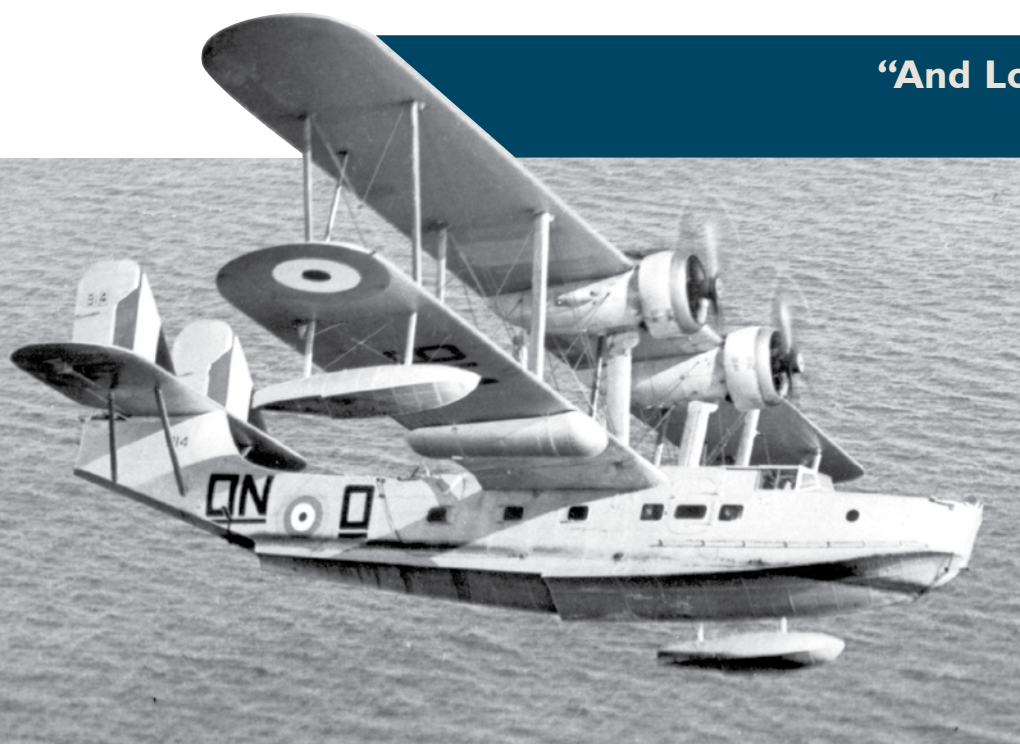


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“And Look After Our Coasts”



The Royal Canadian Air Force
and the Production of Coastal
Defence Aircraft in Canada,
1936–1939

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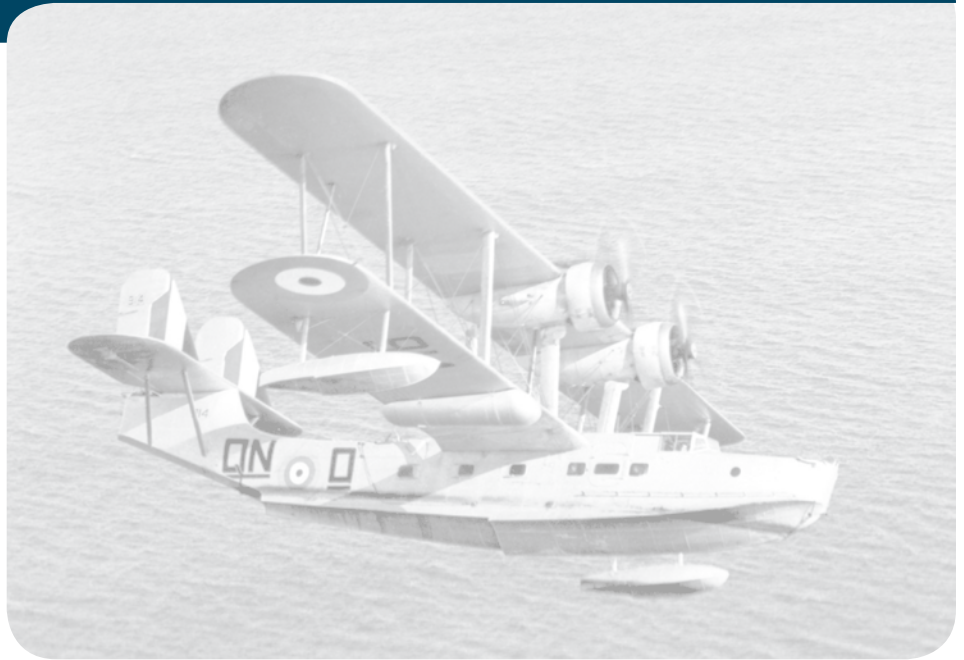
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Introduction

The beginning of the Second World War, in the early days of September 1939, was preceded by a series of crises and disasters, each more serious than the last.



The beginning of the Second World War, in the early days of September 1939, was preceded by a series of crises and disasters, each more serious than the last. In September 1931, Japanese troops stationed in the region for some years invaded the Chinese province of Manchuria, announcing the creation of a puppet state, Manchukuo, in February 1932. In January 1933, Adolf Hitler became chancellor of the German Reich, proclaiming himself Führer in August of the following year. In March 1933, Japan announced its withdrawal from the League of Nations; Germany did the same in October after withdrawing from the Geneva World Disarmament Conference. In December 1934, Japan renounced the London Naval Treaty. In March 1935, Germany made public the existence of the German Air Force, the Luftwaffe. Shortly afterwards Hitler announced the rearmament of the country and the reintroduction of compulsory military service.

Italy launched an attack on Abyssinia, present-day Ethiopia, in October 1935; Addis Ababa, the capital, fell in May 1936. Economic sanctions approved by the League of Nations in

November 1935 were suspended in July of the following year. Japan withdrew from the London Naval Conference in January 1936. The German Army entered the Rhineland demilitarized zone in March 1936 in order to reintegrate this region into the German defence network. In Spain, a July 1936 revolt by senior military officers turned into a civil war, which was to end in March 1939 with the victory of General Franco's Nationalist troops. In early November 1936, Italian dictator Benito Mussolini announced the formation of the Rome-Berlin Axis and in the same month, Germany and Japan signed the Anti-Comintern Pact. Italy joined this pact in November 1937 and left the League of Nations the following month.

In July 1937, Japan attacked China; that war ending only when the Second World War came to a close. The German Army entered Austria in March 1938; Hitler then announced the *Anschluss*, the union of his native country with Germany. In July and August 1938, Japanese and Soviet troops fought along the Manchukuan border. In September 1938, Hitler, Mussolini and the French and British prime ministers, Édouard

Daladier and Neville Chamberlain, respectively, negotiated the Munich Accords. The Czech government, the party the agreement would affect most, was not even invited to the negotiations. Days later, Germany occupied the border region of the Sudetenland in Czechoslovakia. Slovakia proclaimed its independence in March 1939. This territory, along with Bohemia and Moravia, was soon occupied by the German Army. The annexation of Ruthenia by Hungary completed the dismemberment of Czechoslovakia.

In April 1939, Italy annexed Albania, and Germany terminated the 1935 Anglo-German Naval Agreement that limited the size of its fleet. The following month, Germany and Italy signed a military alliance and in August 1939, Germany and the Soviet Union concluded a non-aggression pact. Just days later, on 1 September 1939, the German Army invaded Poland, prompting Great Britain and France to declare war on Germany two days later. Canada did the same on 10 September. The Second World War had begun.

The Need for Rearmament in Canada



A Bristol Blenheim I
from No. 62 Squadron, RAF,
ca 1938 (CAVM 24826)

The accession to power of Hitler and the National Socialist Workers' Party, or Nazi Party, in 1933 gave rise to considerable concern in British government circles. The first program to expand the Royal Air Force (RAF) appeared in July 1934. It was modified time and again. By March 1938, the number of first-line aircraft deemed necessary for the defence of the British Isles had risen from about 1250 to approximately 2375. The Munich crisis in the fall of 1938 led to the preparation of another update, which resulted in the addition of about two hundred fighters and the decision to re-equip the RAF's bomber force, Bomber Command, with heavy bombers.



