Aircraft of the Royal Canadian Air Force

A Centennial History, 1924–2024

National Defence Défense nationale

CANADIAN ARMED FORCES
FORCES ARMÉES CANADIENNES

Canada

Aircraft of the Royal Canadian Air Force

A Centennial History, 1924–2024

Terry Leversedge

RCAF
HISTORY AND HERITAGE
HISTOIRE ET PATRIMOINE
DE L'ARC

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Editor's Note

Royal Canadian Air Force CF-188 Hornets are refueled by a KC-135 Stratotanker assigned to the 340th Expeditionary Air Refueling Squadron on October 30, 2014, over Iraq during the first combat mission in the area of operations, supporting Operation Inherent Resolve. (USAF photo)

THE ORGANIZATION OF THIS BOOK

In the last century, the Royal Canadian Air Force (RCAF) has operated over 200 different types of aircraft and air vehicles. During this time, some popular names of aircraft have been duplicated (e.g., Freighter, Nomad). The entries in this book are therefore listed by the designer/manufacturer. In cases where the original company has been bought out by another manufacturer or has changed names, both are listed.

In addition, to appropriately document the aircraft / aerial vehicles operated over the past 100 years, this book has been divided into five sections. In most cases, the aircraft flown by the RCAF have been owned by the Canadian government and were registered accordingly. These aircraft constitute the first section of this book. In other cases, however, aircraft have only been loaned to or were effectively leased to the RCAF. The current fleets of training aircraft in the RCAF are, for example, provided by contractor consortiums. These aircraft types make up the second section of the book. Additionally, during the Second World War, one of the important contributions by the RCAF to the war effort was participation in the British Commonwealth Air Training Plan (BCATP). The BCATP trained thousands of Commonwealth aircrew and required significant investments in aircraft, facilities and personnel. In compensation, under Article 15 of the BCATP,[1] as the RCAF mobilized and sent squadrons overseas, the British government provided these squadrons with aircraft that were owned by the United Kingdom and registered as belonging to the Royal Air Force (RAF). The Hawker Hurricane, Hawker Typhoon, Handley Page Halifax, Supermarine Spitfire and Vickers Wellington are examples of aircraft flown by RCAF squadrons in operations in Europe while still officially being registered as RAF aircraft. Another more modern example is the NATO E-3 airborne warning and control system (AWACS) aircraft that are currently flown and operated with RCAF crews and/or crew members, but the aircraft are officially registered to the country of Luxembourg. These aircraft are included in the third section of this book. There is also a category of remotely piloted vehicles that includes target drones and remotely piloted missiles/vehicles—more commonly known today as uncrewed air vehicles (UAVs)—that are, for completeness, included as the fourth section. And lastly, there are those aircraft types that have been ordered but are not yet in service, which constitute the fifth and final section.

1. Article 15 of the BCATP indicated that the costs of the Commonwealth squadrons, including the pay of the aircrew, the uniforms they wore and the aircraft they flew, were to be borne by the United Kingdom.

A WORD ABOUT DESIGNATIONS

General

When a military aircraft is designed and built by an aircraft company, it is often given a company designation. If that type is adopted by a military air arm, sometimes the company designation is retained or the type is given a new "military" designation. Depending on the popularity of the design, the same type of aircraft can have different designations based upon which country and/or which air arm (i.e., army, navy or air force) is operating that same type of aircraft. In addition to the designation, most (but not all) aircraft types are christened with a "popular" name. Different countries have also used different names when referring to the same type of aircraft. Some aircraft, however, are never given a name and are only known by their company or military designation. The result is a sometimes confusing array of designations (company/military) and popular names for the same aircraft type.

The Canadian Military Aircraft Designation System

In an effort to avoid confusion and standardize the Canadian approach to the above issues, since 1968, the Canadian Armed Forces (CAF) have used standardized aircraft designations as follows:

Examples:	C	C	-	144	A	Challenger-600	144601
	C	P	-	140		Aurora	140101
	C	F	-	188	B	Hornet	188901
(See notes)	*1	*2		*3	*4	*5	*6

(*1) All designations start with "C" which denotes "Canada."

(*2) Following the initial C is a "type" letter describing the purpose of the aircraft. The letters are essentially a subset of the type letters used in the United States' (US's) current system:

- C - Cargo/Transport
- E - Electronic Warfare
- F - Fighter
- H - Helicopter
- P - Patrol / Reconnaissance / Antisubmarine Warfare
- T - Trainer
- U - UAV
- X - Research/Experimental

In earlier versions of the system, more letters were used to define the type. Previous examples (which are now obsolete) include the following:

- O - Observation
- SR - Search and Rescue

(*3) The next in the series is a three-digit number. There is only one numbering sequence for all aircraft types. A number that has been allocated to one aircraft would not normally be later reallocated to another one, even if the original aircraft order had been cancelled. The numbers are not necessarily allocated in sequence but are instead often chosen to match another designation (like the manufacturer's or US military's designation) of the aircraft. The type number is also used as the first three digits of the six-digit serial number for individual aircraft. Variants of an aircraft for a different purpose retain the number but use a different type letter (e.g., the electronic support trainer version of the CC-144A Challenger-600 was called CE-144A Challenger-EST). However, the allocation of a different type letter is not done very often and is only used if the aircraft is significantly altered.

(*4) An optional suffix letter may follow the designation to distinguish between different versions of a specific type. Letters are assigned alphabetically, omitting "I" and "O". Some letters are reserved for special purposes, including the following:

- D - Dual-seat version of a single-seat aircraft
- NT - Navigation Trainer

(*5) Most—but not all—aircraft types have an official "popular name" assigned. Unofficial nicknames are also common.

(*6) The aircraft serial number is always six-digits that includes the aircraft number series plus the individual tail number.

A Royal Canadian Air Force member from HMCS MONTREAL's Helicopter Air Detachment marshals a CH-148 Cyclone helicopter, call sign Strider, before commencing flight operations in the Mediterranean Sea during Operation REASSURANCE on March 1, 2022. (CAF photo)

Foreword

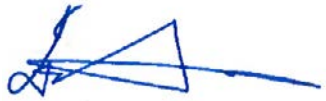
The Royal Canadian Air Force (RCAF) has a proud tradition of excellence when it comes to flying and maintaining aircraft and aerial systems. *Aircraft of the Royal Canadian Air Force: A Centennial History, 1924–2024* carefully details the many diverse types of aircraft and remotely piloted vehicles that have been flown operationally and have served both the RCAF and the nation so faithfully through one hundred years of operations.

It must be remembered, however, that even as the technology and the systems have changed and evolved drastically over these years, it has always been (and will always be) the determination and dedication of the greater Air Force community that has made these aircraft ready to meet and to carry out their missions. RCAF personnel, public servants and contractors have always worked as a team to prepare for and provide support to daily operations around the globe across the entire spectrum of peace and war. Consistently excellent teamwork plus the continued spirit and drive of those teams has ably served the RCAF throughout the decades.

Each aircraft in this volume has a proud history and a story all its own, as depicted herein. Behind each of these stories, however, is another hidden story about the personnel (aircrew, ground crew and support personnel in so many different capacities) who have toiled and sacrificed to achieve their goals in order to ensure mission success.

And so, while on the surface this book is about machines and technology, it also must be about the personnel who have operated and supported each of these aircraft types and aerial systems.

Sic Itur Ad Astra



Eric Kenny
Lieutenant-General
Commander RCAF

Preface and Acknowledgements

The days of early aviation were special, exciting and pioneering times. Individuals took to the skies in aircraft made of little more than wood, canvas and wire. In fact, nothing illustrates the differences between the aircraft of yesteryear and today's RCAF fleet like a comparison of the rickety Burgess Dunne, a biplane bought by the Canadian government in 1914 to support one of the RCAF's proto–air forces (the Canadian Aviation Corps), with the jets as well as other fixed- and rotary-wing aircraft of the current complement. The differences could not be starker. Even more telling for the flight path of the future is the fact that the RCAF recently established a third division, which is devoted to Canadian space-defence requirements. This book, therefore, will use the story of every aircraft that the RCAF has ever flown to capture its journey from the biplanes of old to a juncture where it has its own space division and, in the process, has lived up to its Latin motto Sic itur ad astra, which in English means "such is the pathway to the stars."

Major-General Colin Keiver, who at the time was the Deputy Commander of the RCAF, was the catalyst for this book, as he saw much value in a centennial and historical product that focused on the many aircraft the RCAF has flown over its 100 years of existence. He was right. While there are many excellent books that highlight the aircraft that have been procured by the RCAF between 1924 and the present, no volume has ever included every single one. Thanks to the efforts of Brigadier-General Terry Leversedge (Retired) and others, the RCAF is proud to present this book, which is a wonderful, all-inclusive investigative tool that will serve future generations of researchers well. This makes it a critical resource and a lasting tribute to the RCAF and its 100 years of unparalleled experience and service to the nation.

But it takes more than pilots, aircrew and aircraft to make an air force fly. Creating air effects requires a team effort that extends from the maintainers to the administrators and to the logistical supporters as well. As observed in the RCAF's recent strategy document, our people are our greatest asset; if it were not for them, none of the aircraft in this book would have ever rolled down a runway. Moreover, the RCAF Centennial is providing a wonderful opportunity to look back at 100 years of a marvelous history filled with achievement and duty to the nation. Therefore, it is with great pride that the RCAF has the privilege to launch this tribute to the people who have allowed these aircraft to take to the air and accomplish mission success once airborne and engaged in countless operations.

The author and producers of this book would like to thank a number of individuals without whom this project would not have been possible. While this book is primarily written by Brigadier-General Terry Leversedge (Retired), Major Fred Paradie from the Office of RCAF History and Heritage also deserves special recognition for selecting and providing a large portion of the photographs. Mr. Mathias Joost put in a wonderful effort by providing a second pair of eyes on the manuscript and is therefore equally worthy of a special note of thanks for his part in this endeavour. Special thanks also go to Sergeant Mark Schombs for his outstanding cover design. The RCAF 2024 aircraft mosaic incorporates a silhouette of every aircraft to have ever been part of the RCAF fleet. Reflected within many of the RCAF Centennial promotional items, this maple-leaf formation distinctly acknowledges the pride our members take in representing and protecting Canada at home and abroad, in both air and space.

Mr. Denis Langlois, Production Manager at the Royal Canadian Air Force Aerospace Warfare Centre, and his team did a simply amazing job with the editing and layout of the book. Their talent is just as impressive as their professionalism.

Others played an important role behind the scenes. Members of RCAF History and Heritage, including Lieutenant-Colonel Paul Johnston and Major Bruno Paulhus, were a big help with administrative matters, as were the members of the RCAF Centennial Committee. RCAF museums answered inquiries when required, and by doing so attested to their value as instrumental sources of historical information for the Air Force. This book was, indeed, a real team effort. Well done to those involved.

Sic itur ad astra.

Dr. Richard Mayne
Director
RCAF History and Heritage

CC-150 Polaris A/C from 437 Transport Squadron. Originally delivered in a 194-seat passenger configuration, four of the A/C have now been modified into a combi configuration that includes the addition of a large cargo door. A removable bulkhead provides a compartment for 60 passengers in the back of the A/C and for freight, which is loaded in the front. (CF photo)

Airbus Industries POLARIS (Airbus)

The Polaris is a twin-engine, high-speed jet that was originally designed as a commercial airliner. Three aircraft (A/C) were acquired from Canadian Airlines (ex-Wardair A/C), and two further A/C were acquired from foreign sources. In Canadian Forces (CF) service they are easily converted for passenger, freight or medical transport. Stationed at 8 Wing Trenton, Ontario, 437 Transport Squadron (Sqn) [the Huskies] is the only transport sqn equipped with the Polaris, which replaced the aging Boeing 707 starting in 1992. The five-plane fleet's primary role is long-range transport of personnel and equipment, and it can carry up to 194 passengers or 32,000 kg of cargo. Four A/C can be configured in the combi role, carrying both passengers and freight, and they are each equipped with a large cargo door plus a strengthened floor and fuselage. One A/C (no. CC150001) is permanently configured for very important person (VIP) transportation duties. Two of the fleet A/C have now also been modified to a strategic-tanker configuration with the addition of two under-wing mounted "probe and drogue" pods. They have participated in operations supporting the CF, NATO and numerous United Nations and Red Cross initiatives. The Sqn has an excellent reputation for transporting high-ranking government officials and foreign dignitaries—including the prime minister, the governor general and members of the Royal Family—around the world. The Huskies are proud of their motto: "Omnia Passim" (Anything, Anywhere).

DETAILS

Designation: CC-150
Role: Transport
No: 5
Model No: A310-304
TOS: 1992/93
Service: CF/RCAF
SOS: In service

SPECIFICATIONS

Manufacturer:	Airbus Industries Ltd	
Crew/Passengers:	Two pilots plus cabin crew, maximum 194 passengers in the standard configuration or 60 passengers in the combi configuration	
Power Plant:	Two GE CF6-80-C2A2 turbofans, each with 24,265 kg thrust	
Performance:	Max speed: 535 mph (861 km/h)	Cruising speed: Mach 0.80
	Service ceiling: 44,839 ft (13,667 m)	Range: 7,250 mi (11,668 km)
Weights:	Gross: 152,616 lb (69,225 kg)	Cargo load: 70,547 lb (32,000 kg)
Dimensions:	Wing-span: 144 ft, 0 in (43.9 m)	Length: 153 ft, 0 in (46.66 m)
	Height: 51 ft, 10 in (15.8 m)	Wing area: 2,360 sq ft (219 sq m)
Armament:	None	
Cost:	Three ex-Canadian A/C at $51.2M each, one A/C at $54.1M and one A/C at $57.1M	
Unit Affiliations:	Nos. 437 and 426 Sqns	
Serial Numbers:	150001–150005	

Top: CC-150 no. 150001 wears a special Government of Canada paint scheme for its VIP duties. (CF photo TN2013-0238-02)

Middle: This CC-150 no. 150004 is equipped for in-flight refuelling duties. The retractable fuel drogues are extended to allow for the CF188s in formation to be refuelled. (CF photo FA2013-5100-10)

Bottom: This is another image of no. 150004 on the ground, this time receiving its own fuel load from fuel tenders at 8 Wing Trenton. The A/C's refuelling pod is visible under the wing. (CF photo)

CC-295 Kingfisher no. 506. (Photo courtesy of Mike Kaehler)

Airbus (CASA) KINGFISHER

The CASA-built 295W Kingfisher was the winner of a protracted (14-year) competition to replace the De Havilland CC-115 Buffalo and older Lockheed CC-130 Hercules aircraft (A/C) in the search and rescue (SAR) role. The C-295W retains the basic characteristics of Airbus Defence and Space's bestselling CASA CN-235 transport and has been further improved with more payload and range. The RCAF's CC-295 SAR A/C is staffed by two pilots, two search and rescue technicians (SAR TECHs), one loadmaster and one air combat systems officer, and it has a 12.7 m (41 ft) pressurized cabin with a large floor area. The A/C features distinctive, blended winglets attached to the wings to improve the A/C's aerodynamic efficiency. The A/C's retractable tricycle landing gear enables the flight crew to perform takeoff and landing operations safely in difficult terrain conditions. A large ramp door is fitted in the rear of the A/C to provide easy access for survivors, SAR equipment and personnel. Kingfisher A/C incorporate a night vision imaging system (NVIS)–compatible cockpit and an advanced avionics suite. Featuring head-up displays (HUDs) and an enhanced vision system (EVS), the cockpit provides improved situational awareness, allowing the RCAF to perform SAR missions more effectively in all weather conditions. The on-board digital avionics provide flight safety and enhanced mission effectiveness while reducing the pilot's workload. The A/C is also fitted with a Fully Integrated Tactical System (FITS) mission system, which integrates the tactical information and mission sensors. The A/C is equipped with an MX-15 multisensor imaging system beneath its nose to localize, track, identify and detect targets during the day or night and in difficult weather conditions. A multimode search radar is fitted under the fuselage to provide an unobstructed 360° field of view. It can detect, recognize, classify and track both land- and water-based objects such as fishing vessels, merchant ships, inflatable boats and small craft up to a distance of 200 nautical miles (NM). The avionics also include an automatic identification system (AIS) capable of transmitting and receiving text messages. The AIS is used to identify and locate any A/C, ships, land-based installations and navigational aids with AIS transponders. This equipment suite will allow the Kingfisher to perform its duties in each of Canada's challenging SAR regions, from the North Atlantic to the Arctic and across the Rocky Mountains to the Pacific Ocean.

DETAILS

Designation: CC-295
Role: SAR/Transport
No: 16 + 1 MT

Model No: C-295W
TOS: 2019
Service: RCAF

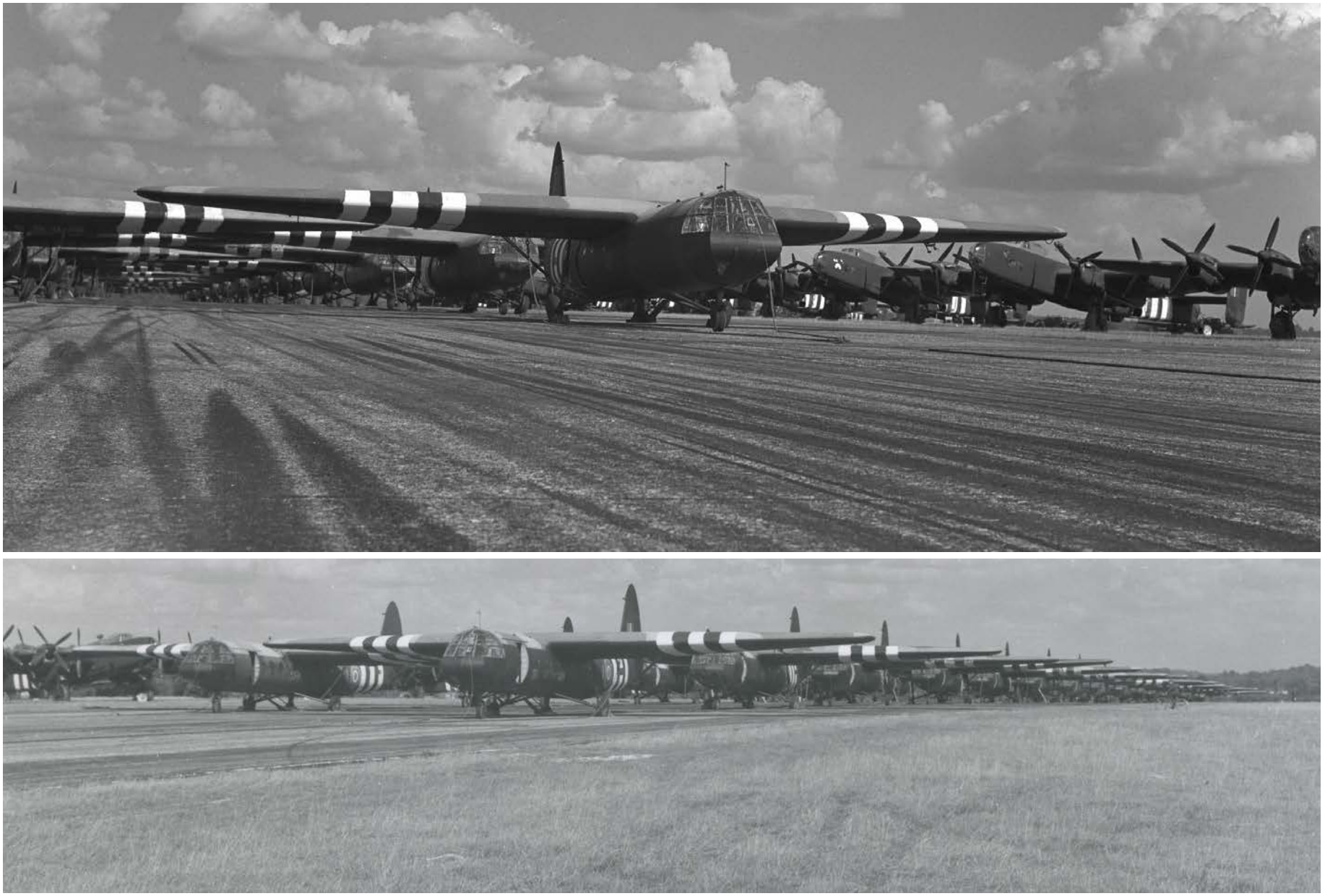
SOS: In service

SPECIFICATIONS

Manufacturer:	CASA Spain: designed and built	
Crew:	(SAR crew) 2 pilots, 1 flight engineer and 2 SAR TECHs	
Power Plant:	2 Pratt and Whitney Canada PW127G turboshaft engines at 1,972 kW (2,645 shaft horsepower [SHP]) with Hamilton-Standard 586F six-blade propellers	
Performance:	Max speed: 260 kt (480 km/h)	
	Service ceiling: 25,000 ft (7,620 m)	Range: 2,300 NM (4,260 km)
Weights:	Empty: 24,250 lb (11,000 kg)	MTOW: 51,150 lb (23,200 kg)
Dimensions:	Length: 80 ft 4 in (24.45 m)	Wing-span: 84 ft 8 in (25.81 m)
	Height: 28 ft 5 in (8.70 m)	Wing area: 635 sq ft (59 sq m)
Armament:	None	
Original Cost:	Can$2.4B	
Unit Affiliations:	413, 418, 424, 435 and 442 Sqns	
Serial Numbers:	295501–295516 and 295517 (MT)	

CC-295 Kingfisher no. 501 is seen here arriving at 3 Wing Bagotville, QC, on September 16, 2020, during its delivery flight from the manufacturer. (CF photo by Cpl Louis Gagné)

The new and the old: On the ramp at 442 Transport and Rescue Sqn in 19 Wing Comox, BC, the first CC-295 Kingfisher A/C is seen here parked alongside the venerable CC-115 Buffalo, which will be replaced in service by the newer A/C. Several of 442 Sqn's other A/C type, the CH-149 Cormorant helicopter, are also lined up in the background. (CF photo by Sgt Amy Martin)



Two views of Airspeed Horsas that were prepared as part of the D-Day invasion force as evidenced by the black and white stripes. Halifax bomber tow planes are in the background in the top photo. (RCAF photo PL-32964 and Griffin Library photo)

Airspeed HORSA

The Horsa was a Second World War troop-carrying and/or vehicle-carrying glider used by the British and their allies during many of the airborne assault actions in the war. Designed and test-flown in less than 10 months, the glider was put into quantity production starting in 1940. Built almost entirely of wood, the glider featured fairly complete cockpit instrumentation for flying at night or in cloud. The fuselage was built in three pieces, and the main fuselage and tail sections featured quick-disconnect bolts to allow the aft section to be removed for rapid unloading of the payload. The main gear of the tricycle undercarriage was also able to be jettisoned, and a nose wheel in combination with a central shock-absorbing skid could be used for rough-ground landings. Used by Canadian airborne troops in the Second World War, the RCAF also acquired a small number of Horsas for use in post-war evaluations.

DETAILS

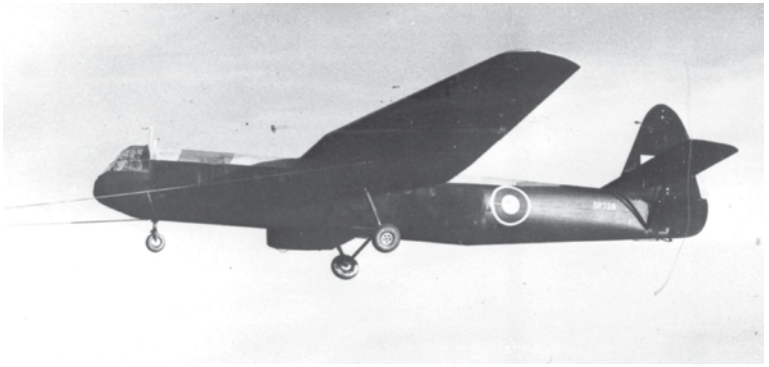
Designation: N/A
Role: Glider
No: 3

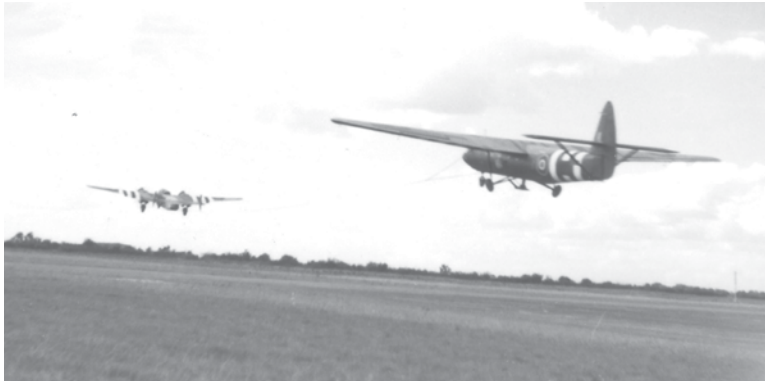
Model No: N/A
TOS: 1948
Service: RCAF

Mark: II
SOS: 1959

SPECIFICATIONS

Manufacturer:	Airspeed	
Crew/Passengers:	2 pilots plus up to 25 troops or light vehicles (jeeps or motorcycles)	
Power Plant:	None	
Performance:	Max towing speed: 150 mph (241 km/h)	
	Normal towing speed: 100 mph (161 km/h)	
	Service ceiling: Tow-plane dependent	Range: Tow-plane dependent
Weights:	Empty: 8,370 lb (3,800 kg)	Gross: 15,500 lb (7,030 kg)
	Payload: 6,900 lb (3,130 kg)	
Dimensions:	Wing-span: 88 ft (26.8 m)	Length: 67 ft (20.4 m)
	Height: 19 ft 6 in (5.90 m)	Wing area: 1,104 sq ft (102.5 sq m)
Armament:	None	
Cost:	Unknown	
Unit Affiliations:	Not available	
Serial Numbers:	TL334, TL349 and TL401	





Two views of an Airspeed Horsa under tow. In the bottom photo, the Albermarle tow plane and the Horsa's central skid between the two main landing gear can just barely be discerned. (Library and Archives Canada and Griffin Library photos)

Airspeed Oxford Mk II no. 1510 is seen here with some sister ships staked down on some rather muddy grounds at RCAF Station Rockcliffe. (RCAF photo PL-8527)

Airspeed OXFORD

The Airspeed Oxford was a twin-engine, three-seat advanced trainer used for all aspects of aircrew training during the Second World War. The first versions were received in Canada from Great Britain in 1939, and they were used in numerous roles for the British Commonwealth Air Training Plan (BCATP). These roles included navigation, air-to-air gunnery, communication, radar calibration, air ambulance duties and training of anti-aircraft crews.

DETAILS

Designation: N/A
Role: Trainer
No: 819

Model No: AS 10, AS 46
TOS: 1939
Service: RCAF

Marks: I, II and V
SOS: 1947

SPECIFICATIONS (for Mark II aircraft)

Manufacturer:	Airspeed	
Crew/Passengers:	Three crew with space for four passengers	
Power Plant:	Two 370 hp Armstrong Siddeley Cheetah Mk X engines	
Performance:	Max speed: 188 mph (303 km/h) Service ceiling: 19,500 ft (5,944 m)	
Weights:	Empty: 5,350 lb (2,427 kg)	Gross: 7,600 lb (3,447 kg)
Dimensions:	Wing-span: 53 ft 4 in (16.25 m) Height: 11 ft 1 in (5.38 m)	Length: 34 ft 6 in (10.51 m) Wing area: 348 sq ft (32.33 sq m)
Armament:	None	
Cost:	Unknown	
Unit Affiliations:	A wide variety of BCATP units and other RCAF training units	
Serial Numbers:	1501–1525, A89, A101, various between T1119–T1328, V3247–V3383, X6520–X7156, AP413–AP491, AR756–AR981, AS148–AS980, AT440–AT642, BG297–BG506, BM675–BM817, EB425–EB677, LB537	

An action view of an early Mk I Oxford aircraft taxiing. The Airspeed Oxford Mk I was fitted with Armstrong Siddeley Cheetah X power plants. The RCAF had 27 aircraft of this mark on strength between May 1939 and April 1944.
(Photo courtesy of Comox Air Force Museum)

This Airspeed Oxford Mk I no. 1503 has been outfitted for aerial gunnery training. Note the gun turret on the rear of the fuselage. (RCAF photo HC-8704)

Armstrong Whitworth Atlas no. 405. (RCAF photo)

Armstrong Whitworth ATLAS

Designed for an all-encompassing "Army Cooperation" role, the Armstrong Whitworth Atlas was a two-seat biplane. First acquired by the RCAF in 1927, the aircraft's (A/C's) excellent low-speed handling made it highly suitable in the ground-liaison role. Message dropping and snatching techniques were routinely practiced. Additional reconditioned examples were purchased in 1934, after financial restrictions imposed for the Depression had eased. Badly outclassed by the eve of the Second World War, there were still 12 Atlases on strength in the RCAF. The type was therefore pressed into reconnaissance coastal patrols in the Bay of Fundy at the outbreak of the war until being passed to No. 118 (Coast Artillery Cooperation) Squadron for brief use prior to their retirement.

DETAILS

Designation: N/A
Role: Army Cooperation
No: 16

Model No: N/A
TOS: 1927
Service: RCAF

Marks: I, IIAC
SOS: 1942

SPECIFICATIONS

Manufacturer:	Armstrong Whitworth	
Crew:	Two (pilot and observer or two pilots in dual control advanced trainer)	
Power Plant:	One 450 hp Armstrong Siddeley Jaguar IVB radial engine	
Performance:	Max speed: 149 mph (240 km/h) Service ceiling: 17,700 ft (5,395 m)	
Weights:	Empty: 2,550 lb (1,157 kg)	Gross: 4,020 lb (1,823 kg)
Dimensions:	Wing-span: 39 ft 6.5 in (12.00 m) Height: 10 ft 6 in (3.20 m)	Length: 28 ft 6.5 in (8.68 m) Wing area: 391 sq ft (36.30 sq m)
Armament:	One fixed Vickers machine gun and two Lewis machine guns on a Scharffe ring in the observer's cockpit plus provisions for four 112 lb (50.8 kg) bombs on underwing racks	
Cost:	Can$16,754 per airframe and Can$8,000 per engine	
Unit Affiliations:	No. 2 (AC) Sqn, No. 111 (CAC) Sqn, No. 118 (CAC) Sqn, School of Army Cooperation	
Serial Numbers:	6–19, 111–112, 401–415 (includes renumbered 16–19 and 112)	

A lineup of the RCAF's Armstrong Whitworth Atlas A/C, probably in Halifax Aero Club field, in the fall of 1939. (Photo courtesy of T. F. J. Leversedge)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20

Armstrong Whitworth SISKIN

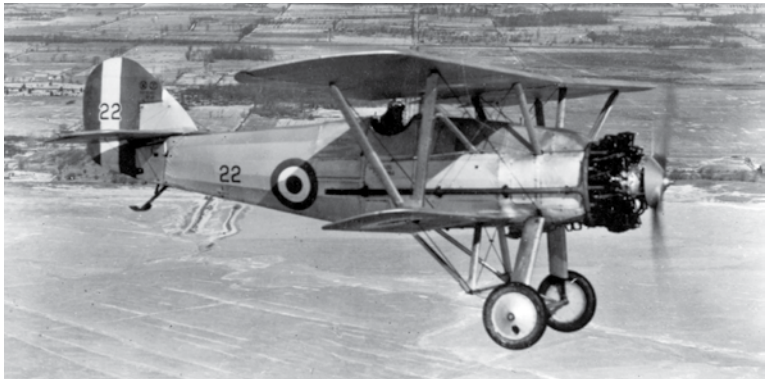
The Armstrong Whitworth Siskin was perhaps the most important RCAF aircraft (A/C) of the interwar years. Cousin to the Armstrong Whitworth Atlas, it represented the only pure military A/C design in service with the RCAF between 1929 and 1936. A fighter design, the Siskin originally served with the Royal Air Force (RAF) in this role and, when acquired by the RCAF in 1927, it represented a modern state-of-the-art design. The A/C received a great deal of exposure in the 1930s when the RCAF formed an aerobatic display team using the type. The three-plane Siskin aerobatic team put on popular displays from coast to coast. The Siskin A/C also formed the basis of No. 1 Fighter Squadron. The Siskin remained with this unit until the outbreak of the Second World War and eventually was replaced by modern Hawker Hurricanes in 1939. The airframes were then turned over to various technical establishments for instructional use.

DETAILS

Designation: N/A
Model No: N/A
Marks: III, IIIA
Role: Fighter, air demonstration
TOS: 1926
SOS: 1942
No: 12
Service: RCAF

SPECIFICATIONS

Manufacturer:	Armstrong Whitworth	
Crew:	One pilot or two pilots in dual-control advanced trainer	
Power Plant:	One 420/450 hp Armstrong Siddeley Jaguar IV radial engine	
Performance:	Max speed: 156 mph (251 km/h) at sea level and 143 mph (230 km/h) at 15,000 ft Service ceiling: 27,000 ft (8,230 m)	
Weights:	Empty: 2,061 lb (935 kg)	Gross: 3,012 lb (1,366 kg)
Dimensions:	Wing-span: 33 ft 2 in (10.11 m)	Length: 25 ft 4 in (7.72 m)
	Height: 10 ft 2 in (3.10 m)	Wing area: 293 sq ft (27.20 sq m)
Armament:	Two fixed Vickers machine guns plus provisions for four 20 lb (9 kg) bombs on underwing racks	
Cost:	Can$11,758.66 per airframe plus Can$6,800 per engine	
Unit Affiliations:	“B” Flight Camp Borden Training Squadron, No. 1 (F) Sqn, Siskin Exhibition Flight, No. 1 TTS	
Serial Numbers:	J7758, 20–23, 59–63, 210, (survivors later renumbered) 301–309	



This is a fine “air-to-air” portrait of Siskin no. 22, which was probably taken in the vicinity of Camp Borden. (Canada Aviation and Space Museum collection)

The Siskin was the RCAF’s front-line fighter from 1926 until approximately 1938. The A/C was also used for one of Canada’s first military air demonstration teams. In the summer of 1929, the Siskin air demonstration team was formed at Camp Borden, Ontario, and toured the country. Consisting of three Siskins, the team flew formation and solo displays until 1932. (CF photo)


XP246

Auster AOP

On March 1, 1947, the Canadian Army Air Component was formed, and 36 Auster AOP (Air Observation Post) Mark (Mk) VI aircraft (A/C) were ordered to equip it. The British Taylorcraft firm had changed its name simply to Auster Aircraft Limited in the post-war period. Following the success of the Auster Taylorcraft in the Second World War, an improved and upgraded version of the A/C, simply known as the Auster Mk VI, was introduced just prior to the Korean War. The Auster AOP Mk VI differed from its predecessors by having a more powerful engine, protruding rear flaps, longer undercarriage legs and increased fuel capacity. Again, the primary roles of the A/C were for artillery spotting along with liaison and light observation duties. During the Korean War, Canadian Army crews were attached to the Commonwealth Division AOP Flight. The RCAF later took over the remaining aircraft from the Canadian Army and used them at a variety of its stations and units.

DETAILS

Designation: N/A
Role: Army cooperation
No: 42

Model Nos: N/A
TOS: 1948
Service: CA/RCAF

Marks: VI, VII
SOS: 1958

SPECIFICATIONS

Manufacturer:	Auster/Taylorcraft	
Crew/Passengers:	One pilot plus one observer or two passengers	
Power Plant:	One 145 hp De Havilland Gipsy Major VII engine	
Performance:	Max speed: 124 mph (200 km/h) Cruising speed: 108 mph (174 km/h) Service ceiling: 14,000 ft (4,267 m)	
Weights:	Empty: 1,413 lb (641 kg)	Gross: 2,160 lb (980 kg)
Dimensions:	Wing-span: 36 ft 0 in (10.97 m)	Length: 23 ft 9 in (7.24 m)
	Height: 8 ft 4.5 in (2.55 m)	Wing area: 184 sq ft (17.09 sq m)
Armament:	None	
Cost:	Unknown	
Unit Affiliations:	No. 444 Sqn, CJATC Rivers, MB	
Serial Numbers:	16651–16692	

An Auster AOP Mk VI A/C is illustrated here on skis while at RCAF Station MacDonald, Manitoba, in the 1950s. (Photo courtesy of T. F. J. Leversedge)

This is a nice view of Auster AOP Mk VI no. 663 at RCAF Station MacDonald, Manitoba, in 1955. After being struck off strength from the RCAF, this A/C was later sold to the Brampton Flying Club in Ontario. (RCAF Photo PL-135037)

This fine colour view illustrates a restored example of the Avro 504K from the Canada Aviation and Space Museum. (CF photo)

This is an interesting view of an RCAF Avro Viper on floats being prepared for a patrol. This A/C, no. G-CYGC, was one of nine Avro Viper two-seat (TS) seaplanes acquired by the RCAF. This A/C suffered a Category "A" accident at Bowden Lake, Alberta, and was therefore struck off strength on October 18, 1927. (CF photo)

A view of the Avro Lynx with a trial ski installation for RCAF service. (CF photo)

This is the Avro 504N Wright TS Patrol AWS floatplane (no. G-CYGK) at the Ottawa Air Station. It was the sole example of the type and taken on strength with the RCAF on July 14, 1925. The A/C was later given the RCAF Serial No. 12. It served with No. 1 (Operations) Wing in Winnipeg, Manitoba. The A/C was severely damaged on July 16, 1929, and subsequently written off. It was struck off strength on January 17, 1930. (CF photo)

Avro 504 / Viper / Lynx (552) / Wright

Originally designed in 1913 as an operational type, the Avro 504 quickly provided the backbone for flying training throughout the First World War for Britain and its allies. In 1918, Canada ordered a substantial number of Avro 504 aircraft (A/C) to be built by the Canadian Aeroplanes Company. The end of the war terminated the order and, instead, in 1919, Canada received 62 Avro 504Ks as part of an Imperial gift of 114 A/C from Britain. The A/C type then served in a variety of roles for more than a decade. Additional A/C were also acquired and they were progressively modified and improved. These subsequent variants were named after the engines that powered them.

After the war, the availability of thousands of cheap power plants from the S.E.5A fighter design in the form of 180 hp Wolseley Viper water-cooled engines, which came complete with frontal radiators, led to the modification and upgrade of the Avro 504 type. The airframe needed considerable modifications to accept the new, more powerful engine's installation. In 1923, following the assembly of six long-range, single-seat Avro 552As at Camp Borden, the RCAF ordered another five single-seat and nine two-seat versions for forest fire patrol work.

The Avro Wright was yet another derivative of the Avro 504 series of A/C. The rapid development of improved power plants in wartime meant that, post-war, the Avro 504 A/C could be significantly improved. Various engine installations were tried and other improvements were made to the A/C type. The Avro 504N was an updated 504K, with the latter's rotary engine replaced with an Armstrong Siddeley Lynx radial engine; hence, the 504N became known as the "Avro Lynx." Another RCAF A/C conversion was the modification of the 504 airframe with a 200 hp Wright Whirlwind engine and a Hamilton Standard variable-pitch propeller installed. This converted A/C was simply known as the "Avro Wright." The single-float design was completed by Canadian Vickers Ltd.

DETAILS - 504

Designation: N/A
Model Nos: 504K, 504L, 504N
Role: Trainer, general utility
TOS: 1920
SOS: 1934
No: 97
Service: RCAF

DETAILS - AVRO 552

Designation: N/A
Model No: 552A
Role: Trainer, forest fire patrol
TOS: 1924
SOS: 1928
No: 14
Service: RCAF

DETAILS - AVRO WRIGHT

Designation: N/A
Model No: 552A
Role: Amphibian
TOS: 1925
SOS: 1930
No: 1
Service: RCAF

SPECIFICATIONS (for 504K)

Manufacturer: Avro and licence built by Canadian Aeroplanes Company
Crew: One or two pilots
Power Plant: Clerget 9B 130 hp radial engine

Performance: Max speed: 100 mph (161 km/h)
Cruising speed: 75 mph (121 km/h)
Service ceiling: 13,500 ft (4,115 m)
Range: 255 mi (410 km)
Weights: Gross: 1,829 lb (830 kg)
Dimensions: Wing-span: 36 ft (10.97 m) Length: 28 ft (8.54 m)
Height: 10 ft 5 in (3.17 m) Wing area: 330 sq ft (30.66 sq m)

Armament: None
Cost: Unknown
Unit Affiliations: No. 1 (Ops) Sqn, No. 2 (Ops) Sqn, No. 3 (Ops) Sqn, No. 1 FTS, Camp Borden
Serial Numbers: Avro 504K various between G-CYAA – G-CY, four between H9552–H9733
Avro 504N various between GYAR – G-CYFZ (some later renumbered 13–15, 44–49), 32–43
Avro 552 G-CYFT – G-CYFX, G-CYCG – G-CYGB – G-CYGJ;
Avro Wright G-CYGK (later renumbered 12)

Avro AVIAN

In 1929, the Ottawa Car Manufacturing Company assembled 21 Avro Avian light two-seat trainers for the Department of National Defence, which in turn distributed 10 of them to the RCAF and 11 to various flying clubs. Further examples were then acquired in 1930 for both the RCAF and additional flying clubs. The RCAF began using the type for initial flying training, but surprisingly, the aircraft (A/C) were not extensively used. Most had very few hours flown before being relegated as instructional airframes or being transferred to flying clubs.

DETAILS

Designation: N/A
Role: Trainer
No: 29
Model No: 616
TOS: 1929
Service: RCAF
Mark: IVM
SOS: 1945

SPECIFICATIONS (for Avian IVM)

Manufacturer: Ottawa Car Manufacturing Company under licence from Avro
Crew: Two pilots
Power Plant: Seven-cylinder 135 hp Genet Major 1 or Minor radial engine

Performance: Max speed: 100 mph (161 km/h); Cruising speed: 90 mph (145 km/h)
Service ceiling: 12,500 ft (3,810 m); Range: 360 mi (579 km)
Weights: Empty: 1,000 lb (454 kg); Gross: 1,600 lb (726 kg)
Dimensions: Wing-span: 28 ft 0 in (8.53 m); Length: 24 ft 3 in (7.39 m)
Height: 8 ft 6 in (2.59 m); Wing area: 245 sq ft (22.76 sq m)

Armament: None
Cost: Unknown
Unit Affiliations: Camp Borden and various Canadian flying clubs
Serial Numbers: 92–101, 125–138, 141–144, A129

This is one of the initial batch of 21 RCAF Avro Avian IVM A/C. (CF photo)

Avro Avian no. 98 is seen here on skis in front of one of the hangars at Camp Borden. (J. McNulty Collection photo)

RCAF Avro Tutor no. 188 from No. 10 Sqn is seen here receiving some maintenance attention in a hangar at RCAF Station Ottawa. Twin-engine Lockheed Hudson bombers surround the smaller airframe. (RCAF photo HC-9006)

Avro TUTOR

The Avro Model 621 was initially known as the Trainer. It was a light initial pilot trainer, which originated as a private venture of the Avro Company in England. The type was eventually adopted as the standard trainer of the RAF under the service name of Avro Tutor. Standard model 621s were supplied to the Ottawa Car Company Limited for sale to the RCAF. Why the aircraft (A/C) were ordered remains somewhat of a mystery since the RCAF already had three other trainers in service: the Hawker Tomtit, Gipsy Moth and Fleet Fawn. The Tutor A/C were not as suitable as these types in the basic training role and were instead converted to army cooperation training. They were used by three non-permanent squadrons (Auxiliary squadrons) in this role. The A/C were modified with wireless sets, retrieval hooks and vertical cameras. When the three non-permanent squadrons received new A/C at the start of the Second World War, the Tutors became instructional airframes.

DETAILS

Designation: N/A
Model No: 621
Role: Trainer
TOS: 1931
SOS: 1945
No: 6
Service: RCAF

SPECIFICATIONS

Manufacturer:	Ottawa Car Company Limited under Avro licence	
Crew:	Two pilots	
Power Plant:	One 240 hp Armstrong Siddley Lynx IVC radial engine	
Performance:	Max speed: 120 mph (193 km/h)	Cruising speed: 97 mph (156 km/h)
	Service ceiling: 16,000 ft (4,877 m)	Range: 250 mi (402 km)
Weights:	Empty: 1,844 lb (836 kg)	Gross: 2,493 lb (1,131 kg)
Dimensions:	Wing-span: 34 ft 0 in (10.36 m)	Length: 26 ft 4.5 in (8.04 m)
	Height: 9 ft 7 in (2.92 m)	Wing area: 301 sq ft (27.96 m)
Armament:	None	
Cost:	Unknown	
Unit Affiliations:	No. 10/110 (AC) Sqn, No. 11/110 (AC) Sqn, No. 12/112 (AC) Sqn	
Serial Numbers:	184–189, 224	

Two RCAF Avro Tutors following conversion to the army cooperation training role, as evidenced by the long hook under the fuselages. (CF photo)

Avro 626 trainer no. 268 is pictured here on the flight line at Camp Borden, Ontario. Note the enclosed cockpit on this A/C. (J. McNulty Collection photo)

Avro 626

To satisfy the needs of air forces with limited financial resources, the Avro Company redesigned the Model 621 Tutor to make it suitable not only for initial flying training but also for bombing, photographic, gunnery, wireless, night-flying, navigation and instrument training. Although the machine remained a two-seater, a third cockpit or gunner's cockpit could be provided aft of the second cockpit. The RCAF placed a follow-on order for the Model 626 after experience with the 621 model. These aircraft (A/C) could be equipped with twin metal skis and enclosed cockpits and featured Arctic cowlings with controllable shutters.

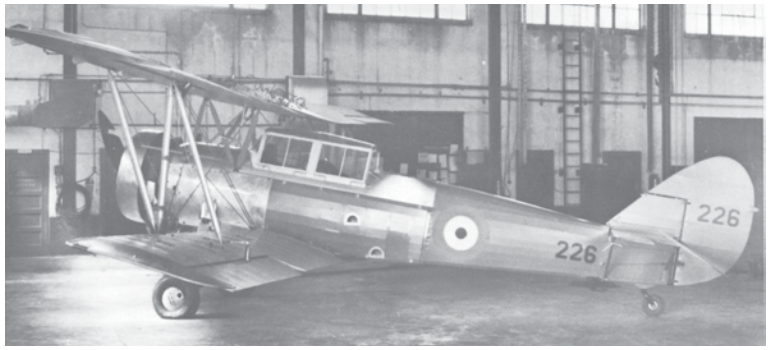
Seven of the A/C served with the RCAF's three non-permanent (auxiliary) army cooperation squadrons. Five other A/C were used as training aids for air cadet squadrons.

DETAILS

Designation: N/A
Model No: 626
Role: Trainer
TOS: 1937
SOS: 1945
No: 12
Service: RCAF

SPECIFICATIONS

Manufacturer:	Avro Aircraft Limited	
Crew:	Two pilots	
Power Plant:	One 240 hp Armstrong Siddley Lynx IVC radial engine	
Performance:	Max speed: 112 mph (180 km/h)	Cruising speed: 95 mph (153 km/h)
	Service ceiling: 14,800 ft (4,511 m)	Range: 240 mi (386 km)
Weights:	Empty: 1,765 lb (801 kg)	Gross: 2,750 lb (1,247 kg)
Dimensions:	Wing-span: 34 ft 0 in (10.36 m)	Length: 26 ft 6 in (8.08 m)
	Height: 9 ft 7 in (2.92 m)	Wing area: 300 sq ft (27.87 m)
Armament:	One flexible Lewis machine gun in the rear cockpit and light bombs	
Cost:	Unknown	
Unit Affiliations:	No. 110 (AC) Sqn, No. 111 (AC) Sqn, No. 112 (AC) Sqn	
Serial Numbers:	225–227, 266–274	



Avro 626 trainer no. 226 modified for winter flying with an enclosed cockpit. (CF photo)

Avro 626 trainer no. 266 from No. 112 (AC) Sqn is seen here prior to departing on a mission exercise. The observer/gunner is holding a flexible Lewis machine gun. (RCAF photo PMR76-588)

Accidents while training thousands of aircrew were not uncommon in the BCATP. This was one of the more unusual accidents at No. 7 Service Flying Training School (SFTS). While in the landing circuit, one aircraft inadvertently landed upon the other in mid-air. A successful landing then ensued and both crews walked away.
(RCAF photo PL-988)

The Avro Anson soldiered on well into the post-war period. This Mk VP, no. 12416, belonged to the Central Experimental Proving Establishment (CEPE) at RCAF Station Uplands, ON. It was struck off strength in 1954.
(RCAF photo PL-59412)

Avro (Canada) ANSON

The Avro Anson was known by a number of nicknames, including “Faithful Annie” and “Flying Greenhouse.” It was the first aircraft (A/C) to be flown by the RAF that had a retractable undercarriage, which was a comparative novelty in 1936. In 1940, a Canadian government–owned company, Federal Aircraft Limited, was created in Montreal to manufacture the Anson for Canadian use. Nearly 3,000 Anson A/C were produced, and in the early days of the British Commonwealth Air Training Plan (BCATP), the Anson was the standard trainer for many pilots, observers, wireless operators and bomb aimers. More than 20,000 aircrew received training on the Anson. In Canadian service the A/C was substantially redesigned, with the substitution of North American engines and many other airframe and equipment changes. These included an all-new plywood fuselage in place of the original metal frame and fabric-covered design.

DETAILS

Designation: N/A
Role: Trainer
No: 4,413

Model No: 652A
TOS: 1940
Service: RCAF/RCN

Mark: I, II, III, IV, V, VA, VP, VT, VI
SOS: 1954

SPECIFICATIONS

Manufacturer:	Avro Canada and various other Canadian companies	
Crew/Passengers:	Two pilots and crew	
Power Plant:	Two 450 hp Pratt and Whitney R-985AN-12B or 14B Wasp Jr. radial engines	
Performance:	Max speed: 190 mph (304 km/h)	Cruising speed: 174 mph (280 km/h)
	Service ceiling: 20,550 ft (6,263 m)	Range: 1,130 mi (1,819 km)
Weights:	Empty: 6,693 lb (3,039 kg)	Gross: 9,275 lb (4,210 kg)
Dimensions:	Wing-span: 56 ft 6 in (17.2 m)	Length: 42 ft 3 in (12.9 m)
	Height: 13 ft 1 in (4 m)	Wing area: 410 sq ft (38.1 sq m)
Armament:	None, but provisions for bomb and gunnery training in turret equipped with machine gun and using practice bombs in underwing bomb bays	
Original Cost:	Unknown	
Unit Affiliations:	A wide variety of BCATP units and numerous other RCAF units	
Serial Numbers:	Various between 3451–3452, 6001–13881, K6154–K8830, L7046–L9159, N4856–N9985, R3338–R9826, W1654–W2665, AW964–AX641, BF800–BG295, DG812–DG899, FP867–FP999, JS100–JS218	

Avro Anson Mk II no. 11534 as used in the BCATP. The overall yellow finish, which denoted a training A/C, was typical of many BCATP A/C. (RCAF photo PC-2492)

Avro Anson Mk II no. 7069 as used in the BCATP. It was sold in the post-war period, having accumulated 823:10 of flying hours in RCAF service. (RCAF photo PL-9867)

Avro Anson Mk VA no. 11581 seen on the ramp at Camp Borden. This mark had a plywood fuselage; note the circular cabin windows. It was powered by Wasp Jr. radial engines. (RCAF photo PC-2492)

These are two CF-100s from 423 Sqn. (CF photo RNC-177)

Avro (Canada) CANUCK ("CLUNK")

The RCAF named the CF-100 Canuck after the much earlier Curtis JN-4 Canuck trainer of the First World War. However, the name Canuck was never really accepted for the jet aircraft (A/C), and the crews more often referred to the type as the "Clunk." The jet—a twin-engine, all-weather interceptor—was all-Canadian designed and built. The CF-100's good climb, excellent fire-control and radar systems, twin-engine reliability and all-weather capability made the A/C highly suitable for Canadian and NATO air defence roles during the Korean and Cold War eras. Belgium also selected the design for its NATO forces. After a successful career in the RCAF/CF as a fighter, the A/C type was later modified as an electronic countermeasures (ECM) trainer and was fitted with ECM and chaff-dispensing equipment. A black paint scheme was chosen by Avro for the prototype A/C, and to commemorate the type's retirement, a Mark V A/C was repainted in its original colour scheme.

DETAILS

Designation: CF-100
Role: Fighter and EW trainer
No: 692

Model No: N/A
TOS: 1951
Service: RCAF/CF

Mk: 1, 2, 3A and B, 4A and B, 5D and M, 6
SOS: 1981

SPECIFICATIONS

Manufacturer:	Avro Canada: designed and built	
Crew:	Two (pilot and navigator) in ejection seats	
Power Plant:	Orenda Series 11 or 17 Turbojet	
Performance:	Max speed: 525 kt (972.3 km/h)	Cruising speed: 400 kt (741 km/h)
	Service ceiling: 41,000 ft (12,496 m)	Range: 2,000 NM (3,706 km)
Weights:	Empty: 23,100 lb (10,487 kg)	Gross: 33,000 lb (14,969 kg)
Dimensions:	Wing-span: 57 ft 6 in (16.31 m)	Length: 54 ft 2 in (16.5 m)
	Height: 14 ft 6 in (4.43 m)	Wing area: 526.6 sq ft (48.92 sq m)
Armament:	Provisions for bombs, rockets (unguided), missiles	
Original Cost:	Can$660,000	
Unit Affiliations:	409, 410, 413, 414, 416, 419, 428, 423, 432, 433, 440, and 445 Sqns, EWU, 3AW(F) OTU, CEPE, AAED, WPU	
Serial Numbers:	18101–18792	

The prototype CF-100 no. 18101 was painted in the attractive black and white paint scheme seen here. (RCAF photo PC-35)

This is an interesting display of the CF-100 Mk 4B along with its possible weaponry of rockets and missiles. The radar nose cone and upper-fuselage panel have been fitted with Plexiglass replacements to allow the radar equipment to be shown. (RCAF photo PCN-418)

The CF-100s of the 1950s and 1960s received some very colourful unit markings. This nice Mk 4A photographed at RCAF Station St-Hubert, QC, belongs to 428 Sqn. (RCAF photo PCN-325)

This is a rare wartime colour photo of an RCAF Avro Lancaster B.III ready to depart on a mission. (RCAF photo PC-2513)

Avro (Canada) LANCASTER

The Avro Lancaster was derived from the unsuccessful twin-engine Avro Manchester bomber that first flew in 1939. A decision was made in late 1940 to replace the Manchester's two Rolls-Royce Vulture engines with four of the more reliable Rolls-Royce Merlin (in Canada, Packard Merlin) engines, which had a proven record in the Hurricane and Spitfire fighter designs. The revised design was an immediate success, and the Lancaster went on to carry the heaviest individual bomb loads of the Second World War. The Lancaster was manufactured in Canada by Victory Aircraft Limited in Malton, Ontario, where 430 Mk 10 versions were built. Although widely assumed that the Lancaster provided the bulk of the RCAF's wartime bomber force, that distinction actually belongs to the Handley Page Halifax; however, it is true that Canadian-built Lancasters had been used to re-equip most of the RCAF's No. 6 Group bomber squadrons before the end of the war. In post-war use, the Lancasters went on to serve in highly useful roles. Quickly converted into photographic reconnaissance variants for charting and mapping and into maritime patrol versions, the Lancaster soldiered on well into the Cold War era.

This example of an Avro Lancaster Mk X in the wartime markings of No. 428 Squadron is now preserved at the Canada Aviation and Space Museum.
(RCAF photo RNC-1499-4)

DETAILS

Designation: N/A **Model No:** 683
Mk: B.I, B.II, B.III, B.X, XPP, 10 AP, AR, BR, DC, 10 MP, MR, N, 10 P, PR, S, SR
Role: Bomber, photographic reconnaissance, maritime patrol
TOS: 1944 **SOS:** 1965
No: 229 **Service:** RCAF

This is an Avro Lancaster Mk 10MP belonging to No. 407 Squadron at RCAF Station Comox, BC, which was used for maritime patrols in the early 1950s. (RCAF photo)

SPECIFICATIONS (for Mk X)

Manufacturer:	Victory Aircraft Ltd which became Avro Canada	
Crew:	One pilot and up to six crew	
Power Plant:	Four 1,620 hp Packard Merlin 224 piston engines	
Performance:	Max speed: 272 mph (438 km/h)	Cruising speed: 200 mph (322 km/h)
	Service ceiling: 24,700 ft (7,528 m)	Range: 2,530 mi (4,072 km)
Weights:	Empty: 35,240 lb (15,999 kg)	Gross: 60,000 lb (27,400 kg)
Dimensions:	Wing-span: 102 ft 0 in (31.09 m)	Length: 69 ft 6 in (21.18 m)
	Height: 20 ft 0 in (6.10 m)	Wing area: 1,297 sq ft (120.49 sq m)
Armament:	Provision for three gun turrets, each with two or four .303 calibre machine guns, and up to 14,000 lb (6,350 kg) bomb load	
Original Cost:	Unknown	
Unit Affiliations:	Second World War: No. 405, 408, 419, 420, 425, 428, 431, 434, 438 Sqns Post-war: No. 7 Photographic Wing; No. 9 (T) Group; No. 13 (Photographic), 404, 405, 407, 408 Sqns; No. 103 and 107 RU; No. 2(M) OTU	
Serial Numbers:	EE182 and various between KB700–KB999, FM100–FM299	

This is a heavily modified, long-nose Avro Lancaster Mk 10AR variant, no. KB976, belonging to No. 408 Squadron based at RCAF Station Rockcliffe, ON.
(RCAF photo PCN-3110)

Avro (Canada) LINCOLN

In 1943, an improved version of the Lancaster was proposed for the war in the Pacific. The aircraft (A/C) featured larger dimensions, more-powerful engines, better performance, heavier armament and longer range. Originally intended to be designated the Lancaster Mk IV, the eventual design was sufficiently different to warrant a new designation and name: the Avro 694 Lincoln. Also preparing for the "Tiger Force" intended for the Pacific war, Canada ordered home production of the Lincoln to re-equip Canadian bomber squadrons destined for the Pacific theatre. At the cessation of hostilities, the production order was terminated after only six A/C had been started. Three Lincolns, including two borrowed from the RAF, were then briefly evaluated by the RCAF in post-war tests.

DETAILS

Designation: N/A
Role: Bomber
No: 3
Model No: 683
TOS: 1946
Service: RCAF
Mk: B.Mk I, II, XV
SOS: 1948

SPECIFICATIONS (for B.Mk I)

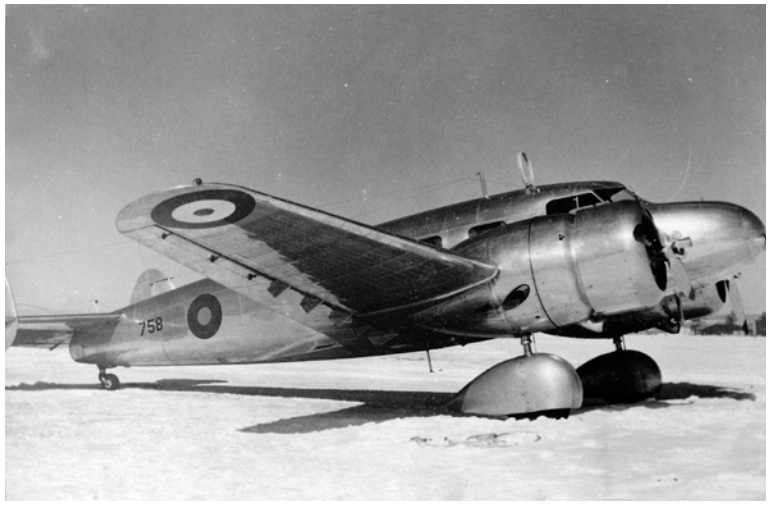
Manufacturer:	Licence-built from Avro by Victory Aircraft Ltd (later Avro Canada) in Malton	
Crew:	Typical crew of seven	
Power Plant:	Four 1,750 hp Rolls-Royce Merlin 85 piston engines	
Performance:	Max speed: 295 mph (475 km/h)	Cruising speed: 238 mph (383 km/h)
	Service ceiling: 22,000 ft (6,706 m)	Range: 3,750 mi (6,035 km)
Weights:	Empty: 43,778 lb (19,858 kg)	Gross: 82,000 lb (37,195 kg)
Dimensions:	Wing-span: 120 ft 0 in (36.58 m)	Length: 78 ft 3.5 in (23.86 m)
	Height: 17 ft 3.5 in (5.27 m)	Wing area: 1,421 sq ft (132.02 sq m)
Armament:	Provisions for a 14,000 lb (6,350 kg) bomb load and self-defence armament consisting of twin 20 mm or .50 in cal guns in nose, dorsal and tail powered turrets	
Cost:	Unknown	
Unit Affiliation:	WEE	
Serial Numbers:	FM300, RE258, SX924	

A view of the Lincoln (in this case the Canadian prototype B.Mk XV no. FM300), illustrating its overall lineage from the Lancaster, several of which are parked in the background. (CF photo)

H.C.9183.
BARKLEY GROWE 758.
UPLANDS AIRPORT.
6.12.39.

Barkley Grow T8P-1

The Barkley Grow Model T8P-1 was a twin-engine, all-metal, low-winged transport monoplane with a crew of two and seating normally arranged for six passengers. Often mistaken for either a Beech 18 or Lockheed Electra, the Barkley Grow was designed around a patented "multi-spar" all-metal wing that provided exceptional strength against bending and torsion. Unfortunately, the design proved to be less popular than those of its competitors' and only a handful were ever built. The fixed landing gear was considered archaic by some, but the design proved more popular in Canada, where seasonal changes between wheels, skis and floats were regularly performed. The RCAF acquired one Barkley Grow for use in the early part of the Second World War as a "communication" aircraft (A/C). It was also used for radar calibration trials.



A ground view of the RCAF's Barkley Grow that illustrates its fixed landing gear. (Comox Air Force Museum photo)

DETAILS

Designation: N/A
Model No: T8P-1
Role: Transport
TOS: 1939
SOS: 1941
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Barkley Grow	
Crew/Passengers:	Crew of two and six passengers	
Power Plant:	Two Wasp Jr. SB engines rated at 400 hp (450 hp for takeoff)	
Performance:	Max speed: 224 mph (361 km/h)	Cruising speed: 204 mph (328 km/h)
	Service ceiling: 20,000 ft (6,096 m)	Range: 750 mi (1,207 km)
Weights:	Empty: 5,448 lb (2,471 kg)	Gross: 8,250 lb (3,742 kg)
Dimensions:	Wing-span: 50 ft 9 in (15.47 m)	Length: 36 ft 2 in (11.02 m)
	Height: 9 ft 8 in (2.95 m)	Wing area: 354 sq ft (32.89 sq m)
Armament:	None	
Cost:	US$37,500	
Unit Affiliation:	No. 12 (Communication) Sqn	
Serial Number:	758	

A nice in-flight colour view of an RCAF Expeditor. No. 2340 was a Mk IIINM (later NMT) model Expeditor on strength with the RCAF and the CAF from November 3, 1952, to June 3, 1970. (CF photo)

Beechcraft EXPEDITOR

The Beechcraft Expeditor was an American-built twin-engine aircraft (A/C) that provided yeoman service to the RCAF for three decades. Originally serving as a light transport in the Second World War, the Expeditor was the RCAF's basic multi-engine trainer after the war. The A/C also served as a light-communication, refresher-training, liaison, VIP transport and search and rescue (SAR) A/C. It was affectionately known by a variety of names, such as the "Bug Smasher," "Twin Harvard," "Wichita Wobbler" and "Exploder." As a trainer, its many roles included multi-engine training for pilots, navigators and radio operators. Unification of the CAF took place in 1968, with only 53 Expeditors remaining of the total of 398 once listed as being on strength, and these were all retired.

DETAILS

Designation: CT-128
Role: Transport
No: 398

Model No: C-45F, C-45M
TOS: 1941
Service: RCAF/RCN

Mk: I, II, IIIH, IIINM, IIIT, IIITM
SOS: 1972

SPECIFICATIONS

Manufacturer:	Beechcraft	
Crew/Passengers:	Two crew and five to seven passengers	
Power Plant:	Two 450 hp Pratt and Whitney Jr. R-985-AN-14B radials	
Performance:	Max speed: 230 mph (370 km/h)	Cruising speed: 205 mph (330 km/h)
	Service ceiling: 20,500 ft (6,248 m)	Range: 1,200 mi (1,931 km)
Weights:	Empty: 4,600 lb (2,087 kg)	Gross: 7,500 lb (3,402 kg)
Dimensions:	Wing-span: 47 ft 8 in (14.52 m)	Length: 34 ft 3 in (10.43 m)
	Height: 9 ft 5 in (2.87 m)	
Armament:	None	
Original Cost:	Can$75,000	
Unit Affiliations:	A very wide variety of RCAF training units, sqns and station flights	
Serial Numbers:	Various between 1381–7842, FR940–FR948, HB100–HB269	

This is another nice in-flight colour view, this time of a formation of Expeditor Mk 3 navigation trainers from No. 402 Sqn. (RCAF photo PC-997)

The Expeditor was widely used to train aircrew from NATO countries. Here, an RCAF instructor leads two cadets from Norway through the pre-flight process. (RCAF photo PCN-3932)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Beechcraft MENTOR

In early 1950, the RCAF initiated an evaluation programme to select a new primary trainer as it struggled to define the pilot training programme best suited to the needs of a "jet" air force. The Beechcraft T-34A Mentor training aircraft (A/C) had been developed from the successful Beechcraft Bonanza light A/C and in fact shared many common components with its civilian cousin. The Mentor was adopted by both the USAF and USN for primary training, and in 1953, the USAF gave a contract to Canadian Car and Foundry to build 34 T-34As. Shortly thereafter—perhaps somewhat reluctantly—the RCAF ordered 25 of the low-powered Mentors for its own use. An experimental course of student pilots was processed on the Mentor through normal training at No. 4 Flying Training School (FTS) in Penhold, Alberta. For a variety of reasons, the Mentors were not considered suitable for RCAF training purposes. One of the A/C was written off in a crash and the rest were quickly sent to Greece and Turkey as part of a NATO Mutual Aid programme.

