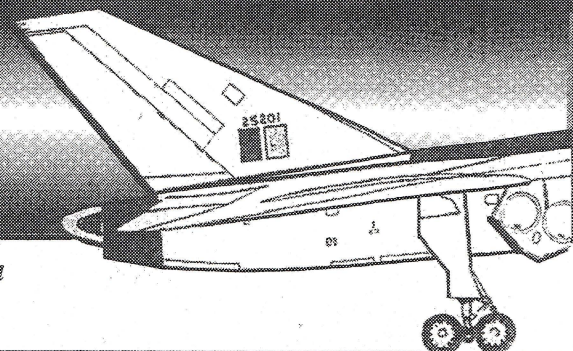


Pre-Flight



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AVRO & SAAB: PARALLEL UNIVERSES

by

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Part One

The "SAAB Story" is valuable in that it provides a comparison -- not only of aircraft design and production, but also (and more importantly) of political policies and their effect on the aviation industries in Sweden and Canada. So many of the conspiracy theorists point to the United States as the "villain" in Avro Canada's demise. That is ridiculous in terms of the Jetliner (where the greatest support and enthusiasm were coming from south of the border), and a bit immaterial in the case of the Arrow. I say that because while the Eisenhower government might have had some influence on the Diefenbaker government in its attitude toward the Arrow (remember, the U.S. had concluded in 1958 that ICBMs were the main Soviet threat), it was ultimately the Canadian government's decision whether or not to allocate the funds to produce the Arrow. In other words, the "buck stopped" on Dief's desk (and in Parliament).

The Swedes took a very different approach toward defence spending during the Cold War. But, as I pointed out, Sweden also faced a very different set of circumstances. It did not have the international commitments that Canada had at the time (and still has). In any case, I think my remarks ought to give readers some food for thought ... and, perhaps, a broader view of the Avro Canada saga. But they also apply to aerospace projects in any country. The success or failure of a programme (like the Jetliner and the Scandia) often hinge on the whims of politicians. That is the real lesson we should draw from Avro's sorry fate. And that is why I'm making my views known to my government and my political leaders about NASA's future at a time when America's space programme has reached a crossroads. Fortunately, thousands of other people are writing letters, sending emails and making phone calls, too. The success of the Ares I-X rocket two weeks ago, and the confirmation today that water has been discovered at the Moon's south pole, will make it more difficult for the Obama Administration to kill our Return to the Moon (the Constellation Programme).

My most recent letter cites the decision by President Lincoln in 1862 to support the construction of a transcontinental railroad. That was an example of a government supporting an enterprise which literally built a new country, as well as a railroad. (And the Union Pacific is still's America's largest, oldest and most profitable railroad 140 years later). I could have cited the Canadian Pacific, as well ... an even more remarkable story in many ways, as Pierre Berton's book makes clear.

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From the President

I have received on behalf of the AHFC a 100 Anniversary of First Flight plaque presented by the Canadian Aeronautical Preservation Association Inc. (CAPA) at the 2009 Convention in Winnipeg, October 15-18th. We extend congratulations to Paul Cabot and John Harper of CASM on being elected to the Board of Directors of CAPA.

The AHFC large models of the CF-100 and the Avro Arrow will be on loan to CASM until further notice.

Thanks go to Board member David Sotzek for updating all of AHFC forms.

Frank

AVRO & SAAB: Parallel Universes

Many a story has begun: "It was a stormy night ..." But, as Jim Floyd described the Jetliner's maiden flight in his wonderful book, this story begins: "It was a hot afternoon ..." Some of you were at Malton that hot afternoon when North America's first jet transport took to the air for the very first time. The rest of us would gladly endure the blistering August heat if we could travel through Time to witness that historic event, and to see that beautiful aircraft. What a sight it must have been! And what a shame that the Jetliner was prevented from making even more history.