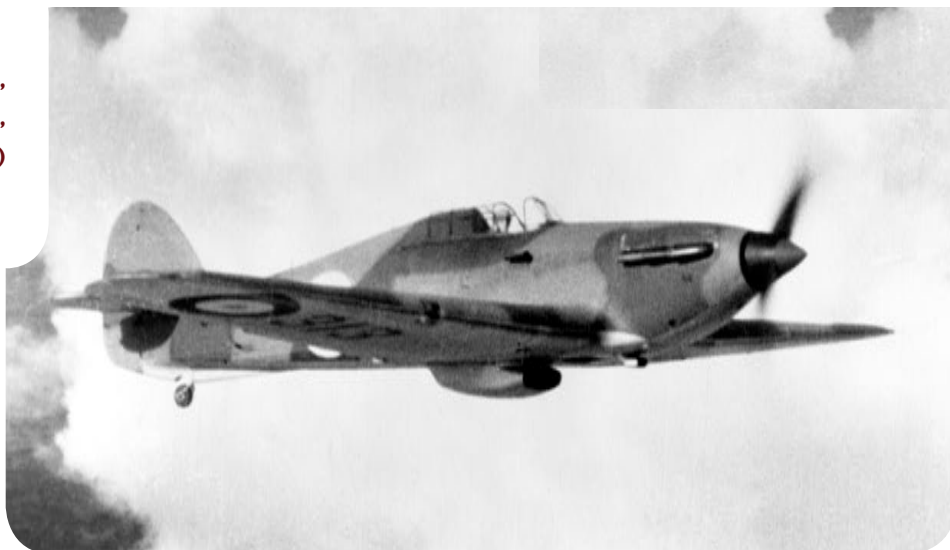
A Fairey Battle I from No. 63 Squadron, RAF,
ca 1938 (CAVM 24741)

The cost of these expansion programs increased significantly and the RAF ultimately received a larger percentage of defence spending than the British Army or even the Royal Navy. Moreover, the performance of the new aircraft entering service between 1937 and 1939 was far superior to that of aircraft serving in RAF squadrons in 1934. The following aircraft entered service in 1937: the Supermarine Stranraer long-range maritime reconnaissance flying boat; the Armstrong Whitworth Whitley and Handley Page Harrow medium bombers; the Bristol

Blenheim, Fairey Battle and Vickers Wellesley light bombers; and the Gloster Gladiator and Hawker Hurricane fighters. The Short Sunderland long-range maritime reconnaissance flying boat, the Handley Page Hampden and Vickers Wellington medium bombers, the Supermarine Spitfire fighter and the Westland Lysander observation aircraft entered service in 1938. The American-designed Lockheed Hudson coastal reconnaissance aircraft became operational in 1939, a little more than three months before the outbreak of war.

The years 1934 to 1939 were a key period in aviation history. It was at this time that the all-metal monoplane with retractable landing gear became the workhorse of the air forces of all the major powers. Unfortunately, the effort expended and the amount of money spent on aircraft production by Great Britain did not produce the desired results. There were many delays and the British authorities were forced to continue producing aircraft that seemed to already be on the point of becoming obsolete. Ultimately, the British aircraft industry did not reach its “cruising

**The RCAF's fourth Hawker Hurricane I,
flown by No. 1 Squadron,
ca 1939 (CAvM 25258)**



A Handley Page Hampden I from No. 7 Squadron, RAF, ca 1938 (CAvM 24833)

speed” until around the end of 1938. Obviously, the outbreak of war cast an entirely new light on the situation.

Despite its distance from the battlefields, the Government of Canada was well aware that the successive crises in Europe and Asia were increasing the likelihood of war. In light of the circumstances, Canada wanted to be prepared. Thus, Canada's rearmament

program began very gradually in the months following the defeat of Richard Bedford Bennett's Conservative government in the October 1935 federal election, in which his arch rival, William Lyon Mackenzie King, regained power. A few days after this Liberal victory, a skilful, intelligent and loyal west coast member of Parliament (MP) and a veteran of the First World War, Ian Alistair Mackenzie, obtained the National Defence portfolio.

Prime Minister King, concerned about the tensions prevailing worldwide, decided in 1936 to organize a Cabinet Defence Committee to co-ordinate and define his government's policies. All the “big guns” were involved: King himself; the minister of Justice and the prime minister's Quebec lieutenant, Ernest Lapointe; Minister of Finance Charles Dunning; and Minister of National Defence Ian Mackenzie. At the committee's first meeting in late August



**A Vickers Wellington IC
from No. 38 Squadron, RAF,
ca 1940 (CAVM 14004)**

the ministers were finally able to examine the reports prepared by Canadian armed forces experts. The news was bad and the deficiencies were many. Cabinet therefore decided to embark on an equipment modernization program. However, the government could not afford to purchase as much equipment as the Department of National Defence (DND) recommended, as the Dominion's financial resources were far too limited. King thereupon began to take an increasing interest in the potential importance of the Royal Canadian Air Force (RCAF) for the defence of the country.

Although it was not decisive, a meeting with the British Conservative prime minister, Stanley Baldwin, in October 1936, was to play a significant role in the ensuing events. Indeed, Baldwin suggested his Canadian counterpart look primarily toward military aviation. Even though Canada was one of the world's least vulnerable countries, a strong RCAF would be beneficial in the event of attack. Baldwin saw the training of aircrews and a plentiful supply of aircraft as essential elements of modern warfare. He did not seem to think it worthwhile to invest a lot of money in the army or the navy.

These military arguments were backed up by the fact that, unlike the Royal Canadian Navy (RCN) and the Canadian Army, the RCAF had no negative associations along the lines of the problems surrounding the creation of the RCN in 1910, or the riots against conscription that took place in the spring of 1918. The prime minister therefore established his position. Before the end of the summer of 1936, King had decided that the RCAF was to become the Dominion's first line of defence. In the event of danger, its units could be concentrated very quickly and could provide coverage of Canadian territory in co-operation with the RCN and the Canadian Army. As far as King was concerned, this policy put an end to the idea of an expeditionary force, a concept closely associated with that of conscription, and the risk that this idea might pose for the unity of the country.

Even at that time, the RCAF was still under the command of the chief of staff of the Canadian Army. Many believed that this situation was anachronistic because it no longer corresponded to the importance that the federal government had come to attach to the RCAF. Increasingly, senior RCAF officers wanted to obtain independence. In fact, of the three services the Canadian Army was the only one with a well-organized staff and a network of bases and commands throughout the country. The dream of the RCAF's higher ranks nonetheless became a reality on 19 December 1938, when it became an autonomous service with its own staff and its own contacts at DND. The transition went smoothly. Virtually all personnel remained in place. At most, there were some changes in job designations. One such change involved the senior air officer, Air Commodore George M. Croil, who achieved the rank of air vice-marshal and became chief of air staff.



**An RAF Supermarine
Spitfire I, ca 1938–1939
(CAVM 24864)**

The RCAF's Plans for Rearmament

As early as the mid-1930s, Air Commodore Croil had sought to increase spending on military aviation in Canada in order to expand flying schools and purchase more modern aircraft. The new importance given to the RCAF and the confidence placed in it by Minister of National Defence Mackenzie were to make matters easier for him. In fact, Mackenzie wanted to give free rein to the experts. He found planning problems tiresome, considered the military to be competent, and was happy to defend their ideas in Cabinet. His attitude differed significantly from that of some of his predecessors but, understandably, the principal parties concerned had no complaints about it. As far as the Canadian Army, RCN and RCAF chiefs of staff were concerned, the defence minister's work was not limited to the presentation and defence of budget estimates in the House of Commons. He also quietly endeavoured to establish the credibility of the military in the face of a skeptical, not to say mistrustful, prime minister. Mackenzie thus played an important (and somewhat overlooked) role during this period.

In September 1936, the Joint Staff Committee proposed a five-year rearmament program. Of the \$200 million earmarked for the program, close to \$75 million was to go to the RCAF. The committee established its requirements at twenty-three squadrons, broken down into two groups: twelve non-permanent squadrons equipped with advanced training aircraft and eleven permanent squadrons equipped with combat aircraft. Six of the latter (two maritime reconnaissance squadrons, two coastal surveillance squadrons and two torpedo bomber squadrons) would be employed in the defence of Canada's two main coastlines.

The priority attached to coastal defence was immediately apparent and, in general, the prime minister was quite receptive to it. King believed Canada needed aircraft to look after its coasts and defend its neutrality. While he did not need much persuading to accept such a rearmament in principle — since it fell within the Dominion's responsibilities — he nevertheless viewed it in a national context. He would thus have to

consider Canada's foreign policy requirements and avoid threatening the unity of the country. However, the prime minister was horrified by the potential cost of the rearmament program, and would try to reduce its scope to limit its expense. In fact, while the military saw the Cabinet Defence Committee as an excellent vehicle for improving their relations with the prime minister, King clearly intended to use it to exercise more control over the military. Nevertheless, the influence of this special committee, the first federal organization designed to allow greater co-operation between the military and the prime minister, seems questionable: it met only six times between August 1936 and September 1939.

