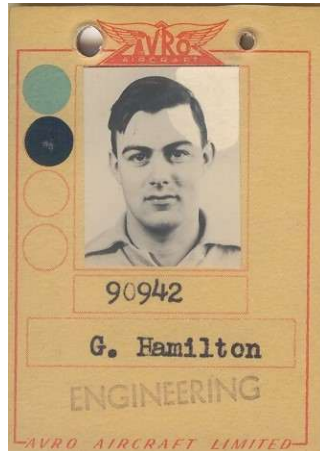


Gordon Hamilton's Time at AVRO Aircraft

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I graduated from Ryerson in Toronto, Ontario in May 1955 (it was then the Ryerson Institute of Technology, now Ryerson University, but soon to have another name change because of Egbert Ryerson's association with the residential schools). Even before my



graduation, I was applying for employment and received a notice of interest from Avro. On April 1st, I received a formal offer, which I accepted, and started to work on the 17th of May, 1955. My initial pay was \$61.15 per week [1].

I worked in the Experimental Electronics Lab. There were about 20 employees in this lab and it included both mechanical and electronic personnel. The lab was part of the larger Engineering section referred to as department 3140, Experimental Engineering. Since the Avro 3140 employee list does not contain the name of my immediate supervisor (Colin Barnes), it leads me to believe that this list covers only union employees and management members were under another department number [2]. We were members of a union: Technical Associates Lodge 2030, International association of Machinists. Department 3140 was listed in the collective agreement [3] as, "Experimental Engineering, Technical", and was shown in Schedule 3 of the agreement as "Seniority Division 1.2". Avro also had a "Group Insurance" plan that was fully funded by the company plus a "Sick leave with pay" plan that started after 3 months employment. Employees were required to use a punch-clock to stamp their time of arrival on their time card. However, if the employee worked a standard shift, it was not necessary to punch out when leaving. One rather unique practice at Avro was the payday routine. Our pay was not provided by cheque or bank deposit. Instead, each pay day, we were handed an envelope containing our pay in cash. Avro also had a "Retirement Income Plan" [4]. There were various levels of security at Avro, which were assigned on a need-to-know basis, and designated by colour dots on the employee badges. Some of the names I still recall from that time were: Colin Barnes (Supervisor), Dave Barker, Wally Alder, Bob Hooper, Jack Hadfield, Dave Twamley, Bruce McNichols and J. Vanginderum.

The lab was the support group for the main Engineering section and we would carry out tests to assist the Engineers in their work. These consisted of two main categories. The first was to evaluate and report on circuit designs that originated with the Engineers. At that time, transistors were just starting to replace vacuum tubes, so some of our work involved bread-boarding a solid state circuit and evaluating its potential. Many of these circuit designs were planned for the future use in the CF105 (Arrow). The second type of work was solving problems

associated with the CF100 production. These ranged from testing large cables before installation to clearing (finding solutions to) snags reported by test pilots on production aircraft.

Unfortunately, I do not have any of the final test reports that I prepared during my tenure. I do, however, have one of my original notebooks that described the troubleshooting of CF100 aircraft, serial number 18544. This aircraft was snagged on its first test flight for static noise on the VHF radio system. The A/C was referred to the Engineering Test lab to determine the cause. Colin Barnes, who was the Supervisor of the lab, took the lead role in these tests and I assisted him. My notes are dated Monday August 27, 1956 through Monday September 17, 1956. Our first objective was to duplicate the problem with the aircraft on the ground and establish the nature of the noise. During these tests I was in the observer's seat and listening on the VHF receiver, while the test pilot (Chris Pike) operated the engines at various speeds. The aircraft was blocked to prevent it from moving but, this being my first time ever in an aircraft, I became very concerned when the aircraft was at 90% max RPM and shifted noticeably forward as its landing gear strained against the blocks. I was sure the aircraft was going to surge forward and into the nearby buildings. It took several attempts before we were able to actually hear the radio noise with the aircraft on the ground. At one point the fire department was enlisted to spray the aircraft to simulate fog conditions. Eventually we were able to hear the noise at lower RPM and also on a more consistent basis. This led to a series of tests using a portable transmitter and moving it around the aircraft to test different possibilities of the cause. The aircraft receiver was changed thus eliminating it as the cause. Since the antenna was in the upper tail section, I crawled through rear of the aircraft to check all the coax connections. During another test, a bedspring type of grid was set up behind one engine to check for any static charge on it that might also be on the aircraft skin. This latter test resulted in the array being blown across the field as the engines increased RPM. None of the tests provided the clues to the cause, however the noise became more and more consistent and at lower RPM. Eventually the noise was detected without the engines running, so the aircraft was moved into a hanger and when we 'thumped' the rudder with our fist, we could make the noise occur. The problem was quickly traced to the rudder bearings. Changing them and adding a ground strap between the rudder and the tail section provided the ultimate cure.