Six decades after the Jetliner first flew, questions remain about its fate, as well as the fall of the fabulous Arrow, and the demise of Avro Canada itself. I'm reminded of one frequently asked question, in particular: Why didn't Avro Canada enjoy the same success as SAAB in Sweden? Sweden, after all, is a smaller country than Canada. Yet, during the past 70 years, SAAB has produced nearly 4,300 advanced aircraft -- from regional airliners to supersonic warplanes. As many a Canadian has rhetorically asked, "If the Swedes could do it, why couldn't we?"

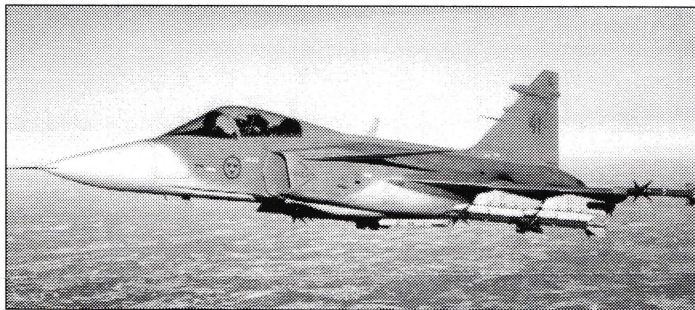
In these remarks, I hope to answer that question; and in so doing, to provide some food for thought. You might call this presentation: "A SAAB Story." (Pun intended.) In any case, I believe that the parallels which existed between Avro and SAAB half a century ago, as well as the political differences between Canada and Sweden at that time, are worth a closer examination in light of subsequent events.

SAAB is an acronym for Svenska Aeroplan AB (or, Swedish Airplane Company). Based in Linköping, southwest of Stockholm, the company was founded in 1937 to produce airplanes for the Swedish Air Force. Over the years SAAB has earned a reputation as one of the world's most innovative aircraft manufacturers, especially in the years following World War II. In 1948, it built the first swept-wing jet fighter in post-war Europe, the SAAB 29 Tunnan (affectionately known as the "Flying Barrel" because of its bulbous shape). The SAAB 32 Lansen (or "Lance") was first flown in 1952. Like the Avro Canada CF-100, it was a two-seat, all-weather jet fighter; and it was the first Swedish aircraft to break the sound barrier. The SAAB 35 Draken (or "Dragon") followed in 1955. A Mach 2 interceptor, the Draken featured the world's first double-delta wing. The 'B' version, first flown in 1959, was equipped with an advanced fire control system which worked in conjunction with the Swedish-designed, ground-based, STRIL 60 air defence network.

SAAB followed the Draken with an even more impressive aircraft of even more unorthodox design. First flown in 1967, the SAAB 37 Viggen (or "Thunderbolt") featured a cranked delta wing and large foreplanes -- a configuration which gave the Mach 2+ aircraft STOL performance for take-offs and landings.

SAAB ... *cont'd.*

In wartime, the Swedish Air Force would be widely dispersed to remote airfields; often consisting of nothing more than a clump of trees to hide a handful of aircraft, and a short strip of highway doubling as a runway. Sometimes referred to as Sweden's Apollo Programme because of its cost and complexity, the multi-role Viggen was a unique aircraft perfectly suited to the needs of the Swedish Air Force.



JAS 39 Gripen

The Viggen's successor is SAAB's JAS 39 Gripen (or "Griffin"). First flown in 1988, the Gripen is smaller and lighter than the Viggen, but carries the same payload and packs a bigger punch. Currently in production, more than 200 Gripens have been built thus far. SAAB is developing a new and improved version which flew in prototype form last year and is now being offered for export.

SAAB has also produced hundreds of other aircraft, including the SAAB 105 jet trainer. On the civil side, the firm sold more than 500 SAAB 340 and 2000 regional prop-jets, most of which are still in service. SAAB also built a piston-powered regional airliner 60 years ago. It wasn't a revolutionary aircraft like the Jetliner. But the twin-engine SAAB 90 Scandia, which first flew in 1946, was appreciated by airline pilots and passengers alike when it finally entered service four years later. In fact, 60 years ago, the Scandia made a demonstration tour across North America during which it visited cities such as New York, Chicago, Miami and Los Angeles. While in California, the Scandia was flown by Howard Hughes who owned TWA and later showed so much interest in the Jetliner. Hughes was impressed with the Scandia, too. However, the Scandia suffered a similar fate to the Jetliner.