Needless to say, the success of this RCAF rearmament program would depend largely on the situation prevailing in the aircraft industry in Canada. In September 1936, the Joint Staff Committee prepared some clear-sighted comments on the subject. To fulfil its mission properly, a modern air force had

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to rely on well-equipped factories producing powerful aircraft and engines. Anyone who accepted this criterion was obliged to conclude that Canada did not possess an aircraft industry worthy of the name. In the case of aircraft, for example, such factories as existed were confined almost entirely to the assembly of parts imported from other countries, or repair work to aircraft already in service. Worse still, no aircraft engine manufacturer existed at the time in Canada. In light of the situation, deliveries could certainly not be expected to be swift. They would take months or possibly as long as a year. In the meantime, the military, politicians and officials would all have to be patient.

Those in the industry, speaking through the monthly publication *Canadian Aviation*, welcomed this reorientation of Canada's defence policy with great enthusiasm, saying that it marked the end of a period of famine. When 1936 came to an end, the stagnation and discouragement that had overshadowed the industry seemed to disappear. Across the country, the few manufacturers began feverish preparations, since military contracts were becoming more numerous and qualified personnel increasingly rare. Yet *Canadian Aviation* voiced the sincere hope that the Canadian government was not going to try to overdo it, cautioning that the indifference shown over many years could not be wiped out in a few months. The industry was not yet over its troubles.

Canada's defence budget had increased slightly from 1934 onward. In 1937, however, spending on air defence would more than double. At first sight, this seems to be an enormous increase but, in fact, it amounted to a little over \$5 million. In 1937–1938, Canada spent \$9,665,000 on the RCAF's military projects. Although this was a very small amount, the rearmament program did require some political courage. Before obtaining the approval of the House of Commons, Prime Minister King and Minister of National Defence Mackenzie had to give an assurance to Quebec's Liberal MPs, as well as those of the Co-operative Commonwealth Federation (CCF), who had asked for a non-confidence vote, that this amount would be used exclusively for the defence of Canada.

The Canadian government, said King and Mackenzie, had not committed itself to fighting alongside Great Britain in the event of a European war. A few Quebec Liberal MPs out of the sixteen who had rejected the budget allocation could not, however, be convinced of this and they voted against increasing the budget. Some elements of the press and public opinion in Quebec, as well as the isolationists, were also hostile, but nothing came of it. King had to take account of the opinion of English Canada. He also believed in the need for some degree of rearmament among the democracies that were faced with the dictatorial and increasingly aggressive governments of Germany, Italy and Japan.

Initially, the RCAF wanted to buy about a hundred aircraft, including a number for coastal surveillance and torpedo bombing. However, the options available to the federal government each involved a compromise: buy in the United States and risk an embargo in the event of participation in a European war once American neutrality legislation came into effect; and/or purchase in Great Britain and wait until after deliveries to the RAF were completed; and/or purchase in Canada and wait for months until the existing industrial core could start to produce aircraft of foreign design. There was only one solution to the problem, according to Air Commodore Croil, and that was the production of RCAF equipment in Canada.

Cabinet accepted his opinion. Consequently, the potential for industrial production in the field of aviation had to be established locally and as quickly as possible. There could be no other basis for the RCAF's rearmament program. By awarding the contracts, DND hoped that Canadian manufacturers would have the opportunity to gain experience in the large-scale production of modern combat aircraft. In the event of a conflict, this experience could carry a great deal of weight.

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Now that a Canadian-based acquisition policy had been established, DND had only to decide which of the available aircraft best suited the conditions the RCAF would have to face. However, their experts had to take RCAF procurement customs into account. The RCAF obviously favoured combat aircraft designed in Great Britain. It was stated within DND that Canada should fly aircraft of the same design as those in the RAF, because for many years it had been the considered policy in all branches of the military (the Canadian Army, RCN and RCAF) that combat equipment should be identical to that used by the British armed forces.

Other factors contributed to this preference: for example, the close cultural, political and military links that united the Commonwealth, and the possibility of a transfer of RCAF units to Great Britain in the event of a conflict, as well as the power of the isolationist movement among the American people and in the U.S. Congress. Moreover, it should not be forgotten that the British themselves were rearming. The creation of an aircraft industry in Canada, beyond the range of Germany, was therefore of some interest to them.

To better develop local aircraft manufacturing potential, DND divided the military contracts in a more or less deliberate manner across the country. This meant that all the manufacturers got something, and were certainly not going to complain. However, some people working in the federal government, such as the highly influential under secretary of state for External Affairs, Oscar Douglas Skelton, began asking questions.



Indeed, a few editorial writers wondered how the King government could reconcile its determination to avoid any further participation in the Empire's wars — and, hence, avoid encouraging the production of weapons for foreign countries — with its laissez-faire policy regarding projects involving British military contracts in Canada. In the eyes of Skelton and his colleagues, Canadian industry had, first and foremost, to meet Canada's defence needs. On 8 January 1937, in the utmost secrecy, Prime Minister King therefore established a special interdepartmental committee to study the main aspects of Canada's rearmament policy: the control and supervision of the profits of weapons manufacturers, as well as the advantages and problems associated with awarding contracts to private enterprise as opposed to Crown corporations.

In the space of two weeks this committee, made up of representatives from the departments of National Revenue, Finance, National Defence and External Affairs, presented its report to Prime Minister King. As chairman of the committee, Skelton stated that the

government would have to turn to private enterprise, but it must ensure that manufacturers' profits did not exceed certain limits. The plan seemed an excellent one and on 5 March 1937, Cabinet created the Interdepartmental Finance Committee on Profit Control, which included representatives from five departments: Commerce, Labour, National Revenue, Finance and National Defence. This special new committee's role, however, went far beyond a simple check of the profits associated with military contracts. It took part in developing the fundamental principles of Canada's armament policy. Rearmament in Canada was to be conducted in an orderly manner, without speculation or excessive profit.

Canada’s Coastal Defence: The Shark and the Stranraer

A Blackburn Shark I from No. 820 Squadron, British Fleet Air Arm, based on the aircraft carrier HMS *Courageous*, ca 1935 (CAvM 25059A)

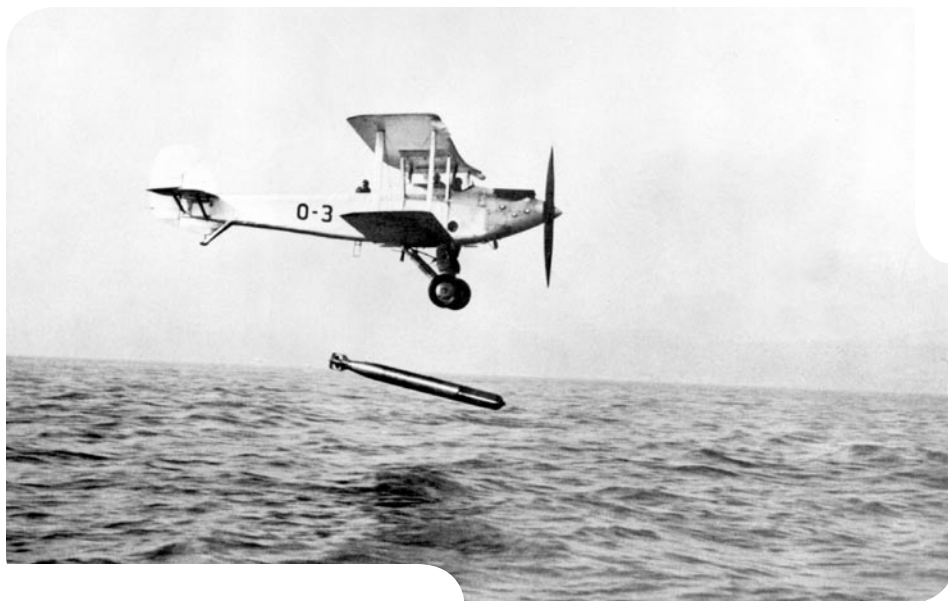


In practice, the decision on which aircraft would meet the RCAF's requirements was made by DND experts. It was generally not until after this decision was made that they indicated their preferred manufacturer. This is exactly how the RCAF operated in 1935 when it asked the Air Ministry to recommend a reliable and effective torpedo bomber. The aircraft selected would have to be able to operate from isolated bases offering little protection against the rigours of the Canadian climate. The British considered the question and suggested that the RCAF adopt the Blackburn Shark.