DETAILS

Designation: T-34A
Role: Trainer
No: 25
Model No: 45
TOS: 1954
Service: RCAF
Mk: N/A
SOS: 1956

SPECIFICATIONS

Manufacturer:	Licence-built from Beechcraft by Canadian Car and Foundry Ltd	
Crew:	Two pilots: student and instructor in tandem	
Power Plant:	One 225 hp Continental 0-470-13 piston engine	
Performance:	Max speed: 189 mph (304 km/h)	Cruising speed: 173 mph (278 km/h)
	Service ceiling: 21,200 ft (6,461 m)	Range: 975 mi (1,569 km)
Weights:	Empty: 2,170 lb (985 kg)	Gross: 2,900 lb (1,317 kg)
Dimensions:	Wing-span: 32 ft 10 in (10.01 m)	Length: 25 ft 10 in (7.87 m)
	Height: 9 ft 7 in (2.92 m)	Wing area: 177 sq ft (16.51 sq m)
Armament:	None	
Cost:	Unknown	
Unit Affiliations:	No. 4 FTS, CEPE	
Serial Numbers:	24201–24225	

A rare view of the short-lived RCAF Beechcraft Mentor no. 24205. This A/C is wearing the badge of the cold-weather testing section of the Central Experimental Proving Establishment (CEPE). (RCAF photo RE68-1767)


CANADIAN ARMED FORCES
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Beechcraft MUSKETEER

From 1961 until approximately 1980, the Beechcraft Model 23 was manufactured under various names, such as Sierra, Sundowner, Sport and Musketeer, to serve the market for a small, inexpensive and private recreational aircraft (A/C). Beechcraft Musketeer A/C were first purchased by the Canadian Forces (CF) in 1970 to replace the capable but increasingly difficult-to-maintain Chipmunk ab-initio trainers. Although not an ideal A/C for the role, the Musketeer served capably in the guise of a pilot-selection vehicle and primary flying trainer. Derived from the stock civilian Beechcraft, the Canadian military models featured a second access door. In 1981, primarily due to structural problems, the original Musketeer was replaced by a newer, improved version of the A/C. Based on the commercial Sundowner version, these later A/C were designated CT-134A, or Musketeer II, in CF service.

DETAILS

Designation: CT-134 / CT-134A
Model No: 23
Role: Trainer
TOS: 1970
SOS: 1992
No: 25 CT-134 + 25 CT-134A
Service: CF

SPECIFICATIONS

Manufacturer:	Beechcraft	
Crew/Passengers:	Two pilots and up to two passengers	
Power Plant:	Lycoming 0-360-A4K 360 cubic inch reciprocal engine with 180 hp	
Performance:	Max speed: 132 kt (245 km/h)	
	Service ceiling: 12,600 ft (3,840 m)	Range: 690 mi (1,110 km)
Weights:	Gross: 2,350 lb (1,113 kg)	
Dimensions:	Wing-span: 32 ft 9 in (9.99 m)	Length: 25 ft 9 in (7.85 m)
Armament:	None	
Original Cost:	Can$25,195 (CT-134) and Can$150,610 (CT-134A)	
Unit Affiliations:	No. 3 CFFTS, AETE	
Serial Numbers:	CT-134: 134201–134225, CT-134A: 134401–134425	

The Beechcraft CT-134 Musketeer and CT-134A Musketeer II (Sundowner) were externally identical. (CF photo)

Known as a Beechcraft Sundowner in civil guise, in Canadian military use it became a CT-134 Musketeer. (CF photo)

This is a Bell 47D from the Basic Helicopter Training Unit at the CJATC in Rivers, Manitoba, on September 28, 1955. (RCAF photo PC-920)

Bell 47 SIOUX

The Bell 47 helicopter was first flown in 1945, and it was the first helicopter to be commercially licensed, reaching commercial production in 1947. It became one of the most successful and numerous of the early helicopters. With its distinctive bubble canopy, the Bell 47 started off as a two-seat (TS) helicopter but was successfully modified into three- and four-seat versions. It served in numerous roles and helped pioneer various uses for the helicopter. The RCN ordered its first three Bell 47D-1 (HTL-4) helicopters in 1951. An additional three Bell 47G (HTL-6) helicopters joined the fleet in 1955. All these helicopters served with HU-21 Squadron in Her Majesty's Canadian ship (HMCS) *Shearwater*. The RCAF acquired its first Bell 47D in 1948 as no. 9608. The Canadian Army (CA) and the RCAF also acquired additional Bell 47Ds for the Basic Helicopter Training Unit at the Canadian Joint Air Training Centre (CJATC) in Rivers, Manitoba. These aircraft (A/C) were used for the transitioning of RCAF, RCN and CA pilots from fixed-wing to rotary-wing operations. In addition, the A/C were used for wire laying, rescue and evacuation, topographic surveying and light resupply missions.

DETAILS

Designation: H-13B
Model No: 47D
Role: Light utility helicopter
TOS: 1948
SOS: 1965
No: 3
Service: RCAF/RCN/CA

SPECIFICATIONS

Manufacturer:	Bell Helicopter Corporation	
Crew/Passengers:	Two pilots or one pilot and one passenger/observer	
Power Plant:	One 200 hp Franklin 0-335-5 or 6U4-C32 or 210 hp 6B-33A piston engine	
Performance:	Max speed: 90 mph (145 km/h)	Cruising speed: 77 mph (124 km/h)
	Service ceiling: 10,000 ft (3,050 m)	Range: 190 mi (306 km)
Weights:	Empty: 1,380 lb (626 kg)	Gross: 2,350 lb (1,066 kg)
Dimensions:	Rotor diameter: 35 ft 1.5 in (10.71 m)	Length: 41 ft 2.5 in (12.56 m)
	Height: 9 ft 6 in (2.90 m)	
Armament:	None	
Cost:	Unknown	
Unit Affiliation:	CJATC	
Serial Numbers:	9608, 9609, 9616	

This is a hangar portrait of the RCAF's first Bell 47D, no. 9608. (RCAF photo)

A CH-118 Iroquois base rescue flight helicopter now officially belonging to 439 CS Sqn in 3 Wing Bagotville, QC, was painted in this special "Tiger Stripe" scheme to commemorate the Sqn's 70th anniversary in 1994. (CF photo)

Bell IROQUOIS (HUEY)

The CH-118 Iroquois was purchased after the success of the US UH-1 Huey in Vietnam. Unlike the US military, however, the Canadian Forces (CF) purchased the single (engine) Huey as a utility helicopter for the Army, but they ended up being used almost exclusively for base rescue flight duties. (The term "single Huey" was derived to differentiate this type from the later Twin Huey [twin engine] version.) These duties involved primarily search and rescue (SAR), aeromedical support, casualty evacuation and general-utility duties. The aircraft were consequently fitted with a rescue hoist and MEDEVAC equipment and were flown in high-visibility all-white-and-red or all-yellow rescue colour schemes. Only ten aircraft were purchased, and following the write-off of one helicopter in a crash, the remaining nine aircraft served faithfully in the SAR role until their retirement in 1995. Known as the Iroquois in CF service, they served primarily in base rescue flights at the bases in Chatham, Moose Jaw, Bagotville and Cold Lake.

A CH-118 Iroquois base rescue flight helicopter in hover at CFB Winnipeg displays an earlier SAR red-and-white paint scheme. (CF photo PCN73-548)

DETAILS

Designation: CH-118
Model No: 205
Role: SAR, utility helicopter
TOS: 1968
SOS: 1995
No: 10
Service: CF/RCAF

SPECIFICATIONS

Manufacturer:	Bell Helicopter Company	
Crew/Passengers:	Two pilots and one flight engineer plus up to eleven passengers or six litters	
Power Plant:	One 1,400 SHP AVCO Lycoming T-53-L-13B turboshaft engine	
Performance:	Max speed: 147 mph (237 km/h)	Cruising speed: 113 mph (182 km/h)
	Hover ceiling: 6,000 ft (1,829 m)	Range: 318 mi (511 km)
Weights:	Empty: 4,973 lb (2,256 kg)	Gross: 9,500 lb (4,309 kg)
Dimensions:	Rotor dia: 48 ft 0 in (14.63 m)	Length: 41 ft 10.75 in (12.77 m)
	Height: 14 ft 6 in (4.42 m)	Disc area: 1,809 sq ft (168.06 sq m)
Armament:	None	
Cost:	Unknown	
Unit Affiliations:	Base rescue flights at CFBs Chatham, Moose Jaw, Bagotville, Winnipeg and Cold Lake. (Later 417 and 439 Combat Support Squadrons [CS Sqns])	
Serial Numbers:	118101–118110	


CANADA

Bell KIOWA

The Bell Kiowa was a significant improvement over the previous Hiller helicopter in both the light observation and training roles. There was room for four in relative comfort. A high-inertia rotor system and a lightweight turbine engine provided much-needed modernization and performance. The helicopter provided excellent handling characteristics and reliability in the training role, although high-temperature and high-density altitude operation was less than satisfactory. The helicopter also provided valuable operational service in Europe and in Canada, both with Regular Force and Reserve units. The Kiowa was officially retired in 1996.

DETAILS

Designation: CH-136 **Model No:** OH-58 (military) or 206 BII (civil)
Role: Light observation and training helicopter
TOS: 1971 **SOS:** 1996
No: 74 **Service:** CF/RCAF

SPECIFICATIONS

Manufacturer:	Bell Helicopter Company	
Crew/Passengers:	Two crew (pilots or pilot/observer) plus two passengers	
Power Plant:	Allison 250 C-18 317 SHP turbine engine	
Performance:	Max speed: 138 mph (222 km/h)	Cruising speed: 117 mph (188 km/h)
	Service ceiling: 19,000 ft (5,791 m)	Range: 356 mi (573 km)
	Hover ceiling: 6,000 ft (1,829 m)	
Weights:	Empty: 1,583 lb (718 kg)	Gross: 3,000 lb (1,360 kg)
Dimensions:	Rotor dia: 35 ft 4 in (10.77 m)	Length: 40 ft 11.75 in (12.49 m)
	Height: 9 ft 6.5 in (2.90 m)	Disc area: 978.8 sq ft (90.93 sq m)
Armament:	Provisions for light 7.62 mm machine guns and target-marking rockets (unguided)	
Original Cost:	$150,000	
Affiliated Units:	AETE, 3 CFFTS and 400, 408, 411, 422, 427, 430 and 444 Sqns	
Serial Numbers:	136201–136274	

CH-136 Kiowas are seen here in action. An under-fuselage mini-tat machine gun installation is visible on the helicopter below. (CF photos)

Several CH-136 Kiowas were given spectacular paint schemes to commemorate the type's retirement from service. This example, 136204, is from No. 408 (Goose) Squadron. (CF photos)

The CH-139 Jet Ranger training helicopters have continued in service at Southport, MB (formerly CFB Portage La Prairie), and are now maintained and supported by a contracted consortium. (RCAF photo FA2013-5200-023)

Bell JET RANGER

Following successful experience with the Bell Kiowa, the CF selected the Bell 206 BIII Jet Ranger improved commercial derivative for basic helicopter training duties. The Jet Rangers were essentially purchased off the shelf for delivery to the military. Primarily employed in this role at Canadian Forces Base (CFB) Portage La Prairie, Manitoba, the Jet Rangers possessed more powerful engines and consequently better "hot and high" performance than their operational cousins. The performance of the helicopters spawned a helicopter display team flown by instructors who were known as the "Dragonflies." As a result of a United Nations Observer Group in Central America (ONUCA) request requiring this better performance, four Jet Rangers were rapidly modified for operational UN use and actively deployed from 1990 to 1992. The entire Jet Ranger fleet was officially retired from the CF in 1992; however, they re-emerged as contractor-flown-and-maintained training aircraft in a now-civilianized primary flying training facility in support of the RCAF programme supported by the Allied Wings consortium at Southport, Manitoba (formerly CFB Portage La Prairie). RCAF pilots first train on the Bell 206 and then move on to the Bell 412 for further advanced training.

The CH1-39 Jet Ranger training helicopters were also deployed on a UN mission to South America because of their superior performance to the CH-136 Kiowa. The deployed aircraft were refinished in UN colours as shown here. (CF photo)

The instructors on CH-139 Jet Ranger training helicopters at CFB Portage La Prairie created a formation team known as the "Dragonflies" for public air displays. One of their performances is shown here. (CF photo REC93-283-15)

DETAILS

Designation: CH-139
Role: Training helicopter
No: 14
Model No: 206 BIII
TOS: 1981
Service: CF
SOS: 1992

SPECIFICATIONS

Manufacturer: Bell Textron Helicopters
Crew/Passengers: Two pilots plus up to three passengers
Power Plant: One 420 SHP Allison 205-C20B turboshaft engine

Performance: Max speed: 140 mph (225 km/h); Cruising speed: 133 mph (214 km/h)
Hover ceiling: 13,200 ft (4,025 m); Range: 430 mi (692 km)
Weights: Empty: 1,702 lb (722 kg); Gross: 3,200 lb (1,452 kg)
Dimensions: Rotor dia: 33 ft 4 in (10.16 m); Length: 38 ft 9.5 in (11.82 m)
Height: 9 ft 6 in (2.89 m); Rotor Disc Area: 872.7 sq ft (81.07 sq m)

Armament: None
Original Cost: Unknown
Affiliated Units: 3 CFFTS and UN Ops (No. 89 Rotary Wing Aviation Unit) and Allied Wings consortium
Serial Numbers: 139301–139314

The CH-135 Twin Huey was also operated in the search and rescue role. This example also is equipped with the Canadian-developed Wire Strike Protection System (WSPS), which consists of wire cutter blades mounted above and below the windscreen. (CF photo PCN 82-121)

Bell TWIN HUEY

After the successful introduction of the CH-118 Iroquois helicopter into CF service, a major improvement of the basic Bell model 204/205 was undertaken starting in 1968 on behalf of the US military. The uprated helicopter was based around the installation of the Canadian-developed Pratt & Whitney PT-6T Twin-Pac power plant. This involved two of the Canadian company's PT-6A turboshaft engines coupled to a common gear box, which resulted in a significant increase in installed thrust with the benefit of enhanced twin-engine reliability. The Twin Huey development warranted a new model designation, and the 212 versions—or UH 1N as it was known in the US military—proved to be highly successful. The CF recognized the potential of this new helicopter and ordered 50 Twin Hueys for general-utility duties in support of Canadian land forces. The Twin Hueys primarily were flown in tactical-aviation roles and were painted and equipped accordingly. The exceptions were three Twin Hueys that were devoted to base-rescue-flight duties in Goose Bay, Labrador. Twin Hueys served with distinction in a wide variety of CF roles and missions. Four of the aircraft served with the Canadian contingent of the United Nations Observer Group in Central America (ONUCA—Canadian name Operation SULTAN) from 1990 to 1992.

DETAILS

Designation: CH-135
Role: Utility helicopter
No: 50
Model No: 212
TOS: 1971
Service: CF/RCAF
SOS: 1997

SPECIFICATIONS

Manufacturer:	Bell Textron Helicopters	
Crew/Passengers:	Two pilots and one flight engineer plus up to 13 passengers	
Power Plant:	One 1,250 SHP Pratt & Whitney T400-CP-400 Twin-Pac turboshaft engine	
Performance:	Max speed: 127 mph (204 km/h)	Hover ceiling: 9,300 ft (2,835 m)
	Service ceiling: 17,300 ft (5,273 m)	Range: 286 mi (460 km)
Weights:	Empty: 6,000 lb (2,722 kg)	Gross: 10,000 lb (4,536 kg)
Dimensions:	Rotor dia: 48 ft 2.5 in (14.69 m)	Length: 57 ft 0 in (17.37 m)
	Height: 14 ft 4.75 in (4.39 m)	
Armament:	Provisions for door-mounted 7.62 mm machine guns and two 19-tube CRV-7 rocket launchers	
Cost:	Unknown	
Affiliated Units:	AETE, MFO, UN Ops and 408, 422, 424, 427, 430 Sqns and BRF Goose Bay	
Serial Numbers:	135101–135150	

In its day, the CH-135 Twin Huey was considered one of the finest utility tactical-transport helicopters in the world. The fleet made up the backbone of the Air Force's Tactical Air Group and was used primarily to support Army operations. Other variants were also used in the utility and search and rescue roles. The top image illustrates a utility aircraft belonging to the Aerospace Engineering Test Establishment as evidenced by the red "X" on the tail. (CF photo) At the bottom, this CH-135 Twin Huey wears an all-white paint scheme used on UN operations. (RCAF photo IEC95-438A)


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Bell Textron GRIFFON/OUTLAW

The CH-146 Griffon was purchased to replace the single and Twin Huey and the Kiowa helicopters and, in addition to its military roles, has proved invaluable to civilian law enforcement as well as drug, support-to-firefighting and other special operations. The Griffon was selected by the Army for its flexibility to do more things collectively than the helicopters it replaced. Currently Canada's only land-aviation helicopter, it is used for everything from airlift of equipment and troops to reconnaissance and surveillance missions, direction and control of fire, aeromedical support, casualty evacuation and search and rescue (SAR). The four-bladed Griffon helicopter is powered by two Pratt & Whitney Canada PT6T-3D Twin-Pac turboshaft engines. The Griffon has an all-up weight of 5,398 kg (11,900 lb), with standard seating for nine and maximum seating for ten, plus three crew members and door gunners as required. The Griffon crew of two pilots and one flight engineer must be skilled in a wide range of battlefield and non-battlefield tasks. Their primary mission remains transporting troops and their equipment. Lightly armed with a C9 machine gun mounted in an open doorway, the CH-146 Griffon can carry up to 12 lightly equipped troops or 8 fully equipped troops.

The Griffon has deployed on domestic operations such as the 1996 Saguenay and 1997 Manitoba floods and the 2016 Fort McMurray wildfire. It has deployed on peacekeeping missions in Bosnia-Herzegovina (1998–2004), Haiti (1996–1997) and Kosovo (1999–2000) as well as humanitarian operations. It also served in Afghanistan from 2008 to 2011.

In 2007, a portion (nine) of the CH-146 Griffon fleet was retired from RCAF service and made available to the Allied Wings contracted consortium running the flying training program for the RCAF in Southport, Manitoba (formerly CFB Portage La Prairie). These ex-Griffon Bell 412s have been further modified by the contractor for training purposes and feature modifications not found on the CF fleet, such as a nose-mounted weather radar. RCAF pilots first train on the Bell 206 and then move on to the Bell 412 Outlaw for advanced training purposes.

DETAILS

Designation: CH-146
Role: Utility helicopter
No: 100
Model No: 412 EP
TOS: 1995
Service: CF/RCAF
SOS: In service

SPECIFICATIONS

Manufacturer:	Bell Textron Mirabel	
Crew/Passengers:	Two pilots and one flight engineer plus up to thirteen passengers	
Power Plant:	Two Pratt & Whitney Canada PT6T-3D Twin-Pac turboshaft engines	
Performance:	Max speed: 162 mph (269 km/h)	Cruising speed: 136 mph (219 km/h)
	Hover ceiling: 10,200 ft (3,109 m)	Range: 408 mi (656 km)
Weights:	Empty: 7,511 lb (3,407 kg)	Gross: 11,900 lb (5,398 kg)
Dimensions:	Rotor dia: 46 ft 0 in (14.02 m)	Length: 56 ft 2 in (17.12 m)
	Height: 15 ft 3 in (4.65 m)	
Armament:	Door-mounted C6 (7.62 mm) machine guns or Dillo Aero M134D (7.62 mm) "Minigun" or 0.50 cal (12.77 mm) GAU-21	
Cost:	Unknown	
Affiliated Units:	AETE and 400, 403, 408, 417, 424, 427, 430, 438, 439, 444 Sqns, TFA Wing and UN Ops and Allied Wings consortium	
Serial Numbers:	146400–146499	

The CH-146 Griffon tactical helicopter was essentially a commercial off-the-shelf acquisition by the CF. (CF photos)

This is RCAF Bellanca Pacemaker 610, which at this time belonged to No. 8 (GP) Squadron. (RCAF photo from the Griffin Library Collection)

Bellanca (Canadian Vickers) PACEMAKER

The Bellanca Pacemaker came from a long line of famous Bellanca monoplanes, which had been used on numerous record-breaking, long-distance flights. This successful reputation for outstanding performance ensured Canada's interest in the design, and the RCAF was to acquire a total of 13 CH-300 Pacemakers. The Pacemaker was a typical Bellanca design, featuring a high-wing monoplane with lifting struts. It combined wooden wings with a welded steel-tube fuselage and tail surfaces featuring both wood and steel. The RCAF machines featured a wider than normal float track and a rear spreader bar that angled upward to the centre point, which was strut-braced to the fuselage. This revised arrangement provided an improved view for a vertically mounted camera. In service, these RCAF aircraft served primarily in this photographic role for which they proved to be reliable and stable platforms.

DETAILS

Designation: N/A
Model No: CH-300
Role: Utility, photo survey
TOS: 1929
SOS: 1944
No: 13
Service: RCAF

SPECIFICATIONS

Manufacturer:	Bellanca Aircraft of Canada Ltd.	
Crew/Passengers:	One pilot and up to four passengers	
Power Plant:	One 300 hp Wright Whirlwind J-6E or one 300 hp Pratt & Whitney Wasp Jr piston engine	
Performance:	Max speed: 143 mph (230 km/h)	Cruising speed: 110 mph (177 km/h)
	Service ceiling: 17,000 ft (5,181 m)	Range: 500 mi (805 km)
Weights:	Empty: 2,647 lb (1,201 kg)	Gross: 4,300 lb (1,952 kg)
Dimensions:	Wing-span: 46 ft 4 in (14.12 m)	Length: 27 ft 9 in (8.46 m)
	Height: 8 ft 4 in (2.54 m)	Wing area: 272 sq ft (25.36 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	No. 7 (GP) Sqn and No. 8 (GP) Sqn	
Serial Numbers:	G-CYWT, G-CYVF – G-CYFK, G-CYVA – G-CYVC, G-CYUX – G-CYUZ (latter 12 later renumbered 601–612)	

A Bellanca Pacemaker, G-CYUZ, in RCAF colours. (RCAF photo HC4822-GL52)

Blackburn Shark 503. (RCAF photo)

Blackburn (Boeing Canada) SHARK

The RCAF became interested in acquiring a torpedo bomber in 1935. It turned to the RAF for assistance, and in 1937, on the RAF's advice, acquired seven Blackburn Shark Mk II aircraft powered by 760 hp Armstrong Siddeley Tiger VI engines. These aircraft were tested and, consequently, uprated 840 hp Bristol Pegasus Mk IX engines were installed. Additional orders for these improved Mk III Shark aircraft were added in 1939. The Shark featured unequal-span folding biplane wings. Another unusual feature was full-span ailerons on both wings, which could be lowered together for landings or takeoffs. The aircraft could be operated on wheels, skis and floats, and it was also suitable for carrier operations. Pressed into operational service at the outbreak of war, the RCAF's Sharks primarily patrolled the West Coast. Only one Shark is known to have seen action, dropping depth charges on a suspected submarine during the course of its patrol duties. No aircraft were lost to enemy action, but more than a few were lost during training and landing accidents. After their useful operational service, the last RCAF Sharks ended their days serving as deck-handling practice aircraft for Royal Navy training purposes.

This is one of the original Mk II Sharks procured from Blackburn Aircraft in the UK. It is seen here at RCAF Station Trenton in 1940. A Fairey Battle is in the background. (RCAF photo)

Blackburn Sharks were later used for target towing purposes, where they were given a distinctive black-and-yellow-striped paint scheme. This image also shows off the wing-fold mechanism to good effect. This is RCAF Shark Mk III (built by Boeing Canada) 504 at Patricia Bay. (RCAF photo)

DETAILS

Designation: N/A
Model No: N/A
Marks: II, III
Role: Torpedo bomber / maritime patrol
TOS: 1936
SOS: 1944
No: 26
Service: RCAF

SPECIFICATIONS (for Mk II)

Manufacturer: Blackburn Aircraft and Boeing Aircraft of Canada
Crew/Passengers: Pilot and observer/gunner in tandem
Power Plant: One 840 hp Bristol Pegasus Mk IX radial piston engine

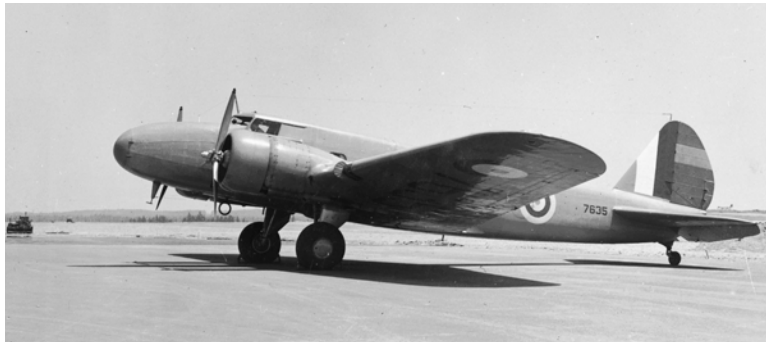
Performance: Max speed: 152 mph (245 km/h); Cruising speed: 135 mph (217 km/h)
Service ceiling: 16,100 ft (4,876 m); Range: 760 mi (1,223 km)
Weights: Empty: 4,948 lb (2,246 kg); Gross: 8,300 lb (3,768 kg)
Dimensions: Upper span: 46 ft 0 in (14.02 m); Lower span: 36 ft 0 in (10.97 m)
Length: 35 ft 2.25 in (10.72 m); Wing area: 489 sq ft (45.43 sq m)
Height: 12 ft 1 in (3.68 m)

Armament: One fixed forward .303 cal machine gun and one flexibly mounted .303 cal machine gun plus provisions for one 1,650 lb (749 kg) 18 in (46 cm) torpedo or equivalent bomb load
Cost: Unknown
Affiliated Units: AAS, T&D Flt, No. 4 and 10 (BR) Sqns, No. 6 (TB/BR) Sqn, No. 111 (CAC) Sqn, No. 122 (K) Sqn
Serial Numbers: 502–550

RCAF Boeing 247-D 7636 is seen here taxiing past a de Havilland Tiger Moth. Note the distinctive swept-forward cockpit windscreen used on some the aircraft. (RCAF photo)

Boeing 247-D

The all-metal Boeing Model 247-D was a low-winged, twin-engine transport monoplane. It was the first of "modern-day" airliners and made transports of its day virtually obsolete. The model 247-D featured newly developed supercharged engines mounted in streamlined nacelles with controllable-pitch propellers. The 247-D also had a new windshield that sloped backward instead of forward as on earlier 247 models. Various RCAF support units flew seven Model 247-D aircraft as medium transports during the early part of the Second World War. The remaining aircraft was gifted to the UK to assist with developing airborne radar systems.



RCAF Boeing 247-D 7635 is seen here on the tarmac circa 1939, while it was likely serving with No. 121 (K) Squadron. (RCAF photo PMR77-256)

DETAILS

Designation: N/A
Model No: 247-D
Role: Transport
TOS: 1940
SOS: 1942
No: 8
Service: RCAF

SPECIFICATIONS

Manufacturer:	Boeing Aircraft Company	
Crew/Passengers:	Crew of three and up to ten passengers	
Power Plant:	Two Pratt & Whitney Wasp S1H1-G engines rated at 550 hp	
Performance:	Max speed: 202 mph (325 km/h)	Cruising speed: 184 mph (296 km/h)
	Service ceiling: 25,400 ft (7,742 m)	Range: 745 miles (1,194 km)
Weights:	Empty: 8,940 lb (4,055 kg)	Gross: 13,650 lb (6,192 kg)
Dimensions:	Span: 74 ft 0 in (22.56 m)	Length: 51 ft 7 in (15.72 m)
	Height: 12 ft 2 in (3.71 m)	Wing area: 836 sq ft (77.67 sq m)
Armament:	None	
Cost:	US$69,000	
Affiliated Units:	CFS, EAC Communication Flight, No. 1 SFTS, No. 12 (Comm) Sqn, No. 121 (K) Sqn and Station Flight, RCAF Station Rockcliffe	
Serial Numbers:	7635–7639 and 7838–7840	

First acquired in 1970, the Boeing CC-137 served the CF both as a strategic airlifter and, as shown here, as an air-to-air refueller for up to two fighter aircraft. The CC-137 fleet was retired in the summer of 1996. (RCAF photo)

Boeing 707

The Boeing 707 was the most successful and versatile of the early jet airliners. The Canadian Forces (CF) acquired a fleet of five used Boeing 707-320C jet transports to provide long-range strategic transport. The aircraft were acquired to replace the Canadair Yukons in this same role. The aircraft were modified to a quick-change configuration, allowing for the rapid change of passenger, cargo or combi configurations. This versatility was facilitated by the installation of reinforced flooring and large-dimension loading hatches. Very important person (VIP) interior configurations were also introduced, and two aircraft (13703 and 13704) were adapted as long-range strategic refuellers by the installation of wing-tip mounted Beech probe and drogue refuelling pods. The CF 707s were retired in 1996 in favour of used A310 Airbus aircraft, and many of the ex-CF aircraft were bought to provide either the basis or spares for the US JSTARS aircraft programme.

DETAILS

Designation: CC-137
Role: Strategic transport and refuelling
No: 5
Model No: 707-320C
TOS: 1970
Service: CF/RCAF
SOS: 1996

SPECIFICATIONS

Manufacturer:	Boeing Aircraft Company	
Crew/Passengers:	Two pilots and crew plus up to 170 passengers and 88,900 lb (40,325 kg) cargo	
Power Plant:	Four Pratt & Whitney 19,700 lb thrust JT3D-7 turbofan engines	
Performance:	Cruising speed: 618 mph (994 km/h)	
	Service ceiling: 39,000 ft (11,887 m)	Range: 7,638 mi (12,293 km)
Weights:	Empty: 146,400 lb (66,406 kg)	Gross: 333,600 lb (151,321 kg)
Dimensions:	Span: 145 ft 9 in (44.42 m)	Length: 152 ft 11 in (46.61 m)
	Height: 42 ft 5 in (12.93 m)	Wing area: 3,010 sq ft (280 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	412 and 437 Sqns	
Serial Numbers:	13701–13705	

The RCAF's Boeing CC-137 served as a strategic airlifter, hauling passengers and cargo as required. The latter was facilitated by the installation of large cargo hatch doors, as seen above. (RCAF photo PCN71-268)

The RCAF's Boeing CC-137 also provided a regular shuttle service for personnel and cargo to Canada's NATO bases. A CC-137 is shown here on the tarmac in Lahr, Germany. (RCAF photo LRC84-387)

The RCAF versions of the Boeing B-17 Flying Fortress (three B-17E models and three B-17F models), which were bombers by design, flew without armament as transport aircraft. Mail bags can be seen in the nose of 9203. (RCAF photo RE1686-PM5)

Boeing FLYING FORTRESS

The Boeing B-17 Flying Fortress was probably the most famous of all the American heavy bombers of the Second World War. Introduced into the US Army Air Corps prior to the war, the Flying Fortress was subsequently flown on US operations in all theatres of the war. In some theatres, war-weary B-17 bombers were converted to unarmed transport aircraft. It was in this latter, less glamorous role that RCAF Flying Fortresses were employed. The RCAF acquired six used B-17E and F aircraft from the US in 1943. Stripped of all armament and armour, the aircraft were employed by No. 168 Squadron on a trans-Atlantic mail service vital to the morale of overseas forces. The aircraft were progressively modified and improved for service in this transport role, and some aircraft were subsequently stripped of paint and appeared in a polished, bare-metal finish. No. 168 Squadron delivered over two million pounds (907,184 kg) of mail between December 1943 and March 1946.

DETAILS

Designation: B-17E, F
Role: Transport
No: 6

Model No: 299-O, 299-P
TOS: 1943
Service: RCAF

Mk: II, IIA
SOS: 1946

SPECIFICATIONS

Manufacturer:	Boeing Aircraft Company	
Crew:	Two pilots, a navigator and up to five additional crew	
Power Plant:	Four 1,200 hp Wright Cyclone R-1820-65 radial engines	
Performance:	Max speed: 317 mph (510 km/h)	Cruising speed: 210 mph (338 km/h)
	Service ceiling: 36,600 ft (11,156 m)	Range: 800 mi (1,287 km)
Weights:	Empty: 32,250 lb (14,629 kg)	Gross: 53,000 lb (24,041 kg)
Dimensions:	Span: 103 ft 9 in (31.62 m)	Length: 73 ft 10 in (22.50 m)
	Height: 19 ft 2 in (5.85 m)	Wing area: 1,420 sq ft (131.92 sq m)
Armament:	None in Canadian service, but provision for .50 calibre machine guns in powered turrets and flexible positions plus carriage of bombs in an internal bomb bay	
Cost:	US$276,000	
Affiliated Units:	No. 168 (HT) Sqn	
Serial Numbers:	9202—9207	

The RCAF Boeing B-17 Flying Fortress 9204. (RCAF photo)

This is the RCAF's Boeing B-17 Flying Fortress 9205 in its final modified form in August 1944. It is stripped of paint to remove additional weight, with a hinged cargo nose and with other interior modifications to facilitate transport operations. (RCAF photo)

The CC-177 Globemaster aircraft is the largest aircraft in the current RCAF transport fleet. (CF photo)

Boeing GLOBEMASTER III

The C-17 was derived from a McDonnell Douglas mid-1970s YC-15 design intended to replace the Hercules. In the 1980s, this design was resurrected to answer a new USAF CX (Cargo Experimental) requirement. Re-engined and enlarged, the redesigned C-17 was meant to supply the USAF with a strategic airlifter which could carry more than a C-141 Starlifter but also had tactical capabilities that were lacking in the C-5 Galaxy transport. The C-17 is powered by a military version of the high-bypass turbofan engine used by the Boeing 757 jetliner. The designers at McDonnell Douglas also incorporated some systems from the DC-10 commercial aircraft to try to curb costs. Five C-17s were purchased for RCAF use. These CC-177 Globemaster IIIs can rapidly transport oversized cargo over long distances between continents. The type can operate from remote and unpaved runways. In most cases, it does not need any ground equipment for short-term operations from these remote locations.

DETAILS

Designation: CC-177
Role: Transport
No: 5

Model No: C-17
TOS: 2008
Service: RCAF

Mk: N/A
SOS: In service

SPECIFICATIONS

Manufacturer: Boeing

Crew/Passengers: Crew: Two pilots, one tech crewperson, and one or two loadmasters
Troops: Up to 144 or litters: 36 plus 102 ambulatory

Power Plant: Four Pratt & Whitney PW 2040 (F117-PW-100) turbofan engines, each with 40,440 lb (18,343 kg) thrust

Performance: Max speed: 403 mph (648 km/h)
Service ceiling: 45,000 ft (13,715 m) Range: 5,063 mi (8,148 km)

Weights: Empty: 227,000 lb (25,645 kg)
Maximum takeoff: 585,000 lb (265,350 kg)

Dimensions: Span: 169 ft 9 in (51.74 m) Length: 174 ft 0 in (53.04) m
Height: 55 ft 1 in (16.79 m) Wing area: 3,800 sq ft (353.03 sq m)

Armament: None, but provision for chaff and flare dispensers

Cost: Can$1.946 billion for aircraft, spare engines, ancillary equipment and specialized systems including initial logistic support

Affiliated Units: No. 429 Sqn and No. 436 (OTU) Sqn

Serial Numbers: 177701–177705

The RCAF's CC-177 Globemaster aircraft are assigned to No. 429 (Bison) Squadron at 8 Wing Trenton. (CF photo IS2013-2006-030)

A CC-177 Globemaster delivers two more CH-146 Griffon helicopters to Operation PRESENCE (Mali) at Camp Castor in Gao, Mali, on July 19, 2018.

Canadian Army soldiers disembark a CH-147 Chinook helicopter during Exercise COMMON GROUND II 2016 at 5th Canadian Division Support Base Gagetown, New Brunswick, November 25, 2016. (CF photo GN00-2016-1156-015)

Boeing Vertol CHINOOK

The Boeing Vertol CH-47C Chinook was a special, uprated variant of the heavy-lift tandem-rotor helicopter acquired by the CF in 1974 and was used primarily for Mobile Command operations. Unfortunately, the first aircraft crashed on its initial delivery flight. The remaining eight survivors were used extensively by the CF in transport duties associated with 10 Tactical Air Group (10 TAG). These duties included medium-airlift requirements such as the transport of troops, rations, military supplies and weapons for mobility operations. Arctic resupply and special heavy-lift operations were also routinely undertaken. The Chinooks were based primarily with 447 and 450 Transport Helicopter Squadrons while employed by the CF. Although highly versatile, the CH-147 Chinooks eventually proved to be maintenance intensive and consequently expensive to operate, so the CF retired the fleet as an economy measure in 1991. The ex-Canadian aircraft were eventually refurbished by Boeing Vertol and sold to the Dutch Armed Forces.

The Boeing Vertol CH-47D Chinook was a further-uprated variant of the heavy-lift tandem-rotor helicopter. The aircraft type continued to be used extensively by other nations in transport duties despite being originally retired from the CF for economic reasons. The principal users were the RAF and US Army, who used the type for airlift requirements including the transport of troops, rations, military supplies and weapons for mobility operations. Consequently, during the first Gulf War, the Chinook featured prominently in the high-mobility ground campaign and in special operations. CF exchange officers flew combat missions in the Chinook during the campaign. Then, as a special measure for operations in Afghanistan, the CF acquired six CH-47D helicopters from the US Army. Maintained in US Army configuration, these aircraft made a significant contribution to the Kandahar-based air wing's operations. One was destroyed by enemy action in August 2010, and another in a nighttime landing accident in May 2011. The CF then leased one more CH-47D from the US Army.

The Boeing CH-47F+ Chinook is a special, uprated variant of the heavy-lift tandem-rotor helicopter first acquired by the CF in 1974. Fifteen of these much-improved versions are now used by the RCAF in heavy-lift tactical operations.

DETAILS

Designation: CH-147
Role: Transport helicopter
No: CH-47C: 8; D: 6; F: 16
Model No: CH-47 C, D, F
TOS: C: 1974; D: 2010; F: 2013
Service: CF/RCAF
SOS: C: 1991; D: 2011; F: in service

SPECIFICATIONS (for CH-147 [CH-47F])

Manufacturer:	Boeing	
Crew/Passengers:	Two pilots and one flight engineer and one loadmaster, plus up to 44 passengers, 33 troops or up to 28,000 lb (12,700 kg) external loads	
Power Plant:	Two Honeywell 4,075 SHP (3,039 kW) T55-GA-714A turboshaft engines	
Performance:	Max speed: 177 mph (285 km/h) Hover ceiling: 9,800 ft (2,985 m)	Cruising speed: 161 mph (259 km/h) Range: 115 mi (185 km)
Weights:	Empty: 25,463 lb (11,550 kg)	Takeoff: 54,000 lb (24,494 kg)
Dimensions:	Rotor dia: 60 ft 0 in (18.29 m) Height: 22 ft 6 in (6.86 m)	Length: 98 ft 10.5 in (30.14 m)
Armament:	None	
Original Cost:	Can$2.3 billion in acquisition costs and Can$2.7 billion for 20 years of maintenance support	
Affiliated Units:	AETE, No 447 and 450 Squadrons	
Serial Numbers:	C Model: 147001–147009; D Model: 147201–147207; F Model: 147301–147315	

The RCAF acquired the CH-147F for heavy-lift tactical operations. A CH-147F is shown here approaching a landing zone during an exercise. (CF photo PA04-2015-0240-332)


11301
FORCES ARMÉES CANADIENNES
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RESCUE
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Boeing Vertol LABRADOR/VOYAGEUR

Prior to the unification of the CF, both the RCAF and Canadian Army (CA) acquired versions of the Voyageur CH-113A, a large twin-rotor helicopter, for their use. The CA acquired the CH-113A version of the Voyageur for transport of troops and supplies. These Voyageurs would also participate in search and rescue (SAR) missions. The RCAF acquired the CH-113 version of the Labrador primarily for SAR work. With unification, the two versions were merged and each type progressively upgraded to a single standard for SAR work. This helicopter type was replaced by the EH-101 Cormorant helicopter beginning in 2001.

DETAILS

Designation: CH-113 and CH-113A
Model No: 107-11 and 107-11-9
Role: Transport / SAR helicopter
TOS: 1963
SOS: 2001
No: 18
Service: CA/RCAF/CF

SPECIFICATIONS

Manufacturer:	Boeing Vertol	
Crew/Passengers:	Two pilots and a flight engineer plus SAR TECHs (up to 26 passengers)	
Power Plant:	Two 1,350 ESHP General Electric T-58-GE-85 turbine engines	
Performance:	Max speed: 148 kt (274 km/h)	Cruising speed: 126 kt (233 km/h)
	Service ceiling: 10,600 ft (3,180 m)	Range: 599 NM (1,110 km)
	Hover ceiling: 6,525 ft (1,989 m)	
Weights:	Gross: 18,700 lb (8,482 kg)	
Dimensions:	Rotor dia: 52 ft 0 in (15.54 m)	Length: 84 ft 4 in (25.70 m)
	Height: 16 ft 9 in (5.09 m)	
Armament:	None	
Original Cost:	CH-113 Labrador Can$948,000	CH-113A Voyageur Can$1,020,000
Affiliated Units:	No. 103 (RU) and No. 413, 424, 442 Sqns	
Serial Numbers:	11301–11318	

This is an RCAF CH-113 Labrador as flown by 442 Sqn during a practice SAR mission. (RCAF photo PCN67-46)

This is a CH-113 Voyageur as flown by the Canadian Army. The Army version lacked the large rear sponsons found on the CH-113 Labrador. (Canadian Army photo ZK-2054)

The CH-113 fleet went through progressive upgrades in the SAR role. All of the remaining Labrador/Voyageur helicopters were retrofitted to the same standard. (CF photo ISC78-279)

An H-44 from No. 103 Rescue Unit is shown here airlifting the hulk of a crashed helicopter out of a remote location. (RCAF photo PCN-2927)

Piasecki/Vertol H-21/H-44

Piasecki Helicopter Corporation was an early pioneer in helicopters, with its PV-2 making its first flight in April 1943. The company would develop further tandem-rotor helicopters after that. In early 1956, Piasecki Helicopter Corporation was renamed Vertol Corporation. In March 1960, the company was acquired by Boeing to become Boeing Vertol.

The Piasecki H-21A was a single-engine, tandem-rotor helicopter acquired by the RCAF in 1954 and was used extensively both by the RCAF and commercial companies in transport duties associated with the construction of the various radar chains (e.g., Mid-Canada Line, DEW Line) across Canada. The H-21B version was virtually identical to the H-21A except for an increase in the available horsepower of the engine for takeoff. The RCAF purchased six H-21As and nine H-21Bs in two separate orders. After the Mid-Canada Line was built, many of the H-21Bs were employed in search and rescue (SAR).

The H-44 version was equipped with metal rotor blades and an advanced transmission, and it could be distinguished from the earlier versions by the covered struts of its landing gear. The RCAF purchased two in 1958. They were never used by the RCAF/CF but were kept in storage until they were disposed of in March 1971. Three H-21s were converted to the H-44 configuration.

With integration, the six remaining H-21Bs became the CH-125 and the H-44s became the CH-127. They were employed in the SAR role until they were replaced by another tandem-rotor Boeing Vertol product, the CH-113 Labrador/Voyageur.

DETAILS

Designation: CH-125, CH-127 **Model No:** H-21A, B, H-44
Role: Transport and SAR helicopter **TOS:** 1954 **SOS:** 1973
No: H-21A: 6, H-21B: 9, H-44: 2 (plus three H-21B conversions)
Service: RCAF

SPECIFICATIONS

Manufacturer:	Originally designed and built by Piasecki Corporation, with later aircraft being built	
Crew/Passengers:	Two pilots and a flight engineer, plus up to 20 passengers	
Power Plant:	One 1,425 hp Wright R-1820-103 engine	
Performance:	Max speed: 131 mph (211 km/h)	Cruising speed: 90 mph (145 km/h)
Weights:	Empty: 8,000 lb (3,629 kg)	Gross: 13,500 lb (6,123 kg)
Dimensions:	Rotor dia: 44 ft 6 in (13.56 m)	Length: 86 ft 4 in (26.31 m)
	Height: 15 ft 5 in (4.70 m)	
Armament:	None	
Cost:	US$406,000	
Affiliated Units:	No. 4 HOTU, No. 5 OTU, 102 (C&R) Flt, 103 (RU), No. 108 Comm Flt, No. 111 and No. 121 (KU) CEPE / 448 Sqn, BRFs at RCAF Stations Bagotville, Chatham, Cold Lake, and Trenton	
Serial Numbers:	H-21: 9610–9615 and 9636–9644 H-44: 9591–9592 and 9594–9596	

An H-21 from the Station Rescue Flight RCAF Station Trenton is shown here in operation shortly after being introduced into service. (RCAF photo PC-1295)

Brewster BERMUDA

The Brewster Bermuda (or Buccaneer, as it was known in the US) has the dubious distinction of being one of the least-successful US combat aircraft put into production during the Second World War. The US Navy ordered a prototype of the new Brewster Model-340 design on April 4, 1939. The mid-wing, inward-retracting-undercarriage and internal-weapon-bay features were all very similar to the previous Brewster product for the Navy. The aircraft made its first flight on June 17, 1941. Desperate for modern aircraft designs, the British Purchasing Commission then ordered 750 of the type, which were to be known as Bermudas. But mediocre performance quickly relegated the aircraft to training duties only. In 1943, the RCAF acquired three Bermudas for training and utility purposes in Canada; they were used at Suffield for special research work. The aircraft saw no other operational use and were quickly retired in the post-war period.

DETAILS

Designation: SB2A-2
Role: Utility
No: 3

Model No: 340
TOS: 1943
Service: RCAF

Mark: I
SOS: 1946

SPECIFICATIONS

Manufacturer:	Brewster Aeronautical Corporation	
Crew/Passengers:	Pilot and observer/gunner in tandem	
Power Plant:	One 1,700 hp Wright R-2600-8 radial engine	
Performance:	Max speed: 274 mph (441 km/h)	Cruising speed: 161 mph (259 km/h)
	Service ceiling: 24,900 ft (7,589 m)	Range: 1,650 mi (2,656 km)
Weights:	Empty: 9,924 lb (4,502 kg)	Gross: 14,289 lb (6,481 kg)
Dimensions:	Span: 47 ft 0 in (14.33 m)	Length: 39 ft 2 in (11.94 m)
	Height: 15 ft 5 in (4.70 m)	Wing area: 379 sq ft (35.21 sq m)
Armament:	Provisions for two fixed forward-firing .50 calibre machine guns in the fuselage and two .30 calibre guns in the wings, along with two .30 calibre guns in a flexible dorsal mount; 1,000 lb (454 kg) internal bomb load	
Cost:	Unknown	
Affiliated Units:	T&D Establishment	
Serial Numbers:	FF568, FF718 and FF732	

One of the lesser-known types in RCAF service, the Brewster Bermuda was a large, single-engine aircraft. The small number of aircraft were used primarily for target towing and other test purposes. (RCAF photo)

Bristol BLENHEIM

In 1936, the RCAF was interested in obtaining a general reconnaissance aircraft and, after evaluation, selected the Bristol Blenheim that was accepted for service in 1937. The later Bolingbroke was in fact an improved version of the fast twin-engine Blenheim bomber. The Blenheim was rushed into front-line service at the outbreak of the war. It was in a Blenheim that an RCAF officer attached to the RAF made the first flight by a member of the CF over enemy territory. Nos. 404, 406 and 407 Squadrons (Sqns) all flew Blenheim bombers in action and 415 Sqn in training. Initial experience with the Blenheim models led to the subsequent adoption of the Bolingbroke style modifications, and later variants of the two aircraft were externally identical.

On the home front, the RCAF had one Blenheim aircraft in addition to the far more numerous Bolingbroke type. This lone Blenheim was used as the pattern-type aircraft for the construction of the Bolingbrokes. It would later serve as an instructional airframe and later with No. 1 Wireless School.

DETAILS

Designation: N/A
Role: Bomber
No: 5

Model No: 142M
TOS: 1941
Service: RCAF

Marks: I, IV,
SOS: 1945

SPECIFICATIONS

Manufacturer:	Bristol Aircraft Limited	
Crew:	Three: pilot, bomb aimer and gunner	
Power Plant:	Two 920 hp Bristol Mercury VIII radial engines	
Performance:	Max speed: 262 mph (422 km/h)	Cruising speed: 225 mph (362 km/h)
	Service ceiling: 28,400 ft (8,660 m)	Range: 1,400 mi (2,253 km)
Weights:	Empty: 8,963 lb (4,065 kg)	Gross: 14,500 lb (6,576 kg)
Dimensions:	Span: 56 ft 4 in (17.17 m)	Length: 42 ft 7 in (13.03 m)
	Height: 9 ft 10 in (2.77 m)	Wing area: 469 sq ft (43.57 sq m)
Armament:	Provisions for one fixed-forward and twin-flexible .303 cal machine guns in dorsal turret and in blister beneath the nose, and up to 1,000 lb (454 kg) of bombs internally plus 320 lb (149.25 kg) externally	
Cost:	Unknown	
Affiliated Units:	Nos. 404, 406, 407 and 415 Sqns, No. 1 WS	
Serial Number:	K7072	

The Bristol Blenheim Mk IV K7072, shown here at RCAF Station Rockcliffe, was externally indistinguishable from the Bristol Bolingbroke. (RCAF photo PL-4117)

The Bristol Blenheim Mk IV from No. 404 (Buffalo) Squadron is shown here receiving some maintenance. (RCAF photo PL-7714)

Bristol Bolingbroke 9892 in the colours and markings of No. 8 Squadron. The aircraft was used in defence of Canada's west coast. (RCAF photo PCN-5252)

Bristol BOLINGBROKE

In 1936, the RCAF was interested in obtaining a general reconnaissance aircraft and, after evaluation, selected the Bristol Bolingbroke in 1937. The Bolingbroke was an improved version of the Blenheim bomber being developed for the RAF. Although dropped by the RAF after the prototype version, the RCAF expressed interest in continuing the Bolingbroke's development. An order was subsequently placed with Fairchild Aircraft Limited of Longueuil, Quebec. First introduced to active service in 1939, the type became the standard patrol bomber on Canada's east and west coasts during the war. The major operational use for the aircraft was in Western Air Command, where the type equipped four bomber-reconnaissance squadrons, some of which were deployed to Alaska. Essentially obsolete before too long, the type was developed into bombing and gunnery-training aircraft as well as target-towing aircraft. It then served useful British Commonwealth Air Training Plan (BCATP) functions in these training roles. A successful prototype float-plane version was also developed, and it was one of the largest float-planes of the period, but no operational development followed. Following the end of hostilities, the type was quickly scrapped.

DETAILS

Designation: N/A
Model No: 142M
Marks: I, II, III, IV, IVC, IVM, IVT, IVTT, IVW
Role: Bomber/trainer / float plane
TOS: 1939
SOS: 1947
No: 626
Service: RCAF

SPECIFICATIONS

Manufacturer:	Fairchild Aircraft Limited under license from Bristol Aeroplanes	
Crew:	Crew of four	
Power Plant:	Two 920 hp Bristol Mercury VIII, XV or XX, or two 750 hp Pratt & Whitney Twin Wasp Jr. radial engines	
Performance:	Max speed: 262 mph (422 km/h)	Cruising speed: 225 mph (362 km/h)
	Service ceiling: 28,400 ft (8,660 m)	Range: 1,400 mi (2,253 km)
Weights:	Empty: 8,963 lb (4,065 kg)	Gross: 14,500 lb (6,576 kg)
Dimensions:	Span: 56 ft 4 in (17.17 m)	Length: 42 ft 9 in (13.03 m)
	Height: 9 ft 1 in (2.77 m)	Wing area: 469 sq ft (43.57 sq m)
Armament:	Provisions for one fixed forward and one flexible .303 cal machine gun and up to 1,000 lb (454 kg) of bombs	
Cost:	Unknown	
Affiliated Units:	No. 8, 115, and 119 Sqns, 4 and 5 CAC Dets on operations, and a number of bombing and gunnery schools and other sqns/units for training	
Serial Numbers:	Various between 702–719, 9001–10258, 705–717, 9001–9201, 9850–10256	

RCAF Bristol Bolingbroke No. 717 from No. 5 Squadron was tested on floats. The tests were basically successful, but no further aircraft were modified. (RCAF photo PL-140864)

This is Bristol Bolingbroke no. 9896 in BCATP markings. Later in the war, the Bolingbroke proved to be a reliable and versatile training aircraft. (Photo courtesy of Nanton Archives)

This photo of Bristol Beaufort Mk I No. N1005 from no. 149 Sqn was taken on December 26, 1941. (RCAF photo PBG1342)

Bristol BEAUFORT

The Beaufort was first flown in October 1938, and it was first used in action by the RAF's Coastal Command in 1939. Its main function was torpedo bombing, but it was also used in reconnaissance and mine-laying missions. Beauforts were used to attack enemy shipping in the North Sea, the English Channel and the Mediterranean Sea. Operating from Malta, Gibraltar and North African bases, the aircraft type did much to deprive the enemy forces in North Africa of valuable supplies, most notably gasoline. No. 415 (RCAF) Squadron (Sqn) flew Beauforts for a brief period. Many more Beauforts were flown by Canadians in RAF service.

No. 32 Operational Training Unit, a RAF unit at Patricia Bay, BC, began operating the Beaufort in September 1942, and provided most of its Beauforts to No. 149 Sqn when that unit was formed. No. 149 Sqn was the only RCAF sqn or unit to fly the Beaufort in Canada. Formed on October 26, 1942, No. 149 Sqn operated the RAF-supplied aircraft to counter any Japanese naval threat from the Aleutian Islands. When the Japanese withdrew from the Aleutians, there was no longer a need for a torpedo bomber, so the Sqn was re-equipped with the Lockheed-Vega Ventura and had its role changed to bomber reconnaissance. The Beauforts were then placed into storage. In March 1946, they became available for sale by the War Assets Corporation.

DETAILS

Designation: N/A
Role: Torpedo bomber
No: 15
Model No: 152
TOS: 1941
Service: RCAF
Mark: I
SOS: 1944

SPECIFICATIONS

Manufacturer:	Bristol Aircraft Company	
Crew:	Crew of four	
Power Plant:	Two 1,130 hp (843 kW) Bristol Taurus VI, XII or XVI radial engines	
Performance:	Max speed: 260 mph (418 km/h)	Cruising speed: 200 mph (322 km/h)
	Service ceiling: 16,500 ft (5,030 m)	Range: 1,035 mi (1,666 km)
Weights:	Empty: 13,107 lb (5,945 kg)	Maximum takeoff: 21,230 lb (9,630 kg)
Dimensions:	Span: 57 ft 10 in (17.63 m)	Length: 44 ft 7 in (13.59 m)
	Height: 12 ft 5 in (3,81 m)	Wing area: 503 sq ft (46.73 sq m)
Armament:	Four .303 in (7.7 mm) calibre machine guns: two each in nose and dorsal turrets plus three additional .303 guns in nose and beam stations. Provisions for up to 1,500 lb (680 kg) bombs or a 1,605 lb (728 kg) torpedo	
Cost:	Unknown	
Affiliated Units:	No. 415 Sqn and No. 149 Sqn	
Serial Numbers:	L9967–L9968, N1005–N1107, N1021, N1026–N1027, N1029–N1030, N1045, N1078, N1107, W6473 and W6484	

This photo of a lineup of Bristol Beauforts from No. 149 Sqn was taken at RCAF Station Rockcliffe, ON. (RCAF photo PL-5811)

Bristol Beaufort Mk I no. N1030 is seen here on patrol from Patricia Bay, BC, on June 19, 1943. (RCAF photo PB1406)

A fine air-to-air portrait of the unusual looking Bristol Freighter clearly illustrating its massive, bulbous fuselage and fixed landing gear. (RCAF photo PC-424)

Bristol FREIGHTER

The Bristol Freighter was a rugged and reliable transport designed for front-end loading through clam-shell doors that permitted the rapid handling of cargoes weighing as much as 12,000 lb (5,443 kg). The high wing construction allowed for efficient handling by reducing the distance that loads had to be moved vertically during loading and unloading. The box-like structure of the fuselage allowed for maximum utilization of cargo space. The RCAF acquired the type in July of 1952 and formed No. 137 Transport (T) Flight at Lachine, QC, to operate it. This flight was subsequently transferred to England, where it served as the link between the Air Material Base at Langar, the four wings of Canada's NATO Air Division based in Europe and the air-firing ranges in either Rabat, Morocco, or Decimomannu, Sardinia. The aircraft was withdrawn from service in November 1966.

DETAILS

Designation: N/A
Role: Transport
No: 6
Model No: 170
TOS: 1952
Service: RCAF
Marks: 31C, 31M
SOS: 1967

SPECIFICATIONS

Manufacturer:	Bristol Aircraft Company	
Crew/Passengers:	Crew of three plus up to 36 passengers	
Power Plant:	Two 1,980 hp Bristol Hercules 734 14-cylinder radial engines	
Performance:	Max speed: 230 mph (370 km/h)	Cruising speed: 166 mph (267 km/h)
Weights:	Empty: 24,000 lb (11,780 kg)	Gross: 36,500 lb (16,556 kg)
Dimensions:	Span: 98 ft 0 in (29.87 m)	Length: 68 ft 4 in (20.82 m)
	Height: 21 ft 8 in (6.60 m)	Wing area: 1,405 sq ft (130.53 sq m)
Armament:	None	
Cost:	Can$238,250 per airframe	
Affiliated Units:	NWAC, WEE, No. 137 (T) Flt, and 109 (KU)	
Serial Numbers:	9696–9700, 9850	

The RCAF Bristol Freighter could carry a dismantled F-86 Sabre from RCAF bases in Europe to repair and overhaul facilities in Prestwick, Scotland. (BCAM photo)

This is a fine portrait of the Bristol Freighter belonging to No. 137 Transport Flight in full tactical camouflage. (RCAF Griffon Library Collection)

This is the RCAF Bristol Freighter in its final form, with a revised non-tactical paint scheme and weather radar added to the nose. (RCAF photo)

In this photo, CP-107 Argus no. 720 illustrates the two bomb bays on the aircraft that could hold bombs, depth charges or torpedoes. (RCAF photo PCN70-125)

Canadair ARGUS

The Canadian-built Canadair Argus was a unique hybrid that employed the wings, tail surfaces and undercarriage of the British designed Britannia transport. That setup was married to a completely new unpressurized fuselage of Canadian design and equipped with different American-designed engines. One of the most effective antisubmarine warfare (ASW) aircraft of its day, the Argus was a mainstay for the RCAF in the maritime role. The principal difference between the Mark (Mk) I and Mk II was primarily in the different navigation, communication and tactical-electronic equipment fitted internally. Externally, the Mk II exhibited a redesigned smaller nose radome and additional electronic countermeasures (ECM) antennae above the fuselage. The Argus replaced the Lancaster and Neptune aircraft types previously flown in the maritime roles and, eventually, the Argus was itself to be replaced by the current CP-140 Aurora aircraft.

DETAILS

Designation: CP-107
Role: ASW
No: 33

Model No: CL-20
TOS: 1957
Service: RCAF/CF

Marks: I, II
SOS: 1982

SPECIFICATIONS

Manufacturer:	Canadair license-built version of Bristol Britannia	
Crew:	Fifteen: two pilots, flight engineer, navigator, radio operator and relief crew of four, plus six operators for ASW equipment	
Power Plant:	Four 3,700 hp Wright R3370 TC981 engines	
Performance:	Max speed: 288 mph (463 km/h)	Cruising speed: 207 mph (333 km/h)
	Service ceiling: 24,200 ft (7,376 m)	Range: 4,420 NM (8,190 km)
	Endurance: 26.5 hr	
Weights:	Empty: 81,000 lb (36,744 kg)	Gross: 148,000 lb (67,192 kg)
Dimensions:	Span: 142 ft 3.5 in (43.38 m)	Length: 128 ft 3 in (39.09 m)
	Height: 36 ft 8.5 in (11.2 m)	Wing area: 2,075 sq ft (192.77 sq m)
Armament:	8,000 lb of torpedoes, bombs, depth charges, mines, etc.	
Original Cost:	Can$5,513,000 per A/C	
Affiliated Units:	CEPE, No. 2 (M) OTU, MPEU, No. 9 FTTU, Nos. 404, 405, 407, 415, and 449 Sqns	
Serial Numbers:	20710–20742. With unification, the serial numbers were changed to 10710–10726 and 10728–10742. (There was no 10727, as 20727 had crashed in 1965.)	

The Canadair-built CP-107 Argus was a mainstay in long-range patrol work off Canada's coasts. These aircraft are both Mk I, as evidenced by the large nose radome. (RCAF photos)

This is an impressive lineup of CP-107 Argus aircraft. (RCAF photo PCN-4141)


Canada
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Canadair (Bombardier) CHALLENGER

The Challenger is a twin-engine executive jet used in the Canadian Forces (CF), originally as an electronic warfare (EW) training aircraft but also as a medium- to long-range transport. Now, based in Ottawa but belonging to 8 Wing Trenton, ON, the Challenger-equipped 412 Transport Squadron (412 [T] Sqn) provides high-ranking government officials and foreign dignitaries with air transportation worldwide. Previously, combat-support Challengers were also assigned to the squadron. These blue Challengers were used for military transport and could be configured for medical evacuation for CF personnel on duty anywhere in the world. The type was also previously used by 434 Combat Support Squadron (434 CS Sqn) at 14 Wing Greenwood, NS, as an EW training and combat-support aircraft. In the combat-support role, the Challenger was very similar to the CT-133 Silver Star, and EW training involved the same techniques, including chaff radar jamming, the dispersal of false targets to confuse enemy radar as well as the creation and transmission of false radar signals. 434 CS Sqn's Challengers were also previously employed in the maritime-patrol role.

DETAILS

Designation: CC-144A, CE-144B, CX-144
Model Nos: CL-600, CL-601, CL-604
Role: VIP transport, EW and maritime patrol
TOS: 1983
SOS: In service
No: 20
Service: CF/RCAF

SPECIFICATIONS (for the 600 model)

Crew/Passengers: Up to 4 crew and 12 passengers
Power Plant: Two Avco Lycoming ALP 502L-2C turbofans developing 7,500 lb (3,405 kg) thrust

Performance: Max speed: Mach .83, 576 mph (927 km/h) Cruising speed: 544 mph (875 km/h)
Service ceiling: 49,000 ft (14,935 m) Range: 3,176 mi (5,112 km)
Weights: Empty: 15,085 lb (6,842 kg) Gross: 32,500 lb (14,061 kg)
Dimensions: Span: 61 ft 10 in (18.83 m) Length: 68 ft 5 in (20.82 in)
Height: 20 ft 9 in (6.33 m) Wing area: 450 sq ft (41.7 sq m)

Armament: None
Cost: CL-600 Can$11,371,000 CL-601 Can$18,381,250 CL-604 US$24,000,000
Affiliated Units: AETE, Nos 412 (T) and 434 CS Sqns
Serial Numbers: 144601–144620

Two views of the Challenger. On the top, CC144615 is one of the original four CC-144Bs (Model 601) flown by the Air Force, all of which belonged to 412 (T) Sqn flying out of Uplands in Ottawa. These four Challenger 601s had General Electric rather than Avco Lycoming engines, the Electronic Flight Information System (EFIS) cockpit and an extra 700–800 miles (1,126–1,287 km) of range. On the bottom is another 412 (T) Sqn aircraft for use in a utility transport role, finished in a midnight-blue colour scheme similar to that used on NFTC aircraft. (CF photos)

This is the CC-109 Cosmopolitan VIP transport aircraft in its revised configuration with Napier Eland 504 turboprop engines. (RCAF photo PCN-003)

Canadair COSMOPOLITAN

Canadair's parent company in the late 1950s was General Dynamics, which also owned Convair Aircraft in the United States. When Convair phased out the Convair CV-440 twin-engine transport design, Canadair purchased the production jigs along with some uncompleted airframes. Canadair further refined the original design with 3,500 shaft horsepower (SHP) Napier Eland turboprop engines. These new variants were initially known as the Convair 540, since they were initially based on the uncompleted CV-440 airframes. New-build aircraft were subsequently given the Canadair CL-66 designation. The RCAF became the launch customer for this new version by ordering 10 CL-66B variants, which incorporated a reinforced floor, wide load doors and the ability to handle both cargo and passengers. The aircraft were introduced in Air Transport Command and were primarily used for the bulk of the type's career for VIP transport duties. The aircraft were also deployed to Europe for Canadian NATO contingent support as well as to the US in support of Canadian NORAD operations. In 1966, eight of the RCAF Cosmopolitans were re-engined with Allison T-56 turboprops. After an avionics upgrade to "glass cockpit" status, the aircraft were retired in 1995.