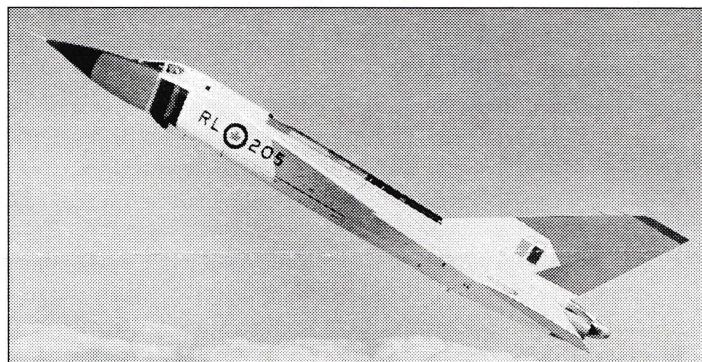
This gives you a brief summary of SAAB's aircraft production during the past six decades. The remarkable success that SAAB has enjoyed over those years is all the more remarkable when you consider the size of Sweden's population (roughly 8 million people) and the company's workforce (4,000 employees in 1949; and 5,500 people ten years later). During the 1950s, little Sweden had the world's fourth largest air force. What accounts for SAAB's success?

Why did SAAB soar while Avro fell? The answers to those questions have nothing to do with technical capabilities or managerial skills. But they have everything to do with geography, politics and geopolitics. For nearly 200 years, Sweden has been a nation at peace. It has been at peace because long ago the Swedes adopted a policy of neutrality with regard to foreign wars, and non-alignment with regard to foreign affairs.

During the past 75 years, in particular, Sweden has maintained the peace by aggressively preparing for war. Successive Swedish governments have all made national defence a major priority. In 1936, the Swedes decided to focus their defence spending on air power and to create an indigenous aircraft industry... a decision which gave birth to SAAB the following year. SAAB was given a virtual monopoly to supply aircraft to the Swedish Air Force. Following World War II, Sweden found itself, like Canada, placed (geographically) between the two Cold War superpowers: the United States and the Soviet Union.

In Sweden's case, two of its next door neighbours were Denmark and Norway, both of which were members of NATO. Finland was the other next door neighbour whose independence and security was linked, in large part, to Sweden's neutrality - providing a buffer zone between the Warsaw Pact and NATO countries. Likewise, the security of the United States depended upon the protection of Canadian airspace from the threat of long-range Soviet bombers flying over the Pole. Thus, geopolitics has played a role in the defence policies of both Sweden and Canada.

Airpower was (and is) Sweden's first line of defence. The country's basic strategy during the Cold War was to slow down a Soviet invasion while waiting for NATO to come to its rescue. In this regard, Sweden's neutrality has been more a matter of semantics than reality. The Swedes always knew who they favoured in the Cold War, and who would come to their rescue if attacked. However, by maintaining a world-class air force and an independent aircraft industry, the Swedes put some real teeth into their defence bite, and gave their policy of non-alignment some genuine credibility.



Avro Arrow

Canada has a very different history. Unlike Sweden, Canada is part of NATO and NORAD. As such, decisions made in Brussels and Washington can influence decisions made in Ottawa -- and often do. Canada's international commitments have had their effect on Canadian defence policies, as well as on domestic politics. Those policies have changed over the years as power has gone back and forth between the major political parties.

The same is true in the United Kingdom and the United States where leadership changes have taken their toll on aircraft programmes such as the TSR.2 and the B-49. All too often the fates of aerospace companies have been in the hands of politicians with little or no understanding of technological matters.

SAAB... cont'd.