This large all-metal, open-cockpit, single-engine biplane with fabric-covered folding

wings was extremely reliable and easy to maintain. Its conventional landing gear could easily be replaced with floats or skis. Moreover, the manufacturer of its Tiger engine, Armstrong Siddeley Motors, had had a representative in the country, Ottawa Car Manufacturing, since 1927. The RCAF accepted the Air Ministry's suggestion. Its initial order was for seven Shark IIs, four of which Blackburn Aircraft delivered in 1936. The first aircraft was taken on strength on 15 October. The other three Shark IIs arrived in Canada in the spring of 1937. All these aircraft were fitted with an enclosed cockpit and, most of the time, with floats. Apparently only one aircraft was fitted with skis, for trial flights.

The history of the Blackburn Shark had begun in 1933. In that year the Air Ministry asked a few manufacturers to prepare plans and specifications for a torpedo bomber to be used in the squadrons of the British Fleet Air Arm (FAA), then under the control of the RAF. Anxious not to lose its status to other aircraft makers, Blackburn Aeroplane & Motor submitted drawings, although it had not been invited to participate in this particular project. Its prototype made its maiden flight on 24 August 1933. Those conducting the official tests were so impressed by its performance that it won the competition.



The prototype of Vickers Vildebeest modified to suit the needs of the Aeronáutica Naval Española, ca 1930 (CAvM 27334)

In August 1934 Blackburn Aircraft — a new name adopted shortly before — received a contract for sixteen aircraft. They were officially named “Sharks” in October. The first of them entered service in an FAA squadron in May 1935. Another unit received the first examples of an improved version, the Shark II, in 1936. Its ruggedness soon became legendary. For example, an FAA aircraft was put back in service after being towed over a distance of more than thirty kilometres, while partially submerged and with a torpedo under its fuselage, after ditching off the British coast. Blackburn produced no fewer than 253 Sharks between 1933 and 1938: 238 for the FAA, including the prototype; nine for the RCAF; and six for the Portuguese Naval Air Force, the Aeronautica Naval.

It is unclear whether the Air Ministry considered suggesting the Vickers Vildebeest, the standard torpedo bomber of the RAF’s coastal squadrons, in 1935. Although quite a bit older than the Shark, the Vildebeest was also rugged and reliable. This large single-engine, open-cockpit biplane could also be equipped with floats. A prototype flew in 1928 and the initial version entered service in November 1932. One of the most remarkable aircraft of the Second World War, the Fairey Swordfish,

does not appear to have been considered. A prototype of this open-cockpit biplane with folding wings made its maiden flight in mid-April 1934. Ordered in April 1935, the aircraft did not become operational until July 1936. It was apparently not available for export. Its replacement, the Fairey Albacore, did not fly until December 1938. This large enclosed-cockpit biplane with folding wings entered service in March 1940 after initially being ordered in May 1937.



A Fairey Swordfish I from No. 820 Squadron, British Fleet Air Arm, based on the aircraft carrier HMS Ark Royal, ca 1939 (CAvM 25067)

**A British Fleet Air Arm
Fairey Albacore, ca 1940
(CAVM 14876)**



All these British aircraft looked antiquated when compared with the American-designed Douglas TBD torpedo bomber, a modern all-metal monoplane with an enclosed cockpit, folding wings and retractable landing gear, which appeared in carrier-based

squadrons of the U.S. Navy as early as the fall of 1937. An equally modern aircraft, the Nakajima B5N, or Type 97, went into service aboard aircraft carriers of the Teikoku Kaigun, the Imperial Japanese Navy, in early 1938.

By themselves, the RCAF's seven Shark IIs obviously could not ensure an effective defence for facilities on both the east and west coasts of Canada. More were needed and, this time, the RCAF decided to award the contract to a local firm. A manufacturer was quickly and fairly easily selected. As these additional Sharks were destined for a squadron of torpedo bombers assigned to defend the west coast, the sole aircraft manufacturer in the region, a subsidiary of U.S. Boeing Aircraft, Boeing Aircraft of Canada, in Vancouver, British Columbia, was awarded the manufacturing contract. The order, signed in May 1937, was for eleven Shark IIIs with enclosed cockpits. After sitting idle for five years, Boeing Aircraft of Canada was again to embark on aircraft construction. In December 1937 the RCAF ordered six additional aircraft, for a total of seventeen.

A U.S. Navy Douglas TBD-1, ca 1938 (CAvM 24796A)



To improve the reliability of its new acquisition, the RCAF insisted on certain modifications, particularly to the engine. Indeed, the British were somewhat disturbed by the unreliable nature of the original Shark engine, the Armstrong Siddeley Tiger. The RCAF had complained about this and had been forced to modify the engines, which, later on, proved satisfactory. Despite this, some British officers were still afraid that the RCAF might decide to change its procurement policy somewhat in favour of American aircraft.

Aware of the situation, Blackburn Aircraft soon reached an agreement with the RCAF and selected the Bristol Pegasus engine, which had already been in use in the RAF for a few years and was tough enough to handle any conditions. The RCAF was all the happier with this choice because a version of this radial engine equipped the Supermarine Stranraer long-range maritime reconnaissance flying boats, ordered in 1936. British-based Bristol Aeroplane would manufacture the engines for the Canadian-built aircraft.

To support the efforts of Boeing Aircraft of Canada, Blackburn Aircraft agreed around May 1937 to manufacture two Shark IIIs equipped with Pegasus engines.

However, for the Air Ministry and Blackburn Aircraft, which delivered various components to Boeing Aircraft of Canada, including the stainless-steel wing spars, this project was not a priority. Consequently, the two Shark IIIs did not undergo flight-testing until November 1938. They arrived in Canada in March 1939. Meanwhile, Boeing Aircraft of Canada was experiencing numerous problems with deliveries of parts and equipment from Great Britain. There were increasing delays and some people at DND began to lose patience. However, according to the American vice-consul in Vancouver, DND officials may have neglected to order the propellers when they issued the contracts for the Shark engines and equipment. This was not impossible. A similar problem delayed production of a group of Westland Lysander observation aircraft ordered by the RCAF in 1938 from the aeronautical division of National Steel Car Corporation, a maker of railway equipment based in Malton, Ontario.



Three Blackburn Shark IIs from No. 9 Squadron, RCAF, in flight over Vancouver harbour, British Columbia, May 1939 (CAvM 15044)



A Blackburn Shark II from No. 9 Squadron, RCAF, based in British Columbia, ca 1939 (CAvM KM2505)



The first Blackburn Shark III built by Boeing Aircraft of Canada, with wings folded, ca 1939 (CAvM KM2506)

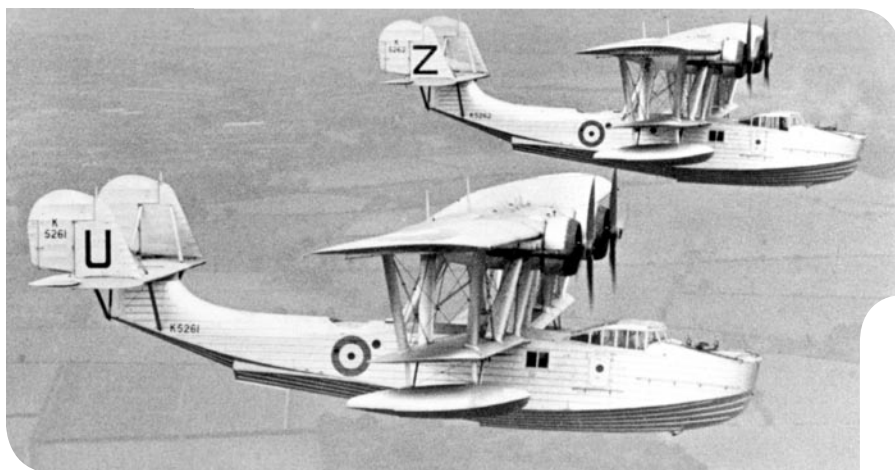


An RCAF Blackburn Shark III, during torpedo attack exercise, ca 1939 (CAvM 14629)

It was feared, and rightly so, that the Canadian version of the Shark III would be obsolete before it even came into service. Ultimately, the first Shark III did not make its maiden flight until 21 July 1939, at Jericho Beach air station, near Vancouver. William James Holland, a pilot working for a small air transport company from the region, Ginger Coote Airways, was at the controls. Everything went well and the RCAF representatives went so far as to stress the excellence of the work done by Boeing

Aircraft of Canada personnel. Buoyed by this success, the manufacturer delivered the other aircraft as fast as it could. The last Shark III entered service in early April 1940. Unfortunately, these aircraft, used almost exclusively on floats, had already been outdated for some time. However, in spite of some landing difficulties caused by its Blackburn floats, the Shark performed satisfactorily enough. From September 1939 Shark IIIs were to be used for surveillance of British Columbia's coasts.

