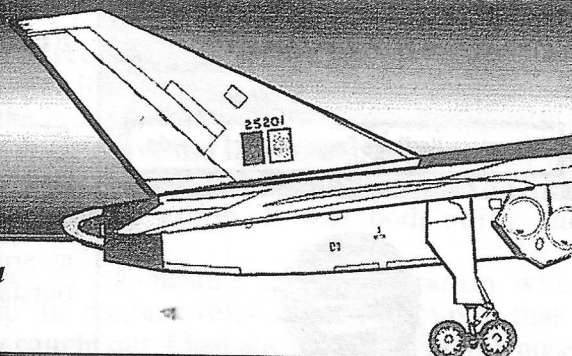


Pre-Flight

A Publication of the Aerospace Heritage Foundation of Canada
P.O. Box 246, Etobicoke "D", Etobicoke ON M9A 4X2



Vol. 21, No. 5

September - October 2010



Waterton - Rogers

CANADA and the U.S.A. A view from the front seat.

by

William A. Waterton

Part 2

In July, 1950, the second CF-100 18102 came along. Like the first, she was powered by 6,500 pound thrust Rolls-Royce Avons, bought by Avro to power the prototypes. Their own Orenda engines, when they came along, would be fitted in the production fighters. As before, I first flew her solo, then took up Bruce Warren, a new Avro test pilot, in the second seat.

Founded 1989

AHFC

Aerospace Heritage Foundation of Canada



Patron William Coyle
President Frank Harvey
Secretary Keith McLaren
Treasurer Al Sablatnig
Membership Nicholas Doran
Director Web Michael Brigham
Director Bill Daniels
John Hughes
Tim Patten
Dave Sotzek



Legal Consultant Jerry Faivish
Editorial Consultant John Thompson

PRE-FLIGHT Nicholas Doran
Ted Harasymchuk

President's mailing address:
1951 Rathburn Rd., E.
Unit 199
Mississauga ON L4W 2N9
905-624-4909

The Aerospace Foundation of Canada (AHFC) is a federally chartered non-for-profit organization. The current emphasis of AHFC is on Avro and Orenda. The Foundation is actively trying to locate former employees of these companies. No part of this newsletter may be reproduced without prior written permission. Opinions expressed in Pre-Flight do not necessarily reflect those of AHFC. Cash donations over \$25.00 and "gifts-in-kind" will be acknowledged by a receipt for income tax purposes. For more information on AHFC and how to support its activities, please write to:

**Aerospace Heritage
Foundation of Canada
P.O. Box 246, Etobicoke D
Etobicoke ON M9A 4X2
(416) 410-3350
www.ahfc.org**

From the President

This June, I attended the Annual Review of 845 Squadron (Avro Arrow) Air Cadets. Once again I was very impressed by the quality and training of these young people. 2010's winner of the James C. Floyd Trophy was Phillip Konarzewski. Phillip also won the Janusz Zurakowski Trophy last year. The Janusz Zurakowski Trophy was awarded to Martin DeSouza. My congratulations to both these outstanding Cadets.

Frank

Canada and the U.S.A

Part 2

In August I was directed to show off the plane at a display in Montreal. The occasion was the visit of the Australian Prime Minister, plus a gathering of Canada's top industrialists. Apart from the CF-100, Canada's first home-built Sabre would be on display. The trip went down very well. I passed over Malton at 10,000 feet at speed, and gently climbed to 23,000 feet, holding the engines well below their full power. Thirty minutes and ten seconds later I crossed Montreal airport, 320 miles away. I had averaged 638.5 m.p.h., about five to eight of them coming from a tail wind. The display followed the usual pattern, except that the plane was at that time still restricted to a maximum speed of 500 low down. I made up for this by demonstrating the plane's low-speed handling, manoeuvrability, acceleration, take-off and landing.

From Montreal I was ordered up to Ottawa to fly the Honourable Bruce Claxton, the National Defence Minister, to a meeting in Toronto. I told him I'd get him there in half an hour--and did. Unfortunately, the air conditioning system packed-up, and by the time we arrived we were both kiln dried.

August was highlighted by a flight in which I carried Ronald Keith, editor of Canadian Aviation. We covered forty miles in three minutes, forty seconds: some 653 miles an hour. Keith was suitably impressed. On the last day of the month I returned to America, this time to Boston, where the United States Air Force Association was having its annual reunion. Our bait was General Vandenburg, U.S. Air Force Chief of Staff: we hoped the CF-100 would catch his eye, for he had not seen it at Washington.