DETAILS

Designation: CC-109 **Model No:** CV-540 and CL-66
Role: VIP transport

CV 540	**TOS:** 1959	**SOS:** 1966	**No:** 3
CL-66B	**TOS:** 1960	**SOS:** 1995	**No:** 10

Service: RCAF/CF

SPECIFICATIONS

Manufacturer:	Canadair Aircraft Ltd	
Crew/Passengers:	Crew of 4 with provisions for 40 passengers or up to 14,300 lb (6,486 kg) in cargo	
Power Plant:	Two 3,500 ESHP Napier Eland 504 turboprop engines	
Performance:	Max Speed: 340 mph (547 km/h)	Cruising Speed: 322 mph (518 km/h)
	Service ceiling: 26,200 ft (6,220 m)	Range: 1,244 mi (1,996 km)
Weights:	Empty: 32,333 lb (14,666 kg)	Gross: 47,000 lb (21,319 kg)
Dimensions:	Span: 105 ft 4 in (32.12 m)	Length: 81 ft 6 in (24.84 m)
	Height: 28 ft 2 in (8.49 m)	
Armament:	None	
Cost:	CV-540 (used): Can$880,000	CL-66B (new): Can$2,000,000
Affiliated Units:	CEPE, No. 412 Sqn, No. 4 (T) OTU, No. 109 (KU), No. 111 (C&R) Flt, No. 104 (Comm) Flt	
Serial Numbers:	11106 and 11107 (became 11162 and 11167), 11151–11163, but with integration those remaining were again renumbered in May 1970 to 109151, 109152, 109154–109160	

This is the CC-109 Cosmopolitan VIP transport aircraft in its revised configuration with Allison T-56 turboprop engines. (RCAF photo UPC 74-830)

This is an example of the CC-109 Cosmopolitan VIP transport interior, complete with RCAF tartan curtains and a personal steward at hand. (RCAF photo RNC-1227-14)

The CF-116D Freedom Fighter fleet was progressively refurbished and used for lead-in fighter pilot training. These aircraft belonging to 419 Squadron in CFB Cold Lake, AB, wear aggressor-aircraft Warsaw Pact–type paint schemes. (CF photo)

Canadair FREEDOM FIGHTER

In July 1965, the Canadian government selected the F-5 lightweight fighter as the new tactical aircraft amid much disagreement. The F-5 had been designed by Northrop Aircraft as a cheap, throwaway fighter for developing countries with limited technical expertise. For a country like Canada, with a sophisticated aerospace industry, the aircraft selection was seen as a step backward. A substantial number of unique Canadian modifications were added to make the aircraft suitable, and it was subsequently also adopted by the Dutch Air Force with even further modifications. The aircraft went on to provide yeoman service for the Canadian Air Force, both in the tactical-fighter and advanced-jet-training role. Its small size also made it a valuable adversary aircraft in tactical training exercises. After being removed from front-line service, the aircraft became a lead-in fighter trainer for the CF-188, only to be retired for budgetary reasons shortly after further extensive overhaul and avionics-modification programmes.

DETAILS

Designation: CF 116
Role: Tactical fighter and trainer
No: 89 x CF-116A, 46 x CF-116D
Model No: F-5, CL-219
TOS: 1968
Service: RCAF, CF
Marks: 116A,116D
SOS: 1995

SPECIFICATIONS

Manufacturer:	License-built by Canadair from Northrop	
Crew:	One or two pilots in ejection seats	
Power Plant:	Two Orenda J-85-Can-15 Turbojets 2,925 lb thrust (mil) 4,300 lb thrust (A/B)	
Performance:	Max speed: 650 kts (1,204 km/h)	Cruising speed: 450 kts (834 km/h)
	Service ceiling: 41,000 ft (12,496 m)	Range: 195 m (314 km)
Weights:	Empty: 8,681 lb (3,938 kg)	Max T/O: 20,390 lb (9,249 kg)
Dimensions:	Span: 25 ft 10 in (7.87 m)	Length: 47 ft 2 in (14.38 m)
	Height: 13 ft 2 in (4.01 m)	
Armament:	Two 20 mm cannon and provisions for tanks, bombs, rockets (unguided) or missiles	
Original Cost:	Single: Can$1,100,000 Dual: Can$1,200,000	
Affiliated Units:	AETE, Nos. 419, 433 and 434 Sqns	
Serial Numbers:	A-model: 116701–116789 and D-model: 116801–116846	

This is a uniquely painted CF-116 Freedom Fighter, "The Moose," belonging to No. 419 Squadron, flying overhead of the tarmac and hangars in CFB Cold Lake, AB. (CF photo CKC95-5028)

This CF-116A Freedom Fighter illustrates the recce-camera nose that could be fitted to the type. It is also equipped with a fixed air-to-air refuelling probe. (CF photo PCN80-67)


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Canadair NORTH STAR

The Canadair North Star was a unique Canadian development of the Douglas C-54/DC-4 aircraft. Instead of radial piston engines found on the Douglas design, Canadair selected Rolls-Royce Merlin engines to achieve a 35 mph (56 km/h) faster cruising speed. The prototype flew on July 15, 1946, and the type was selected by various airlines as well as by the RCAF. The RCAF North Stars were unpressurized and were used on a wide variety of general-transport duties. They were also, unfortunately, infamous for the high level of interior cabin noise caused by the Merlin engines. The North Stars were assigned to 426 Transport Squadron, initially deployed to Dorval, Quebec, and then to Trenton, ON. During the Korean War, from 1950 to 1952, RCAF North Star aircraft were employed ferrying supplies across the Pacific to Korea. They flew 599 round trips over the Pacific and delivered 7,000,000 pounds (3,175,146 kg) of cargo and 13,000 personnel both ways. North Stars were also employed by 412 Squadron from Ottawa on various VIP transport duties, and overall, the aircraft provided valuable and reliable long-range transport services to the RCAF.

DETAILS

Designation: N/A
Role: Transport
No: 24
Model No: C-54GM
TOS: 1947
Service: RCAF
Marks: I
SOS: 1965

SPECIFICATIONS

Manufacturer:	Canadair Aircraft Ltd	
Crew/Passengers:	Crew of 7 with provisions for 44 passengers or 11,500 lb (5,216 kg) of cargo	
Power Plant:	Four 1,760 hp Rolls-Royce Merlin 622 piston engines	
Performance:	Max speed: 353 mph (568 km/h)	Cruising speed: 325 mph (523 km/h)
	Service ceiling: 36,000 ft (10,970 m)	Range: 420 mi (677 km)
Weights:	Empty: 43,500 lb (19,731 kg)	Gross: 73,000 lb (33,112 kg)
Dimensions:	Span: 117 ft 6 in (35.81 m)	Length: 94 ft 9.5 in (28.89 m)
	Height: 27 ft 6 in (8.38 m)	Wing area: 1,462 sq ft (135.82 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	CEPE, No. 4 OTU, Nos. 412, 426 Sqns	
Serial Numbers:	17501–17525 (17524 was converted to C-5)	

This is the Canadair C-54GM North Star in early RCAF colours. (RCAF photo PC-639)

This special North Star aircraft, known as the "Rockcliffe Ice Wagon," was heavily modified and used for airborne icing research/trials. (RCAF photo PL-53288)

RCAF North Star 17525 is seen here at Gibraltar on June 1, 1956. (RCAF photo PC-1288)


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AIR TRANSPORT COMMAND
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Canadair C-5

Noise problems associated with the engine installation on the Canadair North Star led to the development of another variant of the Douglas C-54/DC-4 aircraft. The C-5 was the final derivative of the North Star and reverted to the radial piston engines as found on the Douglas original design, Canadair having selected Pratt & Whitney Double Wasp R-2800 engines. The first and only C-5 was delivered to the RCAF in 1950, and it entered service with 412 Transport Squadron in Uplands, Ottawa. In RCAF service, the aircraft was specially outfitted for the transportation of VIP passengers. It was then used to transport the Canadian prime minister, the Queen and numerous other dignitaries on various high-profile missions. It served faithfully for 17 years before being retired and sold to a buyer in the United States.

DETAILS

Designation: N/A
Role: VIP transport
No: 1
Model No: C-5
TOS: 1950
Service: RCAF
Marks: N/A
SOS: 1967

SPECIFICATIONS

Manufacturer: Canadair Aircraft Ltd. under license from Douglas Aircraft
Crew/Passengers: Crew of 7 with provisions for 27 passengers
Power Plant: Four 2,100 hp Pratt & Whitney Double Wasp R-2800-CA15 radial piston engines

Performance: Max speed: 320 mph (568 km/h); Cruising speed: 303 mph (486 km/h); Service ceiling: 26,200 ft (6,220 m)
Weights: Empty: 49,475 lb (22,441 kg); Gross: 86,000 lb (39,009 kg)
Dimensions: Span: 117 ft 6 in (35.81 m); Length: 93 ft 5 in (28.47 m); Height: 27 ft 6 in (8.38 m); Wing area: 1,462 sq ft (135.82 sq m)

Armament: None
Cost: Unknown
Affiliated Units: No. 412 Sqn
Serial Numbers: 17524, later 10000

The RCAF's sole Canadair C-5 was always kept in pristine condition. (RCAF photo PC-1058)

The Canadair-built C-5 was a VIP variant of the Douglas C-54/DC-4 design. It is seen here at RCAF Station Uplands on June 30, 1958. (RCAF photo PCN-433)

Sabre 23757 was one of 390 Canadair CL-13B Sabre Mk VI (the last version with Avro Orenda 14 engines) that served with the RCAF. This Sabre is carrying the camouflage developed for all RCAF European-based operational aircraft. The photo was taken while the aircraft belonged to No. 1 Overseas Ferry Unit (OFU) based at St-Hubert, Quebec, which was formed in 1953 to ferry Sabres and T-33s across the North Atlantic. (RCAF photo PC-2144)

Canadair SABRE

The North American F-86 Sabre was first flown on October 1, 1947, and the aircraft quickly proved to be a highly successful design. In 1949, with the formation of NATO, the Canadian government made the decision to re-equip the RCAF's front-line fighter squadrons with modern aircraft and the F-86 Sabre was the type selected. Consequently, an agreement was reached between North American and Canadair Limited of Montreal to manufacture 100 F-86As in Canada. After the first prototype, designated CL-13 Sabre Mark (Mk) I, Canadair began production in earnest with an improved Mk II model. The Mk II was essentially an F-86E with an "all flying" tailplane to provide better flying characteristics as well as a flat windscreen. The next major production model was the Mk IV, which originally was to have been powered by an Orenda-designed engine, but to retain commonality with the F-86E, it also carried the J47-GE-13. Various design improvements were incorporated throughout the aircraft. A total of 438 Mk IV Sabres rolled off the assembly lines. The Mk V Sabre was the first production model with a Canadian engine utilizing the Orenda 10 version rated at 6,355 lb thrust. The bigger engine necessitated a larger diameter opening in fuselage frames and stronger engine mounts. An important structural modification was the introduction of a fixed leading edge to replace the automatic slats on earlier versions. This change was designed to enhance the high-altitude performance of the aircraft. Small wing fences were also introduced at the 70% span position. These modifications were successful but also resulted in a corresponding decrease in low-speed-handling characteristics. After the construction of 370 Mk V aircraft, Canadair moved on to the final (and best) version, the Mk VI. This version carried the two-stage Orenda 14 engine, which had a 7,275 lb thrust rating. The wing leading slats were re-introduced while retaining portions of the Mk V wing configuration. The Mk VI therefore acquired superb combat manoeuvring. With this combination of engine and aerodynamics, the Mk VI was widely regarded as the best "dogfighter" of its era. The RCAF's Golden Hawks team flew Mk V aircraft initially but were soon equipped with the excellent Mk VI aircraft.

DETAILS

Manufacturer: North American designed and license-built by Canadair

Designation: F-86	**Model No:** CL-13	**Marks:** I, II, III, IV, V, VI
Role: Fighter	**TOS:** 1950	**SOS:** 1970
No: 1184	**Service:** RCAF/CF	

SPECIFICATIONS (for the Mk II)

Crew:	One pilot in ejection seat	
Power Plant:	General Electric J-47-GE-13 turbojet at 5,200 lb (2,360 kg) thrust	
Performance:	Max speed: 590 mph (949 km/h)	Service ceiling: 47,200 ft (14,386 m)
Weights:	Empty: 10,434 lb (4,737 kg)	Gross: 14,577 lb (6,618 kg)
Dimensions:	Span: 37 ft 11.5 in (11.57 m)	Length: 37 ft 6 in (11.43 m)
	Height: 14 ft 9 in (4.50 m)	Wing area: 287.9 sq ft (26.74 sq m)
Armament:	Six .50 calibre machine guns plus provisions for tanks, bombs and rockets (unguided)	
Original Cost:	Unknown	

SPECIFICATIONS (for the Mk V)

Crew:	One pilot in ejection seat	
Power Plant:	Orenda Series 10 turbojet at 6,600 lb (2,996 kg) thrust	
Performance:	Max speed: 605 mph (973 km/h)	Service ceiling: 50,700 ft (15,453 m)
Weights:	Empty: 10,662 lb (4,840 kg)	Gross: 14,634 lb (6,644 m)
Dimensions:	Span: 37 ft 11.5 in (11.57 m)	Length: 37 ft 6 in (11.43 m)
	Height: 14 ft 9 in (4.50 m)	Wing area: 302.3 sq ft (28.08 sq m)
Armament:	Six .50 calibre machine guns plus provisions for tanks, bombs and rockets (unguided)	
Original Cost:	Unknown	

SPECIFICATIONS (for the Mk VI)

Crew:	One pilot in ejection seat	
Power Plant:	Orenda Series 14 Turbojet at 7,275 lb (3,302 kg) thrust	
Performance:	Max speed: 606 mph (975 km/h)	Cruising speed: 489 mph (787 km/h)
	Service ceiling: 54,000 ft (16,458 m)	Range: 1,486 m (2,391 km)
Weights:	Empty: 10,618 lb (4,818 kg)	Gross: 14,613 lb (6,634 m)
Dimensions:	Span: 37 ft 11.5 in (11.57 m)	Length: 37 ft 6 in (11.43 m)
	Height: 14 ft 9 in (4.50 m)	Wing area: 287.9 sq ft (26.74 sq m)
Armament:	Six .50 calibre machine guns plus provisions for tanks, bombs and rockets (unguided)	
Original Cost:	Can$360,000	
Affiliated Units:	Golden Hawks, CEPE, PWS, STU, No. 1 (F) OTU, 1 OFU, Nos. 410, 414, 416, 421, 422, 427, 430, 434, 439, 441 and 444 Sqns	
Serial Numbers:	19101–19463, various between 19491–19499, 19601–19695, 19702, 23001–23760	


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Canadair (Lockheed) SILVER STAR

The CT-133 Silver Star is more often referred to as the T-33 or T-Bird. It had a long and distinguished history with the Canadian Forces (CF). The world's first purpose-built jet trainer, the T-33 evolved from America's first successful jet fighter, the Lockheed P-80 Shooting Star that briefly flew operationally during the Second World War. Initially known as the P-80C, the trainer variant flew better than its single-seat cousins. Powered by an Allison J33-35 single-shaft, turbojet engine with a thrust rating of 5,200 lb, the improvements to the trainer meant it climbed faster, cruised better and, overall, was slightly faster than the fighter version. In May 1949, the designation for the aircraft was officially switched to T-33. The RCAF's introduction to the aircraft followed two years later, when the first of 20 Lockheed-built T-33As were delivered on loan. The aircraft were known to the RCAF as the Silver Star Mk 1. This first batch was followed by a second loan of 10 more aircraft. On September 13, 1951, Canadair signed a license agreement with Lockheed to build T-33 aircraft for the RCAF. The Canadair-built version, known internally as the CL-30 (and as the T-33ANX by Lockheed and the USAF), was to be powered by an uprated Nene 10 engine licensed by Rolls-Royce and supplied by Orenda Ltd. Once in production, the aircraft were designated T-33 Silver Star Mk III by the RCAF. Variations included versions for armament training (AT), photo-reconnaissance (PR) and pilot training (PT). Initially, the RCAF ordered 576 aircraft. Eventually, a total of 656 aircraft would be delivered to the RCAF between 1952 and 1959. The T-Bird was used by a wide variety of Air Force and Navy units, and a few aircraft continued valuable service at the Aerospace Engineering Test Establishment in various test support roles after the retirement of the majority of the fleet.

DETAILS

Designation: CT-133
Role: Trainer, EW, target towing
No: 656

Model No: T-33
TOS: 1953
Service: RCAF/CF

Marks: I, II, III
SOS: 2002

SPECIFICATIONS (for the Mk III)

Manufacturer:	Built by Canadair under licence from Lockheed Aircraft	
Crew:	Two crew in ejection seats	
Power Plant:	One 5,100 lb Rolls-Royce Nene 10 turbojet	
Performance:	Max speed: 570 mph (917 km/h)	Cruising speed: 190 mph (306 km/h)
	Service ceiling: 47,000 ft (14,325 m)	Range: 1,400 mi (2,253 km) with tip tanks
Weights:	Empty: 8,440 lb (3,832 kg)	Gross: 16,800 lb (7,627 kg)
Dimensions:	Span: 42 ft 5 in (12.93 m)	Length: 37 ft 8.5 in (11.49 m)
	Height: 11 ft 8 in (3.6 m)	Wing area: 238 sq ft (22.11 sq m)
Armament:	None, but provisions for two .50 cal Browning machine guns plus underwing pylons for bombs or rockets	
Original Cost:	Can$165,000	
Affiliated Units:	CEPE, AETE, Nos. 1 AFS, 2 AFS, 3 AFS, and 4 AFS, WPU, 2 CFFTS, No. 1(F) OTU, No. 3 (AW) OTU, Nos. 408, 409, 414, 420, 423, 434, 442, VU-32, VU-33 Sqns plus various miscellaneous units, base flights, etc.	
Serial Numbers:	14675–14695, 51-6713–51-6717, 51-6743–51-6747, 21001–21656	

CT-133 21057 was part of the famed "Red Knight" solo aerobatic team, which was very popular with the public. (RCAF photo PCN-4120)

Canadair-built T-33 21032 is seen here on September 5, 1956. The day-glo orange markings did not last or wear well and were soon discontinued in favour of gloss red. (RCAF photo PC-1971)

This is a dramatic view of the five brand-new CF-104 Starfighters in the RCAF inventory, 12701 to 12705, used for initial testing purposes by CEPE. (RCAF photo PCN-4453)

Canadair (Lockheed) STARFIGHTER

Late in 1959, Canadair was selected to produce 200 strike, reconnaissance versions of the Lockheed-designed F-104 Starfighter, designated as the CF-104, to replace the F-86 Sabres being flown by the RCAF in NATO. The aircraft was known by a wide variety of nicknames, some flattering and some not so flattering (e.g., the "missile with a man in it" referred to the design, while "flying lawn dart" and "widowmaker" referred to the high number of crashes the type suffered in the early years). The CF-104s could be fitted with specialized equipment to conduct the Canadian role. The aircraft was capable of the nuclear-strike role, and reconnaissance packs could be carried in a special pod under the fuselage. Originally, the standard M-61 gun pod was replaced by a 120 US gallon (455 litre) fuel tank. Later in its CF career, the aircraft was returned to a conventional strike role and the 20 mm cannon was re-installed. The CF-104 was replaced in service by the CF-18 Hornet.

This CF-104D from No. 417 Squadron is having its engine tested in full afterburner. The ensuing roar on a cold winter's night could be heard all over the base. (RCAF photo REC04-1601)

CF-104 Starfighter 12705 from the Central Experimental and Proving Establishment is seen here in a rare photo carrying the inert ballistic shape of a nuclear bomb in April 1964. The circular red-and-white markings were added to the weapon and the aircraft to aid tracking cameras. (RCAF photo PCN-5408)

DETAILS

Designation: CF-104 A/D
Role: Fighter / strike / photo-reconnaissance
No: 239
Model No: F-104G / CL-90
TOS: 1961
Service: RCAF/CF
Marks: I (A), II (Dual)
SOS: 1984

SPECIFICATIONS

Manufacturer:	Canadair license-built version of the Lockheed design	
Crew:	One or two pilots in ejection seats	
Power Plant:	One General Electric (Orenda) J-79-OEL-7 turbojet with afterburning (10,000 lb to 15,800 lb in afterburner)	
Performance:	Max speed: Mach 2.2, 1,450 mph (2,334 km/h)	
	Cruising speed: Mach 1.2, 915 mph (1,473 km/h)	
	Service ceiling: 58,000 ft (17,660 m)	Range: 2,180 miles (3,510 km)
Weights:	Empty: 14,082 lb (6,387 kg)	Gross: 28,779 lb (13,510 kg)
Dimensions:	Span: 21 ft 11 in (6.68 m) w/o tip tanks	Length: 54 ft 9 in (16.69 m)
	Height: 13 ft 6 in (4.11 m)	Wing area: 196 sq ft (18.21 sq m)
Armament:	Provision for one 20 mm M61A-1 cannon, plus bombs, rockets or tanks on the underwing or fuselage pylons	
Original Cost:	Can$1,200,000 single, Can$1,400,000 dual	
Affiliated Units:	CEPE/AETE, No. 6 STR, Nos. 417, 421, 422, 427, 430, 439, 441, and 444 Sqns	
Serial Numbers:	12631–12668, 12700–12900	


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Canadair TUTOR

The CT-114 Tutor aircraft was designed and manufactured by Canadair Limited (now Bombardier Inc.) to an RCAF specification. In anticipation of a requirement by the RCAF for a basic jet trainer, Canadair began preliminary in-house studies in 1955. By 1957, Canadair had constructed a full-scale mock-up of the aircraft incorporating side-by-side seating and a single engine. After an evaluation by the RCAF, the CL-41 was selected as the RCAF's basic jet trainer and, in September 1961, was ordered into production as the CT-114 Tutor, in RCAF terminology. The Tutor is a conventional, all-metal, low-wing, single-engine turbojet aircraft designed for the training of student pilots. It features side-by-side ejection seats for a crew of two in a pressurized and air-conditioned cockpit. Most of the services are electrically operated, but the landing gear, wing flaps, speed-brakes, nose-wheel steering and wheel brakes are hydraulically operated. The aircraft is certified for instrument flight rules (IFR) conditions and is equipped with all necessary instrumentation for navigation, instrument- and night-flying training. Canadair supplied 190 CT-114 aircraft to the RCAF in the 1963–1967 timeframe. Various changes were immediately made to the CL-41A prototype configuration, the most significant modification being the government-directed use of the General Electric J-85 CAN 40 jet engine produced under licence by Orenda Ltd. (now the Orenda Aerospace Corporation, a Magellan Aerospace Company) in Toronto. This engine is an axial flow turbojet developing approximately 2,700 lb maximum continuous static thrust at sea level under standard atmospheric conditions.

CT-114 aircraft: top, as originally delivered, and a second example, circa 1968–69, in a white paint scheme given to ex-Centennaire aerobatic team aircraft. This latter paint scheme was also first used by the Snowbirds. (CF photos)

DETAILS

Designation: CT 114
Role: Trainer
No: 190
Model No: CL-41
TOS: 1963
Service: RCAF/CF
SOS: In service

SPECIFICATIONS

Manufacturer:	Canadair designed and built	
Crew:	Two crew (pilots) in ejection seats	
Power Plant:	Orenda J-85 CAN-40 turbojet with 2,950 lb thrust	
Performance:	Max speed: 486 mph (782 km/h)	
	Service ceiling: 42,200 ft (12,863 m)	Range: 940 m (1,563 km)
Weights:	Empty: 4,895 lb (2,220 kg)	Gross: 7,397 lb (3,335 kg)
Dimensions:	Span: 36 ft 6 in (11.13 m)	Length: 32 ft 0 in (9.75 m)
	Height: 9 ft 4 in (2.84 m)	
Armament:	None, but provisions for under-fuselage tanks	
Original Cost:	Can$425,000	
Affiliated Units:	AETE, 2 CFFTS, FIS, No. 431 (AD) Sqn	
Serial Numbers:	114001–114190	

This is a dramatic in-flight view of the Canadair-built CC-106 Yukon 15929. (RCAF photo PCN-4001)

Canadair YUKON

The Canadair-built Yukon was acquired to replace the North Star to provide the RCAF with modern, long-range transport. Like Canadair's antisubmarine warfare (ASW) aircraft the CC-107 Argus, the CC-106 Yukon also stemmed from the design of the Bristol Britannia transport. The fuselage was lengthened as compared to the Britannia, and Rolls-Royce Tyne engines were fitted to provide additional power. The Yukon had two large cargo doors fitted on the port side, both front and rear. The Yukon played a pivotal role in Canada's UN missions through the 1960s, delivering troops and supplies to countries such as Ghana, Tanzania, Pakistan, India, Vietnam and Cyprus as well as supporting Canada's NATO contingent in Europe. The aircraft were retired in the spring of 1971 in favour of a smaller fleet of Boeing 707 jet transports.

DETAILS

Designation: CC-106
Role: Transport
No: 12
Model No: CL-44
TOS: 1959
Service: RCAF/CF
SOS: 1971

SPECIFICATIONS

Manufacturer:	Canadair Aircraft Ltd	
Crew/Passengers:	Crew of 10 with provisions for 134 passengers or up to 14,300 lb (6,486 kg) in cargo	
Power Plant:	Four 5,500 ESHP Rolls-Royce Tyne II turboprop engines	
Performance:	Max speed: 320 mph (515 km/h)	Cruising speed: 288 mph (463 km/h)
	Service ceiling: 30,000 ft (9,144 m)	Range: 3,550 mi (1,996 km)
Weights:	Empty: 91,000 lb (41,314 kg)	Gross: 205,000 lb (93,075 kg)
Dimensions:	Span: 142 ft 3.63 in (43.35 m)	Length: 136 ft 8 in (41.65 m)
	Height: 38 ft 7.63 in (11.77 m)	Wing area: 2,075 sq ft (192.76 sq m)
Armament:	None	
Cost:	Can$6,491,115	
Affiliated Units:	Nos. 412 and 437 Sqns	
Serial Numbers:	15502–15503, 15511–15512 became 15921–15923 and 15931–15932; then 15921–15932 (renumbered with integration in May 1970 as 10921–10932)	

This CC-106 Yukon 15927 is receiving fuel and other servicing. (RCAF photo REC68-718)

RCAF Yukon 15926 wearing the UN flag on the tail is seen here on the ground at the Leopoldville airport in the Congo. The rear cargo hatch is fully open. (RCAF photo PCN-4899)

This is Canadian Vickers Vancouver G-CYXS at RCAF Station Rockcliffe on August 19, 1929. (RCAF photo HC3501)

Canadian Vickers VANCOUVER

The Canadian Vickers Vancouver was a twin-engine flying boat designed to an RCAF specification for an aircraft to replace an earlier flying boat, the Varuna, and be capable of transporting men and equipment to forest fire locations. The resulting equal-span biplane had a metal hull manufactured from a new Alclad material. The remainder of the aircraft was of period conventional wood and fabric construction. In 1929, the initial trials on the aircraft proved the suitability of the design, and with some modest improvements additional aircraft were ordered as Vancouver II. These aircraft then provided long and faithful service. In the mid-1930s, the Vancouvers were modified to a military coastal-patrol capability with the installation of flexible machine guns and provision for the carriage of light bombs. This resulted in the aircraft designation being amended to Mk IIS (S for "service"). The aircraft also went through a progressive series of engine changes and improvements. The installation of Wright and Serval power plants resulted in further designation amendments to Mk IIS/W and IIS/S respectively. At the outbreak of the Second World War, Vancouver aircraft continued to serve on coastal patrol with No. 4 Squadron at Jericho Beach Air Station on the West Coast. By 1940, however, the aircraft were clearly obsolete and were relegated briefly to training duties before being struck off strength.

This is another image of Canadian Vickers Vancouver G-CYXS at RCAF Station Rockcliffe, this time on October 28, 1929. (RCAF photo - Griffin Library Collection)

DETAILS

Designation: N/A
Role: Aerial survey, maritime patrol
No: 6: 1 x Mk I, 5 x Mk II
Model No: N/A
TOS: 1929
Service: RCAF
Marks: I, II
SOS: 1940

SPECIFICATIONS (for Vancouver IIS/S)

Manufacturer: Canadian Vickers
Crew/Passengers: Crew of nine: two pilots, plus seven passengers or crew
Power Plant: Two 340 hp Armstrong Siddeley Serval IV radial engines

Performance: Max speed: 94 mph (151 km/h); Cruising speed: 86 mph (138 km/h); Service ceiling: 4,800 ft (1,463 m)
Weights: Empty: 5,960 lb (2,706 kg); Gross: 10,000 lb (4,540 kg)
Dimensions: Span: 55 ft 0 in (16.76 m); Length: 38 ft 3 in (11.66 m); Height: 15 ft 7 in (4.75 m); Wing area: 409.5 sq ft (38.04 sq m)

Armament: Provisions for three Lewis machine guns on flexible mounts (one in the nose and two in separate cockpits at the rear) plus up to four 250 lb (113.5 kg) bombs
Cost: Can$35,000 for Mk II
Affiliated Units: No. 4 Sqn, No. 13 (OT) Sqn
Serial Number: G-CYXS, G-CYVQ–G-CYVU, with these five being renumbered 902–906 in 1935

The inspiration behind the design for the Vickers Vanessa was a Stinson enclosed-cabin biplane, which was produced in the US. One feature the Canadian Vickers chief engineer did not like about the Stinson was the usual wire bracing for biplanes, which interfered with easy cabin access. Consequently, he introduced a system of interplane struts as clearly seen in the above photo. (RCAF photo)

Canadian Vickers VANESSA

The Canadian Vickers Vanessa was a single-engine float-plane designed as a private venture for the commercial market. The enclosed cabin fuselage was constructed of steel tubing, as were various support structures along with the tail surfaces. The remainder of the aircraft was of wood construction and the entire aircraft was fabric covered. The biplane wings were braced by interplane struts in the form of an X, eliminating the need for traditional wire bracing. After completion of a prototype aircraft, the RCAF expressed an interest in the aircraft for general communication and transport duties. In service, the RCAF pilots considered the aircraft's performance disappointing. This resulted in the installation of a more powerful Wright Whirlwind engine. In September 1927, the aircraft was used for a series of trial airmail runs, and during the tests a float failed structurally. This resulted in the aircraft sinking. Despite a subsequent salvage, repairing the aircraft was considered too costly. Regardless of its very brief career, the Vanessa has the distinction of being one of the first enclosed-cabin aircraft to be designed and built in Canada.

This is another view of the sole Canadian Vickers Vanessa serialized G-CYZJ in RCAF service. (RCAF photo RE9356)

DETAILS

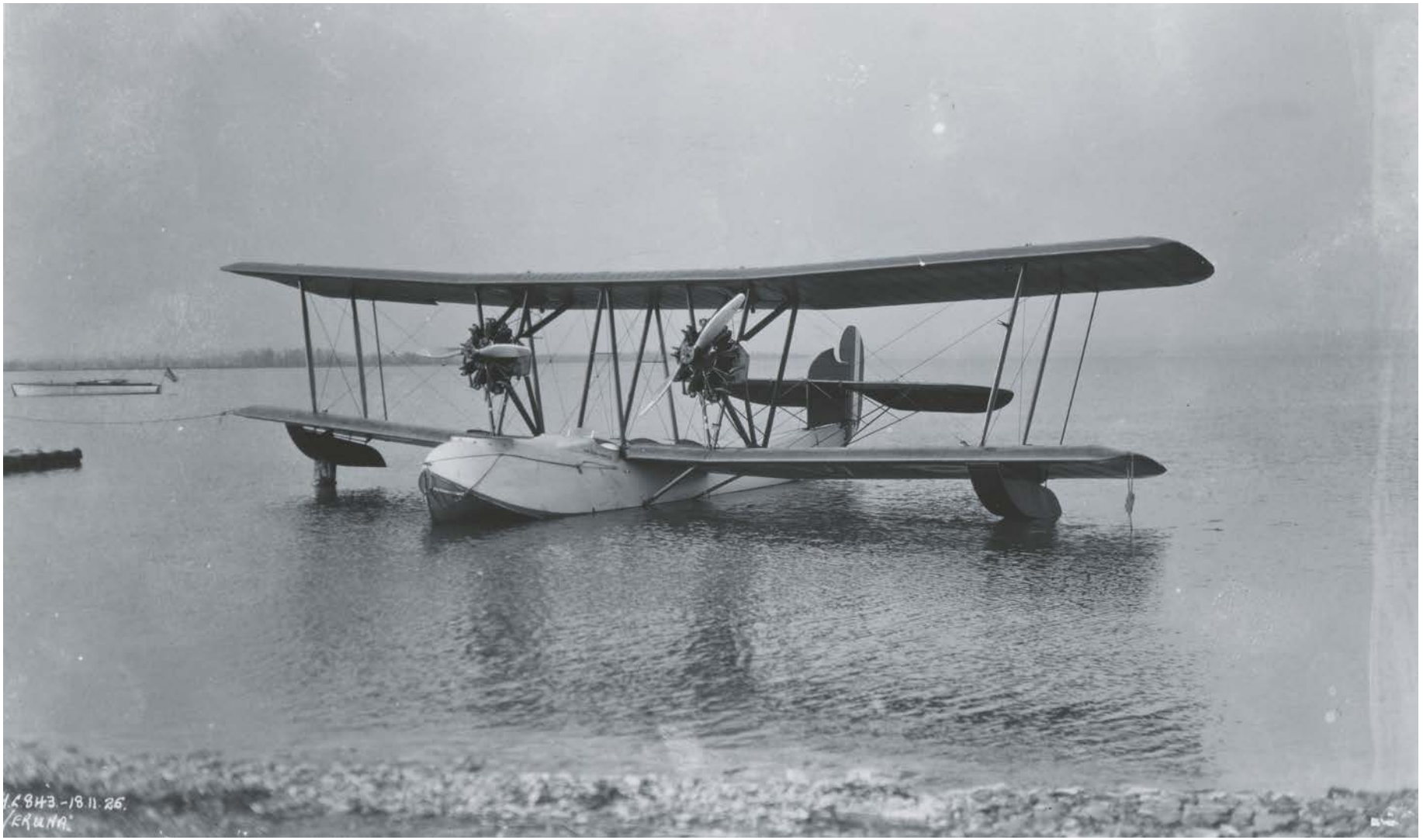
Designation: N/A
Model No: N/A
Role: Transport
TOS: 1927
SOS: 1927
No: 1
Service: RCAF

SPECIFICATIONS (Lynx powered version)

Manufacturer: Canadian Vickers
Crew: One pilot
Power Plant: One 180 hp Armstrong Siddeley Lynx or 220 hp Wright J-5C Whirlwind radial engine

Performance: Max speed: 103 mph (166 km/h)
Service ceiling: 12,000 ft (3,657 m)
Weights: Empty: 2,120 lb (963 kg) Gross: 3,400 lb (1,543 kg)
Dimensions: Span: 35 ft 3 in (10.74 m) Length: 30 ft 0 in (9.14 m)
Height: 12 ft 4 in (3.76 m) Wing area: 410 sq ft (38.1 sq m)

Armament: None
Cost: Unknown
Affiliated Units: N/A
Serial Number: G-CYZJ



This is a Canadian Vickers Varuna (G-CYGV) which belonged to the RCAF No. 3 Sqn at the time and was photographed on November 18, 1925. (RCAF photo HC843)

Canadian Vickers VARUNA

The Canadian Vickers Varuna was a twin-engine flying boat designed to an RCAF specification for an aircraft capable of transporting men and equipment to forest fire locations. The front cockpit was also to be capable of photographic missions. The resulting unequal-span biplane was essentially an enlarged Vedette flying boat. The wing structure was made of steel tubing, as were various support structures along with the tail surfaces. The remainder of the aircraft was of wood construction. Initial tests on the prototype Varuna I proved the suitability of the design, and with some modest improvements, additional aircraft were ordered as the Varuna II. The selection of lower-powered engines for the Varuna II unfortunately resulted in decreased performance. In RCAF service, most of the Varuna II aircraft spent their working lives in the province of Manitoba filling their intended purpose. All of the Varuna II aircraft were struck off strength by 1930, but the sole Varuna I languished until 1932.

DETAILS

Designation: N/A **Model No:** N/A **Marks:** I, II
Role: Flying boat for utility transport and aerial surveying
TOS: 1926 **SOS:** 1932
No: 8 **Service:** RCAF

SPECIFICATIONS (for the Varuna II)

Manufacturer: Canadian Vickers
Crew/Passengers: Crew of seven: two pilots, one photographer and four passengers or crew
Power Plant: Two 180 hp Armstrong Siddiley Lynx IV radial engines

Performance: Max speed: 81 mph (130 km/h)
Service ceiling: 7,800 ft (2,377 m)
Weights: Empty: 4,325 lb (1,963 kg) Gross: 6,315 lb (2,867 kg)
Dimensions: Upper span: 55 ft 3 in (16.84 m) Lower span: 47 ft 4.5 in (14.44 m)
Length: 38 ft 3 in (11.66 m) Height: 13 ft 9.5 in (4.20 m)
Wing area: 715 sq ft (66.42 sq m)

Armament: None
Cost: Unknown
Affiliated Units: Nos. 3 and 4 Sqns
Serial Numbers: G-CYGV – G-CYZP – G-CYZV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Canadian Vickers VEDETTE

The Vickers Vedette was the first aircraft in Canada designed and built to meet a Canadian specification for the country's harsh conditions. It was a single-engine flying boat purchased to meet an RCAF specification to be suitable for forestry-survey and fire-protection-control work. The type went on to have a long and distinguished career in civil operations with the RCAF. Five versions of the Vedette were produced, including two amphibious versions and one with an enclosed cabin on an all-metal hull. Aside from these major changes, however, most of the remaining differences between versions were relatively minor and not externally visible. Each version was produced with a range of optional engine types. In RCAF service, the aircraft proved popular and versatile. It was able to perform photographic and forestry patrols satisfactorily and provided a backbone for RCAF flying operations through the difficult Depression years. The Vedettes lasted even until the outbreak of the Second World War.

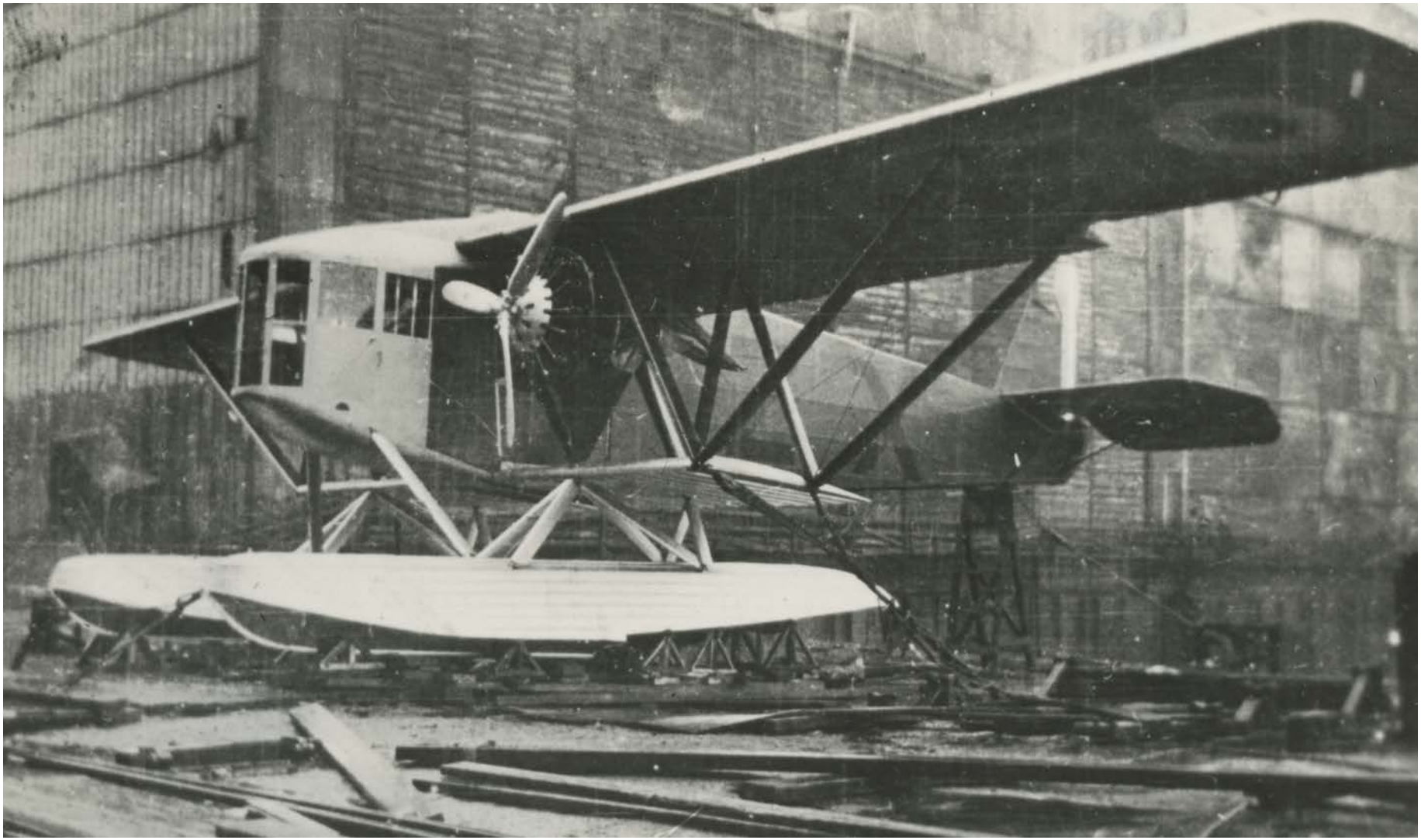
DETAILS

Designation: N/A
Model No: N/A
Marks: I, II, V, VA, VI
Role: Aerial surveying, forestry patrols
TOS: 1925
SOS: 1941
No: 44: 1 x Mk I, 20 x Mk II, 11 x Mk V, 11 x Mk VA, 1 x Mk VI
Service: RCAF

SPECIFICATIONS (for the Vedette I)

Manufacturer:	Canadian Vickers	
Crew/Passengers:	One pilot and two passengers	
Power Plant:	One 200 hp Wolseley Viper, Rolls-Royce Falcon or Wright J4 or 185 hp Armstrong Siddeley Lynx IVB radial engines	
Performance:	Max speed: 95 mph (153 km/h) Service ceiling: 13,000 ft (3,962 m)	Cruising speed: 87 mph (140 km/h)
Weights:	Empty: 2,140 lb (972 kg)	Gross: 3,155 lb (1,432 kg)
Dimensions:	Upper span: 42 ft 0 in (12.8 m) Height: 11 ft 9 in (3.58 m)	Length: 32 ft 10 in (10.0 m) Wing area: 496 sq ft (46.04 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	No. 4 (BR) Squadron (name changed to No. 4 [Flying Boat] Sqn in 1935); RCAF Station Jericho Beach, 1936 to 1940. With No. 13 (OT) Squadron, RCAF Stations Sea Island or Patricia Bay, BC, 1940 to 1941; No. 1 (Operations) Wing at Winnipeg and No. 3 (Operations) Sqn at Rockcliffe	
Serial Numbers:	G-CYFS, various between G-CYGA–G-CYZF. Remaining aircraft renumbered at various dates in early 1930s, 108–124	

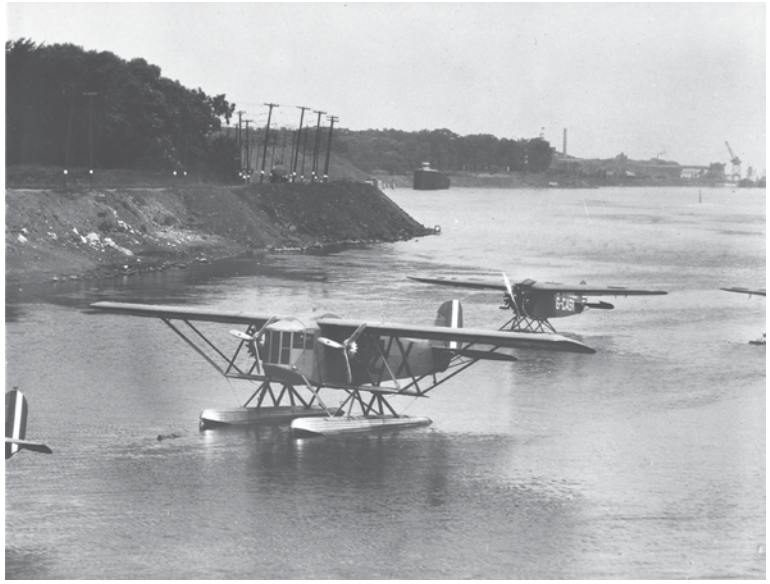
Two RCAF Canadian Vickers Vedette flying boats are shown in their element. The aircraft on the bottom is a Vedette V with an enclosed cockpit and all-metal hull. (RCAF photos)



This is the ungainly and unsuccessful Canadian Vickers Velos G-CYZX. (RCAF photo)

Canadian Vickers VELOS

The Canadian Vickers Velos was a twin-engine float-plane designed to an RCAF specification for a photographic survey aircraft. The enclosed cabin fuselage was constructed of steel tubing, as were various support structures along with the tail surfaces. The remainder of the aircraft was of wood construction and the entire aircraft was fabric covered. Readied for initial water tests in 1927, the aircraft was noted to be overweight and sitting low in the water. Perhaps indicative of the aircraft's overall fate, it almost sank at its mooring. Flight tests were consequently postponed pending a redesign and weight-reduction exercise. First flight occurred in 1928, but again, problems were numerous and the aircraft could not meet specifications. The RCAF test pilot considered the aircraft "unsuitable for any operation carried out in the Royal Canadian Air Force." In November 1928, the aircraft sank at its mooring after a heavy snowstorm. The RCAF and Canadian Vickers staff considered the aircraft a "dead loss" and consequently the aircraft was only salvaged for parts. The Velos therefore has the distinction of being one of the RCAF's worst aircraft types.



The Canadian Vickers Velos G-CYZX is seen moored in front of a Fokker Universal on August 17, 1928. (RCAF photo RE-11710)

DETAILS

Designation: N/A
Model No: N/A
Role: Photographic survey
TOS: 1927
SOS: 1928
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer: Canadian Vickers
Crew: Crew of three: one pilot, one photographer and one surveyor/navigator
Power Plant: Two 304 hp Pratt & Whitney Wasp R-1340 radial engines

Performance: Max speed: 85 mph (137 km/h)
Service ceiling: 8,000 ft (2,438 m)
Weights: Empty: 5,752 lb (2,611 kg) Gross: 7,918 lb (3,595 kg)
Dimensions: Upper span: 68 ft 0 in (20.72 m) Lower span: 27 ft 6 in (8.38 m)
Length: 41 ft 0 in (12.5 m) Height: 16 ft 9 in (5.10 m)
Wing area: 810 sq ft (72.25 sq m)

Armament: None
Cost: Unknown
Affiliated Units: N/A
Serial Number: G-CYZX

The sole Canadian Vickers Vigil G-CYZW displaying its unusual sesquiplane wing configuration. (RCAF photo HC-3046)

Canadian Vickers VIGIL

The Canadian Vickers Vigil was a single-seat patrol aircraft based on an RCAF specification for a forest fire patrol aircraft. The CAF/RCAF had been undertaking forest patrols from the early 1920s. In 1926, the RCAF issued a specification to replace aging D.H. 4 aircraft being used in this role. The Vigil was a strut-braced sesquiplane. The upper wing was instead made of steel spars and ribs with a corrugated aluminum skin. The aircraft was designed for operation on floats, wheels and skis. Unfortunately, the Vigil was considerably overweight when built, and this deficiency considerably reduced the aircraft's performance and its operational ceiling. This lack of performance made the aircraft unsuitable for its intended role. The aircraft was instead stationed at the Rockcliffe Air Station in Ottawa and used by pilots then stationed in Ottawa for proficiency flying. In January and February of 1929, the aircraft was used for experimental airmail delivery flights to the Maritimes. A little over a year later, the requirement for an overhaul and repairs led to the assessment that further effort was uneconomical and the aircraft was consequently scrapped.

DETAILS

Designation: N/A
Model No: N/A
Role: Patrol aircraft
TOS: 1928
SOS: 1930
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Canadian Vickers	
Crew:	One pilot	
Power Plant:	One 180 hp Armstrong Siddeley Lynx IV radial engine	
Performance:	Max speed: 116 mph (186 km/h)	Cruising speed: 95 mph (153 km/h)
	Service ceiling: 13,000 ft (3,962 m)	
Weights:	Empty: 2,005 lb (910 kg)	Gross: 2,750 lb (1,248 kg)
Dimensions:	Upper span: 35 ft 5.25 in (10.8 m)	Lower span: 16 ft 8 in (5.08 m)
	Length: 27 ft 0 in (8.23 m)	
	Height: 11 ft 4 in (3.45 m)	Wing area: 280 sq ft (26.01 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	RCAF Stn Rockcliffe	
Serial Number:	G-CYZW	

This is the sole Canadian Vickers Vista, G-CYZZ, moored outside to test its hull. (RCAF photo HC-1661)

Canadian Vickers VISTA

The Canadian Vickers Vista was a single-seat flying boat and, interestingly, the first Canadian monoplane design. The hull was made of Duralumin sheet and the tail surfaces were made of sheet-metal tubing. The wings were wooden and both the wing and tail surfaces were fabric covered. Following prototype completion for the RCAF, a production order was subsequently cancelled. The design proved to have some less-than-desirable characteristics and the availability of DH 60 Cirrus Moth float-planes probably sealed the Vista's fate. The prototype, registered as "G-CYZZ," was shipped to RCAF Station Jericho Beach in Vancouver in 1930. It then became a training aid to provide aircrew with experience in water-taxiing and docking techniques. In this role, the Vista had its wings clipped to prevent the aircraft from getting inadvertently airborne. When not in use, the aircraft was continuously moored outside in order to test the effects of corrosion on the Duralumin hull. By 1931, the results of this testing dictated the scrapping of the aircraft.

DETAILS

Designation: N/A
Model No: N/A
Role: Trainer
TOS: 1927
SOS: 1931
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Canadian Vickers	
Crew:	One pilot	
Power Plant:	One 60 hp Armstrong Siddeley Genet radial engine	
Performance:	Max speed: 88 mph (142 km/h)	Cruising speed: 184 mph (297 km/h)
	Service ceiling: 12,000 ft (3,657 m)	
Weights:	Empty: 655 lb (297 kg)	Gross: 1,005 lb (456 kg)
Dimensions:	Span: 29 ft 6 in (8.99 m)	Length: 23 ft 9 in (7.24 m)
	Height: 7 ft 6 in (2.28 m)	Wing Area: 147 sq ft (13.65 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	RCAF Stn Jericho Beach	
Serial Number:	G-CYZZ	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CANADIAN
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Cessna BIRD DOG

The Cessna L-19 Bird Dog first entered service with the Canadian Army in late 1954. It replaced the British-made Auster aircraft in the army-cooperation role, providing observation, communication, reconnaissance and artillery-spotting duties. The Cessna was a much more modern piece of equipment than its predecessor. Being considerably more powerful, it provided better performance on takeoff and climb, and it was more comfortable for the pilot and observer. After decommissioning from Army service, the Cessna L-19 found a new lease on life as a glider tow plane for the Royal Canadian Air Cadet (RCAC) programme.

DETAILS

Designation: L-19A / CO-119 **Model No:** O-1E
Role: Army cooperation and glider towing **TOS:** 1954 **SOS:** 1973 (by RCA)
No: 25 **Service:** RCA / Royal Canadian Air Cadets

SPECIFICATIONS

Manufacturer:	Cessna Aircraft	
Crew/Passengers:	Pilot and observer	
Power Plant:	One 213 hp Continental O-470-11 engine	
Performance:	Max speed: 130 mph (209 km/h) Service ceiling: 24,800 ft (7,559 m)	Cruising speed: 104 mph (167 km/h)
Weights:	Empty: 1,498 lb (679 kg)	Gross: 2,430 lb (1,102 kg)
Dimensions:	Span: 36 ft 0 in (10.97 m) Height: 6 ft 7 in (2.01 m)	Length: 24 ft 11.5 in (7.61 m)
Armament:	None	
Original Cost:	Unknown	
Affiliated Units:	RCA, CJATC and RCAC glider units	
Serial Numbers:	16701–16725. With unification, remaining aircraft were renumbered from 16XXX to 119XXX	

Canadian Army Cessna L-19 aircraft in two slightly different paint schemes. The one on the top illustrates the original Canadian Army scheme, while the one on the bottom illustrates an RCAC tow plane version. (CF photos)

Cessna CRANE

The Cessna T-50 Crane, or Bobcat as it was known in US service, was a light, twin-engine trainer procured in large numbers by both the RCAF and the US military during the Second World War. The aircraft was conventional for the period, featuring a low cantilever wing. The aircraft featured a mixed-material construction, with the wings and tail made of wood and the fuselage made of welded-steel tube. The skin featured a combination of lightweight wood and fabric. The retractable tail wheel and trailing-edge flaps were electrically equipped. The Crane was used primarily at the flying instructors schools and Central Flying School to train instructors on how to teach pilots on twin-engine aircraft. It was also used for twin-engine training at No. 4 Service Flying Training School. At least nine other units used the Crane as a personnel transport. The vast majority of the Cranes were retired at the end of war, but a few lingered on in light communication duties.

DETAILS

Designation: N/A
Role: Trainer
No: 826

Model No: T-50
TOS: 1941
Service: RCAF

Marks: I, IA
SOS: 1949

SPECIFICATIONS

Manufacturer:	Cessna Aircraft Corporation	
Crew/Passengers:	Two pilots with provisions for three passengers	
Power Plant:	Two 245 hp Jacobs R-755-9 radial engines	
Performance:	Max speed: 195 mph (314 km/h)	Cruising speed: 175 mph (282 km/h)
	Service ceiling: 22,000 ft (6,705 m)	Range: 750 mi (1,207 km)
Weights:	Empty: 3,500 lb (1,588 kg)	Gross: 5,700 lb (2,585 kg)
Dimensions:	Span: 41 ft 11 in (12.78 m)	Length: 32 ft 9 in (9.98 m)
	Height: 9 ft 11 in (3.02 m)	Wing area: 295 sq ft (27.41 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	Nos. 1, 2 and 3 Flying Instructors School, Central Flying School, Nos. 132 and 133 (F) Sqn, No. 147 (BR) Sqn, No. 1 WS	
Serial Numbers:	1300, 4000, 7657–7836, 7843–8202, 8651–8850, 9000, 9500, FJ200–FJ239, FJ248–FJ289	

The diminutive Cessna Crane in RCAF BCATP trainer colours (i.e., predominantly yellow). (CF photos PCN-3780 & PCN-3781)

This is a Cessna L-182F in Canadian Army colours. They were used as a utility and communication aircraft in the Army and then for very brief RCAF use. (Canadian Army photo ZK-1940-3)

Cessna L-182

The Cessna L-182 was essentially a commercial off-the-shelf purchase for the Canadian Army. In 1963, the Army purchased 10 L-182 light commercial aircraft from Cessna. The aircraft were intended for use in the courier and liaison role and were distributed to the different Army commands of the period. Perhaps unusual for Army aircraft, the L-182s were maintained in a highly polished, bare-metal finish. Little data is available on overall Army use and experience with these aircraft. During unification, these aircraft briefly came under RCAF control but were soon declared surplus and disposed of.

DETAILS

Designation: L-182D/F, CO119
Model No: L-182
Role: Light transport
TOS: 1963
SOS: 1971
No: 10
Service: CA/RCAF/CF

SPECIFICATIONS

Manufacturer: Cessna Aircraft Corporation
Crew/Passengers: One pilot with provisions for three passengers
Power Plant: One 230 hp Continental 0-470-L piston engine

Performance: Max speed: 165 mph (266 km/h)
Cruising speed: 135 mph (217 km/h)
Service ceiling: 19,800 ft (6,035 m)
Weights: Empty: 1,560 lb (708 kg)
Gross: 2,650 lb (1,202 kg)
Dimensions: Span: 36 ft 0 in (10.97 m)
Length: 26 ft 0 in (7.92 m)
Height: 8 ft 6 in (2.59 m)

Armament: None
Cost: Unknown
Affiliated Units: 4 RCHA
Serial Numbers: 19726–19735, with unification 19727–19729 became CO–119727–119729 and 16730 became CO–119730

A restored ASW patrol aircraft in standard top-surface camouflage with a white undersurface. (RCAF photo REC82-2069)

Consolidated LIBERATOR

During the Second World War, the Consolidated B-24 Liberator was manufactured in larger numbers than any other heavy bomber. In RCAF service, however, the type primarily served the long-range maritime-reconnaissance and heavy-transport roles, although some RCAF personnel did fly this type of aircraft on heavy-bomber operations in the Southeast Asia theatre of war. From Canada's East Coast, the type was used primarily in the antisubmarine warfare (ASW) role; this aircraft type provided convoys with air cover as far as the mid-Atlantic. An operational training unit (OTU) using Liberators was also established on Canada's West Coast.

DETAILS

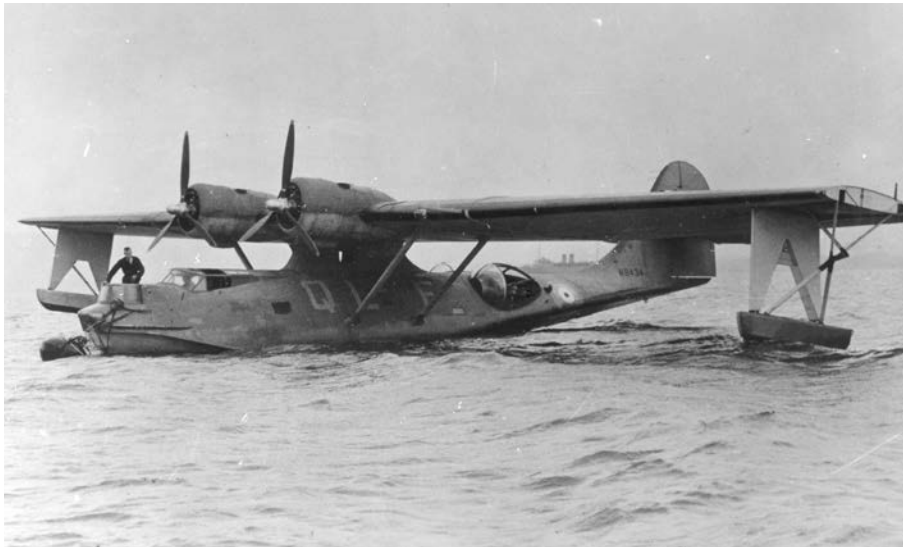
Model No: B-24J
Role: Patrol, transport
No: 148
Marks: B.Mk VI, C.Mk VI, VII, VIII G.R.Mk V, VI, VIT, VIII
TOS: 1943
SOS: 1948
Service: RCAF

SPECIFICATIONS (for the B-24J)

Manufacturer:	Consolidated Aircraft plus various other American companies under licence	
Crew:	Normal bomber crew of ten	
Power Plant:	Four 1,200 hp Pratt & Whitney Twin Wasp R-1830-65 14-cylinder radials	
Performance:	Max speed: 290 mph (467 km/h) Service ceiling: 28,000 ft (8,534 m)	Cruising speed: 190 mph (306 km/h) Range: 2,200 miles (3,540 km)
Weights:	Empty: 37,000 lb (16,783 kg)	Gross: 65,000 lb (29,484 kg)
Dimensions:	Span: 110 ft 0 in (33.5 m) Height: 18 ft 0 in (5.94 m)	Length: 67 ft 2 in (20.47 m)
Armament:	Provision for ten .50 cal Browning machine guns in four turrets and two waist gun positions plus two bomb bays for up to 8,000 lb (3,629 kg) of bombs or stores	
Original Cost:	US$336,000	
Affiliated Units:	No. 168 (HT), No. 10 (BR), No. 11 (BR), 412 Sqns and No. 5 OTU	
Serial Numbers:	570–597, 586–600, 3701–3742, 11101–11105, 11120–11135, various between EW127–EW282, various between KG880–KG978, KH105–KH288, KK237–KK242	

A bare-metal transport Liberator from No. 168 (HT) Sqn in Rockcliffe circa 1945. (RCAF photo – Griffin Library Image)

Two views of RCAF Cansos, one post-war SAR example, left, and a war-weary ASW example (as evidenced by the radar antennas under the wings) in open storage at RCAF Station Moose Jaw.
(RCAF photo PC-1606 & T. F. J. Leversedge Collection)



Two views of RCAF Catalinas moored on the water, the pure amphibious variant of the type. Bringing these aircraft ashore required special beaching gear or a crane.
(RCAF photo and RCAF photo PL-5731)

Consolidated CATALINA/CANSO

The Consolidated Catalina and Canso were close cousins. The Catalina was a pure flying boat and needed special beaching gear to be brought up on the land. The Canso was the true amphibious version of the design; therefore, it included a conventional undercarriage to allow for either water or land use. The Canso provided over two decades of valuable service to the RCAF. The Catalina variant came first and was produced beginning in 1935 for the US Navy. The amphibious version, designated PBY-5A, came into service early in 1941, and the RCAF began using the aircraft on antisubmarine patrols that same year. After the Second World War, the RCAF used Cansos for search and rescue, arctic survey missions and various transport operations.

DETAILS - CATALINA

Designation: N/A
Model No: PBY-5A
Marks: IA, IB, II, III, IIIA, IV, IVA, VB
Role: Patrol
TOS: 1941
SOS: 1946
No: 30
Service: RCAF

SPECIFICATIONS (for the Mark IB)

Manufacturer: Consolidated; also licence-built by Boeing (Canada) Ltd
Crew: Crew of eight or nine
Power Plant: Two 1,200 hp (895 kW) Pratt & Whitney R-1830 Twin Wasp radials,

Performance:
Max speed: 190 mph (306 km/h)
Cruising speed: 179 mph (288 km/h)
Service ceiling: 24,000 ft (7,315 m)
Range: 4,000 mi (6,437 km)

Weights:
Empty: 14,240 lb (6,459 kg)
Maximum takeoff: 27,080 lb (12,283 kg)

Dimensions:
Span: 104 ft 0 in (31.70 m) Length: 65 ft 2 in (19.86 m)
Height: 17 ft 11 in (5.46 m) Wing area: 1,400 sq ft (130.06 sq m)

Armament: One 0.5 in (12.7 mm) machine gun in each blister, one 0.3 in (7.62 mm) machine gun in bow turret and one 0.3 in (7.62 mm) machine gun in rear ventral hatch. Provisions for up to 2,000 lb (907 kg) in bombs or depth charges

Cost: Unknown

DETAILS - CANSO

Designation: PBY-5A
Model No: 28-5A
Role: Patrol, search and rescue, transport
TOS: 1941
SOS: 1962
No: 224
Service: RCAF

SPECIFICATIONS (for the PBY-5A)

Manufacturer: Consolidated; also licence-built by Boeing (Canada) Ltd
Crew: Crew of eight or nine
Power Plant: Two 1200 hp (895 kW) Pratt & Whitney R-1830-92 Twin Wasp radials

Performance:
Max speed: 175 mph (282 km/h)
Cruising speed: 113 mph (182 km/h)
Service ceiling: 13,000 ft (3,960 m)
Range: 2,350 mi (3,782 km)

Weights:
Empty: 20,910 lb (9,485 kg)
Maximum takeoff: 35,420 lb (16,067 kg)

Dimensions:
Span: 104 ft 0 in (31.7 m) Length: 63 ft 10 in (19.47 m)
Height: 20 ft 2 in (6.15 m) Wing area: 1,400 sq ft (130 sq m)

Armament: One 0.5 in (12.7 mm) machine gun in each blister, one or two 0.3 in (7.62 mm) machine guns in bow turret and one 0.3 in (7.62 mm) machine gun in rear ventral hatch. Provisions for up to 1,000 lb (454 kg) in bombs or depth charges

Cost: Unknown

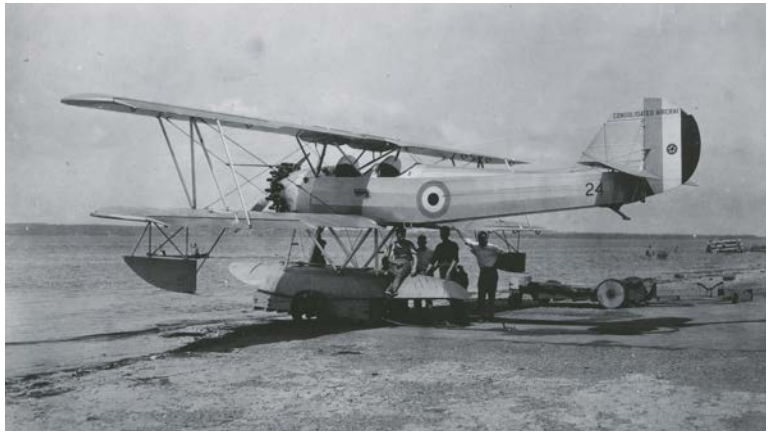
Affiliated Units: Nos. 4, 6, 7, 9 and 162 (BR) Sqns, No. 116, No. 123 (SR), No. 111 (K) Flt, No. 121 Flt and No. 3 OTU

Serial Numbers:
Canso: 9701–9844, 11001–11100
Catalina: FP290–FP297, W8430–W8432, Z2134, Z2136–Z2140, DP202, various between JX206–JX580

This photo illustrates one of the three Consolidated Couriers in RCAF colours. The aircraft were also flown in RCAF service using floats. (Jack McNulty Collection)

Consolidated COURIER

The RCAF took delivery of three Consolidated XO-17A Couriers in February 1928. The aircraft were flown from Buffalo, NY, to Camp Borden north of Toronto. The Courier design originated from a request from the United States Navy for a modification of the company's PT-1 biplane design that was ordered into large-scale production for the US Army in 1924. The US Navy ordered modifications, which included the substitution of a 220 hp Wright J-4 (R-790) radial engine and provisions for the installation of a large, single float under the fuselage and small, stabilizing floats under the wing tips. The fin and rudder were also increased in size for this seaplane configuration. In Canadian service the aircraft were used for advanced flying training and for air-to-air gunnery practice. One crashed in 1928, and the other became an instructional airframe in 1936. It and the last operational Courier were scrapped in 1941.