As noted above, the surveillance and protection of Canada's coasts were among the main objectives of the RCAF's expansion program. Thus it was not surprising that DND decided in 1936 to purchase long-range maritime reconnaissance seaplanes. At that time, there were only two such medium-weight aircraft in production in Great Britain: the Saunders-Roe (or Saro) London and the Supermarine Stranraer, two relatively modern, twin-engine flying boat biplanes with a metal structure and fabric-covered wings. Toward the end of November 1936, the RCAF ordered three Stranraers from Montreal-based Canadian Vickers. In many respects, this contract was historic: for the first time, the RCAF was asking a local firm to manufacture armed combat aircraft.



Two Saunders-Roe Londons from No. 201 Squadron, RAF, ca 1937 (CAvM 24887)



The first production Supermarine Stranraer, flown by No. 228 Squadron, RAF, ca 1937 (CAvM 24728)



A Short Sunderland I from No. 210 Squadron, RAF, ca 1939 (CAvM 24712A)



The first prototype of the Saunders-Roe Lerwick, ca 1939 (CAvM 25095)

The RCAF may have decided against the London because of the relative fragility of the hull of the flying boats manufactured previously by Saunders-Roe. A far more modern, larger and more expensive flying boat, the Short Sunderland, was not ready to fly until

about mid-October 1937 — that is, far too late. It was ordered by the RAF as early as March 1936 and entered service in June 1938. The RAF also ordered the Saunders-Roe Lerwick, which had been designed to replace the Stranraer and the London, although it did

not fly until November 1938, two years after the initial contract was signed. A first squadron became operational in December 1939. The Lerwick, however, was found to be unstable and can only be described as a failure.

The first civilian version of the Consolidated PBY,
the Model 28-1 bought by the USSR, ca 1937 (CAvM 24800)



The origins of the Supermarine Stranraer went back to a specification published by the Air Ministry in late 1931, which described the minimum performance requirements and characteristics of a maritime reconnaissance flying boat for the RAF. The prototype, known then as the Southampton V and produced by Supermarine Aviation Works, flew for the first time on 27 July 1934. Unfortunately, its performance was deemed inadequate and the Saunders-Roe London won the competition. However, Reginald Mitchell, chief

design engineer for Supermarine Aviation Works and future creator of the immortal Spitfire, did not accept this verdict.

He continued to develop his aircraft with such enthusiasm that the Air Ministry ultimately ordered seventeen production Supermarine Stranraers. That contract was signed on 29 August 1935. However, a second order for six identical aircraft, signed in May 1936, was cancelled. An RAF squadron received its first Stranraer in April 1937, and the crews had

no end of praise for it. Its unprepossessing appearance notwithstanding, no other flying boat biplane could rival this five-seat aircraft.

The performance of the Stranraer, however, was inferior to that of the Consolidated PBY of the U.S. Navy, a larger, heavier and more modern-looking aircraft for which deliveries began in the fall of 1936. An equally modern if larger four-engine flying boat, the Kawanishi H6K, or Type 97, went into service with units of the Teikoku Kaigun at the beginning of 1938.

A Stranraer taking off, ca 1939 (CAvM 24771)



Producing an aircraft as large as the Stranraer in Canada — as of that time, it was the heaviest aircraft ever made in this country — certainly could not be accomplished overnight. Preparations for its production were to continue for almost two years. The first Canadian Stranraer flew on 21 October 1938 and was taken on strength by an RCAF squadron on 9 November. In light of the ever-worsening international situation, the RCAF chose to sign additional contracts for a further seven and later six aircraft, in November 1938 and August 1939, respectively. After Canada declared war in September 1939, the RCAF ordered twelve more Stranraers, and then another twelve in 1941.

The ruggedness and seaworthiness of the Stranraer were demonstrated in September 1939. An RCAF aircraft remained afloat for twenty-two hours after ditching off the shores of Atlantic Canada. The large flying boat eventually sank as it proved impossible to tow it back to land due to bad weather.



A Stranraer from No. 5 Squadron, RCAF, off the shores of Nova Scotia, ca 1939 (CAvM KM2507)



**Three Stranraers from No. 4 Squadron, RCAF,
based in British Columbia,
ca 1940 (CAVM 10813)**

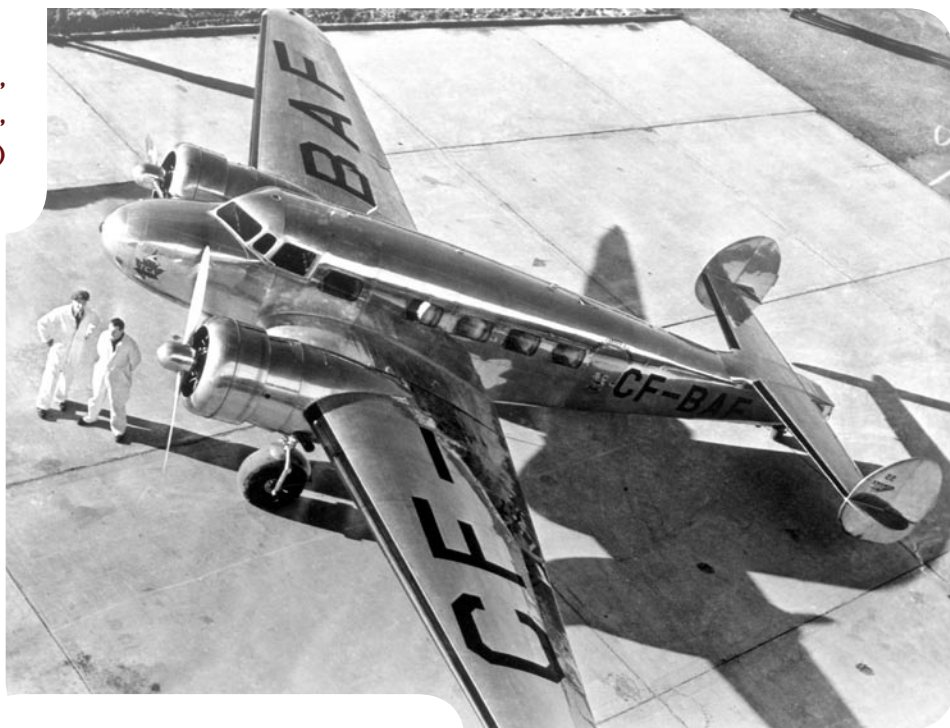
However, from late 1939 onward, since it was more concerned about its own defence at the start of the war, Great Britain stopped delivering the Bristol Pegasus engines and equipment required for the Canadian flying boats. As a result, the program was delayed: only two Stranraers were delivered in 1940 and the assembly line began to gather dust. The situation was all the more serious because at this point the RCAF was in great need of long-range aircraft to protect the convoys of merchant ships heading to Great Britain. The fortieth and last Canadian Stranraer was not to enter service until the very end of 1941, which was far too late. Even its most ardent defenders then had to acknowledge that the seaplane was obsolete and needed to be replaced as quickly as possible. Its crews, who had affectionately nicknamed it “Stranny,” “Strainer,” or even “the whistling bird cage,” would remember the aircraft fondly.



**A Stranraer from No. 4 Squadron, RCAF,
on the ramp of the Jericho Beach air station,
British Columbia, ca 1940 (CAVM KM2508)**

Canada's Coastal Defence: The Bolingbroke Story

**A Lockheed Model 10A Electra,
flown by Trans-Canada Air Lines,
ca 1937 (CAVM 13498)**



**An RAF Blenheim IV,
ca 1939 (CAVM 16277)**

The third component of the program to modernize the RCAF's coastal squadrons began in the fall of 1936. The military now envisaged purchasing twin-engine coastal reconnaissance aircraft. As in the past, the RCAF turned first to Great Britain. However, the situation there did not appear to be encouraging. In fact, the prototype of the only potentially available aircraft, the Bristol Bolingbroke, had not yet flown. Some experts in the RCAF were so concerned that they went so far as to propose converting an American airliner, the Lockheed Model 10 Electra, into a combat aircraft. But since this kind of project inspired little enthusiasm, the Bolingbroke would ultimately be ordered. The acquisition of this aircraft was, however, to cause some headaches for the principal parties involved.

The Bristol Bolingbroke was a modified version of the Blenheim, a modern all-metal, three-seat, light day bomber fitted with Bristol Mercury engines. This elegant twin-engine aircraft was itself a direct descendant of the Type 142, a high-performance transport aircraft manufactured in 1934–1935 for Lord Rothermere, owner of the *Daily Mail*, an important London newspaper. The press baron supported this project as a means of improving the performance of British aircraft, under threat as they were from the American industry. The performance of the Type 142, dubbed *Britain First*, was so spectacular that the Air Ministry put it through rigorous testing. Buoyed by this interest, Bristol Aeroplane prepared plans for a military version and the Air Ministry ordered 150 of them in August 1935. The prototype of this Bristol Blenheim made its maiden flight on 25 June 1936. An RAF squadron took delivery of the first production aircraft in March 1937.