I carried Bruce Warren in the rear cockpit, and again the fighter cruised at an average speed of 575 m.p.h. It was hazy over Boston, and I had difficulty finding Logan airport. Long experience of Britain's industrial haze held me in good stead, however, and we located it and landed without trouble. A R.C.A.F. Dakota brought our ground crew and equipment, and Canada was further represented by her Vampire acrobatic team. Without the Canadian participation there would have been precious little display for the half million people gathered at Logan. It was the oddest air show I've ever attended. At no point during its duration did I discover who was running the Boston show. There was no one man with overall responsibility. Instead, arrangements were in the hands of a committee consisting of the Airport Manager, the local Flying Control, the local Civil Aeronautical Authority (C.A.A.) representing Washington, and a couple of U.S.A.F. officers. If the committee had a chairman, I suppose it was the Airport Manager. ►

It was he who announced that flying would have to fit in with airline operations and God help anyone who interfered with the normal running of Logan airport. The C.A.A. man, who sported a straw boater, then dropped his bombshell: no aerobatics could be performed over the airport, but must be carried out over the sea. Since the sea was about four miles to the east, this wasn't going to allow the spectators to enjoy much of a display. We could turn over the land, he added, fly over it fast or slow, but must not turn upside-down over it. The Flying Control types told us we would have to pack up and clear off when airliners wanted to get in or out. The U.S.A.F. officers were sympathetic, but could do nothing: it was a civil airport, beyond their jurisdiction.

The leader of the Vampire team was furious; I was nonplussed. Since we were the only people performing aerobatics, no one else was affected by the restrictions. Canada was not going to be able to put up much of a show. We haggled, wangled and argued. Finally, Flight Lieutenant Laubman, leader of the Vampires, and I, hit upon a possible solution. On the north side of the aerodrome was a landlocked bay, ringed by houses. Since it was water, could we do our aerobatics over the bay? The C.A.A. agreed that we could.

Next morning, before the show was due to start, the Airport Manager said to me: "Everything will be O.K. now. We're getting Shorty in to run the show. He's got lots of experience in running air shows."

Later in the forenoon Shorty arrived. He was in his shirtsleeves and favoured a Panama hat. A pleasant little man, he was manager of an airport in the mid-west, where large air races were held. His main contribution to organizing things, however, seemed confined to an eternally repetitive "C'mon on, folks, we gotta get a li'l co-operation going roun' here." I've often wondered what fee he rated for those inspired words.

The display was somewhat lacking. There was no timing, coherence or sequence. I worked to the time I had been given, and got a clearance from flying control. It appeared that I certainly drew General Vandenburg's attention to the CF-100, for I took off in the middle of his speech. The roar of the Avons cut him short in mid-sentence.

The plane behaved beautifully, and shattered the Americans, who had never seen a plane which coupled such take-off and rate of climb with exceptional manoeuvrability. Then came the Vampires. They flew as if tied together: an immaculate exhibition. Helicopters flew, Vi-type jets were run on the ground, and a B-45 jet bomber staggered off leaving its usual trails of black smoke.

On the second day of flying I had what is known as a "dicey do". It was my custom to fly at about twenty feet from the ground, with flaps partially extended, just staggering along above the stall, and then in front of the spectators open the engines to full power and roar upwards in a steep climb. It was both noisy and impressive.

It was in the middle of the operation when opening up the engines from about 105 m.p.h. that I was nearly caught out. I had already pulled up the nose, and had the throttles fully opened, when the starboard engine stalled. It's always at such times that things go haywire. The combination of circumstances was the worst possible: at low altitude, the flaps giving high drag, and with virtually no speed. According to every law in the book a prang was inevitable.

Yet I didn't crash. I managed to get the nose down, and gently nursed the aeroplane along until I had sufficient speed to climb away, then, when I had gained sufficient height, I raised the flaps and carried out a normal single-engined circuit and landing. As I had climbed away I had throttled and shut down the rumbling, shaking, stalled starboard engine, otherwise its disintegration would have followed. My actions had been automatic: a reflex developed by long experience.

The acceleration unit of the starboard Avon had gone, and although the Rolls-Royce man in our team made a temporary repair, it still wasn't 100 per cent. right and I refused to fly the CF-100 until it was. A new unit was flown in from Toronto, and we eventually returned to Canada after six days in Boston.

After the show, the "organizers" came along, full of good cheer and this bright item of information: "Now there's been no accidents we can tell you we didn't really care what you did; but we couldn't say that before the show, of course!"

In October I flew CF-100 with new-style air-brakes in slightly altered wings. At the end of the month the plane went to America, at their request, for tests at Wright Field. I gathered that the Americans made fourteen flights in the plane with thirteen pilots, and flew it against Sabres: a rather unfair comparison between a light day fighter and a heavy, long-range plane twice its weight.