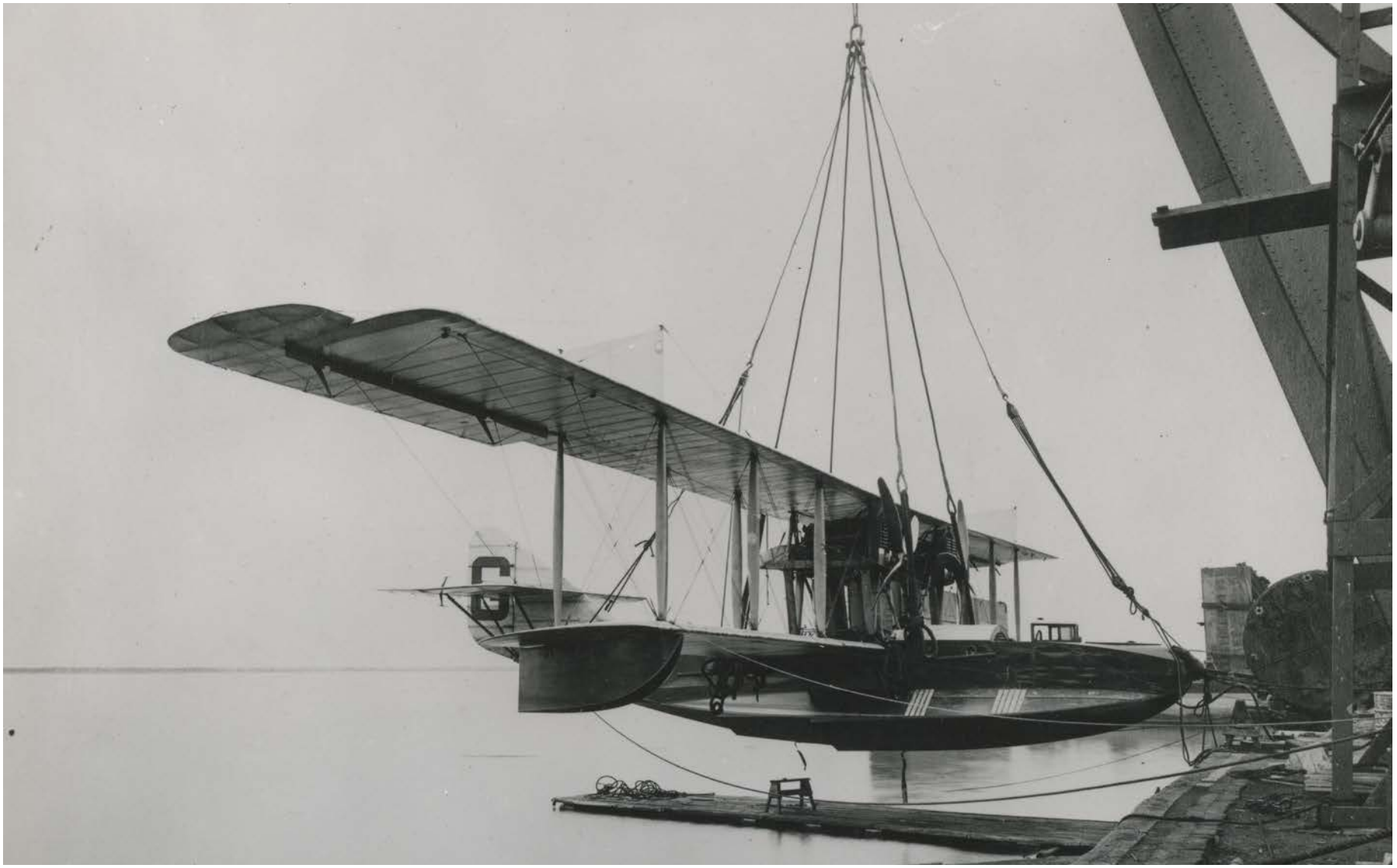


DETAILS

Designation: N/A
Model No: XO-17A
Role: Trainer
TOS: 1928
SOS: 1941
No: 3
Service: RCAF

SPECIFICATIONS

Manufacturer:	Consolidated Aircraft Corporation	
Crew:	Two pilots in tandem	
Power Plant:	One 220 hp Wright J-5 (R-790) radial engine	
Performance:	Max speed: 102 mph (164 km/h)	Cruising speed: 81 mph (130 km/h)
	Service ceiling: 14,500 ft (4,420 m)	Range: 300 mi (483 km)
Weights:	Empty: 1,785 lb (810 kg)	Gross: 2,481 lb (1,125 kg)
Dimensions:	Span: 34 ft 6 in (10.52 m)	Length: 28 ft 1 in (8.56 m)
	Height: 10 ft 3 in (3.12 m)	Wing area: 300 sq ft (27.87 sq m)
Armament:	Provision for a light machine gun	
Cost:	Unknown	
Affiliated Units:	RCAF Camp Borden	
Serial Numbers:	24–26	



A Curtiss H-16 flying boat similar to those used by the RCAF being hoisted out of the water. (RCAF photo / Griffin Library Collection)

Curtiss H-16

The Curtiss H-16 was a First World War, twin-engine flying boat designed to a US Navy specification for a patrol aircraft. The H-16 was a design improvement on the company's H-12 series flying boat. The H-16 had a laminated wood-veneer hull featuring sponsons along the lower edges and unequal-span biplane wings. The design was further sold to Britain in unassembled kit form. In Britain, the aircraft were assembled by RNAS Felixstowe and were fitted with British engines. The British versions were therefore known as the F.2, F.3 and F.5. Both British and American versions of the aircraft proved to be successful. The Canadian Air Force of the 1920s was a large user of flying boats. Two H-16s were received as part of the Imperial Gift of 1919. One was used on operations in Manitoba in 1923, while the other was held as a spare for parts for the operational aircraft. As orphan aircraft they were struck off strength in February 1924.

DETAILS

Designation: N/A
Role: Aerial survey
No: 2

Model No: H-16
TOS: 1922
Service: RCAF

Marks: Unknown
SOS: 1924

SPECIFICATIONS

Manufacturer:	Curtiss Aeroplane and Motor Company	
Crew:	Crew of four	
Power Plant:	Two 400 hp Liberty 12 piston engines	
Performance:	Max speed: 95 mph (153 km/h)	
	Service ceiling: 9,950 ft (3,033 m)	Range: 378 mi (608 km)
Weights:	Empty: 7,400 lb (3,357 kg)	Gross: 10,900 lb (4,944 kg)
Dimensions:	Span: 95 ft 0.75 in (28.98 m)	Length: 46 ft 1.5 in (14.06 m)
	Height: 17 ft 8.63 in (5.40 m)	Wing area: 1,164 sq ft (108.14 sq m)
Armament:	Provisions for five Lewis machine guns on flexible mounts plus up to four 230 lb (104 kg) bombs	
Cost:	Unknown	
Affiliated Units:	No details available	
Serial Numbers:	G-CYEP and N4902	

This is a Curtiss HS-2L flying boat, belonging to the RCAF's No. 3 Sqn. (RCAF photo RE-18658)

Curtiss HS-2L

During the First World War, the HS family of flying boats developed by Curtiss for the United States Navy (USN) proved to be highly successful. Following the marriage of the HS-1 hull design and the popular Liberty engine, the HS-1 was ordered into large-scale production as the USN's standard coastal-patrol flying boat. The design was then further modified with an additional six-foot panel in the centre-wing section, increasing the span from 62 to 74 ft (18.9 to 22.5 m). This increase allowed for the carriage of a heavier bomb load, and the modification resulted in a new designation of HS-2L. In 1918, to combat the growing submarine menace off Canada's East Coast, the Royal Navy requested that two air bases be constructed. The Royal Canadian Naval Air Service thus came into being. Unfortunately, starting from scratch with no trained crews or aircraft proved to be a daunting task. Consequently, the USN was invited to fill the gap, and a detachment of USN personnel arrived in Halifax in August 1918 to begin operations using four HS-2L flying boats. The officer in charge of the USN detachment was Lieutenant Richard E. Byrd, United States Navy Reserve, who later gained fame both as an aviator and polar explorer. With the Armistice, flying operations quickly wound down. All 30 of the HS-2L that the Air Board and RCAF operated were former USN aircraft. They were soon used on aerial surveying, fisheries and forestry patrols and flying-boat pilot training. The HS-2L operated across Canada. The type also pioneered bush flying into Canada's wilderness in both military and civilian hands.

DETAILS

Designation: N/A
Model No: HS-2L
Role: Patrol
TOS: 1920
SOS: 1928
No: 30
Service: RCAF

SPECIFICATIONS

Manufacturer:	Curtiss Aeroplane Division	
Crew:	Crew of four or five	
Power Plant:	One 350 hp Liberty 12 piston engine	
Performance:	Max speed: 83 mph (134 km/h)	
	Service ceiling: 5,200 ft (1,585 m)	Range: 517 mi (832 km)
Weights:	Empty: 4,300 lb (1,950 kg)	Gross: 6,432 lb (2,918 kg)
Dimensions:	Span: 74 ft 0.5 in (22.58 m)	Length: 39 ft 0 in (11.89 m)
	Height: 14 ft 7 in (4.44 m)	Wing area: 803 sq ft (74.60 sq m)
Armament:	Provisions for one flexibly mounted .30 calibre machine gun in rear cockpit plus two 230 lb (104 kg) bombs or depth charges under the wings	
Cost:	Unknown	
Affiliated Units:	Nos. 1, 3 and 4 (Operations) Sqns and RCAF Stations Dartmouth, Jericho Beach, Rockcliffe, Roberval and Shirleys Bay	
Serial Numbers:	Various between G-CYAE–G-CYGU	

This is a view of a restored museum example of the JN-4 Canuck in original RFC (Canada) training colours. (CF photo)

Curtiss CANUCK (JENNY)

During the First World War, the Royal Flying Corps (RFC) began setting up flying schools in Canada starting in 1916. The RFC selected the Curtiss JN-3 Jenny as the training aircraft of choice. The type was then manufactured in Canada under license by Canadian Aeroplanes Limited, and the Canadian version was given the designation JN-4 Canuck. The Canuck went on to become, numerically, the most important trainer of Canadian and British pilots, and the design lent itself to a wide variety of training purposes including air to air gunnery, photography and wireless radio training. RFC training schools in both Canada and the US used the aircraft extensively. After the war, numerous JN-4 Canucks made their way into civilian use. The Canadian government received over 50 JN-4s as part of a post-war Imperial gift, but only 10 of these aircraft saw active use in the Canadian Air Force (CAF) of the 1920s. By the time the RCAF was created, the aircraft were obsolete and worn out and they were quickly retired.

DETAILS

Designation: N/A
Role: Trainer
No: 2,320 / 10
Model No: JN-4
TOS: 1917
Service: RFC/CAF
Marks: N/A
SOS: 1923

SPECIFICATIONS

Manufacturer:	Canadian Aeroplanes Limited under licence	
Crew/Passengers:	Two pilots in tandem or one pilot plus one passenger	
Power Plant:	One 90 hp Curtiss OX-2 or OX-5 piston engine	
Performance:	Max speed: 74 mph (121 km/h) Service ceiling: 11,000 ft (3,353 m)	Cruising speed: 60 mph (96.5 km/h)
Weights:	Empty: 1,390 lb (631 kg)	Gross: 1,920 lb (872 kg)
Dimensions:	Upper span: 43 ft 7.38 in (13.29 m) Length: 27 ft 2.5 in (8.29 m) Wing area: 361 sq ft (33.5 sq m)	Lower span: 34 ft 8.3 in (10.57 m) Height: 9 ft 11 in (3.02 m)
Armament:	Provision for forward-firing Vickers machine gun or flexible Scharff-ring mounted machine gun in rear cockpit	
Cost:	US$5,465	
Affiliated Units:	Camp Borden	
Serial Numbers:	G-CYCN–G-CYCP, G-CYDC–G-CYDG, G-CYDV, G-CYDW	

An RCAF Tomahawk from 400 Sqn having an engine run completed in England. (RCAF photo PL- 55778)

Another Tomahawk from 400 Sqn taxis out for takeoff in England. (RCAF photo PL-34966)

These are two views of Curtiss P-40 Kittyhawk 1076, preserved as part of the National Aeronautical Collection at the Canada Aviation and Space Museum. (RCAF photos PCN-3903 and REC82-2081)

Curtiss TOMAHAWK/KITTYHAWK

The Curtiss P-40 was a development of the company's radial engine P-36 and the experimental YP-37 fighters. The P-40 variants became among the most widely used fighters of the Second World War, employed by over a dozen air forces. The RAF, and hence the RCAF, referred to all P-40 and B and C models as Tomahawks and P-40 D and later models as Kittyhawks. Four overseas RCAF squadrons (Sqns) were stationed in England; Nos. 400 and 403 Sqns flew Tomahawks on defensive patrols, reconnaissance and army cooperation, while 414 and 430 Sqns trained on them before converting to Mustangs. By March 1943, however, the Tomahawk was badly outclassed and these Sqns had all converted to either Spitfires or Mustangs. A small number of Tomahawk aircraft were brought on strength as part of the Home War Establishment and were used for technical training purposes only.

The Curtiss Kittyhawk was a further improvement on the company's successful P-40 fighter. It included a more powerful engine, additional armament, provision for the carriage of bombs plus numerous other design changes. The P-40 variants became among the most widely used fighters of the Second World War, employed by over a dozen air forces. Kittyhawks came into service with the RCAF in late 1941, but only in Canada. They were flown by Nos. 14, 111, 118, 130, 132, 133, 135 and 163 Sqns of the Home War Establishment. Nos. 14 and 111 Sqns were deployed and operated in the Aleutian campaign. Here, No. 111 Sqn would receive the P-40K Warhawk, provided by the United States Army Air Force (USAAF), to allow greater interoperability in the supply chain. They turned them over to No. 14 Sqn. On September 25, 1942, Squadron Leader K. A. Boomer, Commanding Officer of No. 111 Squadron, destroyed a Japanese Rufe float-plane during a fighter sortie in a Kittyhawk over Kiska in the Aleutians. This proved to be the first and only RCAF air combat victory over North American soil. Two pilots from No. 133 Sqn each shot down a Japanese balloon bomb in February and March 1945.

DETAILS

Designation: N/A
Model No: P-40A, B, D, E, K, H
Marks: I, IA, IIB, III, IV
Role: Fighter
TOS: 1943 (Tomahawk) 1941 (Kittyhawk) 1942 (Warhawk)
SOS: 1946 (Tomahawk and Kittyhawk)
No: 4 x Tomahawk, 143 x Kittyhawk, 21 x Warhawk
Service: RCAF

SPECIFICATIONS (For the Tomahawk IIB)

Manufacturer:	Curtiss Wright Aircraft	
Crew:	One pilot	
Power Plant:	One 1,090 hp Allison V-1710-C-15 piston engine	
Performance:	Max speed: 328 mph (528 km/h) Cruising speed: 278 mph (447 km/h) Service ceiling: 30,500 ft (9,296 m) Range: 945 mi (1,521 km)	
Weights:	Empty: 5,615 lb (2,546 kg)	Gross: 6,789 lb (3,079 kg)
Dimensions:	Span: 37 ft 4 in (11.38 m) Height: 10 ft 7 in (3.23 m)	Length: 31 ft 8 in (9.65 m) Wing area: 236 sq ft (21.95 sq m)
Armament:	Two 0.50 in (12.7 mm) nose-mounted machine guns and two .303 in (7.7 mm) wing-mounted machine guns	

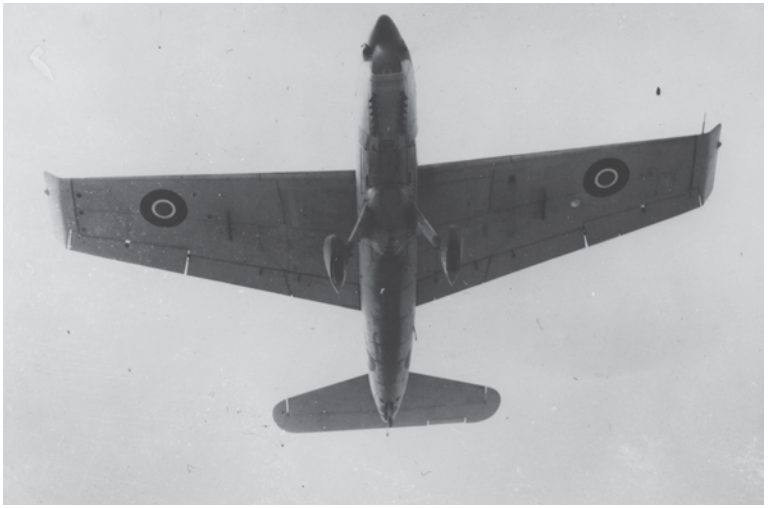
SPECIFICATIONS (for the Kittyhawk III)

Manufacturer:	Curtiss Wright Aircraft	
Crew/Passengers:	One pilot	
Power Plant:	One 1,600 hp Allison V-1710-81 piston engine	
Performance:	Max speed: 362 mph (583 km/h) Service ceiling: 30,000 ft (9,144 m) Range: 1,190 mi (1,915 km)	
Weights:	Empty: 6,400 lb (2,903 kg)	Gross: 8,500 lb (3,856 kg)
Dimensions:	Span: 37 ft 4 in (11.38 m) Height: 10 ft 7 in (3.23 m)	Length: 31 ft 2 in (9.50 m) Wing area: 236 sq ft (21.95 sq m)
Armament:	Six 0.5 in (12.7 mm) wing-mounted machine guns plus up to 1,000 lb (454 kg) in bombs	
Cost:	US$45,000	
Affiliated Units:	Tomahawk: Nos. 400, 403, 414 and 430 Sqns overseas and No. 1 TTS Kittyhawk: Nos. 14, 111, 118, 130, 132, 133, 135 and 163 Sqns Warhawk: Nos. 14 and 111 Sqns	
Serial Numbers:	Tomahawk: A314–A317, AH747–AK878; Kittyhawk: 720–1099; Warhawk: various between 42-45003–42-45997	

The Curtiss Seamew was not a very successful design and only served in the training role. (RCAF photo via the Griffin Library Collection)

Curtiss SEAMEW

In 1937, the United States Navy (USN) drew up a specification for a high-speed scouting monoplane to replace its biplanes aboard the fleet's battleships and cruisers. The resulting competitor from the Curtiss Company was a slender, mid-wing monoplane with a low aspect-ratio wing and a large central float as well as underwing stabilizers. Test flights on the initial configuration revealed serious stability and control problems, and upturned wing tips and an enlarged tail fin were subsequently introduced. Although designed as a seaplane, the type could also be employed as a land plane. Under the pressure of war, the type was selected by Britain for Royal Navy use, and 250 aircraft were subsequently procured under lend-lease arrangements. The British aircraft were the S03C-2C variant that featured a 24-volt electric system, a V-770-8 engine as well as improved radios and hydraulic brakes. The type proved to be operationally disappointing and was relegated to training duties. The Royal Canadian Navy (RCN) consequently acquired a number of the type for its own training purposes here in Canada, where they were used at the No. 1 Naval Air Gunnery School in Yarmouth, NS. Again, however, they proved to be disappointing. The undercarriage design resulted in a number of accident write-offs, as the aircraft were inadvertently nosed over during landing or taxiing.



DETAILS

Designation: N/A **Model No:** S03C-2C **Marks:** I
Role: Scouting and observation seaplane, trainer
TOS: 1943 **SOS:** 1944
No: 82 **Service:** RCN

SPECIFICATIONS

Manufacturer:	Curtiss Aeroplane Division	
Crew/Passengers:	One pilot and one observer in tandem	
Power Plant:	One 600 hp Ranger SGV-770-6 piston engine	
Performance:	Max speed: 172 mph (279 km/h)	Cruising speed: 125 mph (201 km/h)
	Service ceiling: 15,800 ft (4,816 m)	Range: 1,150 mi (1,851 km)
Weights:	Empty: 4,800 lb (2,177 kg)	Gross: 7,000 lb (3,175 kg)
Dimensions:	Span: 38 ft 0 in (11.55 m)	Length: 35 ft 8 in (10.87 m)
	Height: 14 ft 2 in (4.31 m)	Wing area: 293 sq ft (27.22 sq m)
Armament:	Provisions for one fixed forward-firing .30 calibre machine gun and one flexibly mounted .50 calibre machine gun in rear cockpit, plus two 100 lb (45 kg) bombs or 325 lb (147 kg) depth charges under the wings and up to 500 lb (226.7 kg) in stores under the fuselage	
Cost:	Unknown	
Affiliated Units:	No. 1 Naval Air Gunnery School, Yarmouth, NS	
Serial Numbers:	Various between FN480–FN652 and JW576–JW642	

Curtiss Reid RAMBLER

The Curtiss Aeroplane and Motor Company of the United States acquired the Canadian-origin Reid Aircraft Company in 1928 and was renamed the Curtiss-Reid Aircraft Company. The Curtiss-Reid Rambler was a Canadian-designed and Canadian-built trainer. It was intended to fill the needs of flying clubs springing up across Canada, and it possessed several innovative features. It was a sesquiplane with folding wings to facilitate storage, and it incorporated Warren truss bracing that eliminated the need for bracing wires. The interplane struts were streamline tubing. The RCAF evaluated the aircraft type and, despite already having a plethora of other trainers, it elected to purchase a small number of the aircraft. The Ramblers enjoyed relatively productive and lengthy careers, lasting well into the Second World War.

DETAILS

Designation: N/A
Role: Trainer
No: 9
Model No: N/A
TOS: 1929
Service: RCN
Marks: I, II
SOS: 1944

SPECIFICATIONS

Manufacturer:	Curtiss-Reid Aircraft Company	
Crew:	Two pilots in tandem	
Power Plant:	Either one 85/100 hp D. H. Gipsy I or 120 hp D. H. Gipsy II engine	
Performance:	Max speed: 112 mph (180 km/h)	Service ceiling: 14,000 ft (4,270 m)
Weights:	Empty: 1,075 lb (488 kg)	
Dimensions:	Span: 33 ft 0 in (10.06 m)	Height: 8 ft 0 in (2.44 m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	No. 1 Flying Training School	
Serial Numbers:	Seven x Mk I, of which six were numerically serialized 145–150; A62 (an ex-CF-BV); two x Mk II, G-CYXC, G-CYXD	

The Curtiss-Reid Rambler trainer displayed very clean lines without the more normal bracing wires of that design period.
(CF photo [top] and Canada Aviation and Space Museum photo)


CANADIAN ARMED FORCES
AIR TRANSPORT COMMAND
507

Dassault FALCON

The Dassault Falcon was a short- to medium-range transport and executive jet, which was also known as the Mystere 20 in civilian service. In Canadian Forces (CF) service, the aircraft began as a VIP executive transport for ferrying senior government and defence officials. The aircraft's high-performance robust design also allowed the CF to convert the aircraft to an electronic warfare (EW) variant. 412 Transport Squadron at Uplands, Ottawa, employed the transport versions, while the EW variants were flown by 414 Electronic Warfare Support Squadron (414 EWS Sqn). The Falcons were retired in 1988 and many of the ex-CF aircraft continued in the EW training role in private hands.

DETAILS

Designation: CC-117, EW-117
Model No: 20
Role: Transport and electronic warfare
TOS: 1967
SOS: 1988
No: 8
Service: RCAF/CF

SPECIFICATIONS

Manufacturer:	Dassault Aircraft	
Crew/Passengers:	Two pilots and up to ten passengers	
Power Plant:	Two General Electric 4,700 lb (2,132 kg) thrust CF700-2D-2 turbofan engines	
Performance:	Max speed: 560 mph (901 km/h)	Cruising speed: 511 mph (823 km/h)
	Service ceiling: 42,000 ft (12,802 m)	Range: 964 mi (1,552 km)
Weights:	Empty: 16,178 lb (7,530 kg)	Gross: 28,660 lb (13,000 kg)
Dimensions:	Span: 53 ft 6 in (16.30 m)	Length: 56 ft 4 in (17.15 m)
	Height: 17 ft 7 in (5.32 m)	Wing area: 440 sq ft (41.0 sq m)
Armament:	None, but chaff and flare dispensers on EW variant	
Cost:	Can$1,330,000	
Affiliated Units:	Nos. 412 and 414 EWS Sqns and Airborne Sensing Unit	
Serial Numbers:	20501–20508, with unification became 117501–117508	

A view of the white executive-transport version of the CC-117 Falcon and of a much more colourful airborne-sensor variant. (CF photos)

A CAF De Havilland D.H.4, in early civil air-board markings as G-CYDK, is seen here being refuelled at Camp Borden. (RCAF photo)

De Havilland D.H.4

In 1919, as part of an Imperial Gift following Canada's contributions to the First World War, 114 aircraft were donated to Canada. These aircraft, along with 12 airships and a vast quantity of other materiel (including hangars and vehicles, which were also included in the Imperial Gift), were to form the nucleus of Canada's new home-based air force. The Canadian Air Force (CAF) was authorized on 18 February 1920, and it was to be a non-permanent organization. Former officers and men of the RAF and the CAF in England were invited to serve for up to five weeks per year, with operations initially centred at Camp Borden, Ontario. Twelve De Havilland D.H.4 aircraft were included in the Imperial Gift. Built in quantity by both the British and the US militaries, D.H.4s had already been flown by Canadians in combat serving in both the RFC and RNAS. The type was used on day bombing raids and reconnaissance operations. In the post-war period, the D.H.4 was used by CAF pilots for refresher training, aerial photography and forestry patrols.

DETAILS

Designation: N/A
Model No: D.H.4
Role: Utility
TOS: 1920
SOS: 1928
No: 12
Service: RFC/RNAS and CAF/RCAF

SPECIFICATIONS

Manufacturer:	De Havilland	
Crew:	One pilot and one bomber/gunner or two pilots	
Power Plant:	Either one 250 hp Rolls-Royce Eagle III or VI (322 hp), VII (325 hp), VIII (375 hp) or 420 hp Liberty engines	
Performance:	Max speed: 119 mph (192 km/h)	
	Service ceiling: 16,000 ft (4,877 m)	Endurance: 3.2 hours
Weights:	Empty: 2,010 lb (912 kg)	Gross: 3,146 lb (1,427 kg)
Dimensions:	Span: 42 ft 5 in (12.93 m)	Length: 30 ft 8 in (9.35 m)
	Height: 10 ft 5 in (3.17 m)	Wing area: 440 sq ft (40.88 sq m)
Armament:	Provisions for twin synchronized Vickers machine-guns forward and one Lewis machine gun in a flexible mount aft, plus up to 450 lb (204 kg) in light bombs.	
Cost:	None (Imperial Gift)	
Affiliated Units:	RCAF Stations Camp Borden, ON; High River, AB; and various RCAF stations across the country	
Serial Numbers:	Various between G-CYBO–G-CYEM	

This photo illustrates a D.H.9 that participated in the first trans-Canada flight by CAF aircraft. (RCAF photo)

De Havilland D.H.9a

In 1919, twelve De Havilland D.H.9a aircraft were donated to Canada as part of the Imperial Gift. Built in quantity by both the British and the US militaries, D.H.9as, popularly known as the "Nine Acks," had already been flown by Canadians in combat serving in the Royal Flying Corps (RFC). The type had been used on day-bombing raids and reconnaissance operations. In the immediate post-war period, D.H.9as served with No. 2 Squadron (Sqn) of the CAF, which had been formed in England after the Armistice. In the later post-war period, the D.H.9a was used by CAF pilots for refresher training, aerial photography and forestry patrols. The aircraft's principal fame in this period was in the Air Board's trans-Canada flight of 1920. The purpose of the flight was to draw the Canadian public's attention to the Air Board and the CAF as well as to the capability of their post-war aircraft for future airmail and passenger operations. The flight was accomplished in relays of crews and aircraft. They left Halifax, Nova Scotia, on 7 October with a Fairey seaplane. In Winnipeg, the seaplanes and flying boats used throughout the eastern leg of the journey were replaced by three D.H.9as, of which only one (G-CYBF) eventually made it to Vancouver on 17 October, after 45 hours across 11 days spent airborne, covering 3,265 miles (5,834 km).

DETAILS

Designation: N/A
Model No: D.H.9a
Role: Utility
TOS: 1920
SOS: 1929
No: 12
Service: RFC and CAF/RCAF

SPECIFICATIONS

Manufacturer:	De Havilland	
Crew:	One pilot and one bomber/gunner or two pilots	
Power Plant:	Either one 230 hp Siddeley Puma or one 350 hp Rolls-Royce Eagle or one 400 hp Liberty engine	
Performance:	Max speed: 114 mph (183 km/h)	
	Service ceiling: 16,500 ft (5,029 m)	Endurance: 5.75 hours
Weights:	Empty: 2,800 lb (1,270 kg)	Gross: 4,900 lb (2,223 kg)
Dimensions:	Span: 46 ft 0 in (14.02 m)	Length: 30 ft 0 in (9.14 m)
	Height: 10 ft 9 in (3.28 m)	Wing area: 488 sq ft (45.36 sq m)
Armament:	Provisions for one synchronized Vickers machine gun forward and one Lewis machine gun in a flexible mount aft, plus up to 450 lb (204 kg) in light bombs	
Cost:	None (Imperial Gift)	
Affiliated Units:	RCAF Station Camp Borden, ON; RCAF Station High River, AB; and various RCAF stations across the country	
Serial Numbers:	E991 and various between G-CYAD–G-CYDO	

This long line of RCAF Gipsy Moth trainers belonged to No. 10 (AC) Sqn at the time, and the photo was taken in September 1930. (RCAF photo from the Jack McNulty Collection)

De Havilland GIPSY MOTH / GENET MOTH

In February 1925, a prototype of the De Havilland Moth flew in Britain and was recognized as an outstanding trainer. Quickly put into full production, the aircraft was manufactured with a variety of different engines, the most popular being the A.D.C. Cirrus and D.H. Gipsy engines. Depending on the engine installation chosen, the aircraft was then known by one of the Gipsy Moth, Cirrus Moth or Genet Moth names. The RCAF initially acquired the Moth as an ab initio trainer to replace its Avro 504s. The aircraft proved to be very popular and versatile; it could be flown either on wheels or with floats.

DETAILS

Designation: N/A
Role: Trainer
No: 89 x Gipsy, 2 x Genet

Model No: D.H.60
TOS: 1928
Service: RCAF

Marks: I, III, V
SOS: 1948

SPECIFICATIONS

Manufacturer: De Havilland
Crew: Two pilots
Power Plant: Either one 100 hp D.H. Gipsy I or one 120 hp D.H. Gipsy II or one 95 hp Genet engine

Performance: Max speed: 95 mph (152 km/h) Cruising speed: 85 mph (137 km/h)
Service ceiling: 17,000 ft (5,180 m)
Weights: Empty: 890 lb (404 kg) Gross: 1,550 lb (703 kg)
Dimensions: Span: 30 ft 0 in (9.14 m) Length: 23 ft 8.5 in (7.23 m)
Height: 8 ft 9.5 in (2.68 m) Wing area: 242 sq ft (22.48 sq m)

Armament: None
Cost: Unknown
Affiliated Units: A wide variety of pre-war RCAF auxiliary squadrons and flying clubs
Serial Numbers: Gipsy Moth (55–58, 64, 70–91, 102–107, 117–122, 151–168, 212, 223)
Genet Moth (27–28)

Cirrus Moth. (Anderson photo)

Genet Moth. (RCAF photo)

An RCAF De Havilland Hawk Moth in a float-plane configuration is seen here laid up on a beaching dolly. The float-plane configuration revealed structural problems with the design.
(Library and Archives Canada photo PA62799)

De Havilland HAWK MOTH

The De Havilland D.H.75 Hawk Moth first flew in 1928. It was a four-seat-cabin monoplane designed for light transport. It featured composite construction, including a welded steel fuselage and tail as well as a wooden-wing substructure and all-over fabric covering. The first aircraft was fitted with a new 198 hp De Havilland Ghost engine, but it proved to be underpowered and the performance was disappointing. Consequently, the second aircraft was powered by a 240 hp Armstrong Siddeley Lynx engine and had an increased wing-span. Redesignated as the D.H.75A, this aircraft was exported to Canada in 1929 and then demonstrated to the RCAF, both on wheels and skis. The machine was subsequently purchased for general transportation duties. Two further examples were also acquired in 1930 for the same purpose. The RCAF's experience with the type was not good. The undercarriage design was flawed and caused several crashes. One aircraft was written off as a result. Whether operating on wheels or skis, weakness in the wing-root attachment fittings necessitated expensive repairs. Attempts to operate the aircraft on floats revealed further structural problems, and the aircraft also suffered from a limited payload capability. The continuing problems resulted in the type's premature retirement in 1934, and the surviving aircraft were cut up for training aids in 1935.

The RCAF De Havilland Hawk Moths were also flown using skis. Aircraft G-CYVM is shown here at Camp Borden. (RCAF photo RC2429)

DETAILS

Designation: N/A
Model No: D.H.75A
Role: Utility
TOS: 1930
SOS: 1934
No: 3
Service: RCAF

SPECIFICATIONS

Manufacturer:	De Havilland	
Crew/Passengers:	One pilot and up to three passengers, plus provisions for dual control	
Power Plant:	One 240 hp Armstrong Siddeley Lynx Mk VIA piston engine	
Performance:	Max speed: 128 mph (206 km/h)	Cruising speed: 105 mph (169 km/h)
	Service ceiling: 15,500 ft (4,724 m)	Range: 560 mi (901 km)
Weights:	Empty: 2,380 lb (1,080 kg)	Gross: 3,800 lb (1,724 kg)
Dimensions:	Span: 47 ft 0 in (14.33 m)	Length: 28 ft 10 in (8.79 m)
	Height: 9 ft 0 in (2.74 m)	Wing area: 334 sq ft (31.03 sq m)
Armament:	None	
Cost:	First aircraft, Can$24,885; subsequent aircraft, Can$22,410	
Affiliated Units:	RCAF Stations Trenton and Camp Borden	
Serial Numbers:	G-CYVD, G-CYVL and G-CYVM	

RCAF Puss Moth G-CYUT clearly displays its high-wing monoplane configuration in this photograph. (RCAF photo HC4795)

De Havilland PUSS MOTH

The wide success of the De Havilland Gipsy Moth led to the development of a faster aircraft, with a welded-tube fuselage featuring an enclosed cabin for more speed and comfort. The result was a high-wing monoplane known as the Puss Moth, which was essentially a two-seat aircraft, although three people could be carried. The RCAF acquired the Puss Moth for instrument training and as a general-communication, high-speed touring aircraft. An unusual feature of the aircraft was an air brake applied by turning the undercarriage strut 90 degrees.

DETAILS

Designation: N/A
Role: Utility
No: 19

Model No: D.H.80A
TOS: 1931
Service: RCAF

Marks: N/A
SOS: 1944

SPECIFICATIONS

Manufacturer: De Havilland
Crew/Passengers: One pilot and up to two passengers
Power Plant: One 130 hp D.H. Gipsy Major engine

Performance: Max speed: 128 mph (206 km/h); Cruising speed: 105 mph (169 km/h)
Service ceiling: 17,500 ft (5,334 m); Range: 300 mi (483 km)
Weights: Empty: 1,265 lb (574 kg); Gross: 2,050 lb (930 kg)
Dimensions: Span: 36 ft 9 in (11.20 m); Length: 25 ft 0 in (7.62 m)
Height: 6 ft 10 in (2.08 m); Wing area: 222 sq ft (20.62 sq m)

Armament: None
Cost: Unknown
Affiliated Units: RCAF Station Ottawa, RCAF Station Camp Borden and various other locations across the country
Serial Numbers: G-CYUR–G-CYUU, 169–181, A44, A50

This is a view of restored RCAF Tiger Moth 4861. Note the canopy installed for Canadian winter operations. The trainer could also be operated on skis. (Canadian Forces photo)

De Havilland TIGER MOTH / MENASCO MOTH

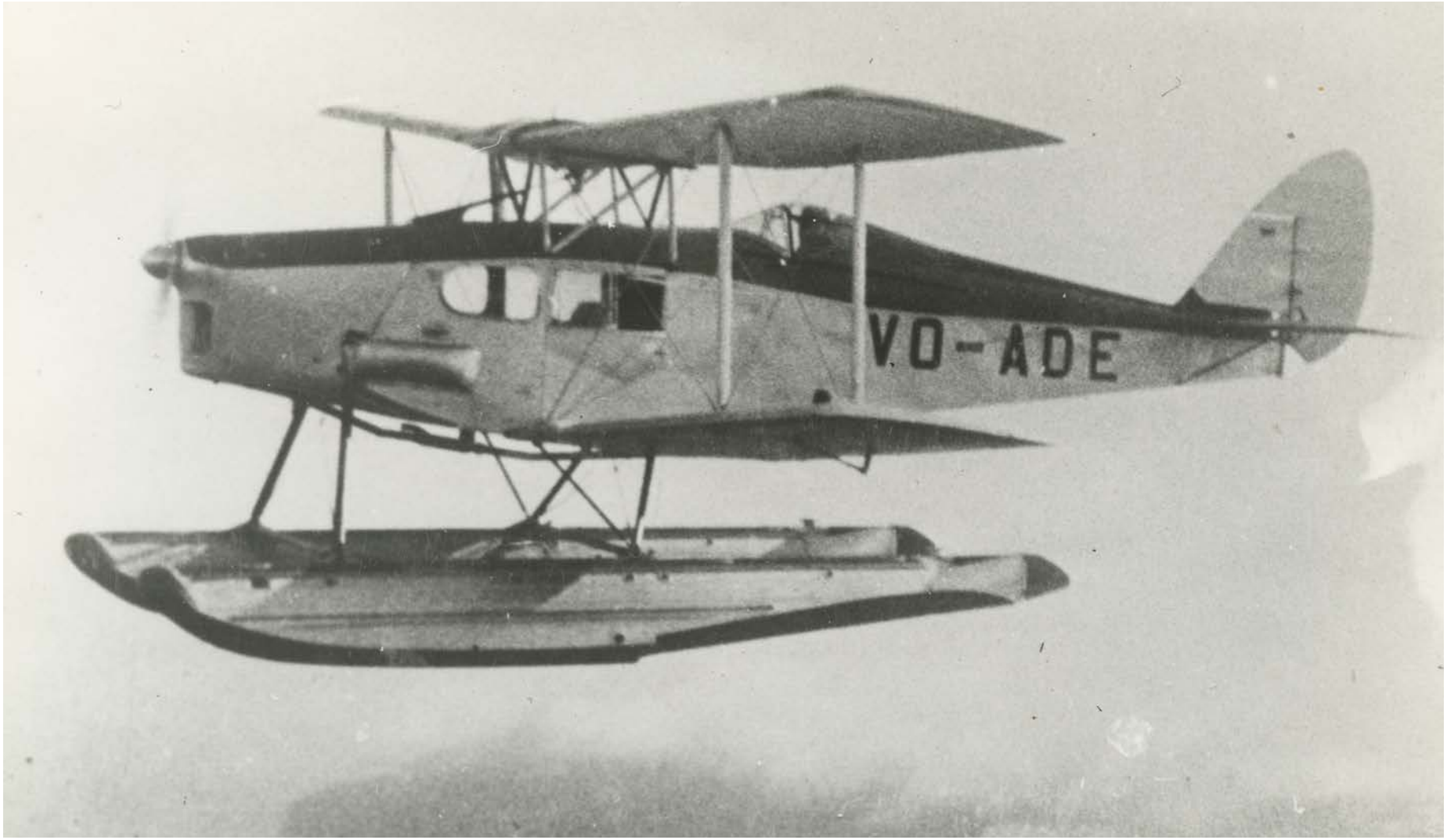
The D.H.82 Tiger Moth was the last in a long line of biplanes built by the De Havilland Aircraft Company. The Tiger Moth first entered service with the Royal Air Force in 1931 and became the standard elementary trainer for the next two decades. The RCAF adopted the type in 1938, and it also became the standard ab initio trainer at the Canadian elementary flying training schools under the British Commonwealth Air Training Plan (BCATP). Canadian production aircraft differed slightly from the British versions and featured two-piece cowlings and heated cockpits as well as large, sliding canopies. A shortage of the original 145 hp Gipsy Major engines further led to some Canadian versions being equipped with 160 hp Menasco Pirate engines, and this subtype was often referred to as a Menasco Moth. The type was generally well liked by pilots and could be used for aerobatic training as well as blind-flying instruction.

DETAILS

Designation: N/A
Model No: D.H.82 A and C
Role: Trainer
TOS: 1938
SOS: 1947
No: 1,546
Service: RCAF

SPECIFICATIONS

Manufacturer:	De Havilland	
Crew:	Up to two pilots	
Power Plant:	One 145 hp Gipsy Major or one 160 hp Menasco Pirate in-line piston engine	
Performance:	Max speed: 109 mph (175 km/h)	Cruising speed: 93 mph (150 km/h)
	Service ceiling: 13,600 ft (4,145 m)	Range: 302 mi (486 km)
Weights:	Empty: 1,115 lb (506 kg)	Maximum takeoff: 1,770 lb (813 kg)
Dimensions:	Span: 29 ft 4 in (8.94 m)	Length: 23 ft 11 in (7.24 m)
	Height: 8 ft 9.5 in (2.68 m)	Wing area: 239 sq ft (22.20 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	A wide variety of BCATP EFTSs, plus various other locations across the country	
Serial Numbers:	Various between 238–9695	



The RCAF employed one De Havilland Fox Moth, shown here, on communication duties in Gander, Newfoundland, in support of RAF Ferry Command. (Jackson Collection photo)

De Havilland FOX MOTH

The De Havilland Fox Moth was designed in 1932 as a light, economical transport, and it borrowed heavily from the De Havilland Tiger Moth design, using many of its components. The aircraft featured a welded-tube fuselage with an enclosed cabin for speed and comfort. Eight British-built Fox Moths were imported into Canada between 1932 and 1935. The RCAF acquired a single Fox Moth for use at the airfield in Gander, Newfoundland, providing general transportation, aerial survey, search and rescue and meteorological-survey duties. Although Newfoundland was not a province of Canada at that time, the RCAF had been operating in Newfoundland since 1940, and an agreement signed in 1941 transferred responsibility for the administration and operation of Newfoundland airfields to Canada for the duration of the Second World War.

DETAILS

Designation: N/A
Role: Utility
No: 1

Model No: D.H.83
TOS: 1941
Service: RCAF

Marks: N/A
SOS: 1945

SPECIFICATIONS

Manufacturer:	De Havilland	
Crew/Passengers:	One pilot and up to four passengers or 600 lb (272 kg) of freight	
Power Plant:	One 130 hp D.H. Gipsy Major engine	
Performance:	Max speed: 110 mph (172 km/h)	Cruising speed: 96 mph (160 km/h)
	Service ceiling: 10,500 ft (5,334 m)	Range: 415 mi (668 km)
Weights:	Empty: 1,219 lb (552 kg)	Gross: 2,100 lb (953 kg)
Dimensions:	Span: 30 ft 10.63 in (9.41 m)	Length: 25 ft 9 in (7.85 m)
	Height: 8 ft 4.75 in (2.56 m)	Wing area: 247 sq ft (22.9 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	RCAF Station Gander	
Serial Number:	A135, originally VO-ADE	

Hornet Moth CF-EEJ. (Photo courtesy of the Griffin Library)

De Havilland HORNET MOTH

The RCAF purchased a single De Havilland Hornet Moth in the 1930s. The RCAF acquired the Hornet Moth as a possible replacement for the successful Gipsy Moth aircraft already in RCAF service. It is likely the Hornet Moth was intended for instrument training and as a general-communication, high-speed touring aircraft. However, it was not as economical to operate as the Gipsy Moth, and consequently, no further purchases were made. Few details of its use are available.

A view of a De Havilland Hornet Moth similar to that used by the RCAF. (Photo courtesy of T. F. J. Leversedge)

DETAILS

Designation: N/A
Role: Utility/trainer
No: 1

Model No: D.H.87B
TOS: 1930s, precise info N/A
Service: RCAF

Marks: N/A
SOS: 1930s, precise info N/A

SPECIFICATIONS (For the B model)

Manufacturer: De Havilland
Crew/Passengers: One pilot and up to two passengers
Power Plant: One 130 hp D.H. Gipsy Major engine

Performance: Max speed: 124 mph (200 km/h); Cruising speed: 105 mph (169 km/h)
Service ceiling: 14,300 ft (4,359 m); Range: 623 mi (1,003 km)
Weights: Empty: 1,192 lb (541 kg); Gross: 1,925 lb (873 kg)
Dimensions: Span: 31 ft 4 in (9.55 m); Length: 24 ft 11.5 in (7.61 m)
Height: 7 ft 2 in (2.18 m); Wing area: 220.5 sq ft (20.49 sq m)

Armament: None
Cost: Unknown but less than £800
Affiliated Units: Unknown
Serial Numbers: Unknown

This photo of De Havilland Dragonfly 7623 at RCAF Station Trenton in October 1944 illustrates its sleek lines and highly tapered wings. (LAC photo)

De Havilland DRAGONFLY

When the Royal Canadian Mounted Police (RCMP) organized its Air Division, it acquired a small fleet of three De Havilland Dragonfly aircraft as the main element of the RCMP's aerial transport. The versatile, light, twin-engine biplane provided for up to a total of five crew and passengers. An elegant and streamlined design, the aircraft featured a plywood fuselage skin and high-aspect-ratio wings. At the outbreak of the Second World War, the scarcity of suitable aircraft for the RCAF eventually led to the requisitioning of all RCMP Dragonflies for military use. In addition, a further three Dragonflies were acquired for RCAF use, including the De Havilland company's demonstrator and two new, unsold aircraft. The RCAF employed the aircraft as light-transport and communication aircraft for the duration of the hostilities. Two aircraft were written off in RCAF service. At the war's end, the RCAF returned the surviving aircraft to civilian use.

DETAILS

Designation: N/A
Model No: D.H.90
Role: Utility
TOS: 1940
SOS: 1945
No: 6
Service: RCAF

SPECIFICATIONS

Manufacturer:	De Havilland	
Crew/Passengers:	One pilot and up to four passengers	
Power Plant:	Two 130 hp De Havilland Gipsy I piston engines	
Performance:	Max speed: 144 mph (232 km/h)	Cruising speed: 125 mph (201 km/h)
	Service ceiling: 16,000 ft (4,877 m)	Range: 885 mi (1,424 km)
Weights:	Empty: 2,500 lb (1,134 kg)	Gross: 4,000 lb (1,814 kg
Dimensions:	Span: Upper 43 ft 0 in (13.11 m)	Lower 38 ft 6 in (11.73 m)
	Length: 31 ft 8 in (9.65 m)	Height: 9 ft 2 in (2.79 m)
	Wing area: 256 sq ft (23.78 sq m)	
Armament:	None	
Cost:	£2,650	
Affiliated Units:	No. 1 Training Command, No. 2 Training Command, No. 1 Communications and Ferry Flight	
Serial Numbers:	7623–7628	

This is a rare, full-colour view of wartime RCAF Mosquito B Mk XXs. (RCAF photo RNC-647)

De Havilland MOSQUITO

The De Havilland Mosquito was called either the "Wooden Wonder" or the "Termite's Dream" because of its unusual plywood construction. Although its construction did provide drawbacks in tropical climates, in both the European theatre and in Canada the aircraft proved to be outstandingly successful. Its wooden construction made it one of the first stealthy aircraft in an era of radar. It was probably one of the most versatile aircraft of the Second World War, being used in fighter, bomber, reconnaissance, anti-shipping and even transport roles. Bomber and reconnaissance variants carried no defensive armament, relying instead on their high speed for protection. A total of six Canadian squadrons flew Mosquitos in a variety of tasks and roles. No. 400 Sqn flew the aircraft on photographic-reconnaissance missions. Four RCAF night fighter (NF) sqns (Nos. 406, 409, 410 and 418) flew Mosquitos on night-fighter and intruder operations. During the V1 pilotless-missile-blitz attacks of 1944, No. 409 Sqn Mosquitos destroyed 10 missiles and No. 418 Sqn shot down a total of 82 V1s. No. 404 Sqn was also equipped with Mosquitos, employing them on coastal anti-shipping and antisubmarine strikes. A total of 7,781 Mosquitos were built, including 1,032 at the De Havilland (Canada) plant in Toronto.

DETAILS

Designation: N/A **Model No:** D.H.98
Marks: II, XII, FB Mk VI, FB Mk 21, FB Mk 26, FB Mk XXX, B Mk VII, B Mk XX, B Mk 25, NF Mk I, NF Mk XII, PR Mk VIC, PR Mk XVI, T Mk 27
Role: Bomber, reconnaissance, night fighter, coastal strike
TOS: 1943 **SOS:** 1951
No: 444 **Service:** RCAF

SPECIFICATIONS (for the Mark II)

Manufacturer:	De Havilland	
Crew:	Crew of two	
Power Plant:	Two 1,230 hp Rolls-Royce Merlin 21 engines	
Performance:	Max speed: 380 mph (612 km/h)	Cruising speed: 300 mph (483 km/h)
	Service ceiling: 36,000 ft (10,973 m)	Range: 1,860 mi (2,990 km)
Weights:	Empty: 14,100 lb (6,396 kg)	Gross: 17,500 lb (7,938 kg)
Dimensions:	Span: 52 ft 2 in (16.5 m)	Length: 40 ft 6 in (12.34 m)
	Height: 15 ft 3.5 in (4.66 m)	
Armament:	For Mark II: None, but provisions for up to four 500 lb (227 kg) bombs and, in later marks, up to 4,000 lb (1,814 kg). For night-fighter variants, armament consisted of four 20 mm Hispano cannons and four .303 in (7.7 mm) Browning machine guns	
Cost:	Unknown	
Affiliated Units:	Nos. 8 and 36 OTUs as well as Nos. 133(F), 400, 404, 406, 409, 410 and 418 Sqns	
Serial Numbers:	Various between HJ857–HJ999, LR533–LR536, KA101–KA999, KB101–KB642	

This Mosquito, NFXI MM466, belonged to No. 409 Sqn and is shown here deployed to a forward base in France. (RCAF photo)

An unidentified Mosquito belonging to the RCAF's No. 418 Sqn is shown receiving some field maintenance. (RCAF photo PL-29463)

This is a quartet of Vampires from No. 438 Squadron. (RCAF photo #PC824)

De Havilland VAMPIRE

On 20 September 1940, a prototype of the De Havilland Vampire became the third British jet-aircraft type to fly. It was fully introduced into service too late, however, to see active combat during the Second World War. Canada briefly evaluated the second British jet, the Gloster Meteor, and after the acquisition of a sole Mark I De Havilland Vampire, eventually selected the Vampire as the first jet-powered aircraft for full-scale RCAF service. The first of 85 Mark III aircraft began to arrive in 1948. The aircraft were primarily assigned to RCAF auxiliary squadrons. 421 Squadron at Chatham, New Brunswick, was the only Regular Force squadron to employ the aircraft, although several used it. The unusual design of the aircraft featured a variety of materials. While the aircraft was primarily made of metal, the cockpit section featured a composite balsa-wood construction similar to the De Havilland Mosquito. RCAF Vampires were rapidly superseded in the jet age, and the last examples retired in 1958.

DETAILS

Designation: N/A
Role: Fighter
No: 86

Model No: D.H.100
TOS: 1946
Service: RCAF

Marks: I, III, V
SOS: 1958

SPECIFICATIONS (for the Mark III)

Manufacturer:	De Havilland	
Crew:	One pilot	
Power Plant:	One 3,100 lb (1,405 kg) thrust De Havilland Goblin 2 jet engine	
Performance:	Max speed: 531 mph (855 km/h)	Service ceiling: 43,500 ft (13,260 m)
Weights:	Empty: 7,134 lb (3,235 kg)	Gross: 11,970 lb (5,430 kg)
Dimensions:	Span: 40 ft 0 in (12.19 m)	Length: 30 ft 9 in (9.37 m)
	Height: 8 ft 10 in (2.69 m)	Wing area: 226 sq ft (20.99 sq m)
Armament:	Four 20 mm cannons	
Cost:	Unknown	
Affiliated Units:	No. 1 (F) OTU as well as Nos. 133 (F), 400, 401, 402, 410, 411, 413, 421, 438, 441 and 442 Sqns	
Serial Numbers:	17001–17042 and 17044–17086 as well as VZ261, VZ343 and WA220	

De Havilland Vampire 17074 was preserved as part of the National Aeronautical Collection at the Canada Aviation and Space Museum. (RCAF photo PCN3906)

This is a nice portrait of 17067, taken on September 10, 1956, when it belonged to No. 410 Squadron. (RCAF photo PCN1350)

The De Havilland Comet gave the RCAF the distinction of being the first air force in the world to operate jet transports. (RCAF photo PCN-295)

De Havilland COMET

When the De Havilland Comet was introduced into RCAF service in early 1953, it gave the RCAF the distinction of being the first air force in the world to operate jet transports. During their seven years on active duty, the RCAF's two Comets established "firsts" and set records as a matter of routine. On their delivery flights, they established speed records from London to Ottawa. When they went into squadron service, the Comets made the RCAF the first organization to operate scheduled jet transatlantic flights. A series of initially mysterious, fatal accidents involving commercially operated Comets overseas caused the RCAF's Comets to be grounded for safety reasons in 1954. In August 1956, the two aircraft were flown to Britain for modifications to resolve metal-fatigue problems (the aircraft were redesignated as Mark [Mk] IXB following the changes), and they returned to Canada the following month and resumed operational service. Employed by 412 Squadron, the two Comets flew across Canada and around the world in a wide variety of assignments. The aircraft were also used to test and train NORAD defences by simulating high-speed, bomber-like targets. By 1965, after logging more than 5,000 hours each, the airframes were time expired and both aircraft were retired from further RCAF use and put up for disposal.

RCAF De Havilland Comet 5302 is arrayed here along with CF-100 Canuck interceptors as part of a royal inspection. (RCAF photo PCN-253)

DETAILS

Designation: N/A
Role: Transport
No: 2
Model No: D.H.106
TOS: 1953
Service: RCAF
Marks: IA, IXB
SOS: 1965

SPECIFICATIONS

Manufacturer: De Havilland
Crew/Passengers: Up to eight, including captain, first officer, navigator, radio officer, flight engineer, steward, flight attendant and transport technician plus 40 passengers (up to 12,000 lb [5,443 kg])
Power Plant: Four De Havilland Ghost Mark II jet engines at 5,000 lb thrust each

Performance: Cruising speed: 460 mph (740 km/h)
Service ceiling: 40,000 ft (12,192 m) Range: 2,500 mi (4,024 km)
Weights: Empty: N/A Gross: 117,000 lb (53,071 kg)
Dimensions: Span: 114 ft 9.75 in (34.99 m) Length: 93 ft 1 in (28.37 m)
Height: 29 ft 4.25 in (8.95 m)

Armament: None
Cost: Can$4,282,672 for two airframes, eight spare engines, support equipment and modifications
Affiliated Unit: No. 412 Sqn
Serial Numbers: 5301 and 5302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De Havilland (Canada) CHIPMUNK

The De Havilland–built Chipmunk was an original design and a development of De Havilland Aircraft of Canada Limited. It first came into service as an elementary trainer with the RCAF in 1952, and it was exported to various other countries as well. The aircraft was a tandem-seat, fixed undercarriage, all-metal monoplane designed for use as a primary trainer. Student pilots were given approximately 25 hours on the Chipmunk prior to proceeding to more advanced trainers. Many thousands of pilot trainees from the RCAF and from other NATO air forces were introduced or reintroduced to the art of flying on the Chipmunk. Chipmunks were also assigned to various Canadian flying clubs to allow pilots to receive refresher training or to maintain currency. Fully aerobatic and able to perform precise manoeuvres in tight airspace, the tiny trainer also entertained many with its aerial antics at RCAF flying displays across Canada.

DETAILS

Designation: CT-120
Role: Trainer
No: 100
Model No: D.H.C.1
TOS: 1948
Service: RCAF/CF and flying clubs
Marks: I, III
SOS: 1971

SPECIFICATIONS

Manufacturer:	De Havilland Canada: designed and built	
Crew:	Two pilots	
Power Plant:	One 145 hp De Havilland Gipsy Major 10 piston engine	
Performance:	Max speed: 140 mph (225 km/h) Service ceiling: 17,200 ft (5,240 m)	Cruising speed: 124 mph (200 km/h)
Weights:	Empty: 1,199 lb (544 kg)	Gross: 1,930 lb (875 kg)
Dimensions:	Span: 34 ft 4 in (10.46 m) Height: 7 ft 0 in (2.13 m)	Length: 25 ft 5 in (7.74 m) Wing area: 172.5 sq ft (16.02 sq m)
Armament:	None	
Original Cost:	Unknown	
Affiliated Units:	N/A	
Serial Numbers:	18001–18066. Eighteen RCAF aircraft were later loaned to flying clubs and placed on the civil register. CF-CXA–CF-CYJ, CF-CYP (there was no CF-CYE)	

Pictured on top is a fine air-to-air study of a De Havilland Canada Chipmunk in early RCAF service. On the bottom is another air-to-air study but from much later, as evidenced by the Canadian flag on the tail (as opposed to the tricolour fin flash or Red Ensign flag). The prominent, overall yellow paint scheme with red high-visibility panels was standard for all trainer aircraft by this point. (RCAF photos PC-1069 and PCN-5598)

(RCAF photo)

De Havilland (Canada) OTTER

The De Havilland–built Otter light transport aircraft was a development of the previous De Havilland Beaver short takeoff and landing (STOL) design. The Otter was in fact originally going to be named the King Beaver, and it followed its predecessor's configuration very closely, although the Otter was larger. It featured a conventional stressed-skin construction and had a braced wing with full-span slotted flaps, with the outer portions acting as ailerons. The design proved to be highly versatile and could be operated on wheels, floats or skis. The RCAF initially selected the Otter to provide general transport and search-and-rescue capabilities. Additional Otters were purchased to re-equip a number of RCAF auxiliary squadrons for emergency and search-and-rescue duties. The aircraft also saw action in an extensive range of UN missions. The Otter served in four Canadian contingents on UN peacekeeping operations. The Otter also proved to be popular with other armed forces such as the United States Army and Navy as well as other air forces. The Otter has seen extensive use as a light utility transport in a variety of military and now civilian uses.

DETAILS

Designation: CSR-123
Role: Utility transport
No: 69
Model No: D.H.C.3
TOS: 1953
Service: RCAF/CF
SOS: 1982

SPECIFICATIONS

Manufacturer:	De Havilland Canada: designed and built	
Crew/Passengers:	Two pilots and nine passengers	
Power Plant:	One 600 hp Pratt & Whitney S3HI-G Wasp piston engine	
Performance:	Maximum speed: 160 mph (257 km/h) Service ceiling: 17,900 ft (5,426 m)	Cruising speed: 138 mph (222 km/h)
Weights:	Empty: 5,287 lb (2,398 kg)	Gross: 8,000 lb (3,629 kg)
Dimensions:	Span: 58 ft 0 in (17.7 m) Height: 13 ft 0 in (3.96 m)	Length: 41 ft 10 in (12.8 m) Wing area: 375 sq ft (34.83 sq m)
Armament:	None	
Original Cost:	Can$136,800	
Affiliated Units:	CEPE as well as Nos. 102, 103 (RU), No. 115 ATU, No. 105, 111, 121 (Comm) Flts, No. 400, 401, 402, 403, 406, 411, 418, 424, 438, 442 and 443 Sqns	
Serial Numbers:	3661–3745, 9401–9427	

The CSR-123 Otter utility transport aircraft could be flown on wheels, skis or as a floatplane. These photos illustrate the type in all three configurations. (RCAF photos PC-211, RT118, and PCN-79-182)

(RCAF photo)

De Havilland (Canada) CARIBOU

The De Havilland–built Caribou transport aircraft was designed with short takeoff and landing (STOL) characteristics. It featured a conventional stressed-skin construction and had a cantilever wing with full-span, double-slotted flaps, with the outer portions acting as ailerons. It was the first De Havilland Aircraft of Canada airframe to feature a retractable undercarriage. The RCAF initially selected the Caribou to fulfil UN support duties for the Congo, purchasing four aircraft along with a range of support equipment. The aircraft were never deployed to the Congo but did see action in four UN missions. The Caribou also proved to be popular with other armed forces, such as the United States Army, Royal Australian Air Force and Royal Malaysian Air Force. The Caribou has seen extensive use as a light tactical transport in a wide variety of military and now civilian uses.

DETAILS

Designation: CC-108
Role: Transport
No: 9

Model No: D.H.C.4
TOS: 1960
Service: RCAF/CF

Marks: IA, IB
SOS: 1971

SPECIFICATIONS

Manufacturer:	De Havilland Canada: designed and built	
Crew/Passengers:	Two pilots, one flight engineer and 30 passengers or 32 troops	
Power Plant:	Two 1,450 ESHP Pratt & Whitney R2000-7M2 Twin Wasp piston engines	
Performance:	Maximum speed: 214 mph (344 km/h)	Cruising speed: 180 mph (290 km/h)
	Service ceiling: 27,500 ft (8,381 m)	Range: 1,280 mi (2,060 km)
Weights:	Empty: 17,630 lb (12,247 kg)	Gross: 28,500 lb (22,317 kg)
Dimensions:	Span: 95 ft 7.5 in (29.15 m)	Length: 72 ft 7 in (22.12 m)
	Height: 31 ft 9 in (9.67 m)	Wing area: 912 sq ft (84.7 sq m)
Armament:	None	
Original Cost:	Can$632,648	
Affiliated Units:	Nos. 115, 117 and 134 ATUs	
Serial Numbers:	5303–5327	

At the top, RCAF CC-108 Caribou transport aircraft 5320, painted in UN colours (overall white) with UN markings, sits alongside sister aircraft 5321 in Trenton. (RCAF photo PCN-2240)

On the bottom, Caribou 5320 is pictured on UN deployment. (RCAF photo RNC-620)

(RCAF photo)

De Havilland (Canada) BUFFALO

The De Havilland-built Buffalo was a new, updated version of the De Havilland Caribou aircraft. The aircraft provided enhanced short take-off and landing (STOL) characteristics that its predecessor did not possess, while having double the range and carrying 50% more payload. The Buffalo saw extensive use as a light tactical transport in a variety of military and now civilian uses. In the Canadian Forces (CF), the aircraft type was progressively converted to primary search and rescue (SAR) duties while retaining a secondary transport role. The Buffalo also served as part of the Canadian contingent to the United Nations Emergency Force II, with one aircraft being shot down by Syrian forces in 1974, killing all nine on-board. 442 Squadron (Sqn) members in 19 Wing Comox were the last operators of this aircraft type and employed the excellent mountain-flying capabilities of this aircraft type in SAR functions. The CC-295 Kingfisher was selected to replace both the Buffalo and legacy Hercules aircraft in the SAR role.

DETAILS

Designation: CC-115
Role: Transport/SAR
No: 15
Model No: D.H.C.5
TOS: 1967
Service: RCAF/CF
SOS: 2022

SPECIFICATIONS

Manufacturer:	De Havilland Canada: designed and built	
Crew:	(SAR crew) Two pilots, one flight engineer, one navigator and 2 SAR TECHs	
Power Plant:	Two 3,060 ESHP General Electric 2CT64-820-3 engines	
Performance:	Max speed: 227 kt (421 km/h)	
	Service ceiling: 27,500 ft (8,382 m)	Range: 650 nm (1,205 km)
Weights:	Empty: (Transport) 27,000 lb (12,247 kg) (SAR) 29,500 lb (13,381 kg)	Gross: 45,000 lb (22,317 kg)
Dimensions:	Span: 96 ft (29.26 m)	Length: 79 ft (24.08 m)
	Height: 28 ft 8 in (8.73 m)	Wing area: 945 sq ft (87.8 sq m)
Armament:	None	
Original Cost:	Can$1,935,000	
Affiliated Units:	AETE and No. 116 ATU as well as Nos. 413, 424, 429 and 442 Sqns	
Serial Numbers:	115451–115465	

The CC-115 Buffalo was conceived as a STOL light tactical transport operating from rough airstrips for army-support use, as shown in the photo on the top. It evolved into a premier SAR aircraft later in its career with the RCAF. (CF photo CFC68-9-1)

Pictured on the bottom is 442 Sqn CC-115 Buffalo SAR aircraft 115451. (RCAF photo)


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De Havilland (Canada) TWIN OTTER

In the Canadian North, where the weather can change at a moment's notice, the Twin Otter provides short takeoff and landing (STOL) capabilities on floats, skis or wheels. It is a highly manoeuvrable, light and versatile transport aircraft used primarily in northern Canada in support of rangers and cadets as well as to transport units from southern areas of Canada to the North for exercises. Twin Otters are also used to support Canadian Forces Station Alert, the northernmost permanent habitation in the world, by ferrying supplies and providing MEDEVAC service when needed. As well, the Twin Otter flies search and rescue (SAR) missions throughout the North and generally supports the Canadian Forces (CF) there. Its ability to transport up to 20 passengers or 2,999 kilograms of payload and its range of 1,296 kilometres earmark it for use in a part of the country where every distance is measured in hundreds of kilometres.

DETAILS

Designation: CC-138
Role: Utility
No: 8
Model No: D.H.C.6
TOS: 1971
Service: CF/RCAF
SOS: In service

SPECIFICATIONS

Manufacturer:	De Havilland Canada
Crew/Passengers:	Up to four crew and twenty passengers
Power Plant:	Two Pratt & Whitney Canada PT6A-27, 620 SHP (434 kW) turboprops
Performance:	Cruising speed: 145 kt (274 km/h) Service ceiling: 26,700 ft (8,138 m) Range: 775 NM (1,435 km) with 2,550 lb (1,156 kg) payload
Weights:	Gross: 12,500 lb (5,670 kg)
Dimensions:	Span: 65 ft 0 in (19.81 m) Length: 49 ft 6 in (15.1 m) Height: 18 ft 6 in (5.66 m)
Armament:	None
Cost:	Can$670,000
Affiliated Units:	Nos. 418, 424, 440 Sqns
Serial Numbers:	138801–138809

On the top is a CC-138 Twin Otter as originally delivered, in all white with SAR markings, circa 1971. This paint scheme subsequently evolved into an overall yellow SAR scheme. (CF photo PCN 71-98)

On the bottom is a CC-139 from 440 (T&R) Squadron based in Yellowknife. The aircraft can be operated on floats, skis or wheels.
(RCAF photo)

Dash-7 aircraft - 001 and 002 in front of hangar at CFB Lahr in Germany. (RCAF photo)

De Havilland (Canada) DASH-7

The Dash-7 was a Canadian designed and built four-engine, medium-range transport aircraft. It was designed to take advantage of De Havilland's short takeoff and landing (STOL) expertise. Despite having four engines, the design was known to be very quiet, and it successfully incorporated specific design enhancements to achieve this goal. Two Dash-7 aircraft were acquired for the Canadian Air Mobility Tasking in NATO, moving personnel and paraphernalia around Europe. The aircraft were purchased with quick-change interiors, allowing for the interchange of passengers and freight. In this role, the aircraft replaced two aging CC-109 Cosmopolitan transports. During the drawdown of Canadian Forces in Europe, the Dash-7 aircraft were themselves subsequently replaced by more economical Dash-8 transports.