**A Bristol Beaufort I from No. 22 Squadron, RAF,
ca 1940 (CAvM 14864)**

As for the Bristol Bolingbroke, it was created in response to a specification issued in August 1935. The objective was to develop a stopgap coastal reconnaissance aircraft for the RAF. A modified Blenheim I became the prototype for the new aircraft. It made its maiden flight on 24 September 1937. This aircraft was eventually shipped to Canada in November 1940.

**A Blackburn Botha from No. 3
School of General Reconnaissance, RAF,
ca 1942 (CAvM 24904)**



The procurement process for the Bolingbroke had been initiated right at the beginning of 1937, at a time when the RCAF was still wondering which aircraft to choose. In January, Hubert M. Pasmore, president of Fairchild Aircraft, a company based in Longueuil, near Montreal, Quebec, went to London. All the signs indicated that he was hoping at that time to obtain some British military contract but, unfortu-

nately, Pasmore soon encountered serious problems. He was alone, with no Canadian support in Great Britain: the federal government, under usual circumstances, would have had no intention of supporting the efforts of a Canadian businessman wanting to secure a contract with the British armed forces. In this particular case, however, Prime Minister King took DND's advice and, on 3 February 1937, authorized the Canadian high commissioner in London, Vincent Massey, to introduce Pasmore to the Air Ministry. However, after this introduction, Pasmore found himself alone, without inside contacts or friends, when talking to British civil servants. His contacts in Ottawa were of no use to him from such a distance. He met with a number of senior British officials but received the same response wherever he went: no contract.

At the same time, around January 1937, since the performance of the Bolingbroke already seemed to be somewhat limited, the Air Ministry recommended that the RCAF await the introduction of aircraft specifically designed for coastal reconnaissance. The Air Ministry also hinted that the two aircraft under development could also be used for torpedo bombing, making them multi-purpose aircraft. In the end, the RCAF

decided not to follow this suggestion. The two new aircraft had in fact been ordered in August and December 1936 and made their maiden flights in October and December 1938. The Bristol Beaufort entered service only in November 1939 and the Blackburn Botha in June 1940. The latter aircraft had such serious defects that it was relegated to operational training scarcely five months later.

To avoid coming home empty-handed, Pasmore tried to obtain the names of aircraft best suited to Canadian conditions, but the Air Ministry proved reticent to provide information and the businessman had to pay another visit to Massey. The high commissioner hastened to contact his superiors to find out whether or not he could support Pasmore in his efforts. Although the federal government was somewhat surprised by the request, Prime Minister King asked Massey to contact the Air Ministry. King said the Canadian government wished Bristol Aeroplane to provide Pasmore with information on the Bolingbroke, but the British remained reticent to do so, stating that since the Bolingbroke was an ultramodern aircraft its specifications were secret, and that Pasmore would see them when DND confirmed it would soon be signing a contract.

All this was highly frustrating for Pasmore, since there was no RCAF contract in sight. In fact, his Ottawa contacts at the RCAF and DND had no idea what the cost of such a contract would be. To expedite the process, however, the federal government stated to the British that Fairchild Aircraft would manufacture these aircraft if, of course, Canada were to purchase them. But this was still not enough and Pasmore returned to Canada empty-handed in March 1937. DND and Fairchild Aircraft immediately began negotiations for a potential order of eighteen Bolingbrokes. At about the same time, Canadian interests purchased the shares held by Fairchild Aircraft's U.S. parent company. The final obstacle barring the manufacture of Bristol Bolingbrokes under licence had just been removed.

With Fairchild Aircraft soon to receive an official contract, the Canadian government asked the Air Ministry to co-operate fully with Pasmore. He returned to Great Britain and after examining the files, began negotiations to obtain the rights to manufacture the Bolingbroke. The RCAF ordered eighteen aircraft in November 1937, and made an order for a further eleven in June 1939. Fairchild Aircraft immediately began preparations for production, although progress was to be slow. Bristol Aeroplane was already busy with numerous British and foreign orders, and needed a great deal of prompting. A decisive step was taken in this long and difficult process on 14 September 1939, when the first Canadian Bolingbroke made its maiden flight near the Longueuil factory. J. H. “Red” Lymburner was at the controls. The first RCAF squadron to receive Bolingbrokes took them on strength in July 1940.

As early as 1938 or 1939, the RCAF asked Fairchild Aircraft to prepare plans for a float-equipped Bolingbroke that would be based along Canada's coasts. In addition, DND

signed a contract with MacDonald Brothers Aircraft of Winnipeg, Manitoba, for the supply of floats. This company held the Canadian rights for the very successful American-designed Edo floats (their name taken from the initials of the company's founder, Earl Dodge Osborn). Thus, MacDonald Brothers built a first set of floats for use on the prototype, designated Bolingbroke IF (*F* standing for floats). If the trials proved satisfactory, the company was to build twenty-three more sets of floats.

Realizing that the performance of the Bolingbroke IF might be insufficient, the RCAF asked Fairchild Aircraft to equip the prototype with more powerful Bristol Mercury engines. The aircraft was immediately given the new designation Bolingbroke III. It made its first flight as a seaplane on 28 August 1940. Its performance proved satisfactory but the RCAF eventually decided not to order more float-equipped Bolingbrokes. It is possible, however, that Fairchild Aircraft built a certain number of Bolingbrokes so that they could be fitted with floats.



The one and only Bolingbroke III, during trials, ca 1940 (CAvM 25630)



**The second Fairchild 45-80 Sekani,
shortly before trials with
Mackenzie Air Service,
ca January 1938 (CAvM 6447)**

It was as a result of the Bolingbroke contract that Fairchild Aircraft succeeded in avoiding the potentially disastrous consequences of continuing production of the Fairchild 45-80 Sekani, a small twin-engine ten-to twelve-seat transport aircraft that made its maiden flight on 24 August 1937. At the time, the project was apparently progressing quite well and two Canadian air transport companies were considering ordering seven aircraft. But from then on, problems began to mount: suspect in-flight reliability, insufficient payload and greater weight than anticipated. As a result, the RCAF and the main potential civilian client, Canadian Airways, wanted no further part in the project. Fairchild Aircraft produced only

two aircraft, which were soon demolished, while three additional versions of the Sekani went no further than the drawing board.

Interestingly, the program to produce Bolingbroke in Canada very nearly came to a sudden end as well. In December 1937, a few months after the maiden flight of the British prototype, the Air Ministry decided to discontinue developing the aircraft. This came as a complete surprise in Ottawa. When DND protested, the British consented to giving the program some additional funding. Reassured by this support, Bristol Aeroplane continued to work on the program. The RAF was so pleased with the results that it asked

the manufacturer to make similar modifications to the Blenheim light day bomber.

With an extended nose, the new aircraft, the Blenheim IV, looked like a sister to the Bolingbroke. To avoid delaying production of this improved aircraft, which was deemed crucial, the Air Ministry cancelled its order for 134 Bolingbrokes. The first RAF Blenheim IVs entered service in March 1939. In the end, Bristol Aeroplane and two other British firms produced 5436 Blenheims: 5386 for the RAF and fifty for the Finnish, Yugoslav and Turkish air forces. Ninety-five Blenheims were also produced under licence in Finland and Yugoslavia.

The difficulties surrounding the acquisition of the Bristol Bolingbroke very clearly illustrate the frustration felt by the RCAF, the Canadian government and DND. Greatly preoccupied by the risk of war in Europe, Great Britain apparently showed very little concern for the interests of the Dominion. As a result, equipment standardization, as sought by the RCAF, suffered. In 1938 the Supermarine Stranraer, the Blackburn Shark and, to a certain extent, the Bristol Bolingbroke were no longer even included in the RAF's major modernization program.

British orders for long-range maritime reconnaissance flying boats, for example, went to Short Brothers and Saunders-Roe, whose Sunderland and Lerwick, respectively, were far more modern and better armed. The Shark was replaced by the Fairey Swordfish, which performed no better than its rival. The withdrawal of the Shark may have been a result of greater priority being given to the production and service introduction of the Blackburn Skua, the first monoplane and the first dive bomber designed for the FAA. This aircraft flew for the first time in February 1937 and entered service toward the end of 1938.