I enjoyed my time at Avro. Being fresh out of school, everything was new and exciting. The group I worked with was super friendly and helpful. During this time I met my future wife, Marion, and we were married in 1957. We will be celebrating our 65th anniversary later this year. Several of my lab mates and their spouses attended our wedding and Bruce McNichols was part of our wedding party. The others, who could not attend, sent their best wishes. We scattered after the closure of the plant and I have not been in touch with them since.

On October 4, 1957 the 1st Arrow rolled out, and many employees were encouraged to join the crowd of invitees, so some of us walked down to the roll-out site. There was already a huge crowd around Arrow 201, so I did not try to push through the crowd to get a close-up look. I believed that I would have many future opportunities to see this aircraft and probably actually work on it. The pictures of this roll-out have become famous and appear in many articles and books about the Arrow. Most of the pictures, that I've seen, appear to be cropped just to show the crowd gathered around the aircraft. However, one picture that appeared in a recent Readers Digest publication called "Our Canada" (the magazine issue of Oct/Nov 2021), has a wider view and I believe that I am in the lower right of the picture, and on the right in the group-of-three [5].

It was Saturday June 7, 1958. My sister was going to Florida so Marion and I drove her to the airport to catch her flight. Toronto International Airport was then just a shadow of its grandeur of today and was referred to as the Malton airport. The single terminal building was a small, one story structure with an observation deck on the roof. We went up to the roof to watch the planes coming and going. We had our Kodak Brownie 8 mm movie camera, which was a simple 'point and shoot' camera. It had no zoom capabilities or other adjustable features. I was taking a movie of the passengers as they walked across the tarmac to their waiting Trans Canada Airlines (TCA) aircraft (perhaps a Vickers Viscount) when I heard the distinct roar of jet engines. There was no mistaking that noise. It was the CF105 Avro Arrow. I looked over to the gate separating the Avro complex from the airport grounds. The gate was open allowing aircraft from the Avro property to taxi directly onto the main Malton runway. First, two CF100 chase planes took off. Then the Arrow appeared at the gate, paused for a short time, and then started its take-off run. This video shows my few seconds of filming Arrow #201 taking off for its 10th flight, with Jan Zurakowski at the controls.



Video.mov

My expectations of a long association with the Arrow did not happen and on February 20, 1959, there was a message over the public address system stating that the project had been cancelled and everyone was to leave immediately; further instructions were to follow [6, 7, 8, 9, 10]. With tens of thousands now looking for another employer in the Toronto area, it was a difficult time. I began looking farther afield and started my next career with Computing Devices of Canada (CDC) in Ottawa, on April-Fool's Day, 1959. That job lasted until my retirement in 1992. One of my early projects at CDC was in the production of the Position and Homing Indicator (PHI) system for the CF100 aircraft. In those early years after the Arrow cancellation, I wrote this ode to that iconic aircraft:

THE ARROW

(Inspired by the Titanic)

When they built the Avro Arrow, they spoke of it with pride.
It was a plane that no one could bring down even if they tried
But in the cruelest twist of fate, it was killed by one man's hate.
It was sad when they shut the Arrow down.

It was sad when they shut the Arrow down.
It was sad when they shut the Arrow down.
It had speed and it had grace, it could fly to outer space.
It was sad when they shut the Arrow down.

The cold war had just begun and it was the thing to do
So we had to build a plane to defend our borders too
And it had to meet the test, from the north or east or west.
It was sad when they shut the Arrow down.

Some said it was impossible; that was the skeptic's song
So it fell to A V Roe to prove these doubters wrong
And the government of the day said that it was "A" OK!
It was sad when they shut the Arrow down.

It set new world records with each amazing flight
And we knew it could defend us, and we knew that it was right.
Then came election-day, and the 'grits' were blown away.
It was sad when they shut the Arrow down.

The new chieftain of the day said that he was not impressed;
He would scrap the Arrow planes and in missiles he'd invest
So the plane we did admire, then succumbed to friendly fire.
It was sad when they shut the Arrow down.

Gordon Hamilton

References:

1. Notice of Hiring
2. 3140 Employee List
3. Lodge 2030 Collective Agreement
4. Retirement Income Plan
5. Our Canada Oct/Nov 2021, Page 8.
6. Layoff Notice Page1 and Page 2
7. Separation of Employment Notice
8. Layoff Pay Notice
9. Layoff Pay & Insurance info
10. Layoff Vacation Pay info