DETAILS

Designation: CC-132
Model No: D.H.C. 7
Role: Transport
TOS: 1979
SOS: 1985
No: 2
Service: CF

SPECIFICATIONS

Manufacturer:	De Havilland Canada	
Crew/Passengers:	Two pilots, two cabin crew, and up to fifty passengers	
Power Plant:	Four 1,120 SHP Pratt & Whitney PT-6A-50 turboprop engines	
Performance:	Max speed: 268 mph (431 km/h)	Cruising speed: 263 mph (421 km/h)
	Service ceiling: 20,400 ft (6,222 m)	Range: 1,355 mi (2,180 km)
Weights:	Empty: 27,350 lb (12,406 kg)	Gross: 44,000 lb (19,958 kg)
Dimensions:	Span: 93 ft 0 in (28.35 m)	Length: 80 ft 8 in (24.58 m)
	Height: 26 ft 2 in (7.98 m)	Wing area: 860 sq ft (79.9 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	412 Sqn	
Serial Numbers:	132001 and 132002	

On the top is an airborne view of the two CF Dash-7 aircraft in Europe. (CF photo ILC81-265)

On the bottom is another view of aircraft 132001 at Downsview in Toronto. (CF photo IOC79-14)

A 402 Squadron CT-142 Dash-8 is completing a touch'n'go during a training circuit at the Winnipeg International Airport. (RCAF photo)

De Havilland (Canada) DASH-8

The Dash-8 is a Canadian designed and built twin-engine, medium-range transport aircraft. It is a highly successful successor to the company's Dash-7 aircraft and, like its predecessor, it was designed to take advantage of De Havilland's short takeoff and landing (STOL) expertise. The design is known to be very quiet, and it successfully incorporated specific enhancements to achieve this goal. Two Dash-8 aircraft were acquired for the Canadian Air Mobility Tasking in NATO, moving personnel and paraphernalia around Europe. The aircraft were purchased with quick-change interiors to allow for the interchange of passengers and freight. In this role, the aircraft replaced two Dash-7 aircraft. The success of the original Dash-8 design resulted in its use for various specialized platforms. The need for a navigation trainer in the Canadian Forces (CF) then resulted in the extensive modification of the aircraft for this role. The most prominent external feature was an extended nose section to house a radar. Extensive avionics and navigation consoles were also fitted to the interior. These modified aircraft are used primarily as training tools at the Canadian Forces Air Navigation School (CFANS) at 17 Wing Winnipeg, Manitoba.

DETAILS

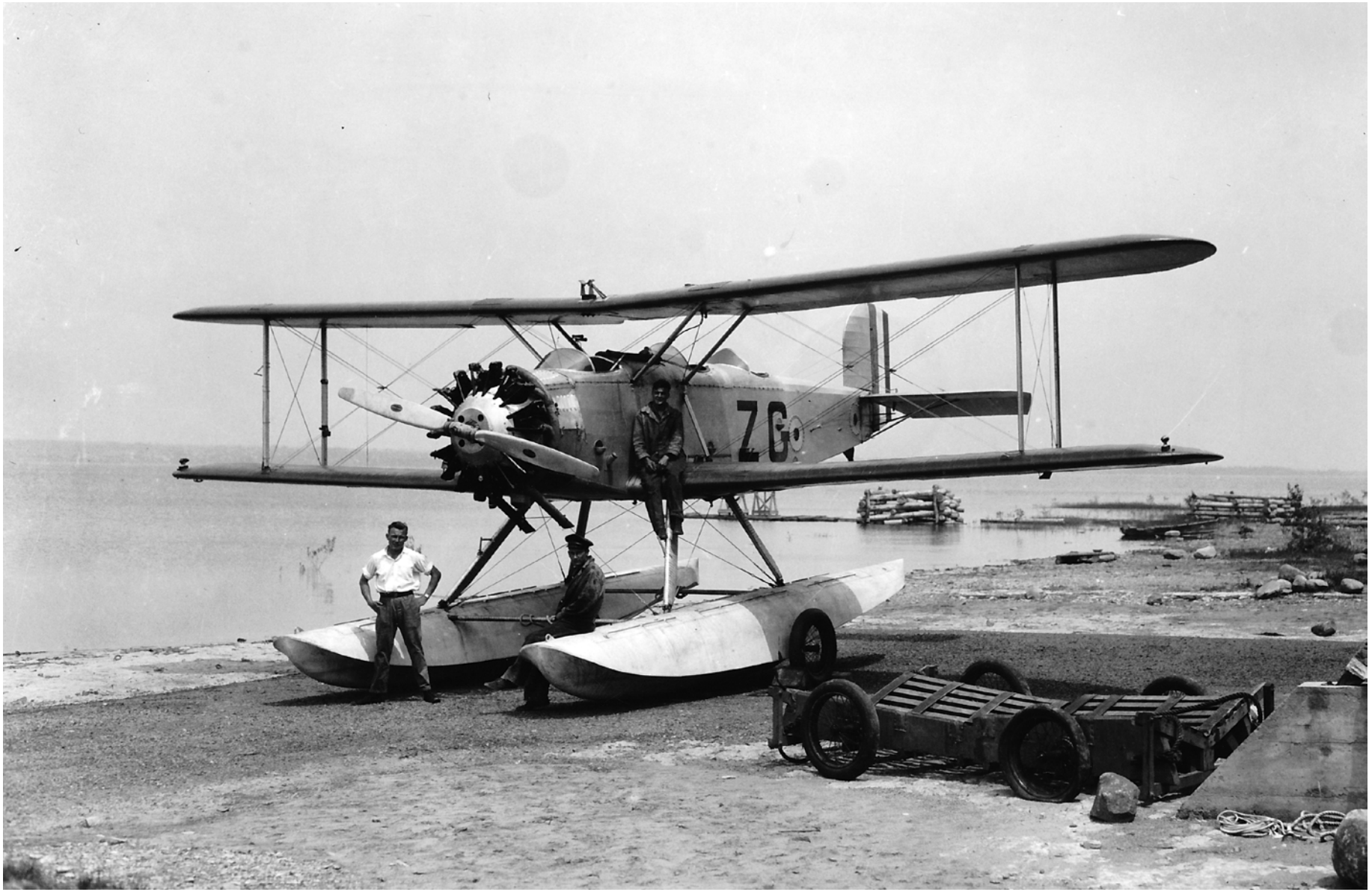
Designation: CC-142, CT-142
Model No: D.H.C. 8
Role: Transport and Navigation Trainer
TOS: 1985
SOS: In service
No: 2 x CC-142 and 4 x CT-142
Service: CF

SPECIFICATIONS

Manufacturer:	De Havilland Canada	
Crew/Passengers:	Two pilots and up to 36 passengers	
Power Plant:	Two Pratt & Whitney Canada PW120A turboprop engines	
Performance:	Cruising speed: 309 mph (497 km/h)	
	Service ceiling: N/A	Range: 1,025 mi (1,650 km)
Weights:	Empty: 22,100 lb (10,024 kg)	Max takeoff: 34,500 lb (15,650 kg)
Dimensions:	Span: 85 ft 0 in (25.91 m)	Length: 73 ft 0 in (22.25 m)
	Height: 24 ft 7 in (7.49 m)	Wing area: 585 sq ft (54.35 sq m)
Armament:	None	
Cost:	CC-142 Can$8,390,000	CT-142 Can$14,298,000
Affiliated Units:	Nos. 402 and 412 Sqn, CFANS	
Serial Numbers:	42801–142806	

On the top is an airborne view of the standard transport version of the Dash-8 (in original European theatre camouflage for its NATO support role). (CF photo)

On the bottom, the later navigation trainer version of the Dash-8 has a much different configuration, with an elongated nose for a radar system. (CF photo WG2008-0261-02)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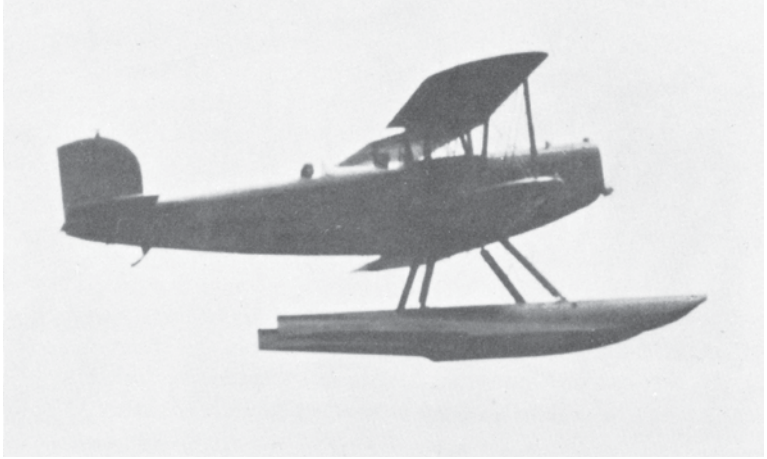
Douglas O-2BS (MO-2B)

The Douglas O-2 biplane family was one of the longest-lived American designs during the interwar period. These aircraft entered service with the US military as early as 1924, and some later models were still in service at the outbreak of the Second World War. The O-2 design featured conventional construction for the period, with a welded steel-tube fuselage and wooden wings. Fuel was carried in extra-thick centre section stubs for the lower wings. O-2B models were identical to the original O-2A model series, except for the former feature of dual controls. Mr. J. D. McKee, a wealthy American aviation enthusiast, acquired the O-2BS directly from Douglas, factory fresh in a United States Army colour scheme. McKee used the O-2BS in a trans-Canada flight from Montreal to Vancouver in September 1928. Squadron Leader A. E. Godfrey of the RCAF flew the aircraft as the second pilot and navigator on this historic trip. After the unfortunate death of McKee in an aviation accident in Quebec, the RCAF then acquired the aircraft. It was subsequently converted to the MO-2B standard and was equipped with a Pratt & Whitney 425 hp Wasp radial engine. It was converted at the same time to a silver colour scheme and carried the G-CYZG registration. The aircraft could carry an extra seat in this configuration and was then used for photographic survey work for the rest of its career.



The sole RCAF Douglas MO-2B was only used in a float-plane configuration. (RCAF photo and Library and Archives Canada photo PA 062407)

DETAILS

Designation: N/A
Model No: O-2BS (MO-2B)
Role: Float-plane
TOS: 1927
SOS: 1930
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Douglas Aircraft Company	
Crew:	(O2-BS) Two pilots in tandem (MO-2B) one pilot, one navigator and one photographer	
Power Plant:	Originally one 420 hp Liberty engine and later one 425 hp Wasp radial engine	
Performance:	Max speed: 126 mph (203 km/h) Service ceiling: 10,000 ft (3,048 m)	
Weights:	Empty: 3,027 lb (1,373 kg)	Gross: 4,706 lb (2,135 kg)
Dimensions:	Span: 39 ft 8 in (12.09 m) Height: 14 ft 4 in (4.36 m)	Length: 29 ft 6 in (8.99 m) Wing area: 411 sq ft (38.18 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Unit(s):	Unknown	
Serial Number:	G-CYZG	

(RCAF photo)

Douglas BOSTON (HAVOC)

The Boston medium bomber and its fighter variant, the Havoc, were well familiar to many Canadians, both in the RCAF and RAF, during the Second World War. The RCAF's Home War Establishment had a small number on strength for experimental purposes. Overseas, No. 418 (RCAF) Squadron (Sqn) used them as night intruders when such operations were still in the experimental stage. The Sqn operated the type from March 1942 until July 1943, when they were replaced by Mosquito aircraft. Later models had their standard armament supplemented with a tray mounted in the belly, containing four 20 mm cannons.

DETAILS

Designation: N/A
Role: Bomber
No: 3

Model No: A20C, J, K / DB-7
TOS: 1941
Service: RCAF

Marks: III, IIIA, IV, V
SOS: 1945

SPECIFICATIONS

Manufacturer:	Douglas Aircraft	
Crew:	Three to five crew	
Power Plant:	Two 1,600 hp (1,193 kW) Wright GR-2600-A5B radial engines	
Performance:	Max speed: 304 mph (489 km/h)	Cruising speed: 250 mph (402 km/h)
	Service ceiling: 24,250 ft (7,391 m)	Range: 1,020 mi (1,642 km)
Weights:	Empty: 12,200 lb (5,534 kg)	Maximum takeoff: 25,000 lb (11,340 kg)
Dimensions:	Span: 61 ft 4 in (18.69 m)	Length: 47 ft 0 in (14.33 m)
	Height: 15 ft 10 in (4.83 m)	Wing area: 465 sq ft (43.20 sq m)
Armament:	Four fixed forward 0.303 in (7.7 mm) machine guns in the nose Two 0.303 in (7.7 mm) machine guns in dorsal and ventral positions Up to 2,000 lb (907 kg) of bombs	
Cost:	US$74,000	
Affiliated Units:	T&D Establishment, 418 Sqn	
Serial Numbers:	AL672, BZ385, BZ410	

Two studies of Bostons on the ground and in flight. The upper photo illustrates one of the HWE aircraft at CNS in Rivers, MB, in January 1942. (RCAF photo)

The lower photo illustrates an all-black night-intruder variant from No. 418 Sqn overseas. (RCAF photo PL-7719)

RCAF Dakota 1000 was a VIP aircraft belonging to 412 Sqn at RCAF Station Uplands, Ontario. It was equipped with a VIP interior. (RCAF photo PC 830)

Douglas DAKOTA

First flown on 17 December 1933 at Clover Field in Santa Monica, California, the Douglas DC-3 is arguably one of the most successful aircraft ever built. Designated Dakota or C-47 by the RAF/RCAF, the aircraft was also known by a wide variety of different names (Skytrain, Skytrooper, DAK, Goonie Bird) and different designations (DC-3, C-47, C-53, R4D) in various services. Highly adaptable, this transport aircraft could be fitted with skis or jet-assisted takeoff (JATO) bottles. In the RCAF and Canadian Forces (CF), it served in a wide variety of roles, including navigation, radio and radar training as well as in other roles such as target towing, transport and search and rescue (SAR) duties.

DETAILS

Designation: CC-129 / CT-129 **Model No:** DC-3 / C-47
Marks: III, IIICSC, F, FP, P, R, S&R, U; and IVM, MF, MFP, P, ST, T
Role: Transport, training, target towing, SAR **TOS:** 1943 **SOS:** 1989
No: 169 **Service:** RCAF/CF

SPECIFICATIONS

Manufacturer:	Douglas Aircraft Corporation	
Crew/Passengers:	Two pilots plus up to three crew or 36 passengers	
Power Plant:	Two 1,200 hp Pratt & Whitney R-1830-92 radials	
Performance:	Max speed: 199 kt (369 km/h)	Cruising speed: 145 kt (269 km/h)
	Service ceiling: 24,100 ft (7,345 m)	Range: 1,300 NM (2,414 km)
Weights:	Max takeoff: 26,000 lb (11,793 kg)	
Dimensions:	Span: 95 ft 0 in (28.95 m)	Length: 64 ft 5.5 in (19.64 m)
Armament:	None	
Original Cost:	Can$165,000	
Affiliated Units:	Nos. 6 and 32 OTUs; Nos. 121 KU, 124 (Com), 115 ATUs; 165 Sqn; Nos. 412, 429, 440, 435 Sqns plus numerous other misc units	
Serial Numbers:	650–10918, FL595–FZ695, KG312–KP227, TS422 and TS425	

On the top, RCAF Dakota 580 was used as a SAR aircraft and is seen here equipped with skis. (RCAF photo PCN 2700)

On the bottom are two modified CC-129 aircraft overflying CFB Cold Lake, Alberta. These aircraft were originally used for CF-104 radar training in the 1970–80s; this explains the Starfighter nose grafted onto the front of each aircraft. (CF photo CKC95-5070)

Air-to-air view of Digby 751 aircraft over #8 SFTS Moncton. (RCAF photo)

Douglas DIGBY

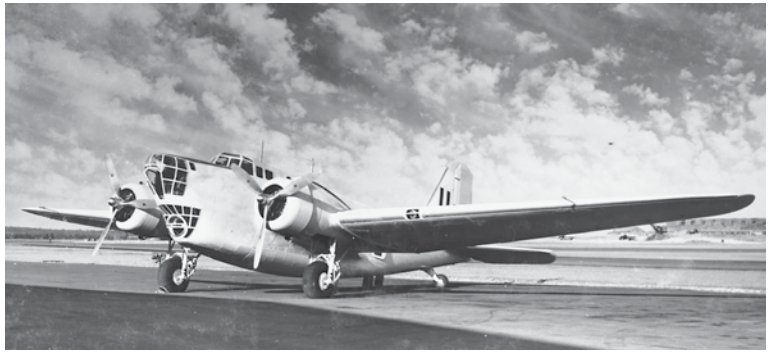
The Digby, designed for the United States Army Air Corps as the B-18, was actually derived from the DC-2, the forerunner to the DC-3 Dakota. The Digby had the same wings, engines and tail components as the transport aircraft. With the onset of war, the RCAF quickly acquired 20 Digby aircraft for patrol work. They served with Nos. 10 and 161 (Bomber Reconnaissance [BR]) Squadrons as patrol bombers, and a few served with Nos. 121, 164 and 167 (Transport) Squadrons. Squadron Leader C. L. Annis's crew, in a Digby of No. 10 (BR) Squadron on 25 October 1941, carried out the first attack on a U-boat by Eastern Air Command (EAC). Overall, the Digbys of EAC carried out 11 attacks on U-boats. U-520 was confirmed sunk by Flying Officer F. Raymes's crew in No. 10 (BR) Squadron on 30 October 1942.

DETAILS

Designation: B-18
Role: Patrol bomber and transport
No: 20
Model No: DB-1
TOS: 1939
Service: RCAF
Marks: I
SOS: 1946

SPECIFICATIONS

Manufacturer:	Douglas Aircraft Corporation	
Crew:	Crew of six, including two gunners, a bomb aimer, a navigator and two pilots	
Power Plant:	Two 1,000 hp (746 kW) Wright R-1820-53 Cyclone 9 radials	
Performance:	Max speed: 215 mph (346 km/h)	Cruising speed: 167 mph (269 km/h)
	Service ceiling: 16,321 ft (7,403 m)	Range: 1,200 mi (1,931 km)
Weights:	Empty: 16,321 lb (7,403 kg)	Maximum takeoff: 27,673 lb (12,552 kg)
Dimensions:	Span: 89 ft 6 in (27.28 m)	Length: 57 ft 10 in (17.63 m)
	Height: 15 ft 2 in (4.62 m)	Wing area: 965 sq ft (89.65 sq m)
Armament:	Three 0.30 in (7.62 mm) machine guns in nose, dorsal and ventral positions, plus up to 6,500 lb (2,948 kg) in bombs or depth charges	
Cost:	Unknown	
Affiliated Units:	Nos. 10 and 161 (BR) and Nos. 121, 164 and 167 (T) Sqns	
Serial Numbers:	738–757	



RCAF Digby aircraft were used primarily to patrol Canada's East Coast. On the top, Digby aircraft 739 was photographed at RCAF Station Trenton in June 1940. (RCAF photo)

This unidentified RCAF Digby pictured on the bottom wears the all-white camouflage finish used for ASW patrol aircraft. (RCAF photo PMR77-421)

(RCAF photo)

Fairchild ARGUS

The first Fairchild Argus in RCAF service was acquired on 17 January 1940. The Argus was a four-passenger, general-purpose aircraft that was less well known than its much larger namesake manufactured in the 1960s by Canadair for antisubmarine warfare (ASW) patrol. The RCAF acquired two of these light aircraft when an American citizen and a staff member of *Reader's Digest* magazine each donated an Argus to the service. No. 12 Communication Squadron based at RCAF Station Rockcliffe in Ottawa initially used the aircraft. They were later used for refresher training. One of the pair was involved in an accident in 1942, and salvaged parts were used to provide spares for its twin. At the end of the Second World War, the remaining Argus was returned to civilian use.

This is the trim-looking Fairchild Argus in RCAF service. (RCAF photo RE-64-988)

DETAILS

Designation: N/A
Model No: 24H and 24R
Role: Utility transport
TOS: 1940
SOS: 1945
No: 1 x 24H, 1 x 24R
Service: RCAF

SPECIFICATIONS

Manufacturer: Fairchild Aircraft Company
Crew/Passengers: One pilot and up to three passengers
Power Plant: One 150 hp Ranger 6-140-BIA piston engine

Performance: Max speed: 117 mph (188 km/h); Cruising speed: 113 mph (182 km/h); Service ceiling: 14,750 ft (4,496 m)
Weights: Empty: 1,467 lb (666 kg); Gross: 2,400 lb (1,089 kg)
Dimensions: Span: 35 ft 4 in (10.77 m); Length: 23 ft 9 in (7.24 m); Height: 8 ft 0 in (2.44 m)

Armament: None
Cost: Unknown
Affiliated Unit: No. 12 (Comm) Sqn

(RCAF photo)

Fairchild 51

The Fairchild Aircraft Company carried on with the progressive development of its FC-2 model aircraft, which first flew in 1926. It was a four-seat-cabin monoplane designed for light transport. It featured composite construction, including a welded steel fuselage and tail along with a strut-braced wooden wing and all-over fabric covering. The 51 version, standardized on four longerons for aft fuselage construction and a 300 hp Wright R-975 radial piston engine, was substituted. This variant was again designed with aerial photography in mind; therefore, it featured an enclosed and heated cabin with extra windows to allow for an improved downward view. Nine of the RCAF's existing FC-2s were converted to this version. In the late 1930s, however, some RCAF Model 51 aircraft had light bomb racks installed under the fuselage and were used for practice bombing at Camp Borden.

DETAILS

Designation: N/A
Model No: 51 and 51A
Role: Utility
TOS: 1930
SOS: 1946
No: 6 x 51 and 3 x 51A
Service: RCAF

SPECIFICATIONS (for the 51)

Manufacturer:	Canadian Vickers under licence from Fairchild and Fairchild Aircraft of the United States	
Crew/Passengers:	One pilot and up to three passengers	
Power Plant:	One 300 hp Wright R-975 radial piston engine	
Performance:	Max speed: 131 mph (211 km/h) Service ceiling: 15,500 ft (4,724 m)	Cruising speed: 105 mph (169 km/h)
Weights:	Empty: 2,256 lb (1,070 kg)	Gross: 4,000 lb (1,816 kg)
Dimensions:	Span: 44 ft 0 in (13.4 m) Height: 9 ft 1 in (2.77 m)	Length: 30 ft 10.56 in (9.4 m) Wing Area: 272 sq ft (25.27 sq m)
Armament:	Provision for light bombs	
Cost:	Unknown	
Affiliated Units:	RCAF Stations Camp Borden, Rockcliffe and Saint John plus other misc units	
Serial Numbers:	G-CYXM–G-CYYV, 29–31, 211, 621–628	

In the top photo, RCAF Fairchild 51 628 is seen at RCAF Station Camp Borden. (RCAF photo RE-64-971-GL175)

The Fairchild 51 could also be operated on floats, as shown in the bottom photo with G-CYYV, which was important for the RCAF's pre-war communication, photographic and general duties. (RCAF photo)

Fairchild 71

The Fairchild Aircraft Company carried on with the progressive development of its FC-2 model aircraft, which first flew in 1926. The FC-2W was a further development featuring a 50 ft (15.39 m) span and a doubling of engine power. Further refinements led to yet another model designation for a seven-seat-cabin monoplane designed for light transport. The Model 71, as it was known, again featured composite construction, including a welded steel fuselage and tail along with a strut-braced wooden wing and all-over fabric covering. This variant was again designed with aerial photography in mind; therefore, it featured a camera bay for vertical photography and low rear-door windows to permit oblique photography. The RCAF found its Fairchild 71 aircraft rugged, reliable and highly useful in the aerial-survey role.

RCAF Fairchild 71 aircraft 633 is shown here, complete with floats and beaching gear, probably on Canada's West Coast. Fairchild 71B 633 (earlier G-CYVX) was one of the twelve on strength with the RCAF from 20 May 1930 to 2 October 1941, although one (G-CYVE / 630) was later converted to a 71C variant in addition to the eleven 71As. (CF photo)

DETAILS

Designation: N/A
Model No: 71A, 71B, 71C
Role: Utility
TOS: 1929
SOS: 1942
No: 11 x 71A, 10 x 71B, 2 x 71C
Service: RCAF

SPECIFICATIONS (for the 71B)

Manufacturer:	Fairchild Aircraft (Canada) and Fairchild Aviation (United States)	
Crew/Passengers:	One pilot and up to six passengers	
Power Plant:	One 420 hp Pratt & Whitney Wasp radial piston engine	
Performance:	Max speed: 132 mph (212 km/h)	Cruising speed: 112 mph (180 km/h)
	Service ceiling: 14,000 ft (4,267 m)	Range: 900 mi (1,448 km)
Weights:	Empty: 3,160 lb (1,435 kg)	Gross: 5,500 lb (2,497 kg)
Dimensions:	Span: 50 ft 0 in (15.39 m)	Length: 35 ft 10.25 in (10.93 m)
	Height: 9 ft 4 in (2.84 m)	Wing area: 310 sq ft (28.76 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	Various RCAF stations across Canada	
Serial Numbers:	G-CYUV–G-CYUW, G-CYVE, G-CYVN–G-CYVO, G-CYVX–G-GCVZ, G-CYWA–G-CYWH, G-CYWX, G-CYXB, 113–114, 182–183; survivors later renumbered 619, 629–647	

This is RCAF Fairchild Super 71P 666 in a floatplane configuration, with beaching dollies attached. (RCAF photo HC7757-GL181)

Fairchild 71P

Unlike the Fairchild Aircraft Company's previous designs that had featured a progressive development of previous models, the Super 71 was an all-new Canadian design despite its model number. The Super 71 was designed for freight transport in the Far North. The Super 71 featured a Duralumin monocoque fuselage as well as strut-braced metal wings and tail surfaces. The RCAF was again interested in a variant of the Super 71 for aerial photography. It ordered two modified aircraft for this role under the designation Super 71P. They featured camera bays for vertical photography. A new wing mount design, the relocation of the cockpit to the front and a new geared Wasp engine were the visible changes, but this variant also had provision for multiple cameras in a camera bay for vertical photography as well as additional radio equipment. The RCAF found its 71P aircraft less than satisfactory in the aerial-survey role. The aircraft's structural problems—with the floats, the overheating of the engines, and adverse handling on the water and on the ground with brake problems—all contributed to a poor reputation. Aircraft 666 crashed in 1937, while aircraft 665 was assigned to Camp Borden and later to RCAF Station Trenton as an air ambulance. However, little use appears to have been made of the aircraft.

DETAILS

Designation: N/A
Model No: Super 71P
Role: Utility
TOS: 1936
SOS: 1940
No: 2
Service: RCAF

SPECIFICATIONS

Manufacturer:	Fairchild (Canada)	
Crew/Passengers:	One pilot and up to eight passengers	
Power Plant:	One 600 hp Pratt & Whitney S2H1-G Wasp radial piston engine	
Performance:	Max speed: 142 mph (228.5 km/h)	Cruising speed: 119.5 mph (192 km/h)
	Service ceiling: 19,000 ft (5,791 m)	Range: 800 mi (1,288 km)
Weights:	Empty: 4,682 lb (2,126 kg)	Gross: 7,090 lb (3,219 kg)
Dimensions:	Span: 58 ft 0 in (17.67 m)	Length: 36 ft 2 in (11.02 m)
	Height: 10 ft 6 in (3.2 m)	Wing area: 392 sq ft (34.56 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	RCAF Station Trenton	
Serial Numbers:	665 and 666	


ROYAL
22130
130

Fairchild FLYING BOXCAR

The Fairchild-designed C-119's distinctive twin-boom layout and box-like, cavernous fuselage earned it the name Flying Boxcar. Its rear-opening clam-shell doors permitted the fast and efficient handling of bulk loads. The type went through a number of redesigns, with increases to the fuselage dimensions, the addition of more powerful engines and many other changes. The RCAF took delivery of its first aircraft in 1952. Nos. 435 and 436 Squadrons of Air Transport Command used the Flying Boxcar extensively throughout the 1950s, including on UN missions. Missions to the Arctic were also routine. The Canadian Army employed RCAF Boxcars for airborne exercises, and the type could deploy up to 62 fully equipped paratroops. The Boxcars were originally intended to supersede the RCAF's Dakota aircraft, but this was not to be the case. The last Boxcars were retired from RCAF service in July 1965, while Dakotas still soldiered on in various roles.

DETAILS

Designation: CC-119 **Model No:** C-119
Role: Tactical troop and cargo transport **TOS:** 1952 **SOS:** 1967
No: 35 **Service:** RCAF

SPECIFICATIONS

Manufacturer:	Fairchild Engine and Airplane Corporation	
Crew/Passengers:	Crew of five and up to 62 troops or 35 stretcher cases, or up to a 10,000 lb (4,536 kg) payload	
Power Plant:	Two 3,500 hp Wright R-3350-85 piston engines	
Performance:	Max speed: 250 mph (402 km/h)	Cruising speed: 205 mph (330 km/h)
	Service ceiling: 23,900 ft (7,285 m)	Range: 2,000 mi (3,219 km)
Weights:	Empty: 40,000 lb (18,144 kg)	Gross: 64,000 lb (29,030 kg)
Dimensions:	Span: 109 ft 3 in (33.30 m)	Length: 86 ft 6 in (26.37 m)
	Height: 26 ft 6 in (8.08 m)	Wing area: 1,447 sq ft (134.43 sq m)
Armament:	None	
Cost:	US$590,000	
Affiliated Units:	No. 4 OTU, CEPE, EWU, Nos. 435 and 436 Sqns	
Serial Numbers:	22101–22135	

These are two examples of the CC-119 Flying Boxcar. On top is an aircraft soon after introduction that belonged to the Central Experimental and Proving Establishment; and on the bottom is another aircraft in late service, just before retirement. Note the differences in markings and configuration. (RCAF photos PC-555 and PCN-2290)


YV

Fairchild FC-2

The Fairchild FC-2 first flew in 1926. It was a four-seat-cabin monoplane designed for light transport. It featured a 220 hp Wright J-5 Whirlwind engine along with composite construction, including a welded steel fuselage and tail along with a strut-braced wooden wing and all-over fabric covering. Early production aircraft had only three longerons in the rear fuselage, giving the aircraft a razorback appearance; hence its nickname, "Razorback." Subsequent versions eliminated this distinctive feature with four-longeron constructions. The aircraft was designed with aerial photography in mind; therefore, it featured an enclosed and heated cabin with extra windows to allow for an improved downward view. The RCAF initially procured the type for this role. The RCAF then decided to standardize engine power plants across a variety of its fleets. Six FC-2s were converted to use the 215 hp Armstrong Siddeley Lynx engine. Redesignated as the FC-2L, this aircraft was then demonstrated to, and accepted by, the RCAF. The RCAF bought a further version, known as the FC-2W, with a larger wing-span and a 300 hp Pratt & Whitney Wasp A engine. The design was further evolved into the 51 and 71 models.

RCAF Fairchild Razorback 31 is seen here on skis. The triangular rear fuselage is evident in this photo. (RCAF photo courtesy of the Griffin Library Collection)

DETAILS

Designation: N/A
Model No: FC-2, FC-2L, FC-W
Role: Utility
TOS: 1927
SOS: 1938
No: 15 x FC-2, 6 x FC-2L, 6 x FC-2W
Service: RCAF

SPECIFICATIONS (for the FC-2L)

Manufacturer:	Canadian Vickers, under licence from Fairchild and Fairchild Aviation of the United States. Ottawa Car Company conducted some of the conversions	
Crew/Passengers:	One pilot and up to three passengers	
Power Plant:	One 215 hp Armstrong Siddeley Lynx G radial piston engine	
Performance:	Max speed: 105.5 mph (170 km/h) Service ceiling: 13,100 ft (3,993 m)	Cruising speed: 85 mph (137 km/h)
Weights:	Empty: 2,749 lb (1,248 kg)	Gross: 4,180 lb (1,898 kg)
Dimensions:	Span: 44 ft 0 in (13.4 m) Height: 9 ft 1 in (2.77 m)	Length: 30 ft 11 in (9.43 m) Wing area: 272.4 sq ft (25.3 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	Miscellaneous RCAF units	
Serial Numbers:	G-CYWU, G-CYXK–G-CYQR, G-CYXT–G-CYXY, G-CYYT–G-CYYV, 29–31, 613–628	

A view of the Fairchild KR-34 trainer evaluated by the RCAF. (RCAF photo)

Fairchild KR-34

The Fairchild KR-34 was a development of the popular Kreider-Reisner Challenger three-place, open-cockpit biplane. Kreider-Reisner Aircraft Co. Inc. in Hagerstown, Maryland, which eventually became a division of Fairchild Aircraft, originally manufactured the design. The KR-34 featured plywood and spruce wings plus a chrome-moly welded steel tube fuselage with wooden fairing strips and a fabric covering. There was an entrance door to the front cockpit and a baggage compartment behind the rear cockpit, accessible by a door on the left-hand side. The RCAF evaluated the CF-AJL from Fairchild. It then bought the CF-AMW for use by the controller of civil aviation (CCA). The CCA used it for its operations and training, and sometimes used it to support other government departments. The aircraft was sold to Fleet Aircraft of Fort Erie in 1936.

DETAILS

Designation: N/A
Model No: KR-34
Role: Trainer
TOS: 1930
SOS: 1936
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Fairchild Aircraft Company	
Crew:	Two pilots in tandem	
Power Plant:	165 hp Wright J-6 radial engine	
Performance:	Max speed: 120 mph (193 km/h)	Cruising speed: 102 mph (164 km/h)
	Service ceiling: 14,100 ft (4,298 m)	Range: 510 mi (821 km)
Weights:	Empty: 1,524 lb (691 kg)	Gross: 2,368 lb (1,074 kg)
Dimensions:	Upper span: 30 ft 1 in (9.17 m)	Lower span: 28 ft 9 in (9.06 m)
	Length: 23 ft 2 in (7.06 m)	
	Height: 9 ft 3 in (2.82 m)	Wing area: 285 sq ft (26.48 sq m)
Armament:	None	
Cost:	US$6,575	
Affiliated Unit:	Unknown	
Serial Number:	CF-AMW; in June 1933 became CF-CCE	

Note: CF-AJL was registered to Fairchild and was not the KR-34 that the RCAF bought.

The photo above is a nice, coloured view of the RCAF Fairchild Cornell trainer in BCATP training colours. This particular aircraft is now part of the Canada Aviation and Space Museum collection. (RCAF photo PCN-3878)

Fairchild CORNELL

As the Second World War advanced, the RCAF needed a more advanced trainer for the British Commonwealth Air Training Plan (BCATP). The existing D.H.82C Tiger Moths and Fleet 16Bs that were used for elementary flying training proved to be a significant step down from contemporary service aircraft. Therefore, in the spring of 1941, the RCAF decided on a development of the Fairchild Aircraft (US) Company's PT-19 trainer design. The RCAF version was designed to feature an enclosed cockpit, an improved heating system, equipment changes and a Ranger piston engine. This modified version was to be known as the Fairchild Cornell in Canada, and it rapidly entered production and found favour at elementary flying schools across Canada, beginning in 1943. Although not without some in-service problems, the Cornell provided fairly reliable service in its intended role until after the war.

RCAF Fairchild Cornell trainers in flight. (Photo courtesy of Comox Air Force Museum)

DETAILS

Designation: N/A
Role: Trainer
No: 1,555
Model No: PT-26, PT-26A, PT-26B
TOS: 1942
Service: RCAF
Marks: I, II, III
SOS: 1948

SPECIFICATIONS (for the PT-26A)

Manufacturer:	Fleet Aircraft Limited (Canada)	
Crew:	Two pilots in tandem	
Power Plant:	One 200 hp Ranger 6-440-C5 piston engine	
Performance:	Max speed: 122 mph (195 km/h)	Cruising speed: 101 mph (162.5 km/h)
	Service ceiling: 13,200 ft (4,023 m)	Range: 420 mi (676 km)
Weights:	Empty: 2,022 lb (918 kg)	Gross: 2,736 lb (1,242 kg)
Dimensions:	Span: 36 ft 11 in (11.2 m)	Length: 28 ft 8 in (8.43 m)
	Height: 7 ft 7.5 in (2.32 m)	Wing area: 200 sq ft (18.6 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	BCATP units: Nos. 5, 10, 11, 23, 24, 32, 34 EFTSs and No. 2 FIS	
Serial Numbers:	Various between EW341–FX197, various between 10500–16650	

A beautiful view of the sole Fairey IIIF float-plane, J9172, on Canada's West Coast. (Stuart Thomson photo courtesy of the City of Vancouver Archives)

Fairey IIIC/F

The Canadian Air Force (CAF) received one Fairey IIIC as part of the Imperial Gift. It flew the first leg of the October 1920 trans-Canada flight, departing from Halifax, but due to a structural failure it force-landed in the Saint John River in New Brunswick. It would not fly again for the CAF. The Fairey IIIF was essentially a much-improved variant of the previous Fairey IIIC and D series of aircraft designed according to a two-part British specification, which called for a three-seat spotter reconnaissance aircraft for the Fleet Air Arm and for a land-based, two-seat, general-purpose aircraft for the Royal Air Force (RAF). The IIIF featured an all-metal fuselage and wings as well as a closely cowled Napier Lion engine. Originally, aircraft J9172 was produced for the RAF but was transferred to the RCAF and used briefly for trial purposes from October 1929 to September 1930. It was then returned to the RAF.

DETAILS

Designation: N/A
Model No: IIIF
Role: Reconnaissance float-plane
TOS: IIIC 1920, IIIF 1929
SOS: IIIC 1920, IIIF 1930
No: 1 x IIIC, 1 x IIIF
Service: RCAF

SPECIFICATIONS

Manufacturer:	Fairey	
Crew/Passengers:	One pilot and one observer/gunner	
Power Plant:	One 12-cylinder 570 hp Napier Lion engine	
Performance:	Max speed: 120 mph (192 km/h)	
	Service ceiling: 36,000 ft (10,973 m)	Range: 1,520 mi (2,432 km)
Weights:	Empty: 3,855 lb (1,752 kg)	Gross: 6,041 lb (2,746 kg)
Dimensions:	Span: 45 ft 9 in (13.95 m)	Length: 36 ft 9 in (11.20 m)
	Height: 14 ft 2 in (4.32 m)	Wing area: 439 sq ft (41 sq m)
Armament:	One .303 forward-firing Vickers and one .303 Lewis machine gun on a flexible mount	
Cost:	Unknown	
Affiliated Unit(s):	Unknown	
Serial Numbers:	IIIC G-CYCF, IIIF J9172	

The Fairey Albacore was designed to replace the Fairey Swordfish. In the end, the latter outlasted its successor in British wartime service. (RCAF photo)

Fairey ALBACORE

The Fairey Albacore had been designed to replace the Fairey Swordfish biplane on Royal Navy carriers. In the end, the latter outlasted its proposed successor. Albacores did, however, serve with distinction, performing several actions, particularly in the Mediterranean. In RCAF service, the Albacore must be credited with two distinctions: 1) it was the last operational biplane to be used by the RCAF; and 2) it was the only one to ever see action. In November 1943, "A" flight of No. 415 (RCAF) Squadron (Sqn) was equipped with Albacores for use in coastal operations. The aircraft usually operated at night as well as on anti-shipping patrols, and it carried a crew of two and armament consisting of six 250 lb (113 kg) bombs in lieu of a torpedo. Highlights of No. 415 Sqn operations included the sinking of the German torpedo boat Greif on 24 May 1944, and the suppression of enemy "E" boats that attempted to interfere with Allied shipping following the invasion of Normandy. When No. 415 Sqn was transferred from Coastal Command to Bomber Command, its Albacores and most of the aircrews, who were nearing the end of their tours, were then sent to No. 119 (RAF) Sqn. A small number of Albacores (six) were also brought on strength in the Home War Establishment and were transferred to the Royal Canadian Navy, but they were never used. They were reportedly sold as scrap shortly after arriving in Canada.

(RCAF photos - Griffin Library)

DETAILS

Designation: N/A
Role: Torpedo bomber
No: 6
Model No: N/A
TOS: 1943
Service: RCAF
Marks: I
SOS: 1949

SPECIFICATIONS

Manufacturer:	Fairey Aircraft Company	
Crew:	Two or three	
Power Plant:	One 1,130 hp (843 kW) Bristol Taurus XII radial engine	
Performance:	Max speed: 161 mph (259 km/h)	Cruising speed: 116 mph (187 km/h)
	Service ceiling: 20,700 ft (6,310 m)	Range: 930 mi (1,497 km)
Weights:	Empty: 7,250 lb (3,289 kg)	Maximum takeoff: 10,460 lb (4,745 kg)
Dimensions:	Span: 50 ft 0 in (15.24 m)	Length: 39 ft 10 in (12.14 m)
	Height: 14 ft 2 in (4.32 m)	Wing area: 623 sq ft (57.88 sq m)
Armament:	One forward-firing .303 in (7.7 mm) machine gun and twin Vickers "K" guns in the rear cockpit, plus provisions for one 1,610 lb (730 kg) torpedo, six 250 lb (113 kg) or four 500 lb (227 kg) bombs	
Cost:	Unknown	
Affiliated Units:	(HWE) Unknown (Overseas) No. 415 Sqn	
Serial Numbers:	N4191, N4315, T9244, T9246, X8947 and X8952	

This pristine Fairey Battle aircraft is a preserved example of the gunnery-trainer version. It is part of the National Aeronautical Collection at the Canada Aviation and Space Museum. Most RCAF Battles in the BCATP had a far more worn and faded appearance. (RCAF photo RNC-1463-3)

Fairey BATTLE

First flown in March 1936, the Fairey Battle was operationally obsolete by 1939, when it was intended to see active service as a front-line combat aircraft. Following a gallant but hopeless exposure in France at the beginning of the Second World War, the type was relegated to training duties, a role through which it contributed far more to the war effort than it had as an operational asset. The RCAF had received its first Battles in August 1939, when eight were shipped by rail to Camp Borden. More were sent from England, and large numbers would eventually be employed as dual-control trainers, target tugs and gunnery trainers in the many bombing and gunnery schools of the British Commonwealth Air Training Plan (BCATP). With the introduction of Bolingbrokes and Harvards, the number of Battles in RCAF use declined, but they continued to be in service until the end of hostilities.

DETAILS

Designation: N/A
Role: Trainer
No: 740

Model No: N/A
TOS: 1939
Service: RCAF

Marks: I, IT, IIT
SOS: 1946

SPECIFICATIONS (for the Mark I)

Manufacturer:	Fairey Aircraft	
Crew:	Crew of three	
Power Plant:	One 1,030 hp (768 kW) Rolls-Royce Merlin engine	
Performance:	Max speed: 257 mph (414 km/h)	Cruising speed: 210 mph (338 km/h)
	Service ceiling: 25,000 ft (7,620 m)	Range: 1,000 mi (1,609 km)
Weights:	Empty: 6,647 lb (3,015 kg)	Maximum takeoff: 10,792 lb (4,895 kg)
Dimensions:	Span: 54 ft 0 in (16.46 m)	Length: 42 ft 4 in (12.90 m)
	Height: 15 ft 6 in (4.72 m)	Wing area: 422 sq ft (39.20 sq m)
Armament:	One .303 in (7.7 mm) machine gun in starboard wing and one Vickers “K” gun in the rear cockpit, plus provisions for up to 1,000 lb (454 kg) of bombs	
Cost:	Unknown	
Affiliated Units:	BCATP units: Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9 B&GS	
Serial Numbers:	Various between 1301–2140, various between K7608–R7480	

This is a fine study of the Fairey Battle aircraft—in this case, a colourfully marked target-towing aircraft with yellow and black stripes. (RCAF photo WRF334)

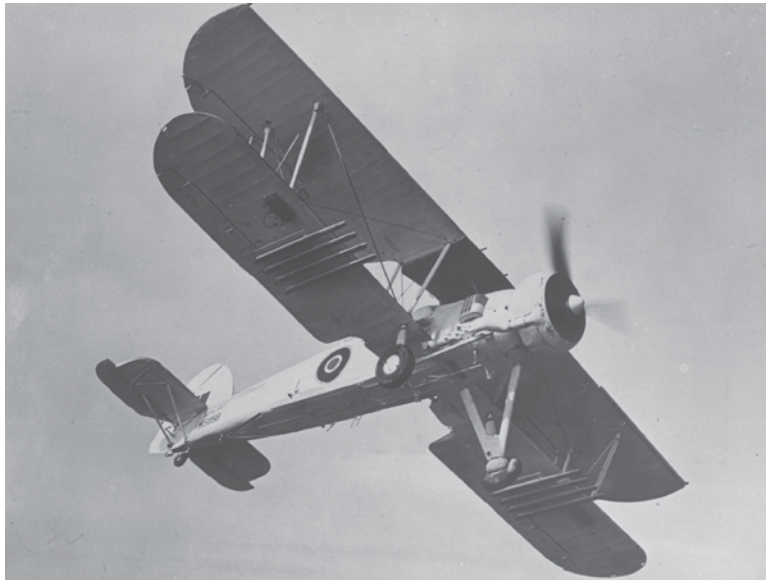
This is a Fairey Battle bomber in early RCAF service, pictured here at RCAF Station Rockcliffe in Ottawa. (RCAF photo)

This is a restored example of the Fairey Swordfish torpedo plane belonging to the Shearwater Aviation Museum in Nova Scotia. (RCAF photo SWC93-245-5)

Fairey SWORDFISH

First appearing in 1933, the open-cockpit Fairey Swordfish biplane was used by the Royal Navy as a torpedo bomber throughout the Second World War. The type primarily operated from aircraft carriers but was also flown from land bases in cross–English Channel actions. Although seemingly antiquated in comparison to other Second World War aircraft types, the Swordfish gave a good account of itself through several major battles, including the sinking of the German battleship Bismarck and the raid on the Italian Port of Taranto. The aircraft type was progressively used as a torpedo bomber, a shore-based minelayer, a convoy antisubmarine warfare (ASW) protection aircraft flown from escort carriers, a night-time flare dispenser, a rocket-armed anti-shipping strike aircraft and for various other training and utility purposes. However, the Swordfish only entered Canadian service at home in 1943, where it was primarily used by the Royal Canadian Navy as a training aircraft supported by the RCAF. In deference to Canadian winters, some of these latter aircraft were fitted with an enclosed cockpit.

Side view of reconstructed Swordfish aircraft. (RCN photo)


Swordfish aircraft, aerial view. (RCAF photo)

DETAILS

Designation: N/A
Role: Torpedo bomber
No: 99
Model No: T.S.R.II
TOS: 1943
Service: RCN/RCAF
Marks: II, III
SOS: 1947

SPECIFICATIONS (for the Mk II [land-plane version])

Manufacturer: Fairey
Crew/Passengers: One pilot and one or two observers/gunners
Power Plant: One 750 hp Bristol Pegasus XXX radial piston engine

Performance: Max speed: 138 mph (222 km/h); Cruising speed: 120 mph (193 km/h)
Service ceiling: 10,700 ft (3,260 m); Range: 1,030 mi (1,658 km)
Weights: Empty: 4,700 lb (2,132 kg); Gross: 7,510 lb (3,406 kg)
Dimensions: Span: 45 ft 6 in (13.87 m); Length: 35 ft 8 in (10.87 m)
Height: 12 ft 4 in (3.76 m); Wing area: 607 sq ft (56.39 sq m)

Armament: Provisions for one synchronized .303 in (7.7 mm) forward machine gun and one Lewis machine gun in a flexible mount aft, plus provisions for one 1,610 lb (730 kg) torpedo, up to 1,500 lb (680 kg) in light bombs or up to eight 60 lb (27 kg) unguided rockets on under-wing racks.
Cost: Unknown
Affiliated Unit(s): Unknown
Serial Numbers: W5856 and various between DK698–DK754, HS168–HS663, LS193, LS229, NE926–NS171

The diminutive Fleet Fawn aircraft served as a basic flying trainer. (RCAF photo via Jack McNulty Collection)

Fleet FAWN

The Fleet Fawn had an American origin. It was originally designed by Consolidated Aircraft Limited, and the company then acquired Fleet Aircraft. The aircraft had conventional construction for the period, with a welded steel-tube fuselage and composite metal, wood and fabric design features. The RCAF acquired the aircraft type as an elementary trainer. In service, the aircraft went through progressive updates and enhancements. A variety of engines were fitted, and a fuselage belly tank as well as a fixed cockpit enclosure, or "coupe top," with hinged sides were optional features. In the late 1930s, a sliding cockpit enclosure was developed and became a standard feature on all RCAF aircraft. The aircraft could also be flown on wheels, floats or skis.

The Fawn primarily served as a trainer at Camp Borden and RCAF Station Trenton and with 110 (Army Cooperation) Squadron (110 [AC] Sqn) prior to the Second World War. During the conflict, it was primarily used at the central training school and Nos. 1, 2 and 3 Flying Instructors Schools to train and test instructors. By mid-1943, most of the Fawns had become instructional airframes. The last aircraft were struck off strength in 1947.

(RCAF photo via Jack McNulty)

(British Columbia Aviation Museum archive photo)

DETAILS

Designation: N/A
Role: Trainer
No: 51
Model No: 7B, C, G
TOS: 1931
Service: RCAF
Marks: I, II
SOS: 1947

SPECIFICATIONS (for the 7B)

Manufacturer:	Fleet Aircraft of Canada	
Crew:	Two pilots in tandem	
Power Plant:	One 125 hp Kinner B-5 radial piston engine	
Performance:	Max speed: 112 mph (180 km/h)	Cruising speed: 87 mph (140 km/h)
	Service ceiling: 15,500 ft (4,724 m)	Range: 320 mi (515 km)
Weights:	Empty: 1,130 lb (513 kg)	Gross: 1,860 lb (844 kg)
Dimensions:	Span: 28 ft 0 in (8.5 m)	Length: 21 ft 6 in (6.5 m)
	Height: 7 ft 10 in (2.4 m)	Wing area: 194 sq ft (18.06 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	"C" Flt Camp Borden, RCAF Stn Trenton, 110 (AC) Sqn and Central Training School as well as Nos. 1, 2 and 3 Flying Instructors Schools	
Serial Numbers:	Various between 190–283	

This is a Fleet Finch trainer aircraft in standard British Commonwealth Air Training Plan colours. (CF photo)

Fleet FINCH

The Fleet Finch was essentially a further development of the company's previous Fawn design. The RCAF had evaluated the Fleet 10D, which was a development of its Fleet Model 7 aircraft. The RCAF then requested further modifications to the design of the aircraft—to make it fully aerobatic—as well as other equipment changes. This revised design was then designated as the Model 16, or Finch, in RCAF service. The aircraft had conventional construction for the period with a welded steel-tube fuselage and composite metal, wood and fabric design features. The RCAF acquired the aircraft type as an elementary trainer. When the aircraft was in service, a sliding cockpit enclosure was developed and became a standard feature on all RCAF aircraft. The Fleet Finch, like its predecessor the Fleet Fawn, was a rugged and successful elementary trainer that served the RCAF very well. The Fairchild Cornell replaced the Finch starting in mid-1942. Most Finches were then placed in storage for later sale to civilians. The rest were used as instructional airframes. The last aircraft were struck off strength in 1947.

January 1942 at RCAF Station Trenton. (RCAF photo)

Fleet Finch Mk I. (RCAF photo)

DETAILS

Designation: N/A
Role: Trainer
No: 431
Model No: 16B, R
TOS: 1939
Service: RCAF
Marks: I, II
SOS: 1947

SPECIFICATIONS (for the 16B)

Manufacturer:	Fleet Aircraft of Canada	
Crew:	Two pilots in tandem	
Power Plant:	One 125 hp Kinner B-5 radial piston engine	
Performance:	Max speed: 104 mph (167 km/h)	Cruising speed: 85 mph (137 km/h)
	Service ceiling: 10,500 ft (3,200 m)	Range: 320 mi (515 km)
Weights:	Empty: 1,122 lb (509 kg)	Gross: 2,000 lb (908 kg)
Dimensions:	Span: 28 ft 0 in (8.5 m)	Length: 21 ft 8 in (6.6 m)
	Height: 7 ft 9 in (2.36 m)	Wing area: 194 sq ft (18.06 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	3, 4, 7, 10, 11, 12, 13, 14, 16, 17, 21 and 22 EFTSs	
Serial Numbers:	1001–1027, 4405–4808	

This is a side view of the unusual-looking Fleet Fort. This example is a restored Fort. (Photo courtesy of Mike Kaehler)

Fleet FORT

The Fleet Fort was originally designed in Canada as an advanced flying trainer, and orders for 200 trainers were placed in 1940 as part of the British Commonwealth Air Training Plan (BCATP). Full-scale production could not be immediately commenced, and the first model was not flying until April 1941. By then, the availability of the Fairchild Cornell trainer and a change in what constituted an advanced trainer led to the contract being cut back sharply. Consequently, only 101 Forts were delivered between June 1941 and June 1942. The Fleet 60 was designed as a monoplane with a low elliptical wing and a raised rear cockpit. An unusual feature was the fixed undercarriage, which was fitted with a retractable fairing. This feature was intended to familiarize student pilots with an undercarriage retraction mechanism without causing any damage should the student forget to use it. The Forts were used primarily at No. 2 Wireless School in Calgary and No. 3 Wireless School in Winnipeg to train radio operators. The last Forts saw active service in 1944, and they were completely retired from use by 1945.

(RCAF photo)

(Griffin Library photo)

DETAILS

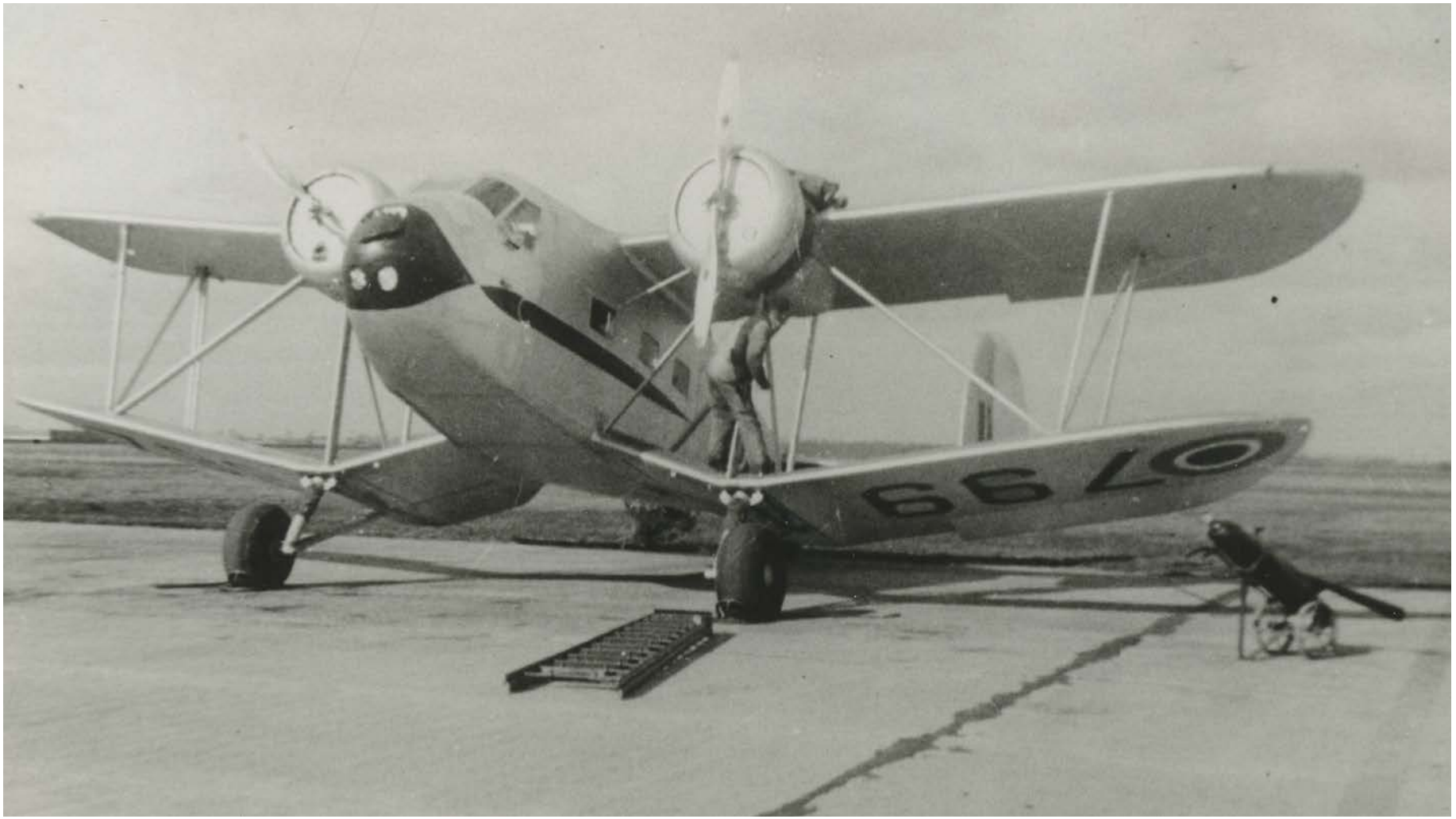
Designation: N/A
Model No: 60
Role: Trainer
TOS: 1941
SOS: 1945
No: 101
Service: RCAF

SPECIFICATIONS

Manufacturer: Fleet Aircraft
Crew: One pilot and one wireless operator trainee
Power Plant: One 250 hp or one 330 hp Jacobs radial piston engine

Performance: Max speed: 162 mph (261 km/h); Cruising speed: 135 mph (217 km/h); Service ceiling: 15,000 ft (4,572 m)
Weights: Empty: 2,530 lb (1,149 kg); Gross: 3,500 lb (1,589 kg)
Dimensions: Span: 36 ft 0 in (10.97 m); Length: 26 ft 10 in (8.18 m); Height: 8 ft 3 in (2.51 m); Wing area: 216 sq ft (20.07 sq m)

Armament: None
Cost: Unknown
Affiliated Units: Misc BCATP units
Serial Numbers: 3540, 3561–3660



This is RCAF Fleet Freighter aircraft 799 receiving some maintenance, probably at RCAF Station Trenton. (RCAF photo)

Fleet FREIGHTER

The Fleet Freighter was a twin-engine aircraft designed for cargo operations in rugged bush country. The fuselage was made of welded steel-tube construction with aluminum fairing strips and a fabric covering but with a semi-monocoque nose of aluminum. The inboard wing sections were made of metal stressed-skin construction, and the outer wing sections were made of composite construction with wooden spars, Duralumin ribs and fabric covering. To permit the easy carriage of freight, there were large doors in the fuselage along with a hatch in the front cabin floor. The RCAF originally ordered two Fleet Freighters for paratroop training. The aircraft were never used in this role, however, and were instead used for both freighting and air-ambulance duties.

DETAILS

Designation: N/A
Model No: 50K
Role: Utility
TOS: 1942
SOS: 1944
No: 2
Service: RCAF

SPECIFICATIONS

Manufacturer: Fleet Aircraft of Canada
Crew/Passengers: Two pilots plus up to 12 passengers
Power Plant: Two 330 hp Jacobs L-6MB radial piston engines

Performance: Max speed: 150 mph (241 km/h)
Cruising speed: 132 mph (212 km/h)
Service ceiling: 15,000 ft (4,572 m)
Weights: Empty: 4,600 lb (2,088 kg)
Gross: 8,326 lb (3,780 kg)
Dimensions: Upper span: 45 ft 0 in (13.7 m)
Lower span: 43 ft 4 in (13.21 m)
Length: 36 ft 0 in (10.97 m)
Wing area: 528 sq ft (49.0 sq m)
Height: 13 ft 1 in (3.99 m)

Armament: None
Cost: Unknown
Affiliated Units: RCAF Station Trenton
Serial Numbers: 799 and 800

This is Fokker Universal aircraft G-CAHE, which belonged to the RCAF. These aircraft were used exclusively for an expedition exploring the Hudson Strait in Canada's North. (RCAF photo)

Fokker UNIVERSAL

The RCAF acquired the Fokker Universal exclusively for an expedition to explore ice formation and navigation in the entrance to the Hudson Strait prior to the development of the Port of Churchill. In service, the aircraft were equipped with floats and skis, and they exclusively wore civilian markings. They operated from three bases, each with two aircraft, from August 1927 to August 1928. One aircraft was lost during the expedition, but the crew walked out over the ice from the crash site. The aircraft were struck off strength following the expedition.

(RCAF photo)

DETAILS

Designation: N/A
Model No: N/A
Role: Utility transport
TOS: 1927
SOS: 1929
No: 6
Service: RCAF

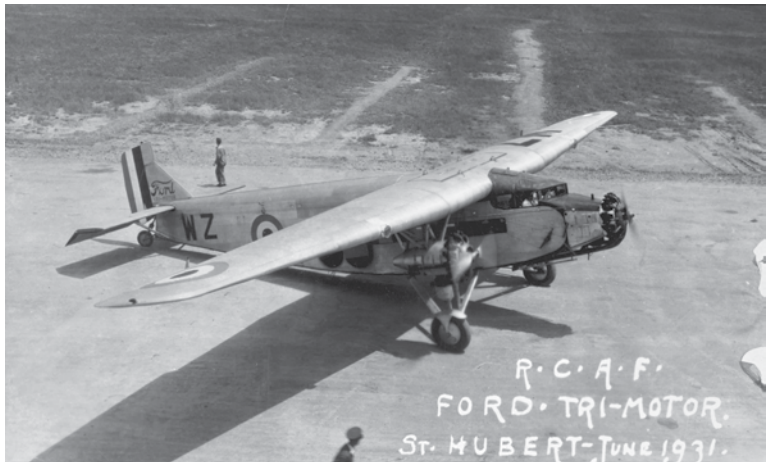
SPECIFICATIONS

Manufacturer:	Fokker Aircraft Corporation (United States)	
Crew/Passengers:	One pilot plus up to four passengers	
Power Plant:	One 220 hp Wright R-790 Whirlwind radial piston engine	
Performance:	Max speed: 118 mph (189 km/h)	Cruising speed: 98 mph (158 km/h)
	Service ceiling: 12,000 ft (3,658 m)	Range: 500 mi (805 km)
Weights:	Empty: 2,192 lb (996 kg)	Gross: 4,000 lb (1,818 kg)
Dimensions:	Span: 50 ft 8 in (15.44 m)	Length: 33 ft 3 in (10.13 m)
	Height: 8 ft 9 in (2.7 m)	Wing area: 341 sq ft (31.68 sq m)
Armament:	None	
Cost:	Can$21,900	
Affiliated Units:	Hudson Strait Expedition	
Serial Numbers:	G-CAHE–G-CAHJ	

In RCAF service, the Ford Trimotor was flown on wheels, skis or floats, the latter shown in this photo. (RCAF photo HC3043)

Ford TRIMOTOR

The Ford Trimotor was one of the most successful early transports. It was one of the largest all-metal aircraft built in America up to that time, and it featured a corrugated aluminum covering on the fuselage, wings, tail and the internally braced cantilever wing. The aircraft had gained quick acceptance from airlines and other services for its advanced features, and the RCAF acquired its one and only example in 1929. The aircraft was initially purchased as a replacement for the RCAF's two Keystone Puffer aircraft that had been used in experimental crop/forest dusting. The RCAF's Trimotor therefore holds the distinction of being one of the first and largest crop-dusting aircraft. The aircraft carried the registration G-CYWZ, and the last two call letters (WZ) were prominently displayed on the fuselage. The aircraft was often referred to by this shortened designation. The Trimotor was also used to transport the servicing personnel for the RCAF's aerobatic team, the Siskins, on their leg of the Trans-Canada Air Pageant of 1931. In addition, it was used for radio-range calibration duties and had a myriad of other uses. The aircraft proved to be very versatile and operated on wheels, skis or floats during its service life. Sold in 1937, the aircraft was destroyed in 1939, ironically on the ground in Vancouver, after an RCAF Hurricane fighter swerved off the runway only to collide with the parked Trimotor.