Sweden, by comparison, has enjoyed a very stable political landscape; and Sweden's aerospace industry has always enjoyed the support of Sweden's politicians. SAAB has also been the beneficiary of long-range thinking and meticulous planning by the Swedish Air Force. The Swedes recognised long ago that aviation technology changes rapidly, and that developing new aircraft takes time, as well as money. So they decided that as one new warplane was entering service, its successor would be on the drawing boards. When the Tunnan joined Air Force squadrons in 1952, the Draken was already under development at SAAB -- much like the Arrow was being developed at Avro Canada when the CF-100s entered service with the RCAF in 1953.

During the mid-1950s, SAAB designed an aircraft rather like the Arrow. Usually referred to by its 'A36' Air Force designation, it was to have been a large, Mach 2.5, delta-wing interceptor. It was also designed to deliver tactical nuclear weapons against Soviet targets. But the "Swedish Arrow" was cancelled in 1957, as the Swedes debated the future of their nuclear weapons programme (which, incidentally, was halted in 1966). SAAB's attention was focused instead on the Viggen which offered much greater flexibility than the A36. The Swedes have always favoured multi-role combat aircraft such as the Viggen and the Gripen, rather than warplanes designed around a more narrow set of specifications. In the latter case, a mere press of a button instantly turns the Gripen from a fighter into an attack aircraft (thanks to its computer software).

When the Viggen's development costs began to rapidly escalate, the aircraft's future was debated in Sweden's Parliament. Some thought was given to acquiring McDonnell F-4 Phantoms. But cancelling the Viggen would have been unthinkable to most Swedish politicians as they never would have put thousands of highly skilled people out of work as happened in Canada when the Arrow was cancelled. Unlike so many politicians in so many halls of power, the Swedes recognized the cost and value of high technology. As Jim Floyd has noted, "Anyone who imagines that high technology runs cheap doesn't understand the subject." But the Swedes understood. Therefore, to save the Viggen, they reduced the planned acquisition by more than half the original number -- from 831 aircraft to an eventual 329. However, the Viggen's multi-role capabilities meant that fewer aircraft were actually needed, and the reduction was not critical. So despite the Viggen's high price tag, Sweden's politicians made sure that their Air Force got the airplane it wanted -- and needed.

Therein lies the fundamental difference between the Avro saga and the SAAB story. The willingness of successive Swedish governments to pay the high price for high technology is the foundation upon which SAAB's long-term success has been built. I'm reminded of what Wernher von Braun said when someone asked him, "What was the most important factor in sending men to the Moon?" Dr. von Braun replied, "The will to do it." Sweden's politicians have had the will to create and support a strong, independent aerospace industry led by SAAB.



SAAB 37 Viggen

But there is a down side to the SAAB story, which brings us back to the Avro Jetliner and to the SAAB Scandia.

End of Part One

Members Matter

As I first reported in the last issue of Pre-Flight, the Canadian Air and Space Museum, has a new Chair and Vice-Chair. Meanwhile, the remaining members of the Board have had weekly meeting to keep the museum functioning.

Claude Sherwood has been reinstated as CEO, and has taken upon himself the duties of day-to-day administration. At the last Board meeting, two new Board members, Dr. Philtip A. Lapp and Mr. Ian McDougall were appointed. Both gentlemen bring a lot of aviation knowledge with them. We wish them well.

The AHFC was present at the 2009 Hobby Show, which is under new management management. John Leonard is now the new manager. We had a 30' X 10' booth, with both the CF-100 and the Avro Arrow models on display. Of course, our President, Frank Harvey gave two lectures during the Show.

Board members working the booth had the pleasure of meeting many of our members there. It was our pleasure to present to our younger visitors photos of the CF-100 in flight, along with the CAPA 100 Years of Flight posters and booklets. The special posters were presented by member Robert Cohen to AHFC for distribution during the Hobby Show, courtesy of the Lucas Oil Products, Inc.

On behalf of the President, the Board of Director, I extend to you and yours a Merry Christmas and joyous and safe New 2010 Year.

Nicholas Doran, Membership