Although down on speed and Mach number when compared to the Sabre, the CF-100 came off well in manoeuvrability, and out climbed its rival. But still the Americans did not buy.

Despite modifications, there was still trouble with the CF-100's "soft" centre section, and one incident, during a beat-up at a Toronto air display, was particularly frightening. While pulling up into the vertical climb of a loop, I heard a violent crack: a sharp thunderclap of sound clearly audible above the engine and wind noise.

Something had gone but what?

I smartly rolled out at the top of the loop, ready to head for open spaces and bale out. Nothing drastic seemed to have occurred, however, for the plane flew on without further trouble. But I had the wind up and wasn't taking chances. I cut short the display and came in. The crack, we discovered, had been caused by the rupture of metal: the skin of the wing and centre section had again split and this time worse than ever.

There were other moments of apprehension in the CF-100. On Don Rogers' first flight with me in her there was a sudden, almighty bang followed by a violent gale of wind. I cut speed drastically, ready for Don to bale out while I had a go at getting the plane down. But nothing followed the explosive crash, and we saw that the cockpit canopy had gone. Fortunately it had hurtled off without damaging the tail or anyone on the ground, and we landed without trouble. If nothing else, the episode provided us with a free canopy. jettisoning trial.

A later incident was concerned with landing. It was frankly my fault, and I would have chalked up an awful black if the worst had happened. For my error was as fundamentally simple as a car driver parking his car on a steep hill without applying the brake: I forgot to put my wheels down as I came in to land.

The flap controls had been altered in the cockpit, and as I came in I was concentrating so hard on getting the changed procedure right that I neglected to lower my wheels. This would have meant a belly landing had not the control car quickly reminded me of the omission. It demonstrated how over-concentration can be as dangerous as forgetfulness.

On another occasion, when Frank Spink was with me, we just missed what could have been an "unfortunate incident". We were doing low-level fuel consumption checks in marginal weather conditions, when red lights indicated electrical failure a rarity in the CF-100. Then that which "couldn't happen", did complete hydraulic failure added to the fun. Drives to both pumps had sheared. Emergency undercarriage flap and wheel brake air systems made possible a landing. Worst of all, elevator control boosters jammed on final approach but we pulled it off.

I returned to England early in February. What had been planned as a six months' trip to Canada had lasted for fifteen. When I left Toronto, the structural weaknesses of the CF-100 had not yet been overcome, but the plane had established an outstanding pattern of behaviour and performance. I was proud to have played some part in the birth of Canada's jet aircraft industry.

Avro-Canada asked me to stay out there, but I felt it would be unfair both to Gloster's and to Avro's Don Rogers. I was soon to discover that my loyalty was sadly misguided.

Work on the CF-100 went on. Today it is the standard night and all-weather fighter of the R.C.A.F. It has been built in hundreds in several different versions all stemming from the two prototypes I flew. A night fighter O.T.U. was the first unit to take the CF-100 into service. They were trainers, which were followed by Mark III's, and later IV's which armed the fighter squadrons. The Americans never took up the aircraft and so the first foreign user is likely to be the reborn German Luftwaffe, for the Canadians have given it squadrons of CF-100's. Canada, having equipped its home units with the fighter, has sent the aeroplane to Europe one squadron is to complement each of its day fighter wings on the Continent. Prior to this three CF-100's were sent to Britain for tactical trials. They worked in with R.A.F. interception ideas and tied up with British ground radar. They were displayed at the Paris Aero Show and the 1955 Farnborough Air Display some five years after we hoped to show a prototype there.

The CF-100 has been for many years the West's top night and all-weather fighter. Though new aeroplanes, such as the Javelin, are superior in climb, speed and ceiling, it will still have many years of useful life ahead. No other night fighter has its range and it can undertake night interception and intruder roles beyond the capability of other fighters which have a drastically limited range in order to gain in rate of climb. Canada can take great credit for the CF-100. It had its setbacks, but no more than many others and less than most. The troubles were mainly of an engineering nature and not aerodynamic, for the CF-100's appearance differs little today from the aeroplane I left in 1951.

Members Matter

I thought I would bring the members up-to-date on the Board's tribute to the memory of Flight-Lieutenant Bruce Warren of Toronto and Avro Engineer Bob Ostrander of Brampton. They died in the crash of Avro CF-100 #18102, Thursday, April 5, 1951 at 10:50 a.m. near Komoka Ontario. The Board's intends to erect a plaque and suitable monument near the site.

Property owner Mark Matthys of Avro Drive near Mt. Brydges, Ontario is donating a park setting to the Foundation. This will include a pathway from the monument to the crash site.

Greg Bobier, President of Digital North media, of Waterloo, Ontario is donating his expertise as a graphic artist to draft an appropriate monument for the Board's approval.

Mich