DETAILS

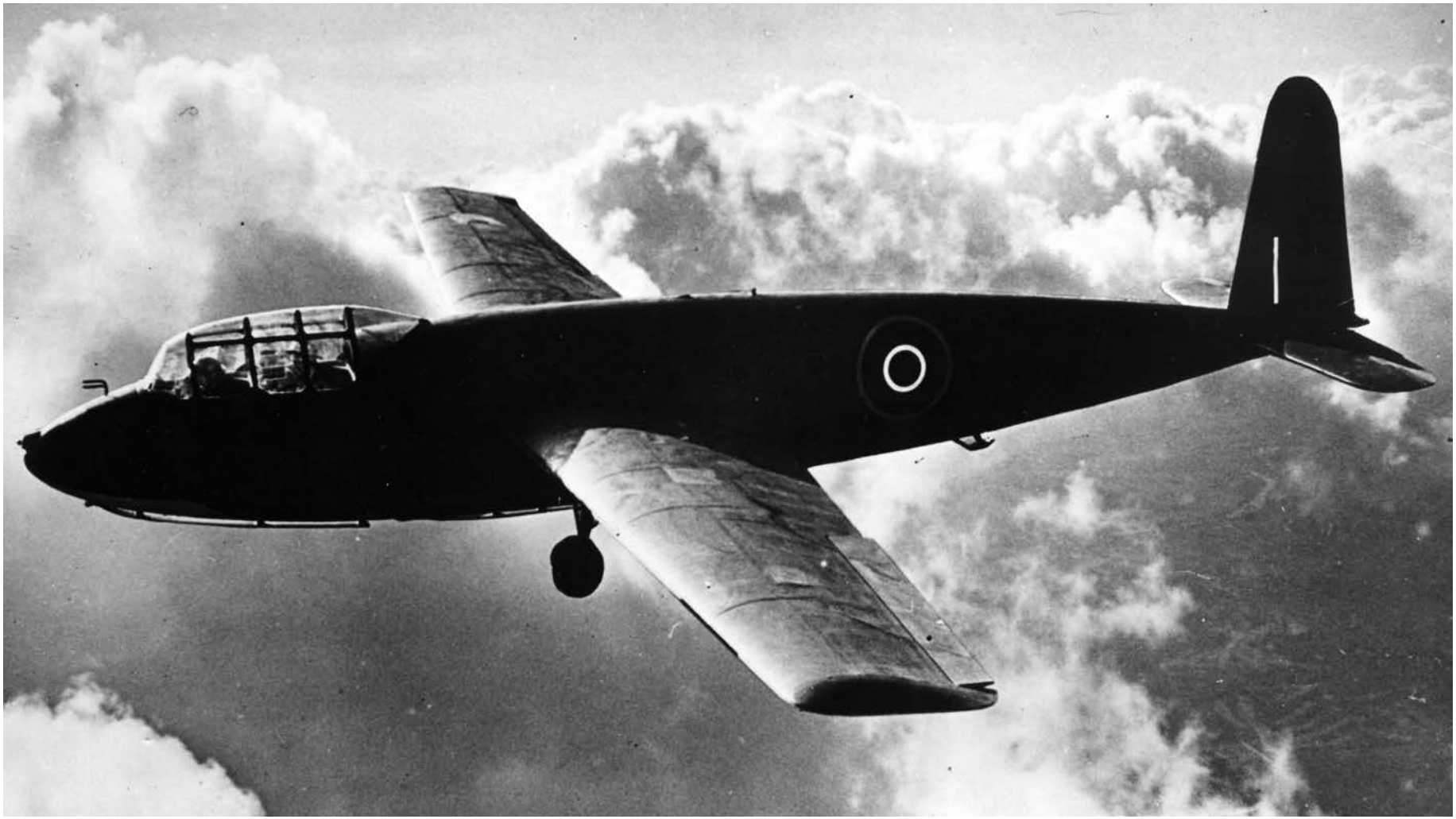
Designation: N/A
Model No: 4-AT
Role: Transport
TOS: 1929
SOS: 1937
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer: Ford Motor Company, Aircraft Division
Crew/Passengers: Two pilots plus up to 15 passengers or 1,200 lb (544 kg) of cargo or insecticide
Power Plant: Three 300 hp Wright Whirlwind J-6R75A piston engines

Performance:	Max speed: 152 mph (245 km/h)	Cruising speed: 122 mph (196 km/h)
	Service ceiling: 19,000 ft (5,791 m)	Range: 515 mi (829 km)
Weights:	Empty: 7,500 lb (3,402 kg)	Gross: 12,500 lb (5,670 kg)
Dimensions:	Span: 77 ft 10 in (23.72 m)	Length: 49 ft 3 in (15.01 m)
	Height: 11 ft 3 in (3.44 m)	Wing area: 835 sq ft (77.57 sq m)

Armament: None
Cost: Unknown
Affiliated Units: Various RCAF units
Serial Number: G-CYWZ



This is a dramatic view of the General Aircraft Hotspur glider. (RCAF photo)

General Aircraft HOTSPUR

The General Aircraft Hotspur was initially designed as a combat assault glider. It featured all-wood construction with plywood skins. Although the design was successful, only 20 Hotspurs were ever used operationally during the Second World War. However, over 1,000 Mark (Mk) II and Mk III versions were used by various glider training schools. The Mk II version had a reduced wing-span (reduced by 16 ft [4.88 m]) and featured dual controls as well as modified flaps and ailerons. The RCAF acquired 22 examples for training purposes, but never used them. Seven were sent to the United States.

DETAILS

Designation: N/A
Role: Glider
No: 22

Model No: G.A.L.48
TOS: 1942
Service: RCAF

Marks: II
SOS: 1945

SPECIFICATIONS

Manufacturer:	General Aircraft Company	
Crew/Passengers:	Two pilots and up to 8 troops or a variety of stores	
Power Plant:	None	
Performance:	Max speed: 130 mph (209 km/h)	Landing speed: 56 mph (90 km/h)
	Service ceiling: 10,000 ft (3,345 m)	Range: Tow-plane dependent
Weights:	Empty: 1,661 lb (753 kg)	Gross: 3,598 lb (1,632 kg)
Dimensions:	Span: 61 ft 11 in (18.87 m)	Length: 39 ft 4 in (11.99 m)
	Height: 10 ft 10 in (3.30 m)	Wing area: 272 sq ft (25.27 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	Unknown	
Serial Numbers:	Various between HH418 and HH667	

This is a clear side view of RCAF Meteor Mk III EE311. (RCAF photo via Jack McNulty Collection)

Gloster METEOR

The Gloster Meteor was the first operational jet fighter to be introduced into Allied service during the Second World War. It entered active service with the RAF in the summer of 1944, and many of its first missions were flown to counter the V-1 "buzz bomb" (also referred to as the "doodlebug") attacks being launched against Britain. Two Canadian pilots flying Meteors scored victories in this campaign. Flying Officer W. McKenzie, while flying with No. 616 (Royal Air Force [RAF]) Squadron (Sqn), shot down a V-1 on 8 August 1944, while Flying Officer J. Ritch scored yet another the very next day. In the post-war period of 1945, the RAF shipped a Meteor Mk III to Canada for test-and-evaluation purposes. A further three Meteor aircraft were scheduled to arrive later for similar purposes. The experience of these Canadian jet pilots helped solidify the early procurement of the De Havilland Vampire as Canada's first operational jet fighter in 1948. However, the RCAF was not yet finished with the Meteor. In June 1950, the Minister of National Defence confirmed the redeployment of 421 Sqn back overseas to acquire experience in the latest technique of air operations in cooperation with the RAF. 421 Sqn was subsequently (temporarily) equipped with (RAF-owned) Meteor Mk 7 aircraft for these training operations in England.

DETAILS

Designation: N/A
Role: Fighter, test and evaluation
No: 4
Model No: G41.D
TOS: 1945
Service: RCAF
Marks: F Mk III, F Mk IV, T Mk 7
SOS: 1948

SPECIFICATIONS (for the F Mk III)

Manufacturer:	Gloster Aircraft	
Crew:	One pilot	
Power Plant:	Two 2,000 lb thrust Rolls-Royce Derwent 1 centrifugal turbojet engines	
Performance:	Max speed: 410 mph (660 km/h)	
	Service ceiling: 44,000 ft (13,410 m)	Range: 1,000 mi (1,610 km)
Weights:	Empty: 8,140 lb (3,693 kg)	Gross: 13,800 lb (6,260 kg)
Dimensions:	Span: 43 ft 0 in (13.11 m)	Length: 41 ft 4 in (12.60 m)
	Height: 13 ft 0 in (3.96 m)	
Armament:	Four 20 mm Hispano cannons	
Cost:	Unknown	
Affiliated Units:	WEE, Test and Development Establishment	
Serial Numbers:	EE311, EE361, RA421 and VT196	

In the RCAF, the Gloster Meteor jet fighter aircraft was used for post-war cold-weather evaluations. The jet was very much a novelty. EE311 is seen here at a display in Ottawa for foreign military attachés. (RCAF photo PL-37102)

The RCAF was also loaned a Gloster Meteor Mk 7 training aircraft, shown here, while its own De Havilland Vampire fighter jets with No. 421 Sqn were training in England. (RCAF photo PL-52630)

Albatross water landing. (RCAF photo)

Grumman ALBATROSS

In the RCAF, the Grumman Albatross was selected to replace the Second World War–vintage "Canso" amphibian employed on post-war search and rescue (SAR) duties. The Albatross filled similar roles for the United States Air Force, Navy and Coast Guard as well as those of other western nations. Designed as an amphibian, the aircraft could operate from land and water as well as unprepared snow and ice surfaces by using a removable skid and ski gear. Reversible propellers gave it manoeuvrability on the water and shortened the landing run, while jet-assisted takeoff (JATO) bottles could be used to get the aircraft airborne quickly under adverse takeoff conditions. The aircraft type was last operated in Comox by 442 Squadron and was eventually replaced by the CC-115 Buffalo aircraft.

DETAILS

Designation: CSR-110 **Model No:** G-231
Role: Amphibian, SAR, transport **TOS:** 1960 **SOS:** 1970
No: 10 **Service:** RCAF

SPECIFICATIONS

Manufacturer:	Grumman Aircraft Corporation	
Crew/Passengers:	Two pilots with 8–12 passengers	
Power Plant:	Two 1,425 hp Wright R1820-82 radial engines	
Performance:	Max speed: 185 kt (343 km/h)	Cruising speed: 155 kt (287 km/h)
	Service ceiling: 22,000 ft (6,705 m)	Range: 2,849 NM (5,280 km) with drop tanks
Weights:	Empty: 22,883 lb (10,379 kg)	Maximum takeoff: 35,500 lb (16,100 kg)
Dimensions:	Span: 96 ft 8 in (29.46 m)	Length: 63 ft 7 in (19.38 m)
	Height: 25 ft 10 in (7.87 m)	Wing area: 1,035 sq ft (96.15 sq m)
Armament:	None	
Original Cost:	Can$1,026,155	
Affiliated Units:	No. 102 (KU), No.103 (RU), No. 111 (KU), No.121 (KU), and Nos. 413, 424, 442 Sqns	
Serial Numbers:	9301–9310	

The Composite Units (KUs) within the RCAF used a mixture of helicopters along with their CSR-110. Here, a Vertol H-21 "Flying Banana" hovers over its stable-mate. The versatility of these helicopters would eventually mean the demise of the amphibian in the SAR role. (RCAF photo PCN-4344)

The Albatross SAR aircraft proved to be highly versatile, operating from land, water or ice. (RCAF photo PCN-1944)

This is an interesting formation of RCAF Goblins. Note the differences in canopies, or lack thereof. (RCAF photo PL-5954)

Grumman GOBLIN

The G-23 Goblin was based on the Grumman FF-1 two-seat naval biplane fighter. In 1937, the Canadian Car and Foundry Company acquired a licence to build the Grumman FF-1 aircraft, known as the Goblin, and subsequently manufactured 57 of these aircraft. The majority of them were exported, and although the type had been offered to the RCAF, it was originally not considered suitable. The aircraft had been assessed as too slow and obsolete. The advent of war gradually changed this bleak assessment, and the RCAF acquired the final batch of 15 aircraft. In December 1940, "A" Flight of No. 118 Squadron (Sqn) was equipped with Goblins at RCAF Station Rockcliffe in Ottawa. Later, the unit moved to Dartmouth, Nova Scotia, where the Squadron's aircraft constituted the sole fighter force on the East Coast for a time. Late in 1941, they were supplemented by more-modern P-40 Kittyhawks, but they were not completely replaced until May 1942. No. 123 (Army Cooperation [AC]) Sqn also flew five Goblins for a brief time but had disposed of them by the end of March 1942.

(BCAM Archive photo)

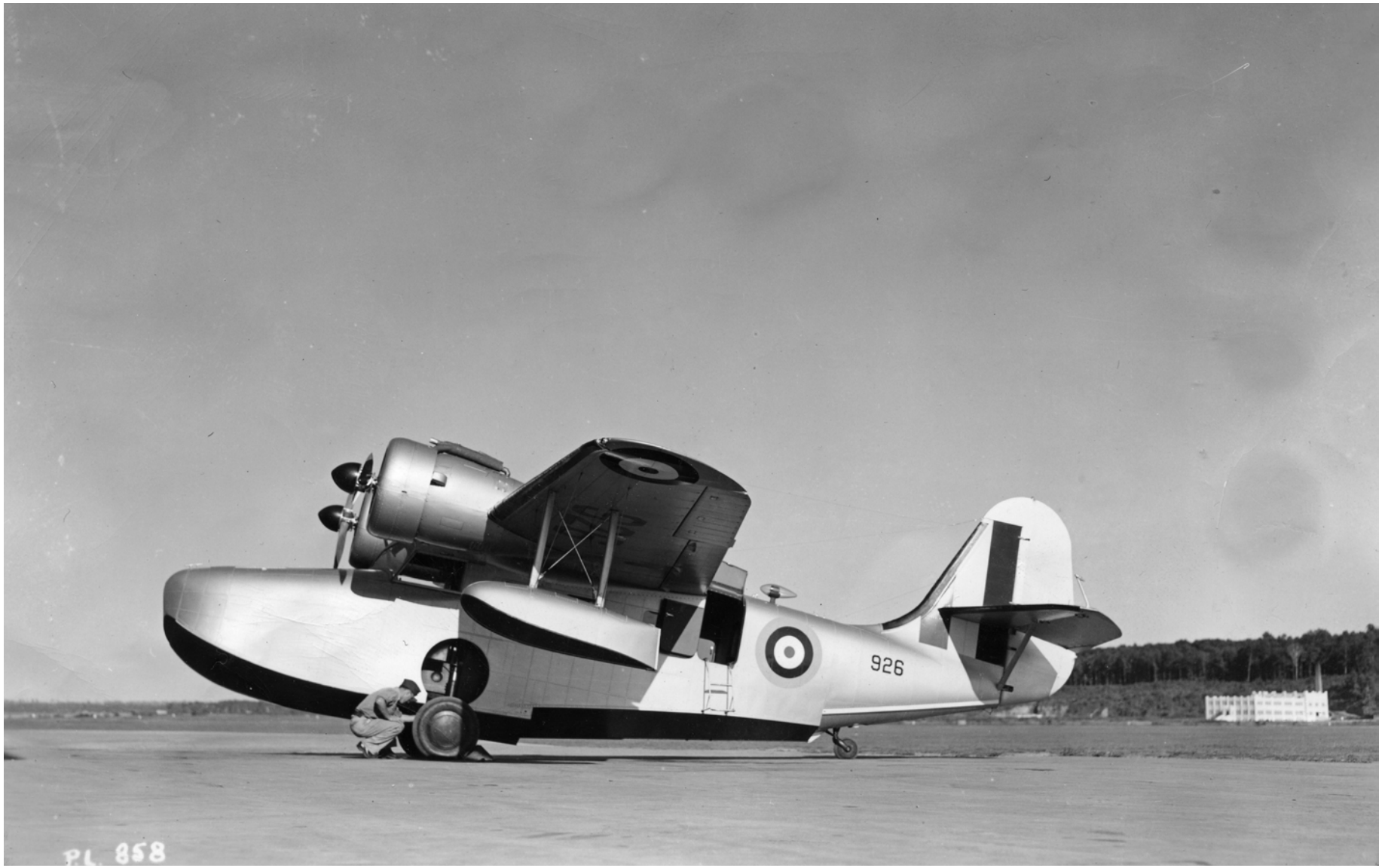

(RCAF photo PL-1948)

DETAILS

Designation: N/A
Role: Fighter
No: 15
Model No: G-23
TOS: 1940
Service: RCAF
Marks: I
SOS: 1942

SPECIFICATIONS

Manufacturer:	Canadian Car and Foundry Company under licence from Grumman	
Crew/Passengers:	One pilot and one observer	
Power Plant:	One 745 hp Wright R-1820-F53 Cyclone radial	
Performance:	Max speed: 223 mph (359 km/h) Service ceiling: 29,400 ft (8,960 m)	
Weights:	Empty: 3,279 lb (1,488 kg)	Gross: 4,728 lb (2,146 kg)
Dimensions:	Upper span: 34 ft 6 in (10.51 m) Height: 11 ft 1 in (3.78 m)	Length: 24 ft 6 in (7.47 m) Wing area: 310 sq ft (28.80 sq m)
Armament:	Two forward-firing .30 cal Browning machine guns and one flexible mount for the observer	
Cost:	Unknown	
Affiliated Units:	Nos. 118 (F) and 123 (AC) Sqns	
Serial Numbers:	334–348	



This view shows a pristine-looking RCAF Grumman Goose aircraft on the tarmac at RCAF Station Rockcliffe. Goose 926 was first taken on charge in July 1940, and it first served with No. 121 (K) Squadron at RCAF Station Dartmouth, NS. This aircraft was struck off charge in June 1942 and sold onto the Canadian civil register. Although some RCAF Goose aircraft could be found in camouflage colours, many of these aircraft were finished in a plain, silver paint scheme similar to that illustrated here. (RCAF photo PL-858)

Grumman GOOSE

The Grumman Goose was a twin-engine amphibian designed primarily for the civil market. The eight-seat design first flew on 29 May 1937. However, its modern design quickly garnered the attention of various militaries. The RCAF acquired the first example for use in 1938, and it was employed on communication and light-transportation duties. During the Second World War, additional examples were acquired, and the design's versatility and ruggedness saw it through the conflict and well into the post-war era.

DETAILS

Designation: N/A
Role: Amphibian, transport
No: 31
Model No: G-21A
TOS: 1938
Service: RCAF
Mark: II
SOS: 1956

SPECIFICATIONS

Manufacturer:	Grumman Aircraft	
Crew/Passengers:	Two crew and five to seven passengers	
Power Plant:	Two 450 hp Pratt & Whitney Wasp Jr. R-985-AN-6 radials	
Performance:	Max speed: 201 mph (323 km/h)	Cruising speed: 191 mph (307 km/h)
	Service ceiling: 21,300 ft (6,492 m)	Range: 640 mi (1,030 km)
Weights:	Empty: 5,425 lb (2,461 kg)	Maximum takeoff: 8,000 lb (3,629 kg)
Dimensions:	Span: 49 ft 0 in (14.95 m)	Length: 38 ft 6 in (11.73 m)
	Height: 16 ft 2 in (4.93 m)	Wing area: 375 sq ft (34.84 sq m)
Armament:	None	
Original Cost:	Unknown	
Affiliated Units:	Nos. 121, 122, 166 (Comm), 412 Sqns	
Serial Numbers:	382–397, 797, 917–944, FP471 and FP473	

Goose 392 at Anaheim Lake. (BCAM Archive photo)

Grumman Goose Mk II aircraft on water. (RCAF photo PL-57169)

The CP-121 Tracker was designed as a carrier-borne aircraft and first served with the RCN on HMCS *Bonaventure*. This example from VX-10 Squadron illustrates both the lower radome and MAD boom fully deployed. (RCN photo CT-441)

Grumman TRACKER

The Grumman Tracker was Canadian built by De Havilland, under license from Grumman aircraft, for use in the Royal Canadian Navy. The Tracker was built to be flown hard. Originally used for antisubmarine warfare (ASW) work off HMCS *Bonaventure*, the Canadian Tracker was built 18 inches shorter than its American counterpart to allow it to fit in the "Bonnie's" hangar. This carrier-borne aircraft was a state-of-the art, all-weather ASW platform carrying the latest electronic gear. For such a compact airframe, the Tracker boasted a respectable amount of equipment to fulfil its duties, including a magnetic anomaly detector (MAD) boom; a surface-search radar; an internal bomb bay for bombs, depth charges or torpedoes; a spotlight; sonobuoy dispensers; and wing pylons for bombs or rockets. With the integration of the Canadian Forces (CF), the aircraft type was then land based and used for coastal patrol as well as maritime surveillance work until being retired. In service from 1956 until 1989, the Tracker was one of the longest-serving piston-engine aircraft in the CF's inventory.

DETAILS

Designation: CP-121
Role: ASW, patrol
No: 101
Model No: S-2, CS2F-1, CS2F-2
TOS: 1956
SOS: 1989
Service: RCN/RCAF/CF

SPECIFICATIONS

Manufacturer:	De Havilland Canada licence-built version of the Grumman design	
Crew:	Two pilots and 2 crew members	
Power Plant:	Two 1,525 hp Wright R-1820-82 engines	
Performance:	Max speed: 287 kt (532 km/h)	Cruising speed: 130 kt (240.9 km/h)
	Service ceiling: 10,000 ft (3,048 m)	Range: 1,200 NM (2,228 km)
Weights:	Empty: 17,500 lb (7,945 kg)	Gross: 24,193 lb (10,984 kg)
Dimensions:	Span: 69 ft 8 in (21.23 m)	Length: 42 ft 3 in (12.88 m)
	Height: 16 ft 3.5 in (4.96 m)	Wing area: 485 sq ft (45.1 sq m)
Armament:	Provision for six Mk 43 torpedoes and/or CRV7 rockets in bomb bays or underwing pylons	
Original Cost:	Can$1,100,000	
Affiliated Units:	VU-32, VU-33	
Serial Numbers:	1500–1600	

This colourfully marked CP-121 was specially painted to commemorate the 30th anniversary of 880 Squadron. (RCAF photo CXC-121)

This photo illustrates some of the armament the CP-121 could carry—in this case, six LAU-5002 rocket pods with their CRV7 rockets. (CF photo)

This Halifax B.II aircraft is from 405 "City of Vancouver" Squadron. Coded "LQ-R," this airframe was RAF serial W7710, and it was named "The Ruhr Express" by its crew. Note the Rolls-Royce Merlin engines on this mark. (RCAF photo PL-10458)

Handley Page HALIFAX

Names painted on the sides of RCAF Halifax bombers—like "Willy the Wolf" and "The Champ" — reflected the affection that Canadian wartime crews felt for the big four-engine bomber type. It could absorb tremendous punishment and still fly home. One Halifax aircraft, named "Friday the Thirteenth," survived 128 sorties. The Halifax was perhaps overshadowed by its larger cousin in Bomber Command, the Avro Lancaster, but many Canadian crews were more than satisfied with the aircraft type, and the type was perhaps Canada's most important bomber in the Second World War. Apart from the bomber offensive, the Halifax was also used in Coastal Command to hunt submarines and for special operations such as towing gliders or making parachute drops of supplies and agents in occupied territories. A small number were also brought onto official RCAF Home War Establishment (HWE) strength for experimental and training purposes.

DETAILS

Model No: HP 56, 57, 58, 59, 60, 61, 62, 63
Marks: I, II, III, IV, V, VI, VII
Role: Bomber, ASW, transport, training and glider tug
TOS: 1940 **SOS:** 1945
No: 84 x Mk I, 1,977 x Mk II, 2,091 x Mk III, 904 x Mk V, 467 x Mk VI, 35 x Mk VII
Service: RAF and RCAF

SPECIFICATIONS (for the Mk III)

Manufacturer:	Handley Page Aircraft Ltd—designed and built	
Crew:	Seven crew (pilot, navigator, bomb aimer, radio operator, gunners)	
Power Plant:	Four Rolls-Royce Merlin or Bristol Hercules XVI radial engines at 1,615 hp	
Performance:	Max speed: 280 mph (450 km/h) at 13,500 ft (4,114.8 m)	
	Service ceiling: 41,000 ft (12,496 m)	Range: 3,000 mi (4,830 km)
Weights:	Empty: 36,000 lb (16,320 kg)	Gross: 65,000 lb (29,450 kg)
Dimensions:	Span: 98 ft 10 in (30.2 m)	Length: 70 ft 1 in (21.4 m)
	Wing area: 1,200 sq ft (111.5 sq m)	
Armament:	Nine Browning .303 calibre machine guns plus provisions for 13,000 lb (5,900 kg) of bombs or stores	
Original Cost:	Unknown	
Affiliated Units:	WEE, Flight Engineers School, CEPE and Nos. 405, 408, 415, 419, 420, 424, 425, 426, 427, 428, 429, 431, 433, 434 Sqns	
Serial Numbers:	HWE only – DC399, EB127, EB138, EB157, RG814	

This Halifax B.III aircraft HX318, named "Oscar," was an aircraft belonging to 424 "Tiger" Squadron and was photographed at Skipton-on-Swale, Yorkshire, on November 13, 1944. (RCAF photo PL-41055)

This is a rare colour view of an RCAF Halifax B.III aircraft from 420 Squadron. (Photo courtesy of the Nanton Archives)

This is a very rare colour view of the Handley Page Hampden. Hampdens were both built and flown at home in Canada during the Second World War, and they were used operationally overseas by three RCAF squadrons. (Photo courtesy of the Imperial War Museum)

Handley Page HAMPDEN

Often known by its nickname, the "Flying Suitcase," the Hampden was one of three bomber types (including the Wellington and Whitley) that formed the backbone of the Royal Air Force's (RAF's) Bomber Command in 1939. The Hampden was originally armed with only three machine guns and used in daylight bombing raids, but increasing losses forced both an increase in armament and a switch to night operations. The Hampden served operationally in RAF Bomber Command until September 1942, and then it soldiered in Coastal Command as a torpedo bomber and minelayer until December 1943. Two RCAF bomber squadrons, Nos. 408 and 420 Squadrons (Sqns), and one RCAF torpedo bomber sqn, No. 415 Sqn, used this aircraft type in overseas operations. After being withdrawn from active service, Hampdens still carried on in the training role. In Canada, most of the Hampdens served at No. 32 Operational Training Unit (OTU) for torpedo bomber training and at No. 1 Flight Engineers' School to acquaint flight engineers with the layout of a bomber. As well, 250 Hampdens were built at the two plants of Canadian Associated Aircraft in Malton, ON, and in St-Hubert, QC. They were sent to the United Kingdom, where they equipped RAF sqns, but some also served with 420 Sqn.

This Handley Page Hampden, AE288, belonged to No. 408 Sqn. The aircraft is apparently receiving a ground engine run-up, as evidenced by the missing engine cowling panels. (RCAF photo PL-4715)

This Handley Page Hampden, AN143, is seen on Canada's West Coast at Patricia Bay, BC, where the Hampdens were used by an operational training unit. (RCAF photo)

DETAILS

Designation: N/A
Role: Bomber, torpedo bomber, trainer
No: 96
Model No: HP52
TOS: 1941
Service: RCAF
Marks: B.Mk I, TB Mk I
SOS: 1944

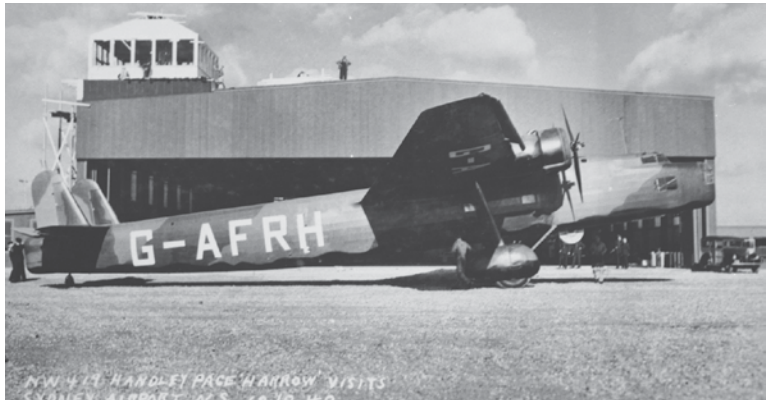
SPECIFICATIONS (for the Mk I)

Manufacturer:	Handley Page Aircraft Ltd	
Crew:	Crew of four	
Power Plant:	Two 1,000 hp (746 kW) Bristol Pegasus XVII radial engines	
Performance:	Max speed: 254 mph (409 km/h)	Cruising speed: 167 mph (269 km/h)
	Service ceiling: 19,000 ft (5,791 m)	Range: 1,885 mi (3,034 km)
Weights:	Empty: 11,780 lb (5.343 kg)	Maximum takeoff: 18,756 lb (8,508 kg)
Dimensions:	Span: 69 ft 2 in (21.08 m)	Length: 53 ft 7 in (16.33 m)
	Height: 14 ft 11 in (4.55 m)	Wing area: 668 sq ft (62.06 sq m)
Armament:	Two forward-firing and twin .303 in (7.7 mm) machine guns, the latter in dorsal and ventral positions, plus provisions for up to 4,000 lb (1,814 kg) in bombs or torpedoes	
Cost:	Unknown	
Affliiated Units:	No. 1 Flight Engineers' School, No. 32 OTU, Nos. 408, 415, and 420 Sqns	
Serial Numbers:	L4142–X3149, AD751–AT147	

Handley Page Harrow 794 Mk I. (Photo courtesy of the Griffin Library)

Handley Page HARROW

Originally designed as a bomber, the Handley Page Harrow was already obsolete at the outbreak of the Second World War. Consequently, it saw far more use as a transport. Prior to the war, a British civilian company brought two Harrows to Newfoundland in preparation for a projected transatlantic aerial-refuelling service. Britain had been a pioneer in experiments of this nature prior to the war. When hostilities commenced, the RCAF purchased both of these Harrow aircraft and sent them to the Test and Development Establishment at RCAF Station Rockcliffe. It appears, however, that neither of these aircraft was flown in active service during a very brief one-year period.



A Handley Page Harrow transport on the tarmac in Nova Scotia, shown in its original civilian markings. (Photo via Comox Air Force Museum)

DETAILS

Designation: N/A
Role: Transport
No: 2
Model No: HP 54
TOS: 1940
Service: RCAF
Marks: II
SOS: 1941

SPECIFICATIONS

Manufacturer: Handley Page Aircraft Company
Crew/Passengers: Crew of five, plus provision for 20 passengers
Power Plant: Two 925 hp (690 kW) Bristol Pegasus XX radial engines

Performance: Max speed: 200 mph (322 km/h); Cruising speed: 163 mph (262 km/h)
Service ceiling: 22,800 ft (6,949 m); Range: 1,250 mi (2,012 km)
Weights: Empty: 13,600 lb (6,169 kg); Gross: 23,000 lb (10,433 kg)
Dimensions: Span: 88 ft 5 in (26.95 m); Length: 82 ft 2 in (25.04 m)
Height: 19 ft 11 in (6.07 m); Wing area: 1,090 sq ft (101.26 sq m)

Armament: None—but provisions for four .303 in (7.7 mm) machine guns
Original Cost: Unknown
Affiliated Unit: Test and Development Establishment
Serial Numbers: 794 and 795

Hawker Audax K3100. (RCAF photo)

Hawker AUDAX

Designed as a light day bomber, the Hawker Hart entered service with the Royal Air Force in 1930. At the time, it was one of the fastest aircraft, outperforming other bombers and even front-line fighters. The exceptional performance of the design then prompted a number of variants for specific roles. These other variants—such as the Audax, Demon, Hind and Osprey—were similar in overall appearance but differed in the specific mission and equipment fit. The Audax also saw RCAF service. The Audax was an army cooperation variant featuring the Hart's engine and armament, as well as lengthened exhaust manifolds and a message pick-up hook mounted on an undercarriage spreader bar. The design was intended to replace the Armstrong Whitworth Atlas, which the RCAF had employed in this same role. Aircraft K3100 was received in 1933 and used for winter trials by the RCAF's Test Flight. It was then returned to the RAF. In 1940, the RCAF received five more Audaxes that were used as instructional airframes until 1943.

A wintry view of the streamlined Hawker Audax on skis, showing the extended exhaust and the pick-up hook underneath the fuselage.
(Library and Archives Canada photo PA62981)

DETAILS

Designation: N/A
Role: Utility
No: 6

Model No: N/A
TOS: 1933
Service: RCAF

Marks: N/A
SOS: 1943

SPECIFICATIONS

Manufacturer:	Hawker Aircraft Company	
Crew/Passengers:	One pilot and one observer/gunner	
Power Plant:	One 525 hp (391 kW) Rolls-Royce Kestrel IB engine	
Performance:	Max speed: 172 mph (275 km/h)	
	Service ceiling: 26,400 ft (8,047 m)	Range: 430 mi (692 km)
Weights:	Empty: 3,251 lb (1,475 kg)	Gross: 4,381 lb (1,987 kg)
Dimensions:	Span: 37 ft 3 in (11.35 m)	Length: 29 ft 7 in (9.02 m)
	Height: 10 ft 7 in (3.23 m)	Wing area: 348 sq ft (32.33 sq m)
Armament:	Provisions for one forward-firing .303 in (7.7 mm) machine gun and one .303 in (7.7 mm) flexible mount Lewis gun in the rear cockpit, plus up to 500 lb (227 kg) in light bombs	
Original Cost:	Unknown	
Affiliated Unit:	Test Flight and No. 1 TTS	
Serial Numbers:	K3100, A77–A81	

Hawker Hart K5861. (Photo courtesy of the Griffin Library)

Hawker HART

Designed as a light day bomber, the Hawker Hart entered service with the Royal Air Force (RAF) in 1930. At the time, it was one of the fastest aircraft, outperforming other bombers and even front-line fighters. The exceptional performance of the design then prompted a number of variants for specific roles. These other variants—such as the Audax, Demon, Hind and Osprey—were similar in overall appearance but differed in the mission and equipment fit. The Audax and Hind also saw RCAF service. By 1937, however, even the Hart itself was being badly outclassed by contemporary designs. The RCAF received K3102 for winter trials in 1937 and then returned it to the RAF. Two more Harts were received in 1940 as instructional airframes, serving as such until 1943.

DETAILS

Designation: N/A
Role: Utility
No: 3
Model No: N/A
TOS: 1937
Service: RCAF
Marks: N/A
SOS: 1943

SPECIFICATIONS

Manufacturer:	Hawker Aircraft Company	
Crew/Passengers:	One pilot and one observer/gunner	
Power Plant:	One 525 hp (391 kW) Rolls-Royce Kestrel IB engine	
Performance:	Max speed: 186 mph (299 km/h)	
	Service ceiling: 26,400 ft (8,047 m)	Range: 430 mi (692 km)
Weights:	Empty: 3,251 lb (1,475 kg)	Gross: 5,298 lb (2,403 kg)
Dimensions:	Span: 37 ft 3 in (11.35 m)	Length: 29 ft 4 in (8.94 m)
	Height: 10 ft 7 in (3.23 m)	Wing area: 348 sq ft (32.33 sq m)
Armament:	Provisions for one forward-firing .303 in (7.7 mm) machine gun and one .303 in (7.7 mm) flexible-mount Lewis gun in the rear cockpit, plus up to 500 lb (227 kg) in light bombs	
Original Cost:	Unknown	
Affiliated Unit:	Test Flight and No. 1 TTS	
Serial Numbers:	K3102, A82 and A92	

This is a clear view of the streamlined Hawker Hart. (Photo courtesy of T. F. J. Leversedge)

Hawker Hart K3012. (RCAF photo)

RCAF Hind of 112 (RCAF) Squadron taken in 1940.

Hawker HIND

Designed as a light day bomber, the Hawker Hart entered service with the Royal Air Force (RAF) in 1930. At the time, it was one of the fastest aircraft, outperforming other bombers and even front-line fighters. The exceptional performance of the design then prompted a number of variants for specific roles. These other variants—such as the Audax, Demon, Hind and Osprey—were similar in overall appearance but differed in the specific mission and equipment fit. The Hind was an improved version of the Hart, featuring a more powerful Rolls-Royce Kestrel engine, a tail wheel (vice tail skid), a cut-down rear fuselage to improve the field of fire and an improved prone position for aiming bombs. The RCAF received four Hinds from the RAF in 1942. They were used as instructional training aids prior to their withdrawal from use in 1943.

This Hawker Hind is a restored example belonging to the Canada Aviation and Space Museum. The overall similarity of the Hawker Audax, Hart and Hind designs is readily apparent in this and the previous images for those types. (Image courtesy of CA&SM)

DETAILS

Designation: N/A
Role: Utility
No: 4
Model No: N/A
TOS: 1942
Service: RCAF
Marks: N/A
SOS: 1943

SPECIFICATIONS

Manufacturer: Hawker Aircraft Company
Crew/Passengers: One pilot and one observer/gunner
Power Plant: One 640 hp (477 kW) Rolls-Royce Kestrel V piston engine

Performance: Max speed: 186 mph (299 km/h)
Service ceiling: 26,400 ft (8,047 m) Range: 430 mi (692 km)
Weights: Empty: 3,251 lb (1,475 kg) Gross: 5,298 lb (2,403 kg)
Dimensions: Span: 37 ft 3 in (11.35 m) Length: 29 ft 7 in (9.02 m)
Height: 10 ft 7 in (3.23 m) Wing area: 348 sq ft (32.33 sq m)

Armament: Provisions for one forward-firing .303 in (7.7 mm) machine gun and one .303 in (7.7 mm) flexible-mount Lewis gun in the rear cockpit, plus up to 510 lb (230 kg) in light bombs
Original Cost: Unknown
Affiliated Unit: No. 1 TTS
Serial Numbers: A73–A76

Pictured is a restored example of the Hawker Hurricane that belongs to the Canada Aviation and Space Museum. (CF photo)

Hawker HURRICANE / SEA HURRICANE

First flown in 1935, the Hurricane served throughout the Second World War in virtually every theatre of operations. The RCAF received its first Hurricanes in February 1939. The first RCAF squadron (sqn) to fire its guns in anger, No. 401 Sqn flew Hurricanes in the Battle of Britain. Two other RCAF sqns, No. 402 and 417 Sqns, flew the type in overseas operations and used three in training, while a further 12 sqns operated the aircraft here in Canada. The Canadian Car and Foundry Company began Canadian production in January 1940 at Fort William, Ontario. A total of 1,451 Hurricanes were built in this country. While not so graceful or well known as its fighting mate, the Spitfire, the Hurricane proved to be rugged in service and highly adaptable, being used in a wide variety of roles and carrying diverse types of weapons and armament. The type was also adaptable for naval-catapult operations aboard merchant vessels as well as for carrier operations. These adapted aircraft had arrestor hooks plus other minor modifications and were known as "Sea Hurricanes."

DETAILS

Designation: N/A
Role: Fighter
No: 503

Model No: N/A
TOS: 1939
Service: RCAF

Marks: I, IIA, B, C, IV, XII, XIIA
SOS: 1948

SPECIFICATIONS (for the Mark I)

Manufacturer:	Built by Canadian Car and Foundry Company under licence from Hawker	
Crew:	One pilot	
Power Plant:	One 1,300 hp (768 kW) Rolls-Royce Merlin II or III engine	
Performance:	Max speed: 318 mph (512 km/h)	
	Service ceiling: 33,400 ft (10,180 m)	Range: 440 mi (708 km)
Weights:	Empty: 4,670 lb (2,118 kg)	Gross: 6,600 lb (2,994 kg)
Dimensions:	Span: 40 ft 0 in (12.14 m)	Length: 31 ft 5 in (9.58 m)
	Height: 13 ft 1 in (3.99 m)	Wing area: 258 sq ft (23.97 sq m)
Armament:	Eight .303 in (7.7 mm) Browning machine guns	
Cost:	Can$50,000	
Affiliated Units:	Test and Development Flt; No. 1 OTU; No. 1 Flight Engineers' School; No. 2 B&GS; Nos. 1, 118, 123, 125, 126, 127, 128, 129, 130, 133, 135 and 163 Sqns in HWE; Nos. 401, 402, 417, 438, 439, 440 Sqns overseas	
Serial Numbers:	310–329, 1351–1380, 5376–5775, 9426, BW935–BW844, R4177, V7402, A274 (HWE only)	

In the photo is an early model Mk I Hurricane in Canada; note the two-bladed propeller. Canada also manufactured Hawker Hurricanes at the Canadian Car and Foundry plant in Ontario. (RCAF photo)

RCAF Hurricanes in Canada were often flown without the propeller spinner, giving them a very unique and distinctive appearance. (RCAF photo PC-2359)

This is another view of the Hurricane at the Canada Aviation and Space Museum. (CF photo REC67-684)

This is view of a late-model Hawker Tempest Mk V illustrating its Typhoon heritage with its distinctive “blown” canopy and nose (chin)–mounted radiator. (RAF photo)

Hawker TEMPEST

The Hawker Tempest was one of the finest fighters of the Second World War. A successor to the Hawker Typhoon, the Tempest was rushed into service and, to a large extent, helped to counter the V-1 flying-rocket attacks on southern England in 1944. The aircraft's outstanding performance allowed it to catch up to and destroy many of these vengeance weapons. As with the Typhoon, many RCAF pilots flew the Tempest while being posted to Royal Air Force squadrons. The aircraft also performed well against superior German jet aircraft such as the Me-262, and an RCAF pilot scored the first such victory while flying a Tempest. The Tempest continued in operation until the end of the war in Europe. Despite being well liked, however, the type was replaced by jet-powered Meteors and Vampires in the post-war period. The RCAF only "officially" brought one aircraft (a Mk VI [serial number NV999]) on strength in this post-war period, from February 1946 to February 1947, for trial purposes.

(RCAF Photo)

DETAILS

Designation: N/A
Model No: N/A
Marks: VI
Role: Fighter / fighter bomber
TOS: 1946
SOS: 1947
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Hawker Aircraft Company	
Crew:	One pilot	
Power Plant:	One 2,180 hp Napier Sabre IIA in-line piston engine	
Performance:	Max speed: 426 mph (686 km/h)	
	Service ceiling: 36,500 ft (11,125 m)	Range: 1,530 mi (2,462 km)
Weights:	Empty: 9,000 lb (4,082 kg)	Gross: 13,540 lb (6,142 kg)
Dimensions:	Span: 41 ft 0 in (12.50 m)	Length: 33 ft 8 in (10.26 m)
	Height: 16 ft 1 in (4.90 m)	Wing area: 302 sq ft (28.06 sq m)
Armament:	Four 0.79 in (20 mm) cannons, plus provisions for 12 x 60 lb (27 kg) rockets or 2 x 1,000 lb (454 kg) bombs	
Original Cost:	Unknown	
Affiliated Units:	No. 1 Winter Experimental and Training Flight	
Serial Number:	NV999	

Hawker Tomtit 139. (RCAF photo)

Hawker TOMTIT

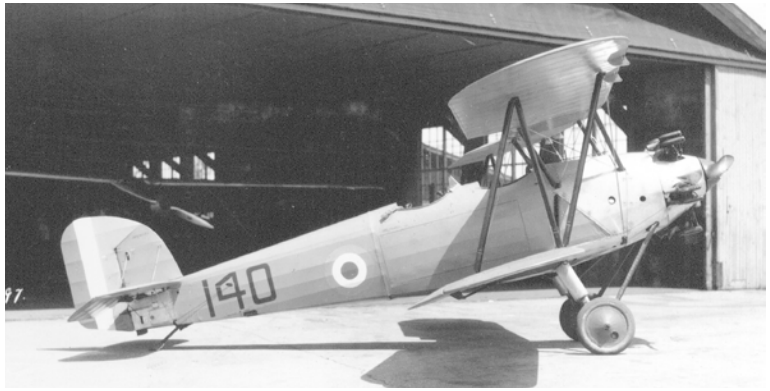
The Hawker Tomtit was designed as a two-seat elementary trainer with all-metal construction and a fabric covering. Designed to replace long-serving Avro 504 trainers in the Royal Air Force, it proved to have delightful flying qualities, and it possessed two features not previously seen on an elementary trainer: Handley Page–type automatic slots fitted to the upper wings, and a full provision for blind-flying instruction was made in the rear cockpit. In addition, the arrangement of the cockpits well clear of the main plane facilitated a rapid exit in the event of emergencies. However, why exactly the Tomtit was acquired for RCAF use remains somewhat unclear. The RCAF already had three other trainers in service, including the Avro Tutor, De Havilland Gipsy Moth and Fleet Fawn. Therefore, the RCAF only acquired two Hawker Tomtits, numbers 139 and 140, but they remained in service from May 1930 to July 1943. They belonged to No. 7 (General Purpose [GP]) Squadron and later to No. 12 (Communications [Comm]) Squadron, both located at RCAF Station Rockcliffe. These Tomtits both became instructional airframes in April 1941, serving as such until 1943.

DETAILS

Designation: N/A
Model No: 621
Role: General duties
TOS: 1930
SOS: 1943
No: 2
Service: RCAF

SPECIFICATIONS

Manufacturer:	HG Hawker Aircraft Engineering Co Ltd	
Crew:	Two pilots	
Power Plant:	One 150 hp Armstrong Siddeley Mongoose IIIC radial engine	
Performance:	Max speed: 124 mph (200 km/h)	Cruising speed: 102 mph (164 km/h)
	Service ceiling: 19,500 ft (5,944 m)	Range: 350 mi (563 km)
Weights:	Empty: 1,100 lb (499 kg)	Gross: 1,750 lb (794 kg)
Dimensions:	Span: 28 ft 6 in (8.69 m)	Length: 23 ft 8 in (7.21 m)
	Height: 8 ft 4 in (2.54 m)	Wing area: 238 sq ft (22.11 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	No. 7 (GP) and No. 12 (Comm) Sqns	
Serial Numbers:	139 and 140	



These are two views of the attractive Hawker Tomtit trainer. It possessed several features not previously seen in an elementary trainer, including Handley Page–type automatic slots fitted to the upper wings and full provision for blind-flying instruction made in the rear cockpit. (Photo courtesy of Canada Aviation and Space Museum)

Colour Comparison Test, at CFB Portage La Prairie, of the CH-112 Hiller Nomad helicopter. (RCAF photo)

Hiller NOMAD

The Hiller Nomad initially served as a light-reconnaissance helicopter with the Canadian Army (CA). It was primarily used for aerial observation and brigade liaison duties. Although nominally capable of carrying three personnel, the cramped bubble cockpit was more spacious with just two. Optional litters could, however, be strapped to the sides on top of the landing skids. The RCAF bought three Nomads for helicopter pilot training, serving both the RCAF and the CA. Like many early helicopter designs, the Nomad was perhaps underpowered; its piston engine developed just 305 hp at mean sea level. With the integration of the Canadian Armed Forces, the type became the joint training helicopter for the service, first at Rivers, Manitoba, and then at CFB Portage la Prairie. The Nomad was a particularly difficult aircraft to learn to fly on because of its peculiar cyclic-actuation system. Two pedals were moved by the cyclic-actuation system, which in turn tilted the rotor blades. Unfortunately, this design also produced a lag in actuation, and this lag could be particularly difficult for student pilots to master. In 1972, the Nomad was superseded in the training role by the Bell CH-136 Kiowa.

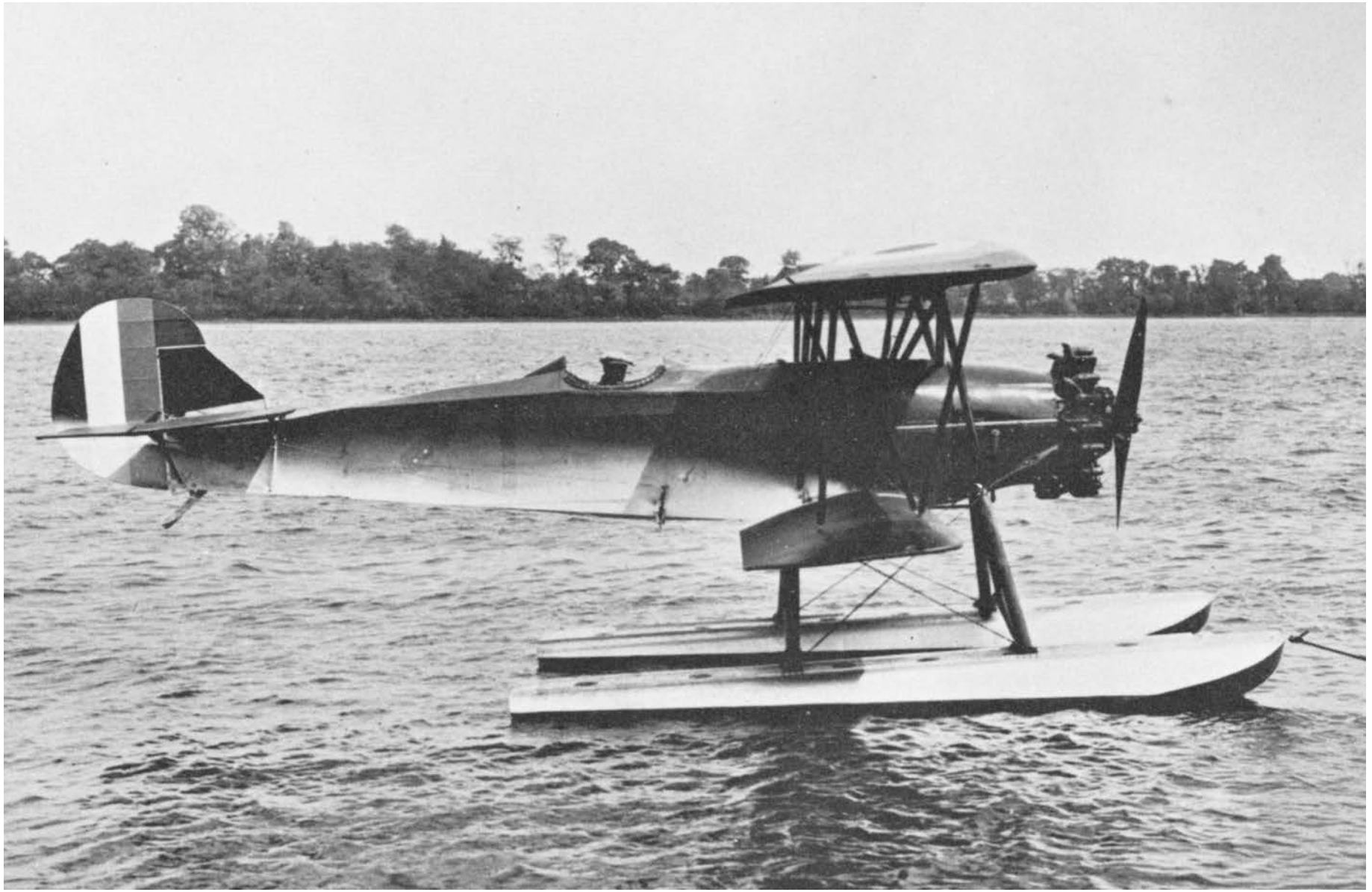
These are two views of the CH-112 Hiller Nomad as employed at CFB Portage la Prairie, MB. (RCAF photos PCN-71-64 and PCN71-55)

DETAILS

Designation: CH-112
Model No: UH-12E / OH-53D
Role: Light reconnaissance / training helicopter
TOS: 1961
SOS: 1972
No: 27
Service: CA/RCAF

SPECIFICATIONS

Manufacturer:	Hiller	
Crew/Passengers:	Two pilots and one passenger	
Power Plant:	One six-cylinder Lycoming VO-540-B1D piston engine producing 305 hp	
Performance:	Max speed: 96 mph (155 km/h) Service ceiling: 15,500 ft (4,724 m)	Cruising speed: 82 mph (132 km/h)
Weights:	Empty: 1,896 lb (860 kg)	Gross: 2,750 lb (1,247 kg)
Dimensions:	Rotor dia: 35 ft 0 in (10.67 m) Height: 10 ft 1.5 in (3.09 m)	Length: 40 ft 8.5 in (12.41 m) Width: 10 ft 0 in (3.05 m)
Armament:	None	
Cost:	Can$75,021	
Affiliated Units:	1 RCAC, 4 CIBG, CEPE, CJATC, 4 FTS	
Serial Numbers:	10261–10287, and those remaining renumbered between 112263 and 112285 in June 1970	



The RCAF's Keystone Puffer "ZI." Note the staining on the lower fuselage from the crop-dusting spray. (RCAF photo PL-114562)

Keystone PUFFER

The RCAF acquired two Keystone Puffer aircraft for experimental crop/forest dusting. Starting in 1921, the RCAF and its predecessor, the Canadian Air Board, had been helping the Department of Agriculture in its investigations into forest- and crop-disease response. In 1927, after some initial cooperative ventures, the Department of Agriculture again asked for RCAF assistance. Two pilots were sent to the United States for training in aerial dusting. At the same time, a contract was placed with Keystone Aircraft Corporation of Bristol, Pennsylvania, for two Huff-Duland aircraft, which had specifically been designed for crop dusting. One of the aircraft was to be equipped with a standard wheel undercarriage, while the other was to be delivered as a float-plane. The Huff-Duland aircraft were then redesignated as Keystone Puffers. The aircraft were used for a variety of crop-dusting experiments for control of a variety of problems, including forest pests, wheat rust and mosquito larvae. The experiments also revealed the hazards of flying a relatively large, heavily laden, single-engine aircraft at treetop heights. This, in turn, led to the purchase of a multi-engine Ford Trimotor for increased reliability along with an increased hopper capacity. The Puffer aircraft remained on strength until late 1934, when they were declared obsolete.

The Keystone Puffer in a wheeled configuration. (RCAF photo RE74-1636)

DETAILS

Designation: N/A **Model No:** N/A
Role: Crop dusting in wheel or float-plane configurations
TOS: 1927 **SOS:** 1934
No: 2 **Service:** RCAF

SPECIFICATIONS

Manufacturer: Keystone Aircraft Corporation
Crew/Passenger: One pilot and up to 1,500 lb (680 kg) of insecticide
Power Plant: One 200 hp Wright Whirlwind J-4 or J-5C radial piston engine

Performance: Max speed: 109 mph (175 km/h) Service ceiling: 15,250 ft (4,648 m)
Weights: Empty: 3,140 lb (1,424 kg) Gross: 5,500 lb (2,945 kg)
Dimensions: Span: 50 ft 0 in (15.24 m) Length: 38 ft 3 in (11.65 m)
Height: 14 ft 3 in (4.34 m)

Armament: None
Cost: Unknown
Affiliated Unit(s): Unknown
Serial Numbers: G-CYZH and G-CYZI

For the era, the Lockheed Electra was a very modern-looking twin-engine transport which the RCAF used for VIP transport and advanced training purposes. (RCAF photo PL-2080)

Lockheed ELECTRA

The Lockheed Electra model 10-A was an all-metal, low-winged, twin-engine transport monoplane with seating arranged for two pilots and up to ten passengers. The Electra was designed as a small passenger transport for short routes, but its interior was adaptable to various custom layouts. The club model offered plush comfort and twin-engine safety for athletes and business executives. When first put into service with Canadian Airways Limited in August 1936, it was the fastest aircraft flying in Canada at the time, compared to both civil and military aircraft. The excellent high-speed performance and overall success of the Electra instigated various later Lockheed twin-engine designs. With the start of the Second World War, the RCAF quickly acquired Electras for VIP and special-transport duties. In addition, the aircraft were used for communication purposes and at flying instructor schools.

Lockhead Electra 7841. (RCAF photo from the Griffin Library Collection)

DETAILS

Designation: N/A
Role: Transport
No: 15 (12 x 10A and 3 x 10B)
Model No: 10-A, B
TOS: 1939
Service: RCAF
SOS: 1946

SPECIFICATIONS

Manufacturer:	Lockheed Aircraft Corporation	
Crew/Passengers:	Two pilots and up to ten passengers	
Power Plant:	Two Wasp Junior R-985-SB engines rated at 400 hp (450 hp for takeoff)	
Performance:	Max speed: 210 mph (337 km/h)	Cruising speed: 195 mph (312 km/h)
	Service ceiling: 19,400 ft (5,913 m)	Range: 750 mi (1,207 km)
Weights:	Empty: 6,325 lb (2,869 kg)	Gross: 10,100 lb (4,581 kg)
Dimensions:	Span: 55 ft 0 in (16.76 m)	Length: 38 ft 7 in (11.76 m)
	Height: 10 ft 1 in (3.07 m)	Wing area: 458 sq ft (42.55 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	FIS Camp Borden and Trenton, Nos. 12 and 13 (Comm) Sqns	
Serial Numbers:	1526–1529, 7631–7841	

Images of more than one Electra Junior together in the RCAF are rare. These two Model 12As display the typical bare-metal finish used on home-based RCAF transport aircraft during the Second World War but with some extra trim colours on the nose and engine cowlings. (Photo courtesy of Canada Aviation and Space Museum)

Lockheed ELECTRA JUNIOR

The Lockheed Electra Junior (Model 12) was a small, low-winged, twin-engine monoplane of an all-metal construction. Essentially, the design was a scaled-down version of the earlier Model 10 that was also used by the RCAF. By using the same amount of power in a scaled-down aircraft, the Electra Junior delivered high performance with a high power-to-weight ratio. Upon its introduction into service, it became the fastest transport plane in the world, being capable of moving over 230 mph (370 km/h). Normally, the Model 12 carried two pilots and up to six passengers, but decreasing the passenger complement benefited range through conserving more fuel. The RCAF acquired a variety of these popular "twins" for use as high-speed executive transports.

Lockheed 12A-7654. (Photo from the British Columbia Aviation Museum archive)

DETAILS

Designation: N/A
Model No: 12A
Role: Transport
TOS: 1940
SOS: 1945
No: 10
Service: RCAF

SPECIFICATIONS

Manufacturer:	Lockheed Aircraft Corporation	
Crew/Passengers:	Two pilots and up to six passengers	
Power Plant:	Two Wasp Jr. SB engines rated at 400 hp (450 hp for takeoff)	
Performance:	Max speed: 225 mph (362 km/h)	Cruising speed: 213 mph (342 km/h)
	Service ceiling: 22,900 ft (6,980 m)	Range: 950 mi (1,529 km)
Weights:	Empty: 5,690 lb (2,703 kg)	Gross: 8,650 lb (3,883 kg)
Dimensions:	Span: 49 ft 6 in (15.09 m)	Length: 36 ft 4 in (11.07 m)
	Height: 9 ft 9 in (2.97 m)	Wing area: 352 sq ft (32.70 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	No. 12 (Comm) Sqn	
Serial Numbers:	1531, various between 7640–7838	

Lockheed 212-7642. (Photo courtesy of the Griffin Library)

Lockheed 212

The Lockheed Model 212 was a small, low-winged, twin-engine monoplane made of all-metal construction. Essentially, the design was a further development version of the earlier Model 12 Electra Junior, which was also used by the RCAF. Designated Model 212, this was the military variant of the design proposed by Lockheed in 1938. It was fitted with a dorsal turret having a .303 inch machine gun, plus a fixed forward weapon of a similar calibre and under-fuselage racks for up to eight 100 lb (45 kg) bombs. With no formal orders pending, however, this experimental machine was subsequently brought back to the model 12-A standard and delivered to the RCAF in June 1940. Normally, the Model 212 carried two pilots and up to six passengers, but decreasing the passenger complement benefited range through conserving more fuel. The RCAF acquired the prototype Model 212, in addition to ten Electra Juniors, for use as a high-speed executive transport.

The sole RCAF Model 212, shown here, was virtually identical to the more numerous Lockheed Model 12 Electra Juniors that were also used by the service. A Norseman is in the background. (Library and Archives Canada photo PA64052)

DETAILS

Designation: N/A
Model No: 212
Role: Transport
TOS: 1940
SOS: 1945
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Lockheed Aircraft Corporation	
Crew/Passengers:	Two pilots and up to 6 passengers	
Power Plant:	Two Wasp Jr. SB engines rated at 400 hp (450 hp for takeoff)	
Performance:	Max speed: 225 mph (362 km/h)	Cruising speed: 213 mph (342 km/h)
	Service ceiling: 22,900 ft (6,980 m)	Range: 800 mi (1,290 km)
Weights:	Empty: 5,690 lb (2,703 kg)	Gross: 8,650 lb (3,883 kg)
Dimensions:	Span: 49 ft 6 in (15.09 m)	Length: 36 ft 4 in (11.07 m)
	Height: 9 ft 9 in (2.97 m)	Wing area: 352 sq ft (32.70 sq m)
Armament:	Original provisions for a dorsal turret having a .303 in machine gun plus a fixed forward weapon of a similar calibre and under-fuselage racks for up to eight 100 lb (45 kg) bombs	
Cost:	Unknown	
Affiliated Units:	No. 12 (Comm) Sqn	
Serial Number:	7642	

The CP-140 Aurora maritime patrol aircraft in two different (early and later) colour schemes. (CF photos)

A CP-140 Aurora Block III aircraft from 14 Wing Greenwood flies over the Strait of Georgia, 26 January 2012, and drops a Mk-46 Mod 5 torpedo as it conducts initial operational testing and evaluation at the Canadian Forces Maritime Experimental and Test Ranges (CFMETR) at Nanoose Bay, British Columbia. (CF photo)

This is an example of the latest Block 4 standard of the CP-140 Aurora maritime patrol aircraft. Its external appearance has been changed considerably by the various system upgrades. (RCAF photo)

The is CP-140A Arcturus 140120 at 14 Wing Greenwood. One visual difference between the CP-140 and CP-140A was the lack of wing-tip ESM pods, as evidenced by this photo.
(RCAF photo SWC94-793-29)

Lockheed AURORA/ARCTURUS

The CP140 Aurora is a four-engine, turboprop, long-range maritime patrol aircraft built for the Canadian Forces (CF) by Lockheed Corporation. In 1976, the Aurora variant won the Canadian long-range patrol aircraft competition to replace the Canadair Argus, and 18 aircraft were delivered commencing in 1980. The aircraft type entered service in 1980. The Aurora is a successful marriage of the Lockheed P-3 Orion airframe with then–modern avionics similar to the S-3 Viking carrier-borne aircraft. The aircraft's sensors are primarily intended for antisubmarine warfare (ASW) work but are also capable of maritime-surveillance, counter-drug and search and rescue (SAR) missions. The P-3 airframe is a variant of the much-older Lockheed Electra airliner originally proposed to the United States Navy as a patrol bomber in 1957. The P-3 airframe currently forms the maritime-patrol backbone for many nations, including the United States, Australia, New Zealand, Japan, Norway, Spain and Portugal. The CP-140 Aurora has been progressively upgraded while in service with the RCAF. These upgrades have included structural modifications to improve the longevity of the airframe and significant improvements to all the on-board systems as part of the Aurora Incremental Modernization Project (AIMP).

The CP140A Arcturus was a further development of the CP-140. Originally, an option for a further six CP-140 Aurora aircraft was never taken up. Eventually, however, the need for additional airframes—particularly for flight-crew training sorties that were particularly damaging from a fatigue perspective—was recognized. A further three aircraft (P-3C airframes) with significantly different mission avionics were therefore acquired in the early 1990s for non–ASW roles, including marine surface surveillance, SAR, drug interdiction and pilot training. These later variants were named Arcturus in CF service. In essence, the Arcturus aircraft were assigned all the roles of the Aurora except that of ASW. There were no significant external differences between the CP-140A and CP-140 aircraft. Some minor changes were made to the fuselage structure. Principal mission systems include the AN/APS-507 surveillance radar. The CP-140A could carry and deploy two survival kit air droppables (SKADs) and could also carry weapons in the internal weapons bay. In the latter case, however, this was only for transport purposes. There were no underwing attachment points and the sonobuoy tubes were not wired for use. The aircraft did have the tail-boom extension, but the associated magnetic anomaly detection (MAD) equipment was not fitted. Similarly, the aircraft did not have the belly-mounted vertical camera system. The principal, visible external difference was the lack of the wing-tip-mounted electronic support measure (ESM) equipment (antennas) fitted to the CP-140 aircraft. The CP-140As had four observer stations with bubble windows, and the auxiliary escape hatch behind the pilot's seat also had an optical window for handheld photography. The three Arcturus aircraft met their original mandate on reducing wear and tear on the Aurora fleet and provided a vital boost in both maritime- and Arctic-surveillance capabilities before themselves being retired and stored in 2010.

DETAILS

Designation: CP-140 and CP-140A
Role: ASW/SAR
No: 18 x CP-140, 3 x CP-140A
Model No: P-3
TOS: CP-140 (1980), CP-140A (1993)
Service: CF/RCAF
Marks: AIMP Block 1, 2, 3, 4
SOS: CP-140 (in service), CP-140A (2010)

SPECIFICATIONS (for the CP-140)

Manufacturer:	Lockheed Aircraft Corporation	
Crew:	Two pilots, one flight engineer, four navigators, four AES OPs	
Power Plant:	Four Allison T-56-A-14 turbine engines	
Performance:	Max speed: 405 kt (750 km/h)	Cruising speed: 350 kt (648 km/h)
	Service ceiling: 35,000 ft (10,668 m)	Range: 5,000 NM (9,266 km)
	Endurance: 17 hr	
Weights:	Empty: 61,491 lb (27,892 kg)	Gross: 142,000 lb (64,410 kg)
Dimensions:	Span: 99 ft 8 in (30.37 m)	Length: 116 ft 10 in (35.61 m)
	Height: 33 ft 9 in (10.30 m)	Wing area: 1,300 sq ft (120.7 sq m)
Armament:	Provisions for 8 Mk 46 torpedoes, depth charges, mines, etc.	
Original Cost:	Can$24,905,000	
Affiliated Units:	MPEU, ASDU / 14 SES, Nos. 404, 405, 407, 415	
Serial Numbers:	CP-140: 140101–140118 and CP-140A: 114119–140121	

Hercules 338. (Photo courtesy of Mike Kaehler)

Lockheed HERCULES

The Hercules, considered to be one of the most versatile heavy-lift planes in the Canadian fleet, is used in the transport of equipment and cargo, in search and rescue (SAR) operations and in the air-to-air refuelling (AAR) of fighters. The Hercules can be loaded and unloaded quickly, with little equipment, and is especially useful in delivering supplies because it does not need a lot of room to land. The plane can also be easily reconfigured to carry fuel. During Operation BOXTOP—the restocking of Canadian Forces Station Alert, the northernmost permanent habitation in the world—Hercules aircraft are fitted with large fuel tanks to transport more than 100 plane-loads of fuel. Since entering the fleet in 1960, the Hercules has also delivered humanitarian aid to many trouble spots around the world and supported the Canadian contingents of UN peacekeeping missions as well as other international operations.