With the outbreak of the Second World War, the RCAF's rearmament program and its dead lines had to be dramatically modified. Fairchild Aircraft and Bristol Aeroplane, manufacturer of the Mercury radial engines mounted in almost all Bolingbrokes, were awarded contracts one after another at an increasing rate. The following figures clearly illustrate the magnitude of the program.

With the outbreak of the Second World War, the RCAF's rearmament program and its deadlines had to be dramatically modified.

**A Bolingbroke IVT from No. 10 Bombing
and Gunnery School, RCAF, ca 1943 (CAvM 15038)**



| AIRCRAFT | DATE | DETAILS |
|----------------------|-----------|--|
| 18 Bolingbroke Is | 1939–1940 | |
| 185 Bolingbroke IVs | 1941–1942 | |
| 15 Bolingbroke IVWs | 1941 | equipped with Pratt & Whitney Twin Wasp Jr engines |
| 1 Bolingbroke IVC | 1942 | equipped with Wright Cyclone engines |
| 407 Bolingbroke IVTs | 1942–1943 | (advanced training aircraft) |
| 626 Bolingbrokes | 1939–1943 | |



**Two RCAF Bolingbroke IVTs,
ca 1943 (CAvM 27260)**

The Bolingbroke IV and its derivatives were the principal versions produced in Canada. They were fitted with de-icers so that the aircraft could be used throughout the year. The use of American radial engines, such as the Pratt & Whitney Twin Wasp Jr and the Wright Cyclone, on sixteen aircraft was prompted by the threat of the supply of British Mercury engines being cut off — they were delivered to Canada by ships vulnerable to attack by German submarines. However, trials of these aircraft soon brought certain problems to light. The Bolingbroke IVW fitted with Pratt & Whitney Twin Wasp Jr engines was underpowered, and the greater diameter of the Wright Cyclone engines of the Bolingbroke IVC limited the pilot's field of vision. Since deliveries of Mercury engines were not in fact interrupted, the Bolingbroke IVW and IVC were not produced in large numbers.

The RCAF's first Bolingbrokes, or “Bolys,” kept watch on Canada's east and west coasts. Most of them, however, were used across all of Canada in the air gunnery and bombing schools of the British Commonwealth Air Training Plan.



**A group of RCAF Bolingbroke IVTs,
near the Fairchild Aircraft factory,
ca 1943 (CAvM KM2509)**

Canada’s Coastal Defence: The Beaufort Project

**A Beaufort I from No. 42 Squadron, RAF,
in flight, ca 1941 (CAvM KM2510)**



The saga of Canada’s twin-engine coastal reconnaissance aircraft did not end with the Bolingbroke. From 1938 on, the British Air Ministry negotiated production orders with a few Canadian manufacturers. As early as 1938, the British were considering the possibility of signing a contract for twenty coastal reconnaissance and torpedo bombing aircraft, probably Bristol Beauforts, with Boeing Aircraft of Canada in Vancouver, a subsidiary of U.S. Boeing Aircraft. This proposal, however, raised some difficulties. Fairchild Aircraft in Longueuil already had the Canadian production rights for all aircraft designed by Bristol Aeroplane, and its managers were not pleased to learn that a competitor might take a potential contract away from them.

The Air Ministry soon explained itself, claiming that its intention was to re-equip many squadrons based in Southeast Asia, quite possibly those in Malaysia, with the new aircraft. To make deliveries easier, it made sense to build the aircraft in British Columbia and/or in Australia (the latter in fact being a better location). The British were, however, still considering the possibility of offering a small contract to Fairchild Aircraft, if — of course — the Canadian government agreed to order a few Beauforts.

Under these circumstances, and seeing the project as promising, the managers of Boeing Aircraft of Canada did not remain idle. To satisfy the Air Ministry’s requirements that an aircraft deemed secret be built by a company free from foreign control, they indicated as early as November 1938 their intention to buy, as soon as possible, the shares held by their U.S. owner. A new and entirely Canadian company, Vancouver Aircraft, could emerge as early as the following year. Indeed, a Boeing Aircraft of Canada representative arrived in London in early February 1939.

Rumours about possible developments created a great deal of interest within the Canadian aviation community. As the year 1939 began, two companies, Fleet Aircraft in Fort Erie, Ontario, a maker of training aircraft, and Canadian Car & Foundry in Fort William (now Thunder Bay), Ontario, an important manufacturer of railway equipment that had recently set up an aircraft division, were considering acquiring Boeing Aircraft of Canada. In fact, Fleet Aircraft’s general manager, William John “Jack” Sanderson, was in Great Britain in January 1939 to obtain information on Beaufort production. The businessman indicated to the RCAF liaison officer in London that he was ready to propose a project related to production of the Beaufort in Canada. Sanderson then informed Bristol Aeroplane that he would not proceed with his negotiations if the latter did not fully co-operate. The British manufacturer, however, responded with little enthusiasm.

Canadian Car & Foundry, having held an option to buy the company for some time, seemed to be in a better position. The company’s president, Victor M. Drury, went to London in March 1939 to negotiate a contract to manufacture Beauforts. Cautious, as was its custom, the British Air Ministry did not favour one company, claiming the issue was primarily a Canadian one that only the Canadian government could resolve. There was now nothing to do but wait. A few weeks later, some information began to seep through: the purchase project was running into numerous difficulties. Indeed, Canadian Car & Foundry had signed one contract with the Air Ministry in November 1938 relating to the production of Hawker Hurricane fighter planes in its Fort William factory, and the firm was also part of a group of six Canadian companies set up in September 1938 to share a British order for Handley Page Hampden medium bombers. Realizing that a third British contract might prove controversial and that its chances of success were limited, Canadian Car & Foundry abandoned its efforts to purchase Boeing Aircraft of Canada in the spring of 1939.



At the time, the Air Ministry was nearing the end of a thorough re-evaluation and enthusiasm about Beaufort production in Canada was dwindling. Each Beaufort built in Canada would be very expensive. In addition, the RCAF had no need for this type of aircraft and a British order did not in itself justify creation of a production base on Canada’s west coast. These factors were influential but another carried still more weight. In early 1939, Great Britain and Australia completed intense negotiations and signed an important production contract. Its numbers speak for themselves: ninety Beauforts would be produced for the Royal Australian Air Force (RAAF) and ninety for the RAF, all of them being manufactured in Australia by numerous subcontractors with

final assembly in two purpose-built government factories. Boeing Aircraft of Canada and Fleet Aircraft could not compete against such a proposal.

In April 1939, the British government put aside all projects relating to production of Beauforts in Canada. Disappointment ran deep in Vancouver and elsewhere in British Columbia. For many weeks, Boeing Aircraft of Canada tried time and again to revive the issue but its efforts were in vain. The decision was final; Great Britain closed the file in July 1939. Plans for a float-equipped version of the Beaufort that might have been of interest to both the RCAF and the RAAF remained on the drawing board.

In April 1939, the British government put aside all projects relating to production of Beauforts in Canada.

War on the Horizon

The very magnitude of the Canadian rearmament program was reflected in the ongoing interest shown by the specialized media. In this context, 1939 was a year of transition, when some commentators began voicing concerns. Progress was slow and the available funding was insufficient. Between 1936 and August 1939 the RCAF was said to have spent between \$18 and \$20 million on its rearmament and expansion program. Before it was finished, DND spending in this area could amount to a further \$12 to \$15 million. *The Financial Post's* comment on the matter on 5 August 1939 was unequivocal. If the rearmament program continued at its current rate, the last aircraft would not enter service until the summer of 1941.

In the House of Commons, Minister of National Defence Mackenzie staunchly defended his policy of manufacturing in Canada, stating that critics attached a little too much importance to delivery schedules. According to Mackenzie, any delays were justified by the creation and development of a new source of supply. In other words, the Canadian government was thinking first and foremost of Canada's long-term interests. A strong and viable aircraft industry would make a powerful contribution to the defence of Canadian soil. Mackenzie went further, stating that, as a result of this procurement policy, Canadian industry would receive numerous British military contracts. This would also help to significantly increase Canada's production capacity, which would be beneficial for all.

Despite the minister's optimistic statements, the situation facing the RCAF cannot be overlooked. There were very serious delays. In November 1938, for example, even DND anticipated that barely twenty-five of the 312 combat aircraft to be produced in the expansion and rearmament program would in fact be operational in July 1939. The Joint Staff Committee would not be able to accomplish all of its program for the defence of Canada until the end of 1941. The Canadian aircraft industry, having been too long neglected, was quite simply not up to the task. One crisis was following another in Europe and war might soon be declared. The RCAF could no longer afford to wait for Canadian manufacturers to deliver the goods that were needed.

