is that it is often used for training. It has since been given a new colour scheme and now wears Royal Netherlands Air Force colours.

Back at the Aircraft Restoration Company office, it had been somebody's birthday, and there was one glass of champagne left. With a smile on his face, John observed: "As you're the world's newest Spitfire pilot, you'd better have it", then shook my hand and passed me the glass. The champagne tasted good, but I still didn't know what he was thinking. Unable to contain myself any longer, I blurted out: "Well, how'd I do?" John grinned and replied: "Not bad - not bad at all. Tell you what, why don't you come back sometime and maybe we'll look at putting you in the front..."