DETAILS

Designation: CC-130
Role: Transport/AAR
No: 44

Model No: H-73, H-80, H-90
TOS: 1960
Service: RCAF/CF

Marks: C-130 B, E, H, H(T)
SOS: In service

SPECIFICATIONS (for the H-Model)

Manufacturer:	Lockheed Aircraft Corporation	
Crew:	Two pilots, one navigator, one flight engineer and one loadmaster	
Power Plant:	Four Allison T-54-A-15 turboprop engines with 4,910 EHP (3,661 kW)	
Troops:	Up to 90, or 64 paratroops, or 74 litters plus 2 attendants	
Performance:	Max speed: 368 mph (621 km/h)	Cruising speed: 355 mph (571 km/h)
	Service ceiling: 42,900 ft (13,075 m)	Range: 5,465 mi (8,795 km)
Weights:	Empty: 76,780 lb (34,827 kg)	Maximum takeoff: 175,000 lb (79,379 kg)
Dimensions:	Span: 132 ft 7 in (40.41 m)	Length: 97 ft 10 in (29.81 m)
	Height: 38 ft 1 in (11.61 m)	Wing area: 1,745.5 sq ft (162.16 sq m)
Armament:	None, but provision for chaff and flare dispensers	
Cost:	CC-130B Can$2,141,440	CC-130H (73) Can$4,973,000
	CC-130H (84) Can$22,415,000	
	Note: There were multiple versions/variants of the "H" model Hercules that are denoted by the numbers in parentheses.	
Affiliated Units:	TFA, Nos. 408, 413, 424, 426, 429, 435, 436 Sqns	
Serial Numbers:	10301–10328, renumbered for Marks E in May 1970 to 130305–130328; 130329–130044	

The CC-130 Hercules aircraft is the most versatile aircraft in the CF transport fleet. The original aircraft were delivered in a smart, bare-metal and white overall paint scheme, as shown in the top photo. The type was later painted in various kinds of tactical camouflage paint schemes, as evidenced in the photo immediately above. (RCAF photo PCN-2230 and T. F. J. Leversedge photo)

The CC-130 Hercules has also been adapted for AAR and an example is shown here refuelling a flight of CF-188 Hornets. (RCAF photo WGC95-288-44a)

The entire RCAF fleet of CC-130J Super Hercules aircraft feature the stretched fuselage. (CF photo WEB2010-IE144-01)

Lockheed SUPER HERCULES

The latest version of the CC-130 Hercules, the J model, has the unofficial nickname of "Super Hercules." It is the most advanced version of the aircraft, and it features numerous technological improvements that add to operational capability while reducing operating and maintenance costs. Essentially, all that stays is the basic airframe shape. Composite materials have replaced metal components to make the aircraft lighter. The propulsion system has been redesigned and features four Rolls-Royce AE2100D3 engines (4,591 SHP each). Dowty R391 all-composite, six-blade propellers generate 29 percent more thrust while increasing fuel efficiency. The under-wing, external fuel tanks that are such a familiar feature of previous CC-130 models are consequently no longer necessary on the CC-130J. The J model's two-person, state-of-the-art cockpit is fully digital and includes four multifunctional liquid crystal displays; two holographic head-up displays; and electronic, digital read-outs for aircraft flight controls as well as operating and navigating systems. The displays and general aircraft lighting are night-vision-system compatible. A 1553 data bus, two mission computers and two backup bus interface units (BIUs) provide dual system redundancy. In addition, the computers provide for an integrated diagnostics system that monitors and records the status of the aircraft's structure and systems. The cargo area has also been improved with the addition of an Enhanced Cargo Handling System, decreasing loadmaster workload, reducing times for configuration changes and allowing for very precise airdrops.

DETAILS

Designation: CC-130J
Model No: C-130J-30
Role: Transport
TOS: 2010
SOS: In service
No: 16
Service: RCAF

SPECIFICATIONS (J-30 Model)

Manufacturer:	Lockheed Aircraft Corporation
Crew/Passengers:	Two pilots, one tech crew member and one or two loadmasters
Troops:	Up to 128, or 92 paratroops, or 74 litters plus two attendants
Power Plant:	Four Allison AE2100D3 turboprop engines with 4,591 EHP (3,425 kW)
Performance:	Max speed: 417 mph (670 km/h) Cruising speed: 400 mph (644 km/h) Service ceiling: 28,000 ft (8,500 m) with 42,000 lb (19,051 kg) payload Range: 2,100 mi (3,300 km) at max normal payload (34,000 lb [15,422 kg])
Weights:	Empty: 87,887 lb (39,765 kg) Maximum takeoff: 164,000 lb (74,389 kg)
Dimensions:	Span: 132 ft 7 in (40.41 m) Length: 112 ft 9 in (34.36 m) Height: 38 ft 10 in (11.84 m) Wing area: 1,745.5 sq ft (162.16 sq m)
Armament:	None but provision for chaff and flare dispensers
Cost:	Can$3.1 billion in acquisition costs
Affiliated Units:	TFA, Nos. 426 (OTU) and 436 Sqns
Serial Numbers:	130601–1300617

Ten of the RCAF's fleet of CC-130J Super Hercules aircraft are seen here on the runway at 8 Wing Trenton. (CF photo TN07-2015-0770-02)

The CC-130J fleet was immediately pressed into operational use after delivery. Missions were quickly flown in Afghanistan, and the aircraft above, 130603, is seen taxiing on the runway at the Malta International Airport during Operation MOBILE, which was the CF response to the crisis in Libya. (CF photo IS2011-5008-03)

The CC-130J Hercules is a significantly redesigned aircraft with only a small percentage of things in common with the other Hercules in the CF transport fleet. Externally almost identical to its older cousins (except for 6-bladed propellers), internally it is almost completely redesigned with all-new avionics, fly-by-wire and improved cockpit controls. (CF photo FA2011-0041-18)

Lockheed Hudson 764. (Photo courtesy of the Griffin Library)

Lockheed HUDSON

The Lockheed Hudson was developed from the Lockheed Model 14 transport design and became a familiar sight to many members of the Royal Air Force, RCAF, Royal Australian Air Force and United States Air Force. The Hudson was originally used for bombing but gained a more prominent niche in antishipping and antisubmarine patrol work along air-sea rescue and meteorological missions. Overseas, No. 407 Squadron (Sqn) flew Hudsons on antishipping operations from September 1941 until January 1943. They attacked enemy convoys at mast-height level and bombed more than 400,000 tons of enemy shipping. In Canada, the RCAF flew a total 243 Hudsons with Nos. 11, 113, 119, 120 and 145 (Bomber-Reconnaissance [BR]) Sqns. No. 11 Sqn, formed on the type on 3 November 1939, became the first RCAF unit to use the aircraft. The first U-boats sunk by Eastern Air Command (EAC) aircraft were victims of Hudson aircraft flown by No. 113 Sqn (31 July 1942) and No. 145 Sqn (30 October 1942). In all, EAC Hudsons made 28 attacks on German submarines. No. 11 Sqn converted to Liberators in August 1944, but Hudsons continued to fly with operational training squadrons at Nos. 121 and 167 (Composite) Sqns as well as with No. 168 (Heavy Transport [HT]) Squadron until after the war.

DETAILS

Designation: N/A
Role: Patrol
No: 247

Model No: 214, 414
TOS: 1938
Service: RCAF

Marks: I, II, III, V, VI
SOS: 1948

SPECIFICATIONS (for the Mk VI)

Manufacturer:	Lockheed Aircraft Company	
Crew:	Crew of 5	
Power Plant:	Two 1,200 hp (895 kW) Pratt & Whitney Twin Wasp R-1830-S3C4-G radial engines	
Performance:	Max speed: 261 mph (420 km/h)	
	Service ceiling: 21,000 ft (8,230 m)	Range: 1,160 mi (3,476 km)
Weights:	Empty: 12,929 lb (5,864 kg)	Gross: 18,500 lb (8,391 kg)
Dimensions:	Span: 65 ft 6 in (19.96 m)	Length: 44 ft 4 in (13.51 m)
	Height: 11 ft 11 in (3.63 m)	Wing area: 551 sq ft (51.19 sq m)
Armament:	Twin .303 in (7.7 mm) machine guns in fixed forward nose position and in dorsal turret position, one .303 (7.7 mm) in machine gun in ventral position, plus an internal bomb bay and underwing pylons for up to 1,000 lb (227 kg) in bombs, depth charges or fuel tanks	
Original Cost:	Unknown	
Affiliated Units:	Nos. 11, 113, 119, 120, 145 (BR) Sqns, Nos. 121, 123, 167 (KU) Sqns, and No. 168 (HT) Sqn plus 407 Sqn, Nos. 13, 31 and 36 OTU, CFS, No. 12 (Comm) Sqn	
Serial Numbers:	759–786, T9385, and various between AM576–FK564	

Several interesting views: on the top, the overhead view of an RCAF Lockheed Hudson Mk I illustrates the wartime camouflage finish. This Hudson belonged to No. 11 (BR) Squadron, based at RCAF Station Dartmouth, Nova Scotia. The photo on the bottom illustrates a much later all-white maritime patrol Hudson paint scheme and clearly illustrates the dorsal turret. (RCAF photos PL-1185 and PL-24337)

RCAF Lockheed Lodestar transport 555 was turned into a highly polished VIP transport aircraft, complete with a high-grade interior finish. (RCAF photo RE64-1827-B-1)

Lockheed LODESTAR

The Lockheed Lodestar transport design drew heavily from the company's Hudson bomber and earlier transport designs. Lockheed's Model 18 initially combined a new, lengthened fuselage with the Model 14 wings, tail unit and engines. Also flown by the United States Army Air Corps and the United States Navy, the RCAF acquired a small number of Lodestar aircraft for transport duties. Starting in 1943, No. 164 Squadron flew Lodestar aircraft on a run from Moncton, New Brunswick, to Goose Bay, Labrador, transporting essential freight, equipment and personnel during the construction of RCAF Station Goose Bay.

The fully camouflaged RCAF Lockheed Lodestar transport 555 on the tarmac. Towards the end of the war, aircraft such as these were stripped of paint to lessen their weight. (RCAF photo RE881-1)

DETAILS

Designation: 60A
Role: Transport
No: 18
Model No: 18
TOS: 1943
Service: RCAF
Marks: II
SOS: 1948

SPECIFICATIONS

Manufacturer:	Lockheed Aircraft Company	
Crew/Passengers:	Crew of three plus provisions for 14 passengers	
Power Plant:	Two 1,200 hp Wright Cyclone R-4-1820-87 radial engines	
Performance:	Max speed: 266 mph (428 km/h)	Cruising speed: 200 mph (322 km/h)
	Service ceiling: 30,100 ft (7,620 m)	Range: 2,500 mi (4,023 km)
Weights:	Empty: 12,500 lb (5,670 kg)	Gross: 21,000 lb (9,525 kg)
Dimensions:	Span: 65 ft 6 in (19.96 m)	Length: 49 ft 10 in (15.19 m)
	Height: 11 ft 11 in (3.63 m)	Wing area: 551 sq ft (51.19 sq m)
Armament:	None	
Original Cost:	Unknown	
Affiliated Units:	No. 12 (Comm) Sqn; Nos. 164 (T), 165 (T) and 168 (HT) Sqns; No. 1 Air Command; and North West Air Command	
Serial Numbers:	551–568	

Neptune 24123. (RCAF photo)

Lockheed NEPTUNE

The Neptune was a medium-range maritime reconnaissance aircraft originally designed and equipped with reciprocating engines. In 1952, the Lockheed Aircraft Company developed an improved version of the Neptune, known to the US Navy as the P2V-7, which satisfactorily met RCAF requirements for a medium-range reconnaissance aircraft to partially replace the Lancaster in that role. This improved variant was scheduled to come off the production line starting in 1954. In 1957, the decision was made to provide the aircraft with jet thrust augmentation by installing two Westinghouse jet-engine pods. The additional thrust improved takeoff, increased endurance by allowing higher weights of fuel and generally improved the overall performance of the aircraft.

DETAILS

Designation: CP-122
Role: ASW
No: 25
Model No: P2V-7
TOS: 1955
Service: RCAF
SOS: 1968

SPECIFICATIONS

Manufacturer:	Lockheed Aircraft Company	
Crew:	Crew of ten	
Power Plant:	Two Wright R3350-32W piston engines plus two J34 Westinghouse jet-engine pods, each with 3,400 lb of thrust	
Performance:	Max speed: 356 mph (572 km/h)	Cruising speed: 207 mph (333 km/h)
	Service ceiling: 22,000 ft (6,706 m)	Range: 2,200 miles (3,540 km)
Weights:	Empty: 49,935 lb (22,651 kg)	Maximum takeoff: 79,895 lb (36,240 kg)
Dimensions:	Span: 103 ft 10 in (31.65 m)	Length: 91 ft 8 in (27.94 m)
	Height: 29 ft 4 in (8.94 m)	Wing area: 1,000 sq ft (92.90 sq m)
Armament:	Provisions for two torpedoes, mines, depth charges, bombs internally plus rockets externally	
Original Cost:	Can$1,284,400 per A/C	
Affiliated Units:	CEPE, No. 2 (M) OTU, MPEU, Nos. 404, 405 and 407 Sqns	
Serial Numbers:	24101–24125	

This view illustrates one of the earliest models of the RCAF Neptune. There are no J34 jet-engine pods outboard of the regular piston engines. (RCAF photo PCN-1592)

In this view of RCAF Neptune 24102, the J34 jet-engine pods are clearly visible on the outboard wing. (RCAF photo PCN-1885)

These RCAF Neptunes are seen on the tarmac at RCAF Station Summerside, PEI, and these aircraft were then part of No. 2 (M) OTU. (RCAF photo PCN-3480)

Lockheed Ventura AE658. (RCAF photo)

Lockheed VENTURA

The Lockheed Ventura was a military development of the Lockheed Lodestar transport design, both of which drew heavily from the company's earlier Hudson bomber design. The Lockheed-Vega V-146 Ventura was in use by the RCAF from 16 June 1942 to 18 April 1947, in the home-defence coastal-patrol role in both Eastern and Western Air Command. They were flown by Nos. 8, 113, 115, 122, 145 and 149 Squadrons as well as by No. 1 Central Flying School in Trenton, Ontario, and No. 34 Operational Training Unit at Pennfield Ridge, New Brunswick. A total of 21 Mk I, 108 Mk II and 157 G.R. Mk Vs were in service during this period, for a grand total of 286 aircraft.

DETAILS

Designation: PV-1, PV-2, B-34
Role: Patrol
No: 286
Model No: V-146
TOS: 1942
Service: RCAF
Marks: BMk I, II, G.R. Mk V
SOS: 1957

SPECIFICATIONS (for the Mk I)

Manufacturer:	Lockheed Aircraft Company	
Crew:	Crew of five	
Power Plant:	Two 2,000 hp Pratt & Whitney Double Wasp R-2800-1 radial engines	
Performance:	Max speed: 300 mph (483 km/h)	Cruising speed: 260 mph (418 km/h)
	Service ceiling: 25,000 ft (7,620 m)	Range: 950 mi (1,529 km)
Weights:	Empty: 17,250 lb (7,824 kg)	Gross: 26,000 lb (11,793 kg)
Dimensions:	Span: 65 ft 6 in (19.96 m)	Length: 51 ft 3 in (15.62 m)
	Height: 11 ft 11 in (3.63 m)	Wing area: 551 sq ft (51.19 sq m)
Armament:	Provisions for up to five .50 cal Browning machine guns, an internal bomb bay and underwing pylons for up to 500 lb (227 kg) in bombs, depth charges or fuel tanks	
Original Cost:	Unknown	
Affiliated Units:	Nos. 8, 113, 115, 122, 145, and 149 Sqns, No. 1 CFS and No. 34 OTU	
Serial Numbers:	2141–2277, and various between AE658–AE954, AJ211–AJ448, FD572–FD755 and FN967–FP547	

This late-model G.R. Mk V Ventura has been turned into a target-towing aircraft, which explains its yellow and black diagonal-stripes paint scheme. (RCAF photo PL-135257)

This pristine example of a Lockheed Ventura is shown on the tarmac at RCAF Station Rockcliffe. It was probably there for testing after recently being delivered. (RCAF photo PL-24335)

The sole RCAF Martin Baltimore. (RCAF photo PL-8167)

Martin BALTIMORE

The Martin Baltimore was developed from its predecessor, the Martin Maryland, which had been pressed into service at the beginning of the Second World War. The Baltimore was developed in response to a British specification and provided for greater power and a deepened fuselage to allow crew members to move around. The prototype entered service in 1942 and was used by the Royal Air Force (RAF) exclusively in the Mediterranean theatre. RCAF personnel attached to RAF squadrons flew the type in theatre. RAF Ferry Command also loaned a single Baltimore to the RCAF for "special" project duties for a short period in 1942. This special project took place at the RCAF Detachment Chemical Warfare Experimental Establishment at Suffield, AB, and likely involved spraying smoke or chemicals.

Another view of the sole RCAF Martin Baltimore. (RCAF photo PL-8166)

DETAILS

Designation: N/A
Role: Bomber
No: 1
Model No: A-30
TOS: 1942
Service: RCAF
Marks: III
SOS: 1942

SPECIFICATIONS

Manufacturer:	Martin	
Crew:	One pilot and three crew members	
Power Plant:	Two 1,660 hp Wright Cyclone GR-2600-A5B radial engines	
Performance:	Max speed: 302 mph (486 km/h)	
	Service ceiling: 24,000 ft (7,315 m)	Range: 950 mi (1,529 km)
Weights:	Empty: 10,204 lb (4,629 kg)	Gross: 23,000 lb (10,433 kg)
Dimensions:	Span: 61 ft 4 in (18.69 m)	Length: 48 ft 5.75 in (14.77 m)
	Height: 17 ft 9 in (5.41 m)	Wing area: 539 sq ft (50.07 sq ft)
Armament:	Provision for eight to ten .303 in (7.7 mm) machine guns and 2,000 lb (907 kg) of bombs	
Cost:	Unknown	
Affiliated Unit:	No. 4 Training Command (Suffield, AB)	
Serial Number:	FA187	

Martinsyde F.4-D4301. (RCAF photo)

Martinsyde F.6

The Martinsyde Aircraft Company was actively engaged in the construction of a transatlantic monoplane at the outbreak of the First World War. The war years saw the company focus on fighter production, although the company's effective designs never achieved large-scale production. Immediately after the war, the company tried to re-enter the civilian market with new long-range designs that were primarily intended for mail carriage. The company also returned to its previous transatlantic design interests. While successful transatlantic attempts failed to materialize using Martinsyde aircraft, the design spawned several civil models, including a Type A Mark (Mk) I with two open cockpits and a Type A Mk II with an enclosed cabin for four passengers. The F.4 Buzzard was the fighter of choice for the fledgling Canadian Air Force (CAF) in England in 1918–1919, but the RAF instead provided the CAF with the Royal Aircraft Factory S.E. 5a. The Air Board acquired a single Martinsyde F.6—a two-seat development of the F.4 design—in 1920 for testing and evaluation purposes. It was transferred to the CAF in 1922, and it apparently had a brief career in the Air Force, flying primarily from Camp Borden.

The Martinsyde F.4 Buzzard shown here was very similar in overall lines to the lesser-known two-seat Martinsyde F.6 variant. The F.4 had been the preferred choice of fighter for the CAF in 1918–1919. (Library and Archives Canada photo, MIKAN 3390817)

Martinsyde F.4-D4301. (RCAF photo)

DETAILS

Designation: N/A
Model No: F.6
Role: Utility
TOS: 1922
SOS: 1925
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer: Martinsyde Aircraft Company
Crew/Passengers: Two pilots or one pilot and one observer
Power Plant: One 300 hp Hispano-Suiza piston engine

Performance: Max speed: 145 mph (233 km/h)
Weights: Empty: 1,810 lb (821 kg)
Dimensions: Span: 32 ft 9.5 in (9.99 m) Length: 25 ft 5.5 in (7.76 m)
Height: 10 ft 4 in (3.15 m)

Armament: None
Cost: Unknown
Affiliated Unit(s): Camp Borden
Serial Number: G-CYEQ

McDonnell Voodoo 101046. (RCAF photo)

McDonnell VOODOO

A formidable fighter aircraft, the McDonnell F-101 Voodoo was acquired by the RCAF, under some controversy, as a replacement for the CF-100 fleet in Air Defence Command. After the dramatic cancellation of the Canadian-designed CF-105 Arrow aircraft just two years before, the nuclear-capable CF-101 Voodoo and the BOMARC missile were acquired by the RCAF in a deal with the United States. As a supersonic, all-weather interceptor, the twin-engine, two-seat Voodoo provided high-speed, excellent climb performance and a very good combat radius and ceiling plus additional flexibility in replacing the CF-100. Canada purchased F-101s in two batches. The RCAF purchased 56 F-101B and 10 F-101F aircraft from the US in 1961. The surviving first batch of CF-101s were then exchanged in the 1970–1972 time frame for 56 lower-time and improved USAF F-101B and 10 F-101F aircraft. The second batch of Voodoos served as front-line interceptors for the Canadian Forces (CF) until the end of 1984. Additionally, one further F-101 (a unique electronic warfare conversion) was leased to Canada from 1982 to 1987. Used almost exclusively in the NORAD defence role, the aircraft type proved to be a safe and reliable weapons platform until it was replaced by the McDonnell Douglas CF-188 Hornet in the mid-1980s.

DETAILS

Designation: CF-101 **Model No:** F-101B/F
Role: Fighter interceptor **TOS:** 1961 **SOS:** 1984
No: 132 (66 each in two batches) **Service:** RCAF/CF

SPECIFICATIONS

Manufacturer:	McDonnell Aircraft Corporation	
Crew:	Two crew (pilot/navigator) in ejection seats	
Power Plant:	Two Pratt & Whitney J-57-P53/55 turbojets with 11,990 lb thrust and 14,990 lb (A/B)	
Performance:	Max speed: 1,220 kt (1,963 km/h)	
	Service ceiling: 51,000 ft (15,545 m)	Range: 1,550 mi (2,494 km)
Weights:	Gross: 39,900 lb (18,097 m)	Maximum takeoff: 46,673 lb (21,171 kg)
Dimensions:	Span: 39 ft 8 in (12.09 m)	Length: 67 ft 5 in (20.55 m)
	Height: 18 ft 0 in (5.49 m)	Wing area: 368 sq ft (34.18 sq m)
Armament:	Two AIR-2A Genie nuclear-tipped rockets and two AIM-4D Falcon missiles	
Original Cost:	Can$1,590,000	
Affiliated Units:	No. 3 OTU, Nos. 409, 410, 414, 416, 425 Sqns	
Serial Numbers:	17391–17483, 101001–101067	

This photo illustrates the first two CF-101 Voodoos (in this case appropriately numbered 17101) arriving in Canada as part of the delivery ceremony. (RCAF photo PCN-3350)

This view is of two RCAF Voodoo aircraft in late CF service with 407 Squadron, "the Nighthawks," at CFB Comox. (CF photos)

The RCAF Voodoo aircraft routinely held both real and practice scrambles to identify unknown aircraft entering Canadian or US airspace. Aircraft 101007 is seen above in full afterburner in preparation for a takeoff. (CF photo)

A two-seater CF-188 flies over the Parc des Laurentides en route to Valcartier firing range. (RCAF photo)

This photo illustrates a CF-188 Hornet from the Aerospace Engineering Test Establishment test firing Canadian-developed CRV7 rockets. (CF photo)

This is a view of a CF-188 Hornet in a high-alpha manoeuvre, clearly illustrating the vortex being generated off of the leading-edge extension (LEX) fence. (CF photo)

Test firing an AIM-7 missile at a target drone. (CF photo)

McDonnell Douglas (later Boeing) HORNET

In the 1970s, the Air Force decided that a single multirole fighter type would replace its CF-101 Voodoos, CF-104 Starfighters and CF-116 Freedom Fighters. The resulting new-fighter-aircraft competition culminated in the selection of the McDonnell-Douglas F/A-18 Hornet. Canada became the first export customer for the type in a contract worth Can$2.34 billion. Several uniquely Canadian modifications were incorporated into the aircraft design. These included changes for Canadian unique weapons, a 600,000-candle-power searchlight in the starboard nose for night intercepts, a modified survival kit and a land-based instrument landing system (ILS) system replacing the United States Navy automatic carrier landing system. Deployed to Canadian air defence (NORAD) and NATO squadrons, the CF-188 Hornet lived up to all expectations. The multirole capability of the Hornet has been repeatedly proven in Canadian Forces' (CF's) use and the aircraft have been operationally employed in the Gulf War and in the NATO campaign over both Kosovo and Libya. In the Gulf War, the aircraft were employed in both combat air patrol (CAP) and conventional strikes. Flying from Aviano, Italy, in the skies over Kosovo and Serbia, the aircraft was primarily employed in the attack role, dropping both conventional and precision-guided munitions. The fleet has received a number of ongoing structural and system upgrades / modernization programmes. Its planned replacement programme has also been underway for some time. To further extend the life of the fleet, a small number (25) of surplus Royal Australian Air Force F/A-18s were also purchased, with some of these being restored to flight status while others provided a source of spares.

DETAILS

Designation: CF-188A/B
Role: Fighter
No: 138 (98 single and 40 dual)
Model No: F/A-18A/B
TOS: 1982
Service: CF
SOS: In service

Individually selected CF-188 Hornets have been routinely, colourfully painted to participate in aerobatic displays for the Canadian public. This photo is one of many examples. (Photo courtesy of Boeing)

SPECIFICATIONS

Manufacturer:	McDonnell-Douglas Aircraft Corporation (later a Boeing Company)
Crew:	One pilot (CF-18A) or two pilots (CF-18B)
Power Plant:	Two General Electric F404-GE-400 low-bypass turbofans at 16,000 lb (7,258 kg) thrust
Performance:	Max speed: Mach 1.8 Service ceiling: 49,000 ft (15,000 m) Unrefuelled range: 2,300 mi (3,704 km)* *(retractable air-to-air refuelling probe fitted)
Weights:	Empty: 23,400 lb (10,614 kg) Gross: 37,000 lb (16,783 kg) Maximum takeoff: 49,355 lb (22,387 kg)
Dimensions:	Unfolded span: 40 ft 5 in (12.32 m) (with missiles) Folded span: 27 ft 6 in (8.38 m) Length: 56 ft 0 in (17.07 m) Height: 15 ft 3 in (4.66 m) Wing area: 400 sq ft (37.16 sq m)
Armament:	Internally mounted M61A1 20 mm cannon and provisions for AIM9 Sidewinder and AIM7 Sparrow air-to-air missiles, Maverick air-to-ground missiles, conventional bombs and precision-guided bombs, unguided CRV7 rockets, fuel tanks, etc.
Cost:	Approximately Can$24 million per aircraft
Affiliated Units:	AETE and Nos. 409, 410, 416, 425, 433, 439, and 441 Sqns
Serial Numbers:	Original Fleet 188701–188798, 188901–188940 Ex-RAAF A/C 188001–188057, 188105–188115

RCAF Noorduyn Norseman aircraft were often to be found in the float-plane configuration, as shown here in this rare colour view of a 495 Mk IVW example. (RCAF photo PC-2490)

Noorduyn NORSEMAN

The Noorduyn Norseman ranks as probably one of the most important designs in Canadian aviation history. An eight-seat general-purpose "bush" aircraft, it was the first Canadian-designed and Canadian-built aircraft to see worldwide use. Designed by Mr. R. B. C Noorduyn, the design incorporated the specific requests and suggestions of Canadian bush pilots, and good performance on wheels, floats and skis was considered a pre-requisite. First flown in 1935, the type gained rapid acceptance. At the outbreak of the Second World War, the RCAF placed orders, which eventually totalled 99 aircraft of various models, plus one more purchased after the war. The US government was, however, by far the largest customer, purchasing over 800 Norseman for military use. The utility of the design ensured its post-war use. The last RCAF example was retired in 1957, although numerous civilian examples soldiered on long after this date.

DETAILS

Designation: N/A
Role: Utility transport / float-plane
No: 100
Model No: C-64
TOS: 1940
Service: RCAF
Marks: I, II, III, IV, V, VI
SOS: 1957

SPECIFICATIONS (for the wheeled version)

Manufacturer:	Noorduyn Aviation Limited and Canadian Car and Foundry	
Crew/Passengers:	One pilot and up to seven passengers	
Power Plant:	One 600 hp Pratt & Whitney Wasp Jr. radial piston engine	
Performance:	Max speed: 155 mph (249 km/h)	Cruising speed: 141 mph (227 km/h)
	Service ceiling: 17,000 ft (5,182 m)	Range: 464 mi (745 km)
Weights:	Empty: 4,250 lb (1,928 kg)	Gross: 7,400 lb (3,357 kg)
Dimensions:	Span: 51 ft 8 in (15.75 m)	Length: 32 ft 4 in (9.86 m)
	Height: 10 ft 3 in (3.12 m)	Wing area: 325 sq ft (30.19 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	Nos. 6 (BR), 12, 13, 122, 408, 413 Sqns, Nos. 105, 111 K, 121 (Comm) and 137 Flt, and various BCATP units including Nos. 1 and 2 WS and various other stations/units	
Serial Numbers:	Various between 361–3524, A291	

The Noorduyn Norseman was a rugged and highly dependable bush-plane design. Used by the RCAF throughout the Second World War, in the immediate post-war period, the later model Norseman (as with this Mk VI belonging to No. 413 Sqn) formed the backbone of the RCAF's early search and rescue units. (RCAF photo PL-48099)

Norseman 3523. (RCAF photo)

This is post-war RCAF B-25 Mitchell 5239 belonging to No. 406 (Auxiliary) “City of Saskatoon” Squadron. This example is a high-speed transport version of the type. (RCAF photo)

North American MITCHELL

The B-25 Mitchell was a highly successful, American-designed medium bomber of the Second World War. The type was widely exported, and six Royal Air Force (RAF) squadrons in the 2nd Tactical Air Force flew B-25 Mitchells in various theatres of operation. Many RCAF officers and men were attached to the RAF units that operated the type. During the war, the Mitchell served as a training aircraft with No. 5 Operational Training Unit (OTU). Following the war, the Mitchell was then supplied in quantity to RCAF Nos. 406 and 418 (Auxiliary) Squadrons along with various other units. It was then used primarily as a pilot, navigational and radar trainer as well as for aerial surveying and as a high-speed transport until its retirement in the spring of 1962.

DETAILS

Designation: N/A
Role: Bomber
No: 164

Model No: B-25B, D, J
TOS: 1942
Service: RCAF

Marks: I, II, III
SOS: 1962

SPECIFICATIONS

Manufacturer:	North American Aircraft	
Crew:	Two pilots and up to three additional crew depending on mission	
Power Plant:	Two 1,700 hp Wright Cyclone R-2600-13 radial engines	
Performance:	Max speed: 272 mph (438 km/h)	Cruising speed: 230 mph (370 km/h)
	Service ceiling: 24,200 ft (7,380 m)	Range: 1,350 mi (2,173 km)
Weights:	Empty: 19,418 lb (8,808 kg)	Gross: 35,000 lb (15,876 kg)
Dimensions:	Span: 67 ft 7 in (20.60 m)	Length: 52 ft 11 in (16.13 m)
	Height: 16 ft 4 in (4.98 m)	Wing area: 610 sq ft (56.67 sq ft)
Armament:	Provision for eight 0.5 in (12.7 mm) machine guns and 3,000 lb (1,361 kg) of bombs	
Cost:	Unknown	
Affiliated Units:	CEPE, Nos. 3 and 5 OTUs, No. 2 AOS, No. 2 ANS, Nos. 402, 406, 413, 418 Sqns, 129 Acceptance and Ferry Flight, 7 Photographic Wing	
Serial Numbers:	891–894, various between 5200 and 5283, and various between FK164 and KL161	

This is a post-war RCAF B-25 Mitchell belonging to No. 406 (Auxiliary) "City of Saskatoon" Squadron. It is being bombed-up for an exercise on 19 February 1952. (RCAF photo PC-75)

This is a line-up of B-25 Mk 3AI (Air Intercept) radar trainers belonging to No. 3 OTU shown at RCAF Station Cold Lake. These trainers were used to help train CF-100 Canuck crews. (RCAF photo PC-1452)

Mustang 9298 in 442 Squadron colours. (RCAF photo)

North American MUSTANG

The North American Mustang was first flown in 1940 and eventually became one of the finest long-range fighters of the Second World War. Early versions, fitted with Allison engines, initially lacked high-altitude performance and were therefore used by both the Royal Air Force (RAF) and RCAF for low-level reconnaissance and ground attack duties. Further modifications to the design resulted in the marriage of the Rolls-Royce Merlin engine to a re-designed airframe. This latter combination, known as the Mark IV in RAF and RCAF service, proved to be outstanding. Three RCAF Squadrons (Nos. 400, 414 and 430) used early model Mustangs in the reconnaissance role and No. 441 and 442 Squadrons converted to the Mk IV variant in 1945 for long-range escort duties. In the post-war period, the RCAF acquired a further 88 Mustang IV aircraft for use by both regular and auxiliary squadrons. The aircraft survived in this latter role until 1961.

DETAILS

Designation: P-51 or F-51
Role: Fighter, fighter reconnaissance
No: 130
Model No: P-51A, B, C, D
TOS: 1947
Service: RCAF
Marks: I, II, III, IV
SOS: 1961

SPECIFICATIONS (for the P-51D)

Manufacturer:	North American Aircraft	
Crew:	One pilot	
Power Plant:	One 1,590 hp Packard (license-built) V-1650-7 Merlin piston engine	
Performance:	Max speed: 448 mph (721 km/h)	Cruising speed: 360 mph (579 km/h)
	Service ceiling: 41,900 ft (12,771 m)	Range: 1,300 mi (2,092 km)
Weights:	Empty: 7,125 lb (3,232 kg)	Gross: 11,600 lb (5,262 kg)
Dimensions:	Span: 37 ft 1 in (11.29 m)	Length: 32 ft 3 in (9.83 m)
	Height: 13 ft 8 in (4.17 m)	Wing area: 235 sq ft (21.83 sq m)
Armament:	Six 0.5 in (12.7 mm) machine guns plus provisions for two 500 lb (227 kg) bombs, eight rockets or two drop tanks	
Cost:	US$54,000	
Affiliated Units:	Wartime: Nos. 400, 414, 430, 441 and 442 Sqns	
	Post-war: CEPE, No. 102 (KU), Nos. 402, 403, 416, 417, 420, 424, 442 and 443 Sqns	
Serial Numbers:	Post-war: 9221–9300, 9551–9600	

North American Mustang fighter aircraft 9298 is shown in the wartime colours of No. 442 Sqn. This unit converted from Spitfires to P-51D Mustangs to begin long-range bomber-escort missions to which the type was well suited. This aircraft is now part of the Canada Aviation and Space Museum collection. (RCAF photo RCAF RNC-1538-32)

Mustang fighter aircraft 9569 shown in post-war RCAF colours belonged to No. 102 (KU) Unit. (RCAF photo PC-1065)

These two Mustang aircraft were photographed during an auxiliary squadron exercise in Grande Prairie, AB. Note the difference in the style of fuselage roundels between the two aircraft. The aircraft in the foreground is wearing the earlier blue and red maple leaf–only roundel. (RCAF photo PL-53930)

The Flying Instructors at the FTS in Moose Jaw created an aerobatic team named the "Goldilocks," which used the Harvard. Their famous flying formation with all the aircraft askew, as shown here, was intended to remind the audience of student pilots still learning their skills. (RCAF photo PCN-4553)

North American NA-26, NA-44, NA-66/76 HARVARD

Developed from the NA-16 series of trainer aircraft in the US, the sole NA-26 was in fact a civilian-company demonstrator aircraft. It was the first trainer to have hydraulics; thus, it was the first trainer to have a retractable undercarriage and extendable flaps. It became the predecessor to the famous Harvard, or Texan, training aircraft. The NA-26 was widely used as company demonstrator. By 1940, it was surplus to company requirements and sold to the RCAF and used alongside other Harvard aircraft at No. 2 Service Flying Training School at Uplands in Ottawa. It was also upgraded to Harvard Mark (Mk) II standard. The sole NA-44 was the second of North American–company demonstrator aircraft acquired by the RCAF. It was marketed as a combat aircraft. It could carry four .30 calibre machine guns in the wings and string points for bomb racks. It therefore had an engine that delivered 60% more power than that of the standard Harvard. When the NA-44 became surplus, the RCAF bought it. Because of its performance it was "commandeered" by senior officers in Trenton where the aircraft was based.

The RCAF operated over 1,000 North American NA-66/76/81 "Harvard" Mk IIs and more than 850 AT-6/16s. Over half were built at Noorduyn Aviation in Montreal. The RCAF also purchased or received NA-49, NA-61, AT-6 and AT-16 models. With its outstanding performance the Harvard was the choice to be the lead-in trainer for fighter pilots training at the Service Flying Training Schools. It also served at one other Wireless School, and all three Flying Instructors Schools as well as at other squadrons and units.

After the war, the RCAF would provide every auxiliary squadron with Harvard IIs as trainers and refresher aircraft, which they used until late 1958. When the NATO Air Training Plan started in 1950, the RCAF required more Harvards. Canadian Car and Foundry at Fort William (now Thunder Bay) had bought the licence and began production of 270 T6-J Harvard Mk 4s. But first, the RCAF acquired 100 AT-6D Texans from the United States Air Force (USAF). Once the Mk 4s began to arrive, the Texans were returned to the USAF. After the NATO Air Training Plan stopped, the RCAF would continue to use some Harvards into the early 1960s.

DETAILS

Designation: N/A
Model Nos: NA-26, NA-44 and NA-49/61/66/76/81 plus AT-6/16 and T-6J
Marks: I, II, IIB, 4
Role: Trainer
TOS: NA-26 (1940), NA-44 (1940), NA-49/61/66/76/81 (1939), AT-6 (1941), AT-16 (1951), T-6J (1951)
SOS: NA-26 (1942), NA-44 (1947), NA-49/61/66/76/81 (1960), AT-6 (1954), AT-16 (1960), T-6J (1968)
Nos: NA-26 (1), NA-44 (1) and NA-49/61 (34), NA-66/76/81 (993), AT-6 (310), AT-16 (649) and T-6J (270) Total: 2,258
Service: RCAF/RCN

SPECIFICATIONS (for the Harvard Mk IV)

Manufacturer:	Canadian Car and Foundry under licence from North American Aircraft	
Crew:	Two pilots	
Power Plant:	One 600 hp Pratt & Whitney R-1340-AN-1 Wasp radial engine	
Performance:	Max speed: 180 mph (290 km/h)	
	Cruising speed: 140 mph (225 km/h)	
	Service ceiling: 22,400 ft (6,827 m)	
	Range: 750 mi (1,207 km)	
Weights:	Empty: 3,995 lb (1,814 kg)	Gross: 5,235 lb (2,376 kg)
Dimensions:	Span: 42 ft (12.81 m)	Length: 28 ft 11 in (8.8 m)
	Height: 11 ft 8.5 in (3.55 m)	Wing area: 253.7 sq ft (23.57 sq m)
Armament:	Provision for machine guns, rockets and practice bombs	
Original Cost:	US$27,000	
Affiliated Units:	Numerous BCATP SFTS and other wartime sqns and units	
	Post-war: CFS, FIS, FTS plus various RCAF reserve squadrons	
Serial Numbers:	NA-26 (3345) NA-44 (3344), NA-44/61 (3560, 1321-1350, A83, A100, A102), NA-66/76/AT-6 (various between 1321–3841, 20200–20479, 41–34177 and 44–81634, AH185–FT301)	

North American Yale 3394. (Photo courtesy of the Griffin Library)

North American YALE

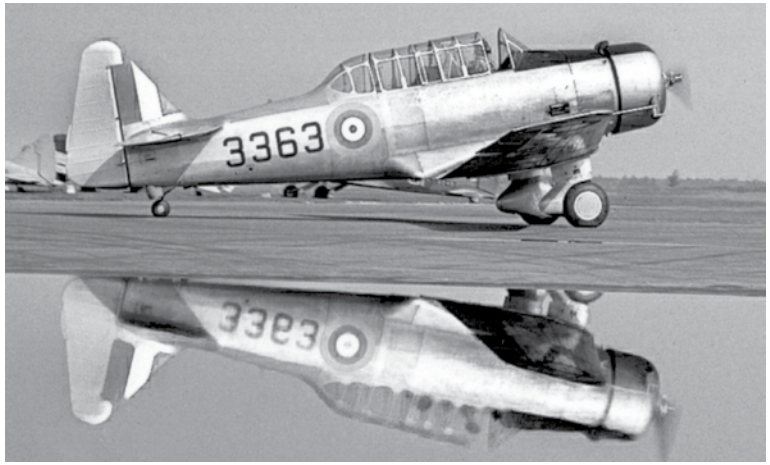
The North American Yale was the forerunner to the highly successful Harvard design by the same company. With the outbreak of the Second World War, the RCAF eventually acquired a total of 119 Yale aircraft between 23 August 1940 and 25 September 1946. Assembly of the Yale in Canada was licensed to Noorduyn in addition to their production of the Harvard and Norseman. The North American Yale was very similar to the Harvard, the most obvious difference being fixed landing gear as opposed to the retractable undercarriage found on the Harvard. Originally ordered in quantity by the French, the first Yales were diverted to the RCAF after the fall of France. The Yale aircraft instruments were consequently annotated in French and calibrated in the metric system, so all were placarded with conversion tables. Other differences and limitations found in this design included engine and propeller controls, which worked in opposite directions to standard practice; no electric starters, so the engines had to be hand cranked; and the aircraft were chronically underpowered. Nevertheless, the aircraft provided valuable service for aircrew training at the outbreak of war.

DETAILS

Designation: N/A
Role: Trainer
No: 119
Model No: NA-64
TOS: 1940
Service: RCAF
SOS: I946

SPECIFICATIONS

Manufacturer:	Noorduyn Aircraft Ltd under licence from North American Aircraft	
Crew:	Two pilots	
Power Plant:	One 420 hp Wright Whirlwind R-975-E3 radial engine	
Performance:	Max speed: 200 mph (322 km/h)	Cruising speed: 145 mph (233 km/h)
	Service ceiling: 16,500 ft (5,035 m)	Range: 750 mi (1,208 km)
Weights:	Empty: 3,324 lb (1,057 kg)	Gross: 4,500 lb (2,040 kg)
Dimensions:	Span: 41 ft 0 in (12.57 m)	Length: 28 ft 8 in (8.70 m)
	Height: 8 ft 10.5 in (2.70 m)	Wing area: 246 sq ft (33 sq m)
Armament:	None	
Original Cost:	Unknown	
Affiliated Units:	Various BCATP units including Nos. 1, 2, 6, 14 and 31 SFTS; Nos. 2, 3, and 4 WS; and No. 12 (Comm) Sqn	
Serial Numbers:	3346–3464	



A Yale in Camp Borden has its mirror image reflected in a pool of rainwater. An Airspeed Oxford is lurking in the background. (RCAF photo)

This airborne view of a Yale from No. 31 SFTS in Kingston clearly illustrates the aircraft's fixed undercarriage, which distinguished the type from its successor, the Harvard. (Photo courtesy of Stanley Leversedge)

A photo taken in 1939 of an RCAF Northrop Delta Mk II variant complete with the rear dorsal turret. (Photo courtesy of G. L. McNulty Collection)

Northrop DELTA

In 1935, when the RCAF wanted a high-performance photographic aircraft, it considered the Northrop Gamma but instead settled on Northrop's transport version of the same aircraft, the Northrop Delta. Canadian Vickers was commissioned to build an initial four aircraft under licence, and these were the first all-metal, stressed-skin aircraft to be built in Canada. The Delta used the same wing as the Gamma and had split flaps and a non-retractable undercarriage like its predecessors. The larger fuselage accommodated up to eight passengers. For RCAF use, the design was modified to accept three Fairchild A-3 cameras at the rear of the cabin. The cabin floor was strengthened to accept freight loads, and a large upward-opening freight door was installed on the port side. On receipt the Delta was used for aerial surveying. Two Deltas were armed with a defensive machine gun fitted in an open hatch in the roof. A plexiglass fairing provided protection from the slipstream. This particular installation was not very satisfactory, causing buffeting and a marked decrease in performance. The Delta was also test-fitted with bomb racks, which became useful as the aircraft was used to conduct antisubmarine patrols at the start of the Second World War. It would also serve with various squadrons as a training aircraft.

DETAILS

Designation: N/A
Role: Transport
No: 20

Model No: N/A
TOS: 1936
Service: RCAF

Marks: I, II
SOS: I945

SPECIFICATIONS

Manufacturer: Canadian Vickers under licence from Northrop
Crew/Passengers: Two pilots and up to eight passengers
Power Plant: One 775 hp Wright SR-1820 F-52 Cyclone engine

Performance: Max speed: 205 mph (329.8 km/h); Cruising speed: 170 mph (273 km/h)
Service ceiling: 22,000 ft (6,705 m)
Weights: Empty: 4,566 lb (2,073 kg); Gross: 7,350 lb (3,337 kg)
Dimensions: Span: 48 ft (14.63 m); Length: 33 ft 2 in (10.11 m)
Height: 10 ft 6 in (3.2 m); Wing area: 363 sq ft (33.72 sq m)

Armament: Provisions for one machine gun in dorsal rear open hatch and up to 250 lb (113.5 kg) in bombs under the wings
Cost: Unknown
Affiliated Units: Nos. 1 (F), 3 (GP), 8 (GP/BR), 120 (BR) Sqns and No. 8 B&GS, No. 1 TTS
Serial Numbers: 667–677, 682–690

Delta 676 from No. 8 Squadron is seen here preparing for a flight from Rockcliffe, ON, to Sydney, NS, on 26 August 1939. Note the powered launch belonging to the RCAF Marine Service. (RCAF photo)

The Northrop Delta was a versatile aircraft that could be flown on wheels, floats or skis. This view of RCAF Delta 673 Illustrates the ski configuration. This aircraft created the first RCAF casualties of the Second World War when it went missing on a deployment flight from Ottawa to Sidney, NS, on 14 September 1939. The wreckage was not discovered for 19 years and the crew was never found. (RCAF photo HC-8541)

Nomad 3497. (Photo courtesy of GL McNulty Collection)

Northrop NOMAD

The Northrop A-17A was a military development of the commercially successful Northrop Gamma. First delivered in 1935 to the US Army Air Corps as a two-seat, light attack bomber, the Northrop A-17A was essentially obsolete by the time the Second World War erupted. This fact notwithstanding, in June 1940, the Royal Air Force purchased 93 surplus A-17As for various training roles. The RCAF consequently acquired a small number of Nomads (as they became known in British service) exclusively for training purposes as part of the British Commonwealth Air Training Plan. They were never used operationally overseas. Initially, the aircraft were used at Camp Borden to check out qualified civilian pilots who were offering their services to the Air Force. In 1941, the aircraft were modified to a target-towing configuration to allow for air-to-air gunnery training at various schools in Quebec and Ontario. In addition to use by the RCAF in Canada, the Royal Norwegian Air Force trained some aircrew in exile on the A-17A at airports in Toronto and Muskoka. The RCAF Nomads were retired with the cessation of hostilities. The Nomads were not particularly outstanding aircraft, but they did provide reliable training service, logging an average of approximately 3,000 flying hours each in their four-and-a-half years of service.

DETAILS

Designation: N/A
Role: Trainer
No: 32

Model No: A-17A
TOS: 1940
Service: RCAF

Marks: I
SOS: 1945

SPECIFICATIONS

Manufacturer:	Northrop	
Crew:	Crew of two: pilot and observer in tandem	
Power Plant:	One 825 hp Pratt & Whitney Twin Wasp Junior R-1535-13 radial engine	
Performance:	Max speed: 220 mph (354 km/h)	
	Service ceiling: 19,400 ft (5,915 kg)	Range: 730 mi (1,175 km)
Weights:	Empty: 5,106 lb (2,316 kg)	Maximum takeoff: 7,543 lb (3,421 kg)
Dimensions:	Span: 47 ft 9 in (14.55 m)	Length: 31 ft 8 in (9.65 m)
	Height: 12 ft 0 in (3.66 m)	Wing area: 362 sq ft (33.63 sq m)
Armament:	Provisions for five .30 calibre machine guns (four in the wings and one on a flexible mount in the rear cockpit) plus four 100 lb (45 kg) bombs	
Cost:	Unknown	
Affiliated Units:	Test and Development Flt, Nos. 1 and 2 SFTS, Nos. 4, 6 and 9 B&GS	
Serial Numbers:	3490–3521	

These are two views of RCAF Northrop Nomad 3495 in the high-visibility paint scheme used for target-towing operations. This aircraft was assigned to No. 6 B&G School at Mountain View, ON, on 11 November 1941, after being converted to target-towing configuration. It was next reassigned to No. 9 B&G School at Mont-Joli, QC. While there, the airframe was damaged beyond economical repair in an accident, and it was written off as of 21 October 1943. (RCAF photos PL-6224 and PL-6225)

This is a view of an RAF Percival Prentice Mk II similar to the sole example that was acquired by the RCAF, probably for evaluation and/or for cold-weather testing. (RAF photo)

Percival PRENTICE

The Percival Prentice was designed as a basic trainer and served as the Royal Air Force's (RAF's) main basic trainer between 1948 and 1953. It was an all-metal, low-wing monoplane with fixed landing gear. The enclosed cockpit was a marked departure from typical RAF predecessors such as the Tiger Moth. It incorporated many new features based upon the experiences of training wartime pilots. Upturned wing tips were an identifying feature. The RCAF acquired one example in 1948, taken on strength by the Winter Experimental Establishment, likely for testing in Canadian conditions for the RAF. After nine months the Prentice was returned to the RAF.

DETAILS

Designation: N/A
Role: Testing
No: 1
Model No: P.40
TOS: 1948
Service: RCAF
Marks: I
SOS: 1948

SPECIFICATIONS

Manufacturer:	Percival Aircraft Ltd	
Crew/Passenger:	One pilot and one student pilot side by side and provisions for a second student	
Power Plant:	One 251 hp De Havilland Gipsy Queen 32 piston engine	
Performance:	Max speed: 143 mph (230 km/h)	Cruising speed: 136 mph (219 km/h)
	Service ceiling: 18,000 ft (5,486 m)	Range: 396 mi (637 km)
Weights:	Empty: 3,232 lb (1,466 kg)	Gross: 4,200 lb (1,905 kg)
Dimensions:	Span: 46 ft 0 in (14.02 m)	Length: 31 ft 3 in (9.53 m)
	Height: 12 ft 10.5 in (3.92 m)	Wing area: 305 sq ft (28.33 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Unit:	Winter Experimental Establishment	
Serial Number:	VR189	

The sole RCAF Pitcairn Mailwing is shown here on skis at RCAF Station Rockcliffe, 17 January 1931. (RCAF photo HC-4031)

Pitcairn MAILWING

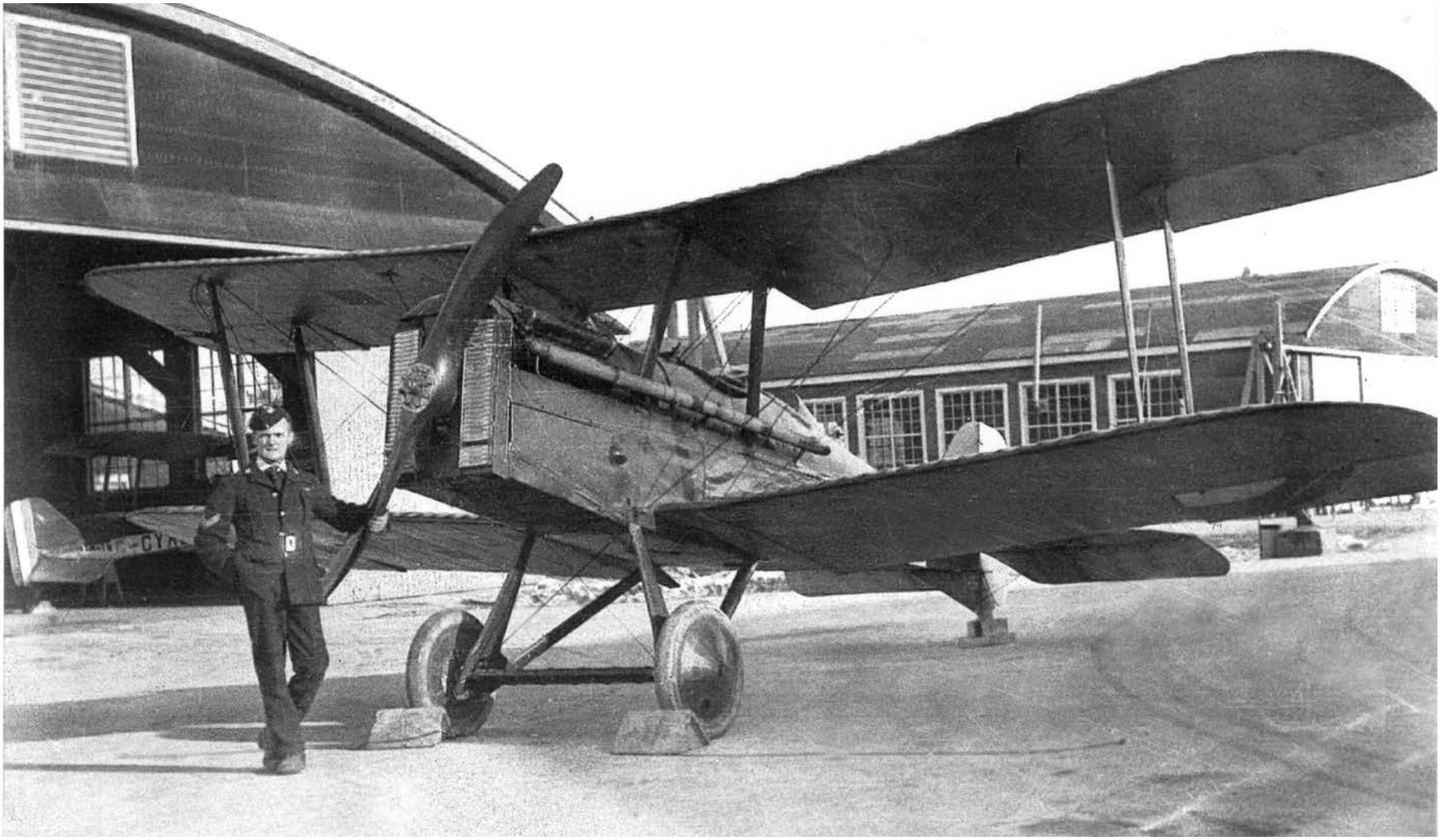
The Pitcairn "Super Sport" Mailwing was a trim and sleek civilian-model, single-engine, single-seat or three-seat biplane purpose-built for airmail use. The rugged design featured a fabric-covered, welded chrome-moly steel-tube fuselage with spruce and plywood wing and tail surfaces. It was strong enough to withstand an outside loop. It could be fitted with a full complement of night-flying equipment and the cargo compartment was lined with metal to make it fireproof. The only Pitcairn Model PA-7S Mailwing ever to serve with the RCAF was registered G-CYXJ, and it was only in service from 3 April 1928 to 20 January 1932 with the Station Flight at Camp Borden. The RCAF operated the aircraft on behalf of the Canadian Post Office for airmail route investigations during this period.

DETAILS

Designation: N/A
Model No: PA-7S
Role: Transport
TOS: 1928
SOS: 1932
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Pitcairn Aircraft Company	
Crew:	One pilot	
Power Plant:	One 200 hp Wright Whirlwind J-6 radial engine	
Performance:	Max speed: 136 mph (219 km/h)	Cruising speed: 115 mph (185 km/h)
	Service ceiling: 16,000 ft (4,877 m)	Range: 520 mi (837 km)
Weights:	Empty: 1,820 lb (826 kg)	Gross: 3,050 lb (1,330 kg)
Dimensions:	Span: 33 ft 0 in (10.06 m)	Length: 23 ft 9 in (7.24 m)
	Height: 9 ft 6.5 in (2.91 m)	Wing area: 243.5 sq ft (22.62 sq m)
Armament:	None	
Original Cost:	US$8,500	
Affiliated Unit:	Station Flight Camp Borden	
Serial Number:	G-CYXJ	



This is an SE-5A G-CYBQ in Camp Borden circa 1921. The service member is wearing the early-style Canadian Air Force uniform. (RCAF photo)

Royal Aircraft Factory SE-5A

The Scott Experimental or SE-5A fighter was conceived in 1916, and the aircraft was introduced into combat starting in 1917. A modern and advanced design for its day, the type went on to make a very significant contribution to the air war in the hands of competent fighter pilots. More than a few Canadian aces of the First World War successfully flew the SE-5A in combat, including Canada's leading ace of that war, William Avery "Billy" Bishop. With the formation of the Canadian Air Force (CAF) in the immediate post-war period, No. 1 Squadron (Sqn) based in Shoreham, England, was eventually re-equipped with the type after a brief stint with Sopwith Dolphins. No. 1 Sqn pilots had previously accounted for 291 enemy aircraft in combat. With the demise of the CAF, the Air Force still had a mandate to maintain the proficiency of wartime fighter pilots. A small number of SE-5A aircraft were gifted from the UK for this purpose. This programme continued briefly through 1922, and thereafter, the aircraft were used for proficiency flying by qualified pilots.

This colourfully marked SE-5A aircraft belonged to No. 1 Sqn of the Canadian Air Force in England in 1918–1919. (Unknown photo credit)

DETAILS

Designation: N/A
Model No: SE-5A
Role: Fighter, advanced pilot trainer
TOS: 1920
SOS: 1929
No: 12
Service: CAF/RCAF

SPECIFICATIONS

Manufacturer:	Royal Aircraft Factory	
Crew:	One pilot	
Power Plant:	One 200 hp Hipano-Suiza or Wolesley Viper piston engine	
Performance:	Max speed: 123 mph (198 km/h)	
	Rate of climb: 6 min 20 sec to 6,500 ft (1,981 m)	
	Service ceiling: 19,500 ft (m)	Endurance: 3 hours
Weights:	Empty: 1,410 lb (639 kg)	Gross: 1,935 lb (880 kg)
Dimensions:	Length: 20 ft 11 in (6.38 m)	Height: 9 ft 6 in (6.38 m)
	Span: 26 ft 7.5 in (8.11 m)	Wing Area: 244 sq ft (22.67 sq m)
Armament:	Provisions for Vickers machine gun to port on front decking plus Lewis gun on Foster mounting on top of the upper centre-section wing	
Cost:	None, part of an Imperial Gift of aircraft types from the UK	
Affiliated Unit:	Camp Borden	
Serial Numbers:	Various between G-CYAB and G-CYCV	

RCAF H-5s could also be equipped with an external stretcher case, as shown here, to MEDEVAC patients on stretchers. (RCAF photo RNC-1538-44)

Sikorsky H-5

The Sikorsky S-51 design followed the now classic helicopter configuration with a single main rotor and an anti-torque tail rotor. It first flew in February 1946 and was the first Sikorsky helicopter to receive approval for civil use. Most S-51 helicopters, however, went into military service, where they were often known under the designation H-5. It was the first of the early helicopters with adequate lifting capacity and cabin space to permit transport and air-sea-rescue duties. The aircraft proved to be very popular and was selected by the RCAF for training as well as rescue purposes. Seven were taken on strength in 1947, and they were the first RCAF helicopters. The first experience with RCAF H-5s provided valuable exposure to rotary-wing operations and solidified the helicopter's reputation for versatility and valuable service.

DETAILS

Designation: H-5
Model No: S-51
Role: Utility helicopter
TOS: 1947
SOS: 1965
No: 7
Service: RCAF

SPECIFICATIONS

Manufacturer:	Sikorsky Aircraft Division	
Crew/Passengers:	One pilot and up to 3 passengers	
Power Plant:	One 450 hp Pratt & Whitney R-985-AN-5 Wasp Jr radial piston engine	
Performance:	Max speed: 103 mph (166 km/h)	Cruising speed: 85 mph (137 km/h)
	Service ceiling: 13,500 ft (4,115 m)	Range: 280 mi (451 km)
Weights:	Empty: 3,810 lb (1,728 kg)	Gross: 5,500 lb (2,494 kg)
Dimensions:	Rotor diameter: 49 ft 0 in (14.94 m)	Length: 44 ft 11.5 in (13.70 m)
	Height: 12 ft 11 in (3.9 m)	
Armament:	None	
Cost:	Unknown	
Affiliated Units:	CJATC, Nos. 102 (KU), 105 (C&R), 121 (C&R), 123 (S&R), 133 (RU) Flights	
	RCAF Stations Chatham, Trenton, Sea Island, Whitehorse	
Serial Numbers:	9601–9607	

RCAF H-5s spent a significant amount of their later careers being used to train helicopter pilots at the Canadian Joint Air Training Centre (CJATC) in Rivers, MB. (RCAF photo PCN-31944)

RCAF H-5s were used for base search and rescue operations and all were painted in a high-visibility overall yellow paint scheme as a result. Helicopter 9603 is shown overflying a CF-100 Canuck interceptor at RCAF Station Chatham, NB. (RCAF photo PC-1614)

RCAF H-19 helicopter 9629 is landing at RCAF Station Bagotville. The type was acquired to support the construction of the Mid-Canada Line radar chain in the mid-1950s. (RCAF photo PC-888)

Sikorsky H-19

The Sikorsky S-55 design also followed what became the classic helicopter configuration, with a single main rotor and an anti-torque tail rotor. It was the first of the early helicopters with adequate lifting capacity and cabin space to permit troop or cargo transport along with air-sea-rescue duties. The aircraft proved to be very popular and was selected by both the RCAF and Royal Canadian Navy (RCN) for slightly different purposes. The RCN version of the S-55 was designated as the HO4S. The main role for the HO4S was search-and-rescue standby (often referred to as "plane guard" duties) on the carriers HMCS *Magnificent* and *Bonaventure*. The helicopters were to be ready to assist in the event of a crash or a ditching. On 21 September 1953, the first such rescue was made when a Sea Fury pilot was picked up 32 seconds after having to ditch alongside the carrier. In the RCAF, the H-19 was acquired starting in late 1954 to help facilitate the construction of a line of radar stations known as the Mid-Canada Line (MCL) across the 55th latitude of Canada. Following completion of this effort, the H-19s were sold to be used by civilian helicopter companies that were hired to support the follow-on MCL logistic-sustainment effort.

DETAILS

Designation: H-19
Model No: S-55, HO4S-3 (RCN version)
Role: Utility helicopter
TOS: 1954
SOS: 1966
No: 15 x RCAF, 13 x RCN
Service: RCAF/RCN

SPECIFICATIONS

Manufacturer: Sikorsky Aircraft Division
Crew/Passengers: One pilot and up to 8 passengers
Power Plant: One 550 hp Wright R-1340 radial piston engine

Performance: Max speed: 101 mph (163 km/h); Cruising speed: 85 mph (137 km/h)
Service ceiling: 10,500 ft (3,200 m); Range: 370 mi (595 km)
Weights: Empty: 4,590 lb (2,082 kg); Gross: 7,900 lb (3,583 kg)
Dimensions: Rotor diameter: 53 ft 0 in (16.15 m); Length: 42 ft 2 in (12.85 m)
Height: 13 ft 4 in (4.06 m)

Armament: None
Cost: Unknown
Affiliated Unit: No. 108 (Comm) Flight
Serial Numbers: 9597–9600, 9619–9629

Air-to-air shot of an H-34 Sikorsky and an H-44 helicopter flying over RCAF Station Trenton. (RCAF photo PCN-3577)

Sikorsky H-34

The S-58 made its first flight on 8 March 1954. This Sikorsky design closely resembled the company's previous S-55 design. The engine was a more-powerful 1,525 hp Wright R-1820 radial engine still obliquely located in the nose so that the transmission shaft ran at right angles to the engine, straight into the gearbox beneath the rotor hub. However, unlike the S-55 with its nosewheel landing gear, the S-58 instead featured a tail-wheel design plus folding main rotor blades, and the entire rear fuselage and tail rotor could also be folded forward. The RCAF acquired a small number of S-58 helicopters, which were used initially during the construction of the Mid-Canada radar chain. Later they were used for search and rescue, pilot training and range-patrol operations, primarily at CFB Cold Lake, Alberta.

DETAILS

Designation: CH-126 / H-34 **Model No:** S-58
Role: Utility helicopter **TOS:** 1955 **SOS:** 1971
No: 6 **Service:** RCAF

SPECIFICATIONS

Manufacturer:	Sikorsky Aircraft Division	
Crew/Passengers:	Two pilots and one loadmaster plus up to 12 passengers or 4,200 lbs (1,905 kg) cargo	
Power Plant:	One 1,525 hp Wright R-1820-84 piston engine	
Performance:	Max speed: 123 mph (198 km/h)	Cruising speed: 98 mph (158 km/h)
	Service ceiling: 9,500 ft (2,896 m)	Range: 182 mi (293 km)
Weights:	Empty: 7,900 lb (3,583 kg)	Gross: 14,000 lb (6,350 kg)
Dimensions:	Rotor diameter: 56 ft 0 in (17.07 m)	Length: 46 ft 9 in (14.25 m)
	Height: 15 ft 11 in (4.85 m)	
Armament:	None	
Cost:	Unknown	
Affiliated Unit:	Nos. 102 (KU), 108 (Comm), 111 (KU) Flights, Nos. 4 and 5 OTUs, No. 448 (Test) Sqn and Base Rescue Flight RCAF Station Cold Lake	
Serial Numbers:	9630–9635	

RCAF H-34 9630 was taken on strength on 3 November 1955 and became the first of its type to reach 1,000 flying hours by August 1957. The airframe survived rugged RCAF use and was finally sold as surplus to requirements a decade later. (RCAF photo PC-1217)

RCAF H-34 9631 is shown here receiving some maintenance attention to the radial engine. The large clam-shell front doors provided easy access. (RCAF photo)

Crew members of the Helicopter Air Detachment onboard HMCS *Halifax*, Flagship of Standing NATO Maritime Group Two, conduct a foc'sle transfer with the CH-148 Cyclone helicopter, call sign Kingfisher during Operation REASSURANCE, August 27, 2019. (RCAF photo)

Sikorsky CYCLONE

The Westland-Agusta EH-101 had originally been chosen to be Canada's new antisubmarine warfare (ASW) helicopter to replace the CH-124 Sea King helicopter. The ASW variant was to be known as the CH-148 Petrol, and the search and rescue (SAR) variant was to be designated the CH-149 Chimo. The first of 50 EH-101s was to be delivered in 1993. Unfortunately, after considerable development effort, a new Canadian government elected to cancel the delivery of the helicopters, terminating the programme as part of cost-cutting measures. The SAR competition was eventually won by a civilianized variant of the EH-101 known as the CH-149 Cormorant. In 2004, the Canadian government decided to purchase 28 of the Sikorsky-designed Superhawk (to be known in Canadian service as the Cyclone) helicopters to replace the Sea Kings. The Cyclone, as the aircraft is called, has assumed all the roles of the Sea King, including ASW, beyond visual identification, SAR and ship-to-shore delivery. The Cyclone was the result of a prolonged procurement process that lasted over 20 years. Ironically, the Cyclone beat out another version of the CH-149 Cormorant. The Canadian Forces (CF) was the first military customer for the S-92 aircraft and the first to use it as a shipborne aircraft.