A few Lockheed Hudson Is from No. 11 Squadron, RCAF, ca 1939 (CAVM 15072)





**A Douglas Digby I from No. 10 Squadron, RCAF, based in Nova Scotia,
ca 1940 (CAvM 14893)**

Consequently, the RCAF had to resign itself to ordering more and more equipment abroad, for example, twenty Hawker Hurricane I fighters purchased in Great Britain in the fall of 1938 that would enter service from February 1939 onward. So dire were the RCAF's needs that the RAF agreed, in the summer of 1939, to transfer to Canada twenty-eight of the two hundred American-designed Lockheed Hudson I twin-engine coastal patrol aircraft it had ordered. These began to enter service in September 1939. They were in fact the first American combat aircraft flown by the RCAF.

Increasingly concerned by the situation in Europe, the RCAF also ordered twenty Douglas Digby Is toward the end of August 1939. A

few of these arrived in Canada at the very end of 1939. These aircraft, which were more or less identical to the Douglas B-18A twin-engine medium bomber of the United States Army Air Corps (USAAC), became operational in the spring of 1940 and immediately began to patrol Canada's eastern shores. Thus, the future looked rather bleak for all concerned. The RCAF's orders involved a limited number of aircraft and yet, despite this, the military was already obliged to draw on budgets for subsequent years. This state of affairs could not continue indefinitely.

The Douglas B-18 owed its origins to a 1934 USAAC specification aimed at creating a medium bomber. Interested in this contract,

Douglas Aircraft immediately designed a military version of the DC-2 airliner, which had just performed its maiden flight. Completed in April 1935, this private venture was chosen by the USAAC despite protests from numerous officers who, deeming its performance insufficient, preferred the Boeing Model 299, the prototype of the famous Boeing B-17 Flying Fortress four-engine heavy bomber. The American military received its first production B-18 in February 1937. Slow, lacking in power and poorly armed, the B-18 was completely obsolete by the time the Second World War began. Douglas Aircraft produced 370 B-18 and Digby I aircraft between 1937 and 1939.

Interestingly, the Lockheed Hudson also derived from an airliner but its origins were somewhat different. Wishing to obtain modern coastal reconnaissance aircraft as quickly as possible, the RAF sent a team of experts to the United States at the beginning of 1938, despite protests from the aviation community, who were outraged that an RAF contract might go to a foreign aircraft manufacturer. The team visited a number of companies, including Douglas Aircraft, which proposed a version of its B-18. The British were not impressed: the aircraft was too expensive and delivery periods were too slow. In addition, the defensive weaponry of the bomber was not satisfactory and it lacked power.

Another company, Lockheed Aircraft, quickly proposed to the British an armed version of its latest airliner, the highly modern and fast Model 14 Super Electra. Negotiations were concluded in June with a production order. The production aircraft, designated Hudson by the RAF, made its maiden flight on 10 December 1938. The Hudson was in fact the first American combat aircraft flown by the RAF during the Second World War. It entered service in mid-1939. Lockheed Aircraft ultimately manufactured almost 2950 Hudsons between 1938 and 1943, for the armed forces of Allied countries such as Australia, Canada, China, Great Britain, New Zealand and the United States. No less than 250 aircraft of this type, for example, served the RCAF.

During the rearmament period... the RCAF signed contracts for just under two hundred aircraft with seven manufacturers based in Canada.



During the rearmament period, that is, from 1936 to the beginning of the Second World War in September 1939, the RCAF signed contracts for just under two hundred aircraft with seven manufacturers based in Canada. A grand total of sixty-two aircraft were identified for coastal defence and surveillance.

| AIRCRAFT | MANUFACTURER | EXPECTED DELIVERY DATE |
|-----------------|---------------------------|------------------------|
| 16 Stranraers | Canadian Vickers | 1938–1941 |
| 17 Sharks | Boeing Aircraft of Canada | 1939–1940 |
| 29 Bolingbrokes | Fairchild Aircraft | 1939–1941 |
| 62 aircraft | | |

These orders constituted the greatest effort undertaken by the Canadian aircraft industry during the interwar years. With war about to be declared, the record for meeting proposed delivery dates for these aircraft was far from impressive.

| TOTAL ORDERS IN CANADA | | DELIVERIES |
|------------------------|------------------------------------|--|
| | Delivery forecasts made April 1939 | Actual deliveries as of September 1939 |
| 16 Stranraers | 10 | 8 |
| 17 Sharks | 6 | 1 |
| 29 Bolingbrokes | 2 | 0 |
| 62 aircraft | 18 aircraft | 9 aircraft |



Unfortunately for the RCAF and for Canada, equipment and technology underwent a rapid transformation in the 1930s.

From these delays, which were already serious, further problems were to arise. Given its limited financial resources, the RCAF had no desire to take needless risks. Consequently, insofar as possible, it avoided new aircraft or those that existed only as prototypes. Unfortunately for the RCAF and for Canada, equipment and technology underwent a rapid transformation in the 1930s. Increasingly, antiquated aircraft encumbered with struts and wires disappeared, to be replaced by all-metal low-wing monoplanes. Consequently, most of the aircraft ordered in Canada, for which a high price had been paid, were almost obsolete when they entered service.

The problems that befell the RCAF's modernization program were reflected in Ottawa as early as the fall of 1938, and senior federal officials such as Under Secretary of State for External Affairs Oscar Douglas Skelton began to react. The RCAF complained about the lack of money and — perhaps in the hope of obtaining more — stressed how vulnerable Canada was to raids and attacks by long-range German bombers. But Skelton pointed out that such arguments were invalid: aircraft of that type did not exist and, in any case, before attacking Canada, Germany would have to eliminate France and Great Britain. Calculating the risk of attack was, according to the minister, a political problem rather than a task that should be left to DND.

For some time now, specialized media and newspapers had been fully aware that all was not well at DND. With the onset of spring in 1939, a respected newspaper from western Canada, *The Winnipeg Free Press*, published a series of articles highlighting the deficiencies in the federal aviation policy. *The Financial Post* supported such criticism, adding that many Canadians had lost confidence in DND's leadership. Numerous details of the aviation policy remained obscure and the explanations of Minister of National Defence Mackenzie were unsatisfactory. His occasional insulting remarks certainly did not help the situation.



In March 1939, in a note addressed to the secretary of state for the Dominions, the British high commissioner in Canada stated that DND's difficulties stemmed largely from a minister whose competence, political weight and interest in his work were all too limited. Prime Minister King apparently shared such views, thus Mackenzie was made minister of Pensions and National Health soon after the start of the Second World War. He was replaced by Norman McLeod Rogers, previously minister of Labour, and a former university professor with whom the prime minister had shared close contacts for more than a decade.

*Summed up in a few words,
DND's policy had called for too
little, too late ...*

According to *The Financial Post* and *The Winnipeg Free Press*, the problem of aircraft production in Canada lay primarily in the area of combat aircraft. Apparently, the federal government had failed in planning its purchases. Summed up in a few words, DND's policy had called for too little, too late and, as a result, the RCAF had at most a few relatively modern combat aircraft — Canada was defenceless. Meanwhile, in Ottawa, Cabinet's reaction to the situation led to military personnel going to the United States and Great Britain to sign a series of contracts. Canadian manufacturers, well aware of what was happening, were understandably concerned. For some months, the federal government had left them in limbo and now the administration seemed to be bypassing them in favour of foreign companies. It was certainly questionable whether the policy of purchasing in Canada still existed.

In a number of cases, press comments and criticisms were quite justified, but in other cases journalists seemed to be confusing the possible and the preferable. Given the situation, purchases had to be made abroad; however, the federal government had not always acted very wisely. This was quite evident from the stir created when Bill 38, the *Defence Purchases, Profit Control and Financing Act*, came into force.

This bill, presented in February 1939, limited the profits of makers of war equipment to five percent of the capital used to execute the contracts allocated without calls for tenders. The manufacturers considered this an extremely harsh limit, and pointed out that the bill could slow down Canada's rearmament still further. The demands of the military were in fact high and profits not particularly impressive. The civilian market was no doubt far more profitable. But such protests, combined with some concern in military circles, failed to alter the opinions of MPs and senators. On 3 June 1939, the Governor General put his signature to Bill 38. The situation was to change only after the outbreak of war.

In one way or another, the federal government was well aware that, militarily, Canada was virtually as dependent in 1939 as it had been in the mid-1930s. Self-sufficiency in terms of military aviation could certainly not be attained overnight, any more than the RCAF's rearmament program could be accomplished in such short order. Canada's entry into the war after Germany's invasion of Poland in September 1939 was to send all scheduling into disorder. However, as the saying goes, that's another story.

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