DETAILS

Designation: CH-148
Role: ASW / utility helicopter
No: 28
Model No: S-92
TOS: 2011 (interim A/C)
Service: CF
Marks: Block 1, 2
SOS: In service

SPECIFICATIONS (for the S-92)

Manufacturer:	Sikorsky	
Crew:	Two pilots, a flight engineer and a weapons systems officer, and provisions for rescue hoists, 10,000 lb (4,535 kg) external cargo	
Power Plant:	Two General Electric CT7-8A engines, each producing a maximum of 2,520 SHP	
Performance:	Max speed: 155 kts (290 km/h)	Cruising speed: 140 kts (260 km/h)
	Service ceiling: 11,500 ft (3,500 m)	Range: 490 NM (910 km)
Weights:	Empty: 15,200 lb (6,893 kg)	Gross: 26,500 lb (12,018 kg)
Dimensions:	Rotor dia: 56 ft 4 in (17.17 m)	Length: 68 ft 5 in (20.85 m)
	Height: 21 ft 2 in (6.45 m)	
Armament:	Torpedoes, self-defence machine guns	
Cost:	Can$1.8B in overall fleet acquisition costs and $3.2B in maintenance support and infrastructure costs	
Affiliated Units:	AETE, HOTEF, Nos. 406, 423 and 443 Sqns	
Serial Numbers:	14881–148828	

The CH-148 Cyclone (left) replaced the CH-124 Sea King (right) as Canada's naval shipborne ASW helicopter type. (RCAF photo SW05-2018-0245-002)

The CH-148 Cyclone uses the same type of "beartrap" landing and takeoff system as its predecessor to allow for operations from heaving ship decks. (CF Combat Camera photo)

The CH-148 Cyclone possesses a wide array of sophisticated sensor systems including missile defence and forward-looking infrared camera sensors, some of which are visible on the nose in this photo. (RCAF photo SW2013-0348-16)

Just before the retirement of the fleet, the type's former service in the RCN was paid homage to through the use of several retro paint schemes as shown here. (Photo courtesy of Mike Kaehler)

Sikorsky SEA KING

The Sea King, introduced in 1961, was initially acquired by the air element of the Royal Canadian Navy (RCN) as an antisubmarine warfare (ASW) helicopter for Canadian ships. Space aboard naval vessels is always at a premium, and the Sea King, with its fold-up rotor and tail, fitted perfectly on the smallest deck. To further enhance this capability, a Canadian-developed and Canadian-manufactured helicopter haul-down rapid securing device (HHRSD) was installed on board purpose-designed destroyers. Better known as the "Beartrap" system, it stabilizes the helicopter in the hover over the deck by means of a cable and helps to centre the helicopter over a small opening in the landing pad. Once the aircraft is landed and secured, the system is then used to tow it into a hangar. The system enabled Sea Kings to land on destroyers rolling plus or minus 31 degrees, pitching 9 degrees and heaving up to 20 feet (6 m) per second. With both day- and night-flight capabilities, the Sea King was carried aboard many Maritime Command destroyers, frigates and replenishment ships. Over the years, submarine hunting became less of a priority and the Sea King was consequently adapted to other roles. Domestically, Sea Kings became increasingly responsible for search and rescue operations, disaster relief, fisheries patrols, environmental surveillance and drug interdiction. They were also instrumental in international operations of peacekeeping and humanitarian assistance. Sea King helicopter air detachments (HELAIRDETS) were provided to Canadian ships on the East and West Coasts as an integral part of the ship's surface and subsurface surveillance and weapons systems. HELAIRDETS were embarked whenever their respective ship was deployed. They frequently participated in international operations with allied forces, combined operations with either naval or army elements of the Canadian Forces (CF) and national operations with other Canadian governmental agencies. Six of the original Sea Kings were extensively modified, incorporating an acoustic system that used sonobuoys instead of a dipping sonar, a magnetic anomaly detector (MAD) and a new tactical navigation system. This equipment enabled crews to localize and track underwater contacts without being detected. A standard Sea King crew comprised two pilots, a tactical coordinator (TACCO) and an airborne electronic sensor operator (AES Op) or sensor operator (SENSO), depending on the missions or type of aircraft. For some operational missions an extra TACCO or AES Op was added to assist with operations in the back end of the helicopter. After more than four decades of service, the age of Canada's only ship-borne helicopter made it increasingly difficult to perform its many roles, and consequently, it went through another series of late upgrades that included new uprated engines and main gearboxes. After a protracted procurement programme to replace the fleet, the Sea King was finally retired in 2018 after 57 years of faithful service to Canada.

DETAILS

Designation: CHSS-2 (RCN), CH-124 (RCAF) **Model No:** S-61, SH-3D
Role: ASW helicopter **TOS:** 1961 **SOS:** 2018
No: 41 **Service:** RCN/CF/RCAF

SPECIFICATIONS

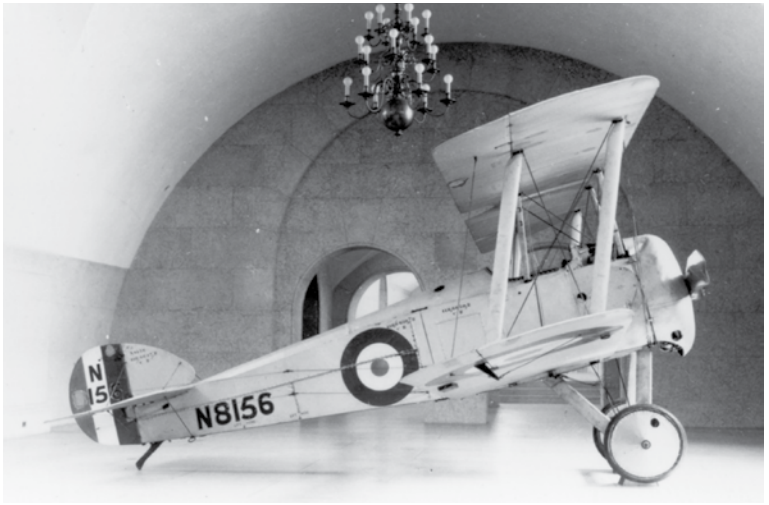
Manufacturer:	United Aircraft of Canada (Sikorsky Helicopters)	
Crew:	Two pilots, one navigator, one airborne electronic sensor operator	
Power Plant:	Two 1,500 hp General Electric T-58-GE-8F turboshaft engines	
Performance:	Max speed: 166 mph (267 km/h)	Cruising speed: 104 mph (167 km/h)
	Service ceiling: 14,700 ft (4,480 m)	Range: 616 mi (991 km)
Weights:	Empty: 11,865 lb (5,382 kg)	Maximum takeoff: 20,542 lb (9,318 kg)
Dimensions:	Rotor span: 62 ft 0 in (18.90 m)	Length: 72 ft 8 in (22.15 m)
	Height: 16 ft 10 in (5.13 m)	Main rotor disc area: 3,019 sq ft (280.5 sq m)
Armament:	Mk 46 Mod V homing torpedoes up to 840 lb (381 kg), plus provision for self-defence machine guns	
Cost:	Can$1,390,000 per A/C	
Affiliated Units:	(RCN) HS-50, VX-10, VT406, (RCAF) AETE, HOTEF, Nos. 406, 423 and 443 Sqns	
Serial Numbers:	(RCN) 4001–4041, (RCAF) 124401–124441	

The CH-124 Sea King helicopter fleet was equipped with chaff and flare dispensers for self-defence, and this view illustrates a test of that system. (RCAF photo ET2014-7218-01)

This colour view illustrates a restored (in a First World War colour scheme) example of Sopwith Camel N8156 belonging to the Canada Aviation and Space Museum collection. (CF photo)

Sopwith CAMEL

The Sopwith Camel became the most successful British fighter of the First World War. The Sopwith F.1 and 2F.1 Camel first went into operations on the Western Front in 1917, and then served in virtually every theatre of Royal Flying Corps, Royal Navy Air Service and Royal Air Force service. Several Canadian aces used the Camel as their mount. While very manoeuvrable, it could be tricky to fly in the hands of a novice pilot. For experienced pilots, however, the aircraft proved to be a superb fighter. The guns were mounted on the forward fuselage with their breeches enclosed in a faired metal cowling—a "hump" that gave the Camel its name. Several Camels were also shipped to Canada in the post-war period as part of an Imperial Gift. There were three registered Sopwith F.1 Camels that then entered service with the RCAF at Camp Borden in 1924. The following year, the RCAF purchased seven additional aircraft to provide further spares for the active aircraft. These latter aircraft were in fact 2F.1 models that had been "navalized" variants. Used primarily by wartime experience fighter pilots for refresher training, the Camels lasted another five years before finally being scrapped.



This view illustrates Sopwith Camel N8156 as it originally looked. It is pictured in the foyer of the National Research Council building in Ottawa circa 1936. (Photo courtesy of the Canada Aviation and Space Museum)

DETAILS

Designation: N/A
Model No: F.1, 2F.1
Role: Fighter/trainer
TOS: 1924
SOS: 1929
No: 3 plus 7 A/C for spares
Service: RFC/RCAF

SPECIFICATIONS

Manufacturer:	Sopwith Aviation Company	
Crew:	One pilot	
Power Plant:	One 130 hp Clerget, 110 hp Le Rhone, 100 hp Gnome Monosoupape or 150 hp Bentley B.R.1 radial piston engine	
Performance:	Max speed: 115 mph (185 km/h) Service ceiling: 19,000 ft (5,791 m)	Endurance: 2.5 hours
Weights:	Empty: 929 lb (421 kg)	Gross: 1,453 lb (659 kg)
Dimensions:	Span: 28 ft 0 in (8.53 m) Height: 8 ft 6 in (4.17 m)	Length: 18 ft 9 in (5.72 m) Wing area: 231 sq ft (21.5 sq m)
Armament:	Twin .303 calibre Vickers machine guns plus provisions for two 50 lb (22.7 kg) bombs	
Cost:	Original three aircraft were part of an Imperial Gift; other A/C unknown	
Affiliated Unit:	Camp Borden	
Serial Numbers:	G-CYFP–G-CYFR and various between ex-RN N735– N8204	

An RCAF Stearman Kaydet flies overhead in this view. (RCAF photo)

Stearman (later Boeing) KAYDET

The Stearman Aircraft Company, eventually a Boeing Company subsidiary, was the principal manufacturer of a famous series of ab initio trainers. These were called the PT-13, PT-17 and PT-27 Kaydet, used by the US Armed Forces during the Second World War. With the demand for training aircraft in Canada necessitated by the British Commonwealth Air Training Plan, arrangements were made in late 1941 to procure 300 Kaydets for the RCAF under the Lend-Lease Act. The aircraft were to be modified to PT-27 standard to suit the Canadian conditions and RCAF requirements. These modifications included equipment changes for night flying plus an improved cockpit heating system and canopy for winter flying conditions. Production delays for these modifications, however, resulted in virtually all of the aircraft being produced to the US military's basic PT-17 model standard. Although the aircraft were reluctantly accepted by the RCAF and introduced into service, the lack of the necessary modifications quickly resulted in complications and dissatisfaction for the basic-flying-training programme then in full swing. Cold weather and winter conditions resulted in the suspension of flying activities. Despite being a sturdy, reliable aircraft, in November 1942, the decision was made to withdraw the type from use and substitute an equivalent number of Fairchild Cornells on existing production contracts. The Kaydets were then returned to the US over a period of six months in 1943 for use by the US Navy and US Army Air Corps in warmer climates.

This is RCAF Stearman Kaydet FK108, which was the only aircraft ever delivered to PT-27 standard with an enclosed canopy, landing lights and other cockpit improvements. Had all the aircraft been delivered to this standard, the type might have lasted longer in RCAF service. (Photo courtesy of the Boeing Company)

DETAILS

Designation: N/A
Role: Trainer
No: 301
Model No: PT-17, PT-27
TOS: 1942
Service: RCAF
SOS: 1943

SPECIFICATIONS

Manufacturer:	Stearman Aircraft Company	
Crew:	Two pilots in tandem	
Power Plant:	One 200 hp Wright Whirlwind radial engine	
Performance:	Max speed: 122 mph (196 km/h)	Cruising speed: 107 mph (172 km/h)
	Service ceiling: 11,700 ft (3,566 m)	Range: 400 mi (644 km)
Weights:	Empty: 1,931 lb (876 kg)	Gross: 2,810 lb (1,275 kg)
Dimensions:	Span: 32 ft 0 in (9.73 m)	Length: 25 ft 0.25 in (7.63 m)
	Height: 9 ft 2 in (2.79 m)	Wing area: 298 sq ft (27.69 m)
Armament:	None	
Cost:	US$11,000	
Affiliated Units:	Test and Development Establishment, No. 3 FIS, Nos. 31, 32 and 36 EFTS	
Serial Numbers:	FD968–FD999, FJ741–FJ999, FK100–FK108 and 41–2543	

This is one of the Model 105 Stinson Voyagers impressed into service with the RCAF. (RCAF photo PBG1261-PM5)

Stinson VOYAGER

The use of light aircraft for liaison, communication and various training duties was well established in the RCAF in the 1920s and 1930s. With the outbreak of the Second World War, the RCAF impressed several examples of the Stinson Model 105 Voyager, which was then in production as a three-seat commercial light aircraft. The Stinson Sentinel was a military version of the same aircraft produced for the US Army featuring a larger fuselage. Additionally, a further modification to the fuselage incorporating an upward-hinged hatch aft of the cabin allowed for the provision of a stretcher. This feature made the aircraft useful as a front-line ambulance and the design was used to good effect both by British and American forces in the Pacific theatre and later in the Korean conflict. The RCAF would purchase 25 examples of the Voyager from owners in the United States. In RCAF service, the aircraft was used by a wide variety of units as a personnel transport, most units having one Stinson.

DETAILS

Designation: L-5
Model No: HW-75 / 105
Role: Utility transport
TOS: 1940
SOS: 1946
No: 25
Service: RCAF

SPECIFICATIONS

Manufacturer: Stinson Aircraft Division of Consolidated Vultee Aircraft Corporation
Crew/Passengers: One pilot and one passenger
Power Plant: One 185 hp Lycoming O-435-1 piston engine

Performance: Max speed: 130 mph (209 km/h)
Service ceiling: 15,800 ft (4,816 m) Range: 420 mi (676 km)
Weights: Empty: 1,550 lb (703 kg) Gross: 2,020 lb (916 kg)
Dimensions: Span: 34 ft 0 in (10.36 m) Length: 4 ft 1 in (7.34 m)
Height: 7 ft 11 in (2.41 m) Wing area: 155 sq ft (14.40 sq m)

Armament: None
Cost: US$10,000
Affiliated Units: Nos. 1 and 3 Communications and Ferry Flights, Nos. 3 and 13 SFTS, No. 12 (Comm) Flight, No. 3 (CAC) Sqn, School of Army Co-operation, No. 1 WS
Serial Numbers: 3465–3489

Spitfire NH188. (RCAF photo)

Supermarine SPITFIRE

First flown in 1936, the Spitfire would become famous as the leading British fighter of the Second World War. A total of 20,351 (excluding naval variants) were built, which was more than any other British warplane. No. 403 Squadron first flew the Spitfire on Canadian operations in March 1941, and a total of 14 RCAF squadrons would eventually fly this type of aircraft. Of these squadrons, 10 were fighter or fighter-bomber squadrons in Europe, 3 formed an RCAF fighter-reconnaissance wing, and one squadron, No. 417 Squadron, flew fighter-bombers in North Africa, Sicily and Italy. The first enemy jet fighter—a German Me-262—to be shot down fell to a Spitfire from No. 401 Squadron. Interestingly, despite the large number of Spitfires flown operationally by Canadians, the RCAF only had a handful of Spitfires on official establishment strength throughout the war. Those aircraft in operational squadrons overseas were supplied by the Royal Air Force (RAF) under Article 15 of the British Commonwealth Air Training Plan agreement. Three of the RCAF's aircraft were primarily unarmed reconnaissance types used for various test and photographic missions. The first Spitfire in Canada, on loan from the RAF for comparative trials, was used additionally in 1940 to test the first "G" suit, which also was invented in Canada. Two others were destined for cold-weather testing and one for the RCAF Museum collection. In 1962, the RCAF received one further Spitfire, which was placed on the RCAF establishment and transferred to the National Aeronautical Collection.

This is an original colour photo illustrating a 421 Squadron Spitfire receiving some engine maintenance while at base B.90 at Petit Brogel in Belgium. (RCAF photo REC89-1492)

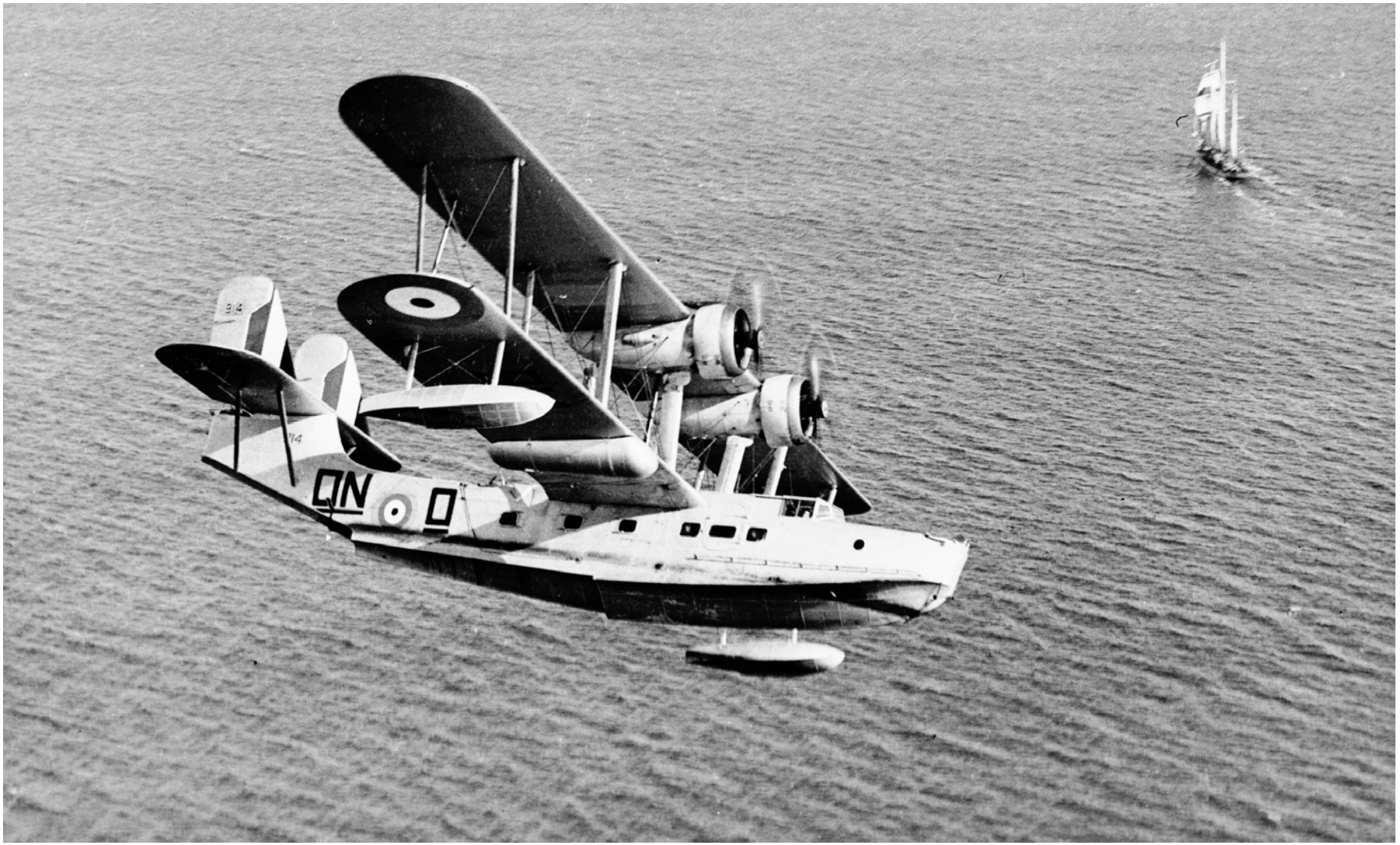
This is another rare colour view of a PRU Mk.XI Spitfire. This colour scheme was designed to make the high-flying PRU variants blend against the sky. Another colour scheme involved a pale shade of pink. (RCAF photo PC-2362)

DETAILS

Designation: N/A **Model No:** 300, 329, 331, 359, 360, 361, 365, 379, 380
Marks: IA, II, IIA, IIB, VA, VB, VC, VIII, IXB, IXC, IXE, XI, XV, XIV, XIVE, XVIE
Role: Fighter, photo reconnaissance **TOS:** 1940 **SOS:** 1950
No: 8 **Service:** RCAF

SPECIFICATIONS (for the Mk I)

Manufacturer:	Supermarine Aircraft	
Crew:	One pilot	
Power Plant:	One 1,030 hp (768 kW) Rolls Royce Merlin II piston engine	
Performance:	Max speed: 364 mph (586 km/h)	
	Service ceiling: 31,500 ft (9,601 m)	Range: 395 mi (636 km)
Weights:	Empty: 4,341 lb (1,969 kg)	Gross: 5,800 lb (2,631 kg)
Dimensions:	Span: 36 ft 10 in (11.23 m)	Length: 29 ft 11 in (9.10 m)
	Height: 11 ft 5 in (3.48 m)	Wing area: 242 sq ft (22.48 m)
Armament:	Eight .303 in (7.7 mm) machine guns in the wings	
Cost:	Unknown	
Affiliated Units:	T&D Est, WEE, No. 13 (Photographic) Flt, Nos. 400, 401, 402, 403, 411, 412, 414, 416, 417, 421, 430, 441, 442 and 443 Sqns	
Serial Numbers:	(HWE only) L1090, P8332, R7143, X4492, X4555, JG480, TZ138 and VN332	



The Stranraer provided vital long-range patrol capabilities through the first half of the Second World War and was used to patrol both the East and West Coasts. This is Stranraer 914 from No. 5 (BR) Sqn photographed on 3 April 1941. (RCAF photo - PL-2729)

Supermarine STRANRAER

With the threat of the Second World War approaching, in 1936 the RCAF began searching for a coastal patrol aircraft. It looked to the Royal Air Force for suggestions and selected the Supermarine Stranraer, then placed an order for the type for license manufacture by Canadian Vickers. The Stranraer featured a hull manufactured from anodized Alclad sheeting, with wings and tail surfaces manufactured from Duralumin and covered with fabric. The Canadian prototype aircraft was delivered in 1938, and with the outbreak of war, additional aircraft were ordered into production. The Stranraers served faithfully on both coasts during the early part of the war. The Stranraers proved to be good, seaworthy aircraft but their antiquated biplane design eventually led to their being relegated to training duties. By 1944, some had even been declared surplus and sold into civilian use.

DETAILS

Designation: N/A
Model No: N/A
Role: Amphibian
TOS: 1938
SOS: 1946
No: 40
Service: RCAF

SPECIFICATIONS

Manufacturer:	Canadian Vickers	
Crew:	Five: pilot, navigator, radio operator and two gunners	
Power Plant:	Two 810 hp Bristol Pegasus X radial engines	
Performance:	Max speed: 165 mph (265 km/h)	Cruising speed: 110 mph (177 km/h)
	Service ceiling: 20,000 ft (6,096 m)	
	Range: 1,140 mi (1,834 km) or 1,750 mi (2,816 km) with 130 Imp gal (591 l) external tanks	
Weights:	Empty: 12,534 lb (5,690 kg)	Gross: 19,900 lb (9,035 kg)
Dimensions:	Span: 85 ft 0 in (25.81 m)	Length: 54 ft 6 in (16.61 m)
	Height: 21 ft 9 in (7.64 m)	Wing area: 1,457 sq ft (135.35 sq m)
Armament:	Three .303 cal flexible mount machine guns in nose, midship and tail positions plus 1,260 lb (572 kg) bombs or depth charges or 130 Imp gallon (591 l) fuel tanks on external racks	
Cost:	Can$28,000 per aircraft	
Affiliated Units:	Nos. 4 (BR), 5 (BR), 6 (BR), 7 (BR), 9 (BR), 117 (BR), 120 (BR) Sqns, No. 166 (Comm), No. 13 OTU	
Serial Numbers:	907–916, 908–923, 927–928, 946–957	

The RCAF was unique in using underlined squadron/aircraft code letters on its aircraft in the Home War Establishment as seen here. This is Stranraer 910 belonging to No. 5 (BR) Sqn. (RCAF photo - WRF-155-GL)

The Stranraer was pure flying boat and consequently it needed cranes or beaching gear to be brought onto land. This heavy-lift gantry crane was part of the facility at RCAF Patricia Bay, BC. (RCAF photo - CY22-7-GL)

A Supermarine Walrus seaplane was a utilitarian design. It was briefly used by the RCAF for SAR duties and was also used by the RCN. (RCAF photo PL-18523)

Supermarine WALRUS

The Supermarine Walrus did not equip any official RCAF squadrons, but it was flown in small numbers within Canada and by some RCAF / Royal Canadian Navy (RCN) personnel on overseas missions. The Walrus, affectionately known as the "Shagbat" in RCN and Royal Air Force (RAF) parlance, was a rather ungainly looking design from the same designer of the much more elegant Spitfire, R. J. Mitchell. Designed originally for catapult-launched fleet reconnaissance and spotting duties, the Shagbat also provided the RAF with a valuable air-sea rescue capability starting in 1941. Rescue missions within close proximity to enemy coastlines were routine. Despite its appearance, the Walrus established a solid reputation for reliability and ability to withstand damage. Eight Walrus aircraft were also used in Canada briefly by the RCAF and primarily for the No. 1 Naval Air Gunners School in Yarmouth, NS.

(Photo from the Griffin Library Collection)

DETAILS

Designation: N/A
Role: Amphibian
No: 8

Model No: N/A
TOS: 1943
Service: RCN/RCAF

Marks: I, II
SOS: 1947

SPECIFICATIONS

Manufacturer:	Supermarine Aircraft	
Crew:	Crew of three or four	
Power Plant:	One 775 hp Bristol Pegasus VI radial engine	
Performance:	Max speed: 135 mph (217 km/h)	Cruising speed: 95 mph (153 km/h)
	Service ceiling: 18,500 ft (5,640 m)	Range: 600 miles (966 km)
Weights:	Empty: 4,900 lb (2,223 kg)	Maximum takeoff: 7,200 lb (3,266 kg)
Dimensions:	Span: 45 ft 10 in (13.97 m)	Length: 37 ft 3 in (11.35 m)
	Height: 15 ft 3 in (4.65 m)	Wing Area: 610 sq ft (56.67 sq m)
Armament:	Provisions for one Vickers gun in bow and two amidships, 760 lb (345 kg) light bombs below wings	
Cost:	Unknown	
Affiliated Units:	No. 1 NAGS, Central Testing Establishment, No. 14 SFTS	
Serial Numbers:	L2330, HD909, W3089, Z1768, Z1771, Z1775, Z1781 and Z1814	

This is Vickers Viking G-CYEU. The Vickers Viking was chosen by the CAF as a replacement for the Curtiss HS-2L flying boat. The crew was housed in open cockpits and an additional camera position in the nose was specified by the RCAF. The Rolls-Royce version of the aircraft was chosen primarily for reasons of economy, but this caused the Viking IV to be considerably underpowered for an aircraft of its size and weight. (RCAF photo RE-13633)

Vickers VIKING

The Vickers Viking was a single-engine flying boat purchased in 1923 to meet a CAF tender for an aircraft suitable to replace the wartime-vintage Curtiss HS-2L flying boats. Canadian Vickers had proposed its parent company's Vickers Viking IV. The mahogany-wood hull of the aircraft gave it a rich appearance. The aircraft was in fact almost exclusively of wood construction except for tubular engine mounts supporting the Rolls-Royce Eagle engines. The CAF's selection of this engine left the aircraft considerably underpowered, and this deficiency remained throughout the type's entire career. Although seating for five was possible, the aircraft were usually limited to only three personnel due to engine-performance limitations. The aircraft were also found to have poor handling characteristics while taxiing in the water. Nevertheless, the aircraft were pressed into service and used at a number of bases, primarily in the province of Manitoba, mostly for survey or transport work. The aircraft were amphibious capable, having wheels fitted, but waterborne landings were the normal activity and the gear served as a convenient beaching capability. In 1924, an RCAF pilot flew a Viking aircraft 900 miles (1,448 km) in 12 days to deliver Treaty payments to Indigenous reserves across Northern Ontario. This extended duration flight was considered a rare accomplishment in the period.

DETAILS

Designation: N/A
Model No: N/A
Marks: IV
Role: Aerial surveying, transport
TOS: 1923
SOS: 1931
No: 8
Service: RCAF

SPECIFICATIONS

Manufacturer:	Canadian Vickers	
Crew/Passengers:	One pilot and two passengers	
Power Plant:	One 360 hp Rolls-Royce Eagle VIII or IX pusher engine	
Performance:	Max speed: 102 mph (164 km/h)	Cruising speed: 80 mph (128 km/h)
	Service ceiling: 9,000 ft (2,743 m)	
Weights:	Empty: 3,750 lb (1,701 kg)	Gross: 5,600 lb (2,541 kg)
Dimensions:	Span: 50 ft 0 in (15.24 m)	Length: 34 ft 0 in (10.36 m)
	Height: 15 ft 1 in (4.6 m)	Wing area: 594 sq ft (55.2 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	No. 3 (Ops) Sqn, No. 1 (Ops) Wing	
Serial Numbers:	G-CYES–G-CYEZ	

This is a handsome WACO AQC-6 in civilian markings and finish similar to those briefly used by the RCAF. (Photo courtesy of the Canada Aviation and Space Museum)

Waco AQC-6 CUSTOM

The Waco AQC-6 was a "Custom Cabin" biplane built by Waco in 1936. The design incorporated a wide variety of engines of seven different types. With each of the engine types, the aircraft received a slightly different designation and model number. Each of these models was like a different aircraft because of the varying degrees of performance. The Custom Cabin design, lavishly equipped for its day, was plush and comfortable and was intended for sportsmen and businessmen. With the Jacobs L-6 engine installed and providing 330 hp, the model became known as the AQC-6. With this improved engine and extra horsepower combined with a controllable pitch propeller, the aircraft provided excellent service. It was capable of being operated year-round, operating comfortably on wheels, skis or floats. The RCAF's only AQC-6 was received on loan from the Department of Transport. It was evaluated at No. 12 Communications Flight at RCAF Station Rockcliffe. It was likely found unsuitable for RCAF service, as no orders were placed for it and it was not retained for service. After three months the AQC-6 was returned to the Department of Transport.

DETAILS

Designation: N/A
Model No: AQC-6
Role: Passenger transport
TOS: 1942
SOS: 1942
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Waco Aircraft Company	
Crew/Passengers:	One pilot and up to four passengers	
Power Plant:	Jacobs L-6 providing 300 hp (330 hp for takeoff)	
Performance:	Max speed: 170 mph (274 km/h)	Cruising speed: 155 mph (249 km/h)
	Service ceiling: 18,500 ft (5,638 m)	Range: 550 mi (885 km)
Weights:	Empty: 2,313 lbs (1,049 kg)	Gross: 3,650 lbs (1,656 kg)
Dimensions:	Span: 35 ft 0 in (10.67 m)	Length: 26 ft 8 in (8.13 m)
	Height: 8 ft 8 in (2.64 m)	Wing area: 244 sq ft (22.67 sq m)
Armament:	None	
Cost:	US$8,975	
Affiliated Unit:	No. 12 Communications Flight	
Serial Number:	CF-DTD	

This wintry view of an American Waco CG-15 glider acquired by Canada for test purposes illustrates the revised wing-span and other improvements for the type. (Library and Archives Canada Photo PA65385)

Waco CG-15

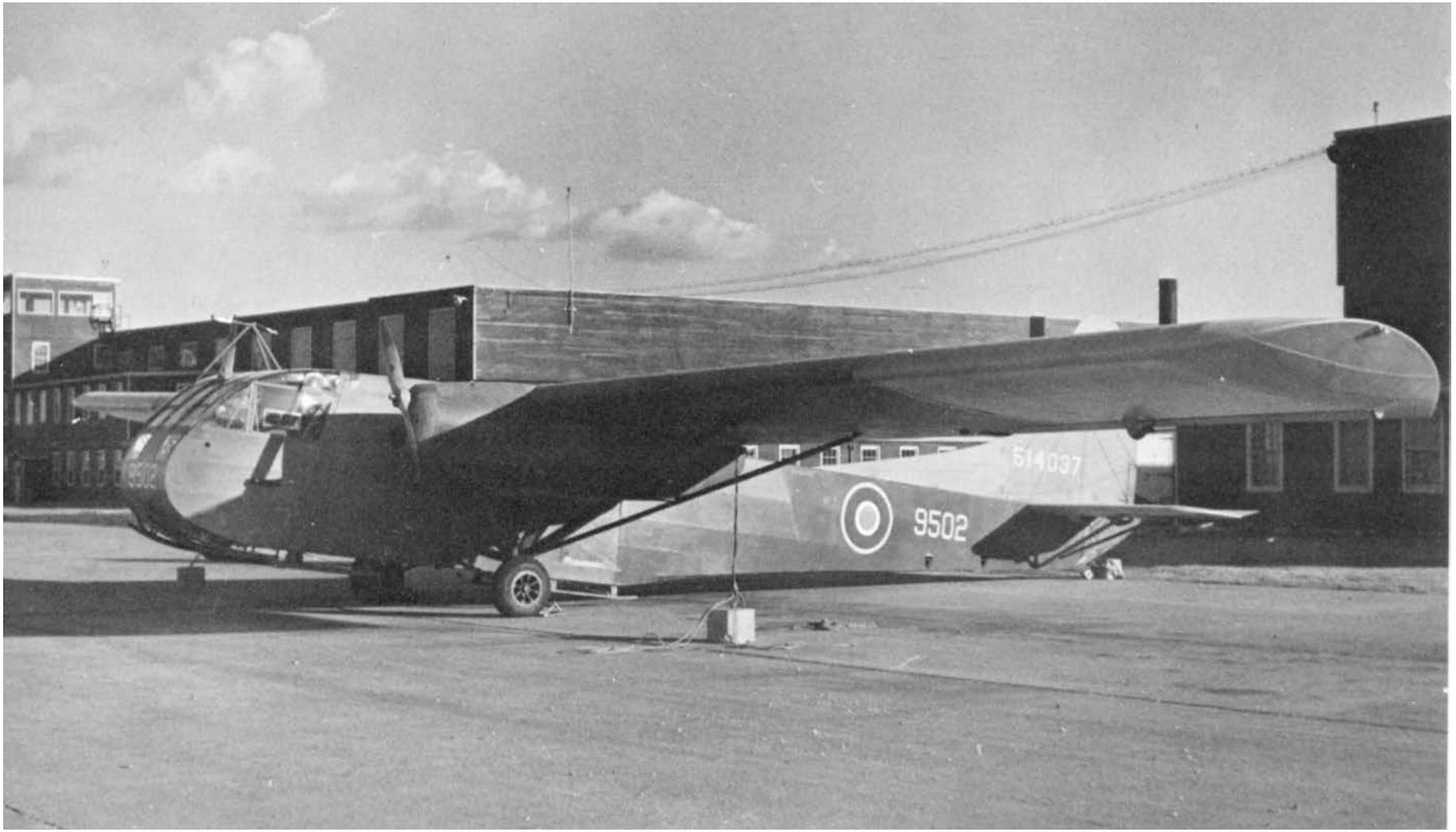
The Waco CG-15 was yet another development of the successful Waco CG-4 Hadrian standard glider. Waco had essentially developed an improved version of the CG-4A. Interestingly, the changes consisted of a reduction in the wing-span from 83 ft 8 in (25.50 m) to 62 ft 2 in (18.9 m), elimination of the wing spoilers, a revised nose shape, improved cantilever undercarriage and numerous internal fitment changes. The changes increased the normal gross weight by 500 lbs (227 kg) and the towing speed increased to 180 mph (290 km/h). A total of 427 CG-15 gliders were originally delivered to the US military. Canada acquired a single example for evaluation purposes.

DETAILS

Designation: N/A
Model No: CG-15
Role: Glider
TOS: 1946
SOS: 1950
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Waco Aircraft Company	
Crew/Passengers:	Two pilots and up to 13 troops or a variety of stores	
Power Plant:	None	
Performance:	Max speed: 180 mph (290 km/h)	
	Service ceiling: 10,000 ft (3,345 m)	Range: Tow-plane dependent
Dimensions:	Span: 62 ft 2 in (18.9 m)	Length: 48 ft 4 in (14.73 m)
	Height: 12 ft 7 in (3.84 m)	
Armament:	None	
Cost:	Unknown	
Affiliated Unit:	Test and Development Establishment	
Serial Number:	9504	



This is a view of the sole Waco PG-2A glider. (RCAF photo)

Waco PG-2A

The Waco PG-2A was a unique powered development of the successful Waco CG-4 Hadrian standard glider. In 1943, the US military had originally developed a prototype powered version of the Hadrian, with two Franklin flat-four piston engines in nacelles beneath the wings. The object of this conversion was to allow the glider to return under its own power after completing a mission. After tests with this prototype, a further 10 conversions of the aircraft were ordered with Ranger L-440-7 piston engines. These production versions were then known by the PG-2A designation. The service trials were apparently of interest to the RCAF, and one PG-2A was briefly trialed in Canada during the immediate post-war period.

DETAILS

Designation: N/A
Model No: PG-2A
Role: Powered glider
TOS: 1946
SOS: 1947
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer: Waco Aircraft Company
Crew/Passengers: Two pilots and up to 13 troops
Power Plant: Two Ranger L-440-7 piston engines

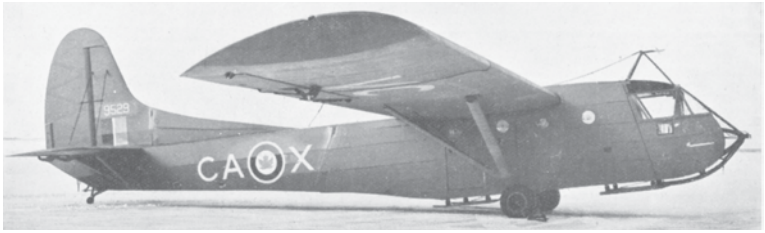
Dimensions: Span: 83 ft 8 in (25.50 m)
Length: 48 ft 4 in (14.73 m)
Height: 12 ft 7 in (3.84 m)
Wing area: 852 sq ft (79.15 sq m)

Armament: None
Cost: Unknown
Affiliated Unit: Test and Development Establishment
Serial Number: 9502

(RCAF photo)

Waco HADRIAN (HAIG)

The Hadrian was the first and most widely used troop glider employed by the Allies during the Second World War. It was a mixture of wood, fabric and metal construction and featured an upward-hinged nose section that permitted direct loading of vehicles into the box-section fuselage. In addition to heavy regular usage, the type was also committed to unique experiments, such as a successful trans-Atlantic crossing under tow involving Canadian crews. In post-war Canada, a small number of gliders were also retained in service for post-war experimentation, exercises including Exercise MUSK OX in the North, and trials use, but the introduction of helicopters effectively relegated these troop-transport gliders to obsolescence.



This view of the Waco CG-4A glider while at Gimli, Manitoba, shows the wing profile to good effect. (RCAF photo)

DETAILS

Designation: N/A
Model No: CG-4A
Role: Glider
TOS: 1944
SOS: 1955
No: 32
Service: RCAF

SPECIFICATIONS

Manufacturer:	Waco Aircraft Company	
Crew/Passengers:	Two pilots and up to 13 fully equipped troops or a variety of stores	
Power Plant:	None	
Performance:	Max speed: 150 mph (241 km/h)	Stalling speed: 44 mph (71 km/h)
	Service ceiling: 10,000 ft (3,345 m)	Range: Tow-plane dependent
Weights:	Empty: 3,700 lb (1,678 kg)	Gross: 7,500 lb (3,402 kg)
Dimensions:	Span: 83 ft 8 in (25.50 m)	Length: 48 ft 4 in (14.73 m)
	Height: 12 ft 7 in (3.84 m)	Wing area: 852 sq ft (79.15 sq m)
Armament:	None	
Cost:	US$24,000	
Affiliated Unit:	No. 112 (T) Flight, No. 6 (RCAF) OTU, CJATC	
Serial Numbers:	9501, 9530, 9505, 9530, KH944–KH947	

Lysander R9003 (RCAF photo)

Westland LYSANDER

Designed and built by Westland Aircraft Limited as an Army co-operation aircraft, the Lysander first entered RCAF service in 1939. No. 110 (later 400) Squadron (Sqn) was the first RCAF unit to be sent overseas in February 1940, and it was equipped with Lysanders, as was the second sqn, No. 112 (later 402) Sqn, which followed in June 1940. Five other squadrons used the "Lizzie" in Canada for artillery spotting, drogue towing, reconnaissance and close-support training. The type then also played an integral role in the British Commonwealth Air Training Plan (BCATP) programme, mainly as a gunnery-target tow tug. In the Royal Air Force, the Lysander also won fame later in the war by transporting agents into enemy-occupied territories.

DETAILS

Designation: N/A
Role: Utility transport
No: 329
Model No: N/A
TOS: 1939
Service: RCAF
Marks: II, IITT, III, IIIA, IIITT
SOS: 1946

SPECIFICATIONS (for the Mk IIITT)

Manufacturer:	Westland Aircraft Limited	
Crew:	Pilot and crewman	
Power Plant:	One 870 hp Bristol Mercury XX or XXX radial	
Performance:	Max speed: 217 mph (349 km/h) Service ceiling: 23,850 ft (7,269 m)	Cruising speed: 170 mph (273.5 km/h)
Weights:	Empty: 4,840 lb (2,197 kg)	Gross: 6,000 lb (2,724 kg)
Dimensions:	Span: 50 ft (15.24 m) Height: 11 ft 6 in (3.5 m)	Length: 30 ft 6 in (9.3 m) Wing area: 260 sq ft (24.15 sq m)
Armament:	Provision for two forward-fixed plus one rear-mounted flexible .303 machine guns and provisions for light practice bombs on stub wings attached to wheel spats	
Original Cost:	Unknown	
Unit Affiliations:	Nos. 110, 111, 112, 118, 121, 122, 123 Sqns, Nos. 1, 2, 3 (CAC) Detachments, numerous BCATP units, Test and Development Establishment, Nos. 3, 31, 34, 36 OTUs, and miscellaneous other units	
Serial Numbers:	46 between V9281–V9739, and 283 between 416–2454	

This restored Canada Aviation and Space Museum example of an RCAF Westland Lysander provides an example of the tactical camouflage employed by the type on overseas missions. (CF photo RNC-1474-3)

The Fairey Battle gunnery trainer in the background and the Westland Lysander aircraft for target towing in the foreground formed the backbone of the BCATP in the early stages of the programme. In the target-towing role the Lysander was often painted in overall yellow BCATP finish with large black diagonal stripes. (CF photo RNC-1474-5)

Wapiti 513, shown here, is from the original batch of six RCAF aircraft. An operational aircraft with No. 3 (B) Sqn, it was mistakenly painted in training-scheme colours of overall yellow dope on the wings and rear fuselage, with the other surfaces being in natural metal. Note the added enclosed cockpit, which was intended to help with winter flying operations. (RCAF photo)

Westland WAPITI

Having previously trialed an aircraft of this type in the winter of 1930, in 1935 the RCAF purchased 24 used Wapitis from the RAF. These light bombers equipped No. 3 (B) Squadron (Sqn) in Trenton. In 1938, the Sqn flew its aircraft from Ottawa to Calgary, and late in August 1939, the Sqn moved to Halifax, where it was disbanded. Its Wapitis went on to equip No. 10 (Bomber Reconnaissance) Sqn, which flew them on antisubmarine patrols from Halifax. No. 10 Sqn used the Wapitis until April 1940, when twin-engine Douglas Digbys replaced them. At the same time as No. 3 Sqn used Wapitis, the Air Armaments School at RCAF Station Trenton used them for air-gunner training. As the type was obsolete for operations and training, the last remaining Wapitis were sent to the Technical Training School in St. Thomas, Ontario. The aircraft had served well but, as with well-used airframes, there also were problems. Originally designed to carry up to 1,000 lbs (454 kg) of bombs, squadron personnel found the most that their aged machines could carry was 500 lbs (227 kg) without an excessively long takeoff. The aircraft therefore earned the less-than-complimentary nickname "What-A-Pity."

DETAILS

Designation: N/A
Role: Utility
No: 25

Model No: N/A
TOS: 1930
Service: RCAF

Marks: II, IIA
SOS: 1944

SPECIFICATIONS

Manufacturer: Westland Aircraft
Crew: Crew of two
Power Plant: One 550 hp (410 kW) Bristol Jupiter VII radial engine

Performance: Max speed: 135 mph (217 km/h); Cruising speed: 110 mph (177 km/h)
Service ceiling: 20,600 ft (6,280 m); Range: 360 mi (579 km)
Weights: Empty: 3,180 lb (1,442 kg); Maximum takeoff: 5,400 lb (2,449 kg)
Dimensions: Span: 46 ft 5 in (14.15 m); Length: 32 ft 6 in (9.91 m)
Height: 11 ft 10 in (3.61 m); Wing area: 468 sq ft (43.48 sq m)

Armament: One .303 in (7.7 mm) forward firing machine gun on fuselage side and one Lewis gun in rear cockpit.
Provision for up to 580 lb (263 kg) of bombs
Cost: Can$584 per a/c (Purchased used from the RAF)
Affiliated Units: No. 3 (B) and No. 10 (BR) Sqns, AAS, No. 1 TTS
Serial Numbers: J9237, 508–513, 527–544

A CH-149 Cormorant helicopter takes off from a confined area in Cloud Lake, NS, during a training flight on January 8, 2016. (RCAF photo)

Westland-Augusta CORMORANT

The Cormorant was chosen as Canada's new search and rescue (SAR) helicopter. They have replaced the 12 CH-113 Labrador helicopters in the SAR role, equipping 103 Squadron (Sqn) at 9 Wing Gander, NL; 413 Sqn at 14 Wing Greenwood, NS; 424 Sqn at 8 Wing Trenton, ON; and 442 Sqn at 19 Wing Comox, BC. Three General Electric T700/CT7-6 engines power the Cormorant, each producing 1,920 shaft horsepower. The tri-engine Cormorant is capable of recovery from any point of flight should one of its engines fail. In fact, it will be common practice for Canadian pilots to shut down one of the three engines when on a SAR mission to extend the endurance of the helicopter to 5–6 hours on station. It has a long-range capability, can withstand high winds and possesses a large cargo area. In addition, it is equipped with an ice-protection system, allowing it to operate in continuous icing conditions. Offering a spacious cabin and rear-ramp access, the Cormorant can also operate from helidecks on ships carrying 12 stretchers or 5,440 kg. The on-board active-vibration controller minimizes the internal noise level, making transport more comfortable for personnel. The Cormorant is fitted with 30 seats, but in the event of an emergency, as many as 40 can be accommodated on board. These overall capabilities make it ideal for Canada's demanding geography and climate.

This is a CH-149 Cormorant SAR helicopter from 442 Sqn in Comox exercising with one of the boats from 19 Wing's Marine Section. (CF photo CX-203-0254-16d)

These are two of 413 Sqn's CH-149s in Greenwood basking in the sunshine circa 2015. (RCAF photo GD2015-0334-24)

DETAILS

Designation: CH-149
Role: SAR helicopter
No: 15
Model No: AW101
TOS: 2001
Service: CF/RCAF
SOS: In service

SPECIFICATIONS

Manufacturer:	Westland-Augusta (later Leonardo)	
Crew/Passengers:	Two pilots, flight engineer and SAR TECHs and up to 30 passengers, plus provisions for two 223 kg rescue hoists, 3,732 kg external cargo and up to 12 stretchers	
Power Plant:	Three General Electric T700/CT7-6 engines, each producing 1,920 SHP	
Performance:	Max speed: 173 mph (278 km/h)	Cruising speed: 167 mph (278 km/h)
	Service ceiling: 15,000 ft (4,575 m)	Range: 633 mi (1,018 km)
Weights:	Empty: 4,600 lb (2,087 kg)	Max takeoff: 6,300 lb (11,943 kg)
Dimensions:	Rotor dia: 60 ft 8 in (18.5 m)	Length: 74 ft 10 in (22.8 m)
	Height: 21 ft 4 in (6.5 m)	
Armament:	None	
Cost:	Unknown	
Affiliated Units:	AETE, No. 103 (S&R) and Nos. 413, 424, 442 (T&R) Sqns	
Serial Numbers:	149901–149916	

This is a photo of the roll-out of the first CF-105 Arrow Mk I in Malton, Ontario. (RCAF photo - PCN 215)

Avro (Canada) ARROW

One of the most famous aircraft in Canadian history, the CF-105 Arrow, never made it into operational use with the RCAF, although it was flown by RCAF test pilots. The CF-105 Arrow was a supersonic, all-weather, two-seat interceptor designed and produced by Avro Aircraft (Canada) Limited in Malton, Ontario. Avro had avoided the normal prototype stage and launched directly into the manufacture of production aircraft. Five pre-production standard aircraft were outfitted with J-57 engines and flight-test systems. The sixth aircraft was equipped with the full-production Orenda Iroquois engines, but this aircraft never flew prior to programme cancellation. A total of 31 more aircraft were also in production when the entire effort was terminated by the federal government on February 20, 1959.

This is another photo of the roll-out of the first CF-105 Arrow Mk I in Malton, Ontario. (RCAF photo - PCN 220)

DETAILS

Designation: CF-105 | **Model No:** C-105 | **Marks:** I, II
Role: Fighter/interceptor | **TOS:** 1958 | **SOS:** 1959
No: 5 | **Service:** Ordered by RCAF

SPECIFICATIONS (for the Mark 1)

Manufacturer:	Avro Canada	
Crew:	Two: pilot and navigator / weapons officer)	
Power Plant:	Two Pratt & Whitney J-57 P5 turbojet engines each with 12,500 lb (5,670 kg) thrust or (18,000 lb [8,165 kg] in A/B)	
Performance:	Max speed: Mach 2.0 or 700 kts (1,297 km/h)	
	Service ceiling: 53,000 ft (15,240 m)	Combat radius: 300 mi (483 km)
Weights:	Empty: 48,923 lb (22,211 kg)	Gross: 57,000 lb (25,855 kg)
	Maximum takeoff: 68,600 lb (31,144 kg)	
Dimensions:	Span: 50 ft (15.24 m)	Length: 77 ft 10 in (23.71 m)
	Height: 21 ft 3 in (6.48 m)	Wing area: 1,225 sq ft (113.8 sq m)
Armament:	Provisions for internal carriage of up to four AIM-4 Falcon or Sparrow 2 missiles	
Cost:	Approximately Can$3,500,000 for each A/C	
Affiliated Unit:	CEPE	
Serial Numbers:	(Aircraft flown) 25201–25205	

The NATO version of the E-3 Sentry. (Photo courtesy of Jean-Marie Hanon)

Boeing E-3 SENTRY

The Boeing 707 was the most successful and versatile of the early jet airliners. This versatility led to a wide variety of subsequent military roles. The United States Air Force (USAF) first used the type as the basis for an airborne warning and control (AWACS) platform designated "E-3 Sentry." The E-3 Sentry is a modified Boeing 707/320 commercial airframe with a distinctive rotating radar dome. The dome is 30 feet (9.1 m) in diameter, six feet (1.8 m) thick and is held 11 feet (3.3 m) above the fuselage by two struts. It contains a radar subsystem that permits all-weather surveillance over a range of more than 200 miles (320 km) for low-flying targets and farther for aerospace vehicles flying at medium to high altitudes. The radar combined with an identification friend or foe (IFF) subsystem can look down to detect, identify and track enemy and friendly low-flying aircraft by eliminating ground-clutter returns that confuse other radar systems. Canadian crews are integrated into USAF E-3 Sentry operations within North America as part of Canada's contribution to NORAD. NATO subsequently acquired a fleet of eighteen Sentry aircraft to provide airborne surveillance as well as command, control and communication for NATO air operations. Home-based in Geilenkirchen, Germany, NATO aircraft are routinely forward deployed and Canadian military personnel serving with NATO in both the past and present also make up part of the associated air or ground crews.

The NATO versions of the E-3 Sentry aircraft are regularly crewed by CF personnel. The NATO aircraft are registered in Luxembourg, hence the registration letters on the tail. RCAF personnel also serve on USAF E-3 aircraft in the NORAD capacity. (CF photo)

This NATO E-3 Sentry aircraft was specially painted to celebrate the 25th anniversary of the creation of the NATO E-3 Component. (Photo courtesy of NATO)

DETAILS

Designation: E-3A
Model No: 707-320C
Role: Airborne warning and control
Service: NATO/USAF

SPECIFICATIONS

Manufacturer:	Boeing Aircraft Corporation	
Crew:	Two pilots, one navigator, one flight engineer and up to 13 mission specialists	
Power Plant:	Four Pratt & Whitney 20,500 lb (9299 kg) thrust TF-33 100A turbofan engines	
Performance:	Max speed: 530 mph (853 km/h)	
	Service ceiling: 39,000 ft (11,887 m)	Range: 1,000 mi (1,610 km)
Weights:	Empty: 180,000 lb (73,480 kg)	Gross: 326,000 lb (147,429 kg)
Dimensions:	Span: 145 ft 9 in (44.45 m)	Length: 152 ft 11 in (46.68 m)
	Height: 41 ft 9 in (12.70 m)	Wing area: 3,050 sq ft (283.4 sq m)
Armament:	None	
Cost:	US$70M	
Affiliated Units:	NATO and USAF	
Serial Numbers:	N/A	

The King Air C90A aircraft shown here on the flight line at Southport, Manitoba (formerly CFB Portage la Prairie), display the Bombardier insignia on their tails. (CF photo)

The King Air C90B aircraft shown here on the flight line at Southport, Manitoba (formerly CFB Portage la Prairie), now display the Allied Wings consortium insignia on their tails. The main example pictured also sports the famed wartime shark-mouth insignia. (CF photo)

This is one of the B200 Super King Air aircraft leased as part of the base flight at 8 Wing Trenton. (RCAF photo TN05-2016-0802-00)

The Canadian government has contracted for three King Air 350 extended-range aircraft equipped with advanced ISR capabilities for support of Canada's special forces. This is an example of the aircraft type, albeit without the special mission equipment yet fitted. (CF photo)

Beech KING AIR / SUPER KING AIR / KING AIR 350 ER

The King Air is a highly successful executive turbine transport design that is very popular, with over 2,000 models sold and in service. The design has constantly evolved and improved in service, and the Super King Air represented the ultimate in this line. The CF was faced with a requirement to teach multi-engine turboprop handling to pilots graduating from a piston and jet training programme. Consequently, the CF acquired three Super King Air aircraft for this purpose. These aircraft were then retired in 1995 following the conversion of the entire training programme to a civilian-run and -organized affair. The requirement was not eliminated, but the civilian contractor supplied its own C90A King Air aircraft (as opposed to Super King Airs) for this purpose. Eight Beech King Airs were therefore provided to the military under contract by their owner, Bombardier, and used for multi-engine training of military pilots by military instructors. These aircraft were subsequently replaced by seven C90B King Airs owned by the Allied Wings consortium that took over the Southport contract.

The Super King Air is a highly successful executive turbine transport design that proved to be very popular, with over 2,000 models sold and in service. The design was constantly evolved and improved in service and the Super King Air represented the ultimate in this line. The RCAF has leased two Super King Airs for a base-flight construct in 8 Wing Trenton.

The Canadian government has also contracted for three King Air 350 extended-range aircraft equipped with advanced intelligence, surveillance and reconnaissance (ISR) capabilities for support of Canada's special forces. The acquisition of the aircraft will be completed through Foreign Military Sales. The associated in-service support of the aircraft will be procured through a competitive process. First delivery was expected in 2022. The extended-range airframe includes additional fuel capacity and increased capability landing gear, allowing for 2,500 nautical mile range and take-off weight of 16,500 lb (7,484 kg). These three aircraft will undergo unique Canadian modifications to suit them for the ISR role, with their mission fit being listed as including L-3 Wescam's MX-15D electro-optic/infrared (EO/IR) imager; Northrop Grumman's AN/AAR-47B(V)2 missile and laser warning system; and the BAE Systems/Extant Aerospace AN/ALE-47 countermeasures dispenser system. Other onboard equipment will include L-3 Communications Systems, West's Vortex transceiver, Raytheon's AN/APX-119 IFF transponder, the Rockwell Collins AN/ARC-210 transceiver, the KGV-135A communications security module, the KIV-77 cryptographic appliqué and the KG-250X network encryptor.

DETAILS

Designation: CT-145, CE-145? **Model No:** C90A, C90B, B200 or 350 ER
Role: Trainer/ISR **TOS:** 1995 **SOS:** In service
No: 8 C90A, 7 C90B, 2 B200, 3 ER
Service: Contractor provided or leased and 3 RCAF a/c under contract

SPECIFICATIONS (for the C90A)

Manufacturer:	Beech Aircraft Corporation	
Crew/Passengers:	Crew of two with provisions for eight passengers	
Power Plant:	Two 550 ESHP Pratt & Whitney PT-6A-21 turboprop engines	
Performance:	Max speed: 284 mph (457 km/h)	
	Service ceiling: 28,100 ft (8,565 m)	Range: 1,243 mi (2,001 km)
Weights:	Empty: 5,765 lb (2,615 kg)	Max T/O: 9,650 lb (4,377 kg)
Dimensions:	Span: 50 ft 3 in (15.32 m)	Length: 35 ft 6 in (10.82 m)
	Height: 14 ft 3 in (4.34 m)	Wing Area: 293.94 sq ft (27.31 sq m)
Armament:	None	
Cost:	Unknown	

SPECIFICATIONS (for the Super King Air)

Manufacturer:	Beech Aircraft Corporation	
Crew/Passengers:	Crew of two with provisions for 13 passengers	
Power Plant:	Two 850 ESHP Pratt & Whitney PT-6A-42 turboprop engines	
Performance:	Max speed: 338 mph (544 km/h)	
	Cruising speed: 325 mph (523 km/h)	
	Service ceiling: 35,000 ft (10,668 m)	Range: 2,272 mi (3,656 km)
Weights:	Empty: 8,060 lb (3,656 kg)	Gross: 12,500 lb (5,670 kg)
Dimensions:	Span: 54 ft 6 in (16.64 m)	Length: 43 ft 9 in (13.38 m)
	Height: 15 ft 0 in (4.57 m)	Wing area: 303 sq ft (28.15 sq m)
Armament:	None	
Cost:	Unknown	

SPECIFICATIONS (for the King Air 350ER)

Manufacturer:	Beech Aircraft Corporation	
Crew/Passengers:	Crew of two with provisions for sensor operators	
Power Plant:	Two 850 ESHP Pratt & Whitney PT-6A-42 turboprop engines	
Performance:	Cruising speed: 303 kt (561 km/h)	Endurance: 12+ hours
	Service ceiling: 35,000 ft (10,668 m)	Ferry range: 2,670 NM (4,945 km)
Weights:	Basic: 9,455 lb (4,289 kg)	MTOW: 16,600 lb (7,484 kg)
Dimensions:	Span: 54 ft 6 in (16.64 m)	Length: 43 ft 9 in (13.38 m)
	Height: 15 ft 0 in (4.57 m)	Wing area: 303 sq ft (28.15 sq m)
Armament:	None	
Cost:	US$300M for 3 a/c and associated tool sets, ground-support equipment, airframe, engine spares, training and logistics	

This is Bell Airacobra I (RAF serial number AH621) with engine running; Bell test pilot Robert M. "Bob" Stanley is at the controls in Buffalo, New York, c. 1941. Shortly after this photo was taken, the a/c was written off while being tested by the RCAF. (Photo courtesy of the US National Air and Space Museum)

Bell AIRACOBRA

The Bell P-39 Airacobra was a fighter produced by Bell Aircraft for the United States Army Air Forces during the Second World War. It was one of the principal American fighters in service when the US first entered combat. Under lend-lease arrangements, the P-39 was also used by the Soviet Air Force and enabled individual Soviet pilots to collect the highest number of kills attributed to any US fighter type flown by any air force in any conflict. The P-39 had an unusual layout, with the engine installed in the centre fuselage behind the pilot, and driving a tractor propeller in the nose with a long shaft. It was also the first fighter fitted with a tricycle undercarriage. Although its mid-engine placement was innovative, the P-39 design was hindered by the absence of an efficient turbo-supercharger, preventing it from performing high-altitude work. For this reason it was rejected by the RAF for use over western Europe but readily adopted by the USSR, where most air combat took place at medium and lower altitudes. The RCAF was loaned one aircraft (RAF serial number AH621) for flight trials, as the RCAF was evaluating various US fighters for purchase. While this aircraft was being tested at Rockcliffe, it crashed at 1100 hr on 26 November 1941, just 2.5 miles (4 km) from the airport. The pilot was slightly injured. An investigation revealed that the aircraft had suffered a forced landing in a field with the undercarriage up following an engine failure. The airframe was written-off in the accident. The RCAF had been attempting to purchase up to 144 P-39 aircraft but delays in production at Bell company coupled with an urgent need by the RAF resulted in the RCAF instead acquiring P-40 Kittyhawks for home-defence purposes.

DETAILS

Designation: N/A
Role: Fighter
No: 1
Model No: P-39
Loaned: 1941
Service: RCAF
Marks: I
Written-off: 1941

SPECIFICATIONS

Manufacturer: Bell Aircraft Company
Crew: One pilot
Power Plant: One Allison V-1710-85 V-12 liquid-cooled piston engine, 1,200 hp (890 kW) at 9,000 ft (2,743 m) (emergency power)

Performance: Max speed: 389 mph (626 km/h)
Service ceiling: 35,000 ft (11,000 m) Range: 525 mi (845 km)
Weights: Empty: 6,516 lbs (2,956 kg) Gross: 7,570 lbs (3,434 kg)
Dimensions: Span: 34 ft 0 in (10.36 m) Length: 30 ft 2 in (9.19 m)
Height: 12 ft 5 in (3.78 m) Wing area: 213 sq ft (19.8 sq m)

Armament: One 37 mm cannon, four .50 calibre Browning machine guns plus provisions for two 500 lb (230 kg) bombs
Original Cost: Unknown
Affiliated Unit: Test and Development Establishment
Serial Number: AH621

This is the sole B-47 Stratojet in RCAF colours. The Iroquois engine test pod is visible at the rear of the aircraft. (RCAF photo)

Boeing B-47 STRATOJET

The Boeing B-47 Stratojet was the first swept-wing bomber built in any quantity in the world. Initial design work began in 1943, and with the end of the war, the final design benefited from results obtained from German research. The first prototype was ready to fly in 1947. The B-47 went to achieve quantity production for the USAF and became the mainstay of the Strategic Air Command. By comparison, the RCAF did not pursue any bomber force in the post-war period. The RCAF, however, did acquire one B-47 Stratojet (USAF B-47 No. 51-2059) for test and evaluation purposes. Ironically, this bomber was acquired to facilitate the test of a fighter engine for the new Avro Arrow interceptor then under development. The B-47 became a flying test bed for Orenda's Iroquois engine testing, during which the test engine was mounted in a nacelle on the rear fuselage. Thus, it became the only seven-engined B-47. Besides adding this engine pylon and nacelle, the extensive structural modifications included double-skinning the rear fuselage, strengthening bulkheads and adding bulkheads and longerons. The co-pilot's station was modified into a flight test engineer's station, test instrumentation was installed in the bomb bay and 8,000 lb (3,600 kg) of ballast was installed in the nose to counter the weight of the Iroquois engine. In subsequent test flights, the B-47 had its primary engines shut down and the aircraft was able to fly powered solely by the Iroquois. With the termination of the Arrow/Iroquois program, the aircraft was returned to the US where it was scrapped.

DETAILS

Designation: N/A
Model No: B-47B
Role: Test and evaluation
TOS: 1955
SOS: 1959
No: 1
Service: RCAF

SPECIFICATIONS

Manufacturer:	Boeing Airplane Company	
Crew:	Two pilots and one navigator	
Power Plant:	Six 6,000 lb (2,722 kg) thrust GE J-47 turbojet engines and one Iroquois test engine	
Performance:	Max speed: 606 mph (975 km/h)	Cruising speed: 557 mph (896 km/h)
	Service ceiling: 40,500 ft (12,344 m)	Range: 4,000 mi (6,438 km)
Weights:	Empty: 80,756 lb (36,631 kg)	Gross: 206,700 lb (93,759 kg)
Dimensions:	Span: 116 ft 0 in (35.36 m)	Length: 109 ft 10 in (33.48 m)
	Height: 27 ft 11 in (8.51 m)	Wing area: 1,428 sq ft (132.67 sq m)
Armament:	None	
Cost:	US$1,888,000	
Affiliated Unit:	CEPE / Canadair / No. 12 TSU (Avro)	
Serial Number:	X059 (ex-USAF 51-2059)	

This is a pair of BAE Systems CT-155 Hawk aircraft in NFTC colours. (RCAF photo CK2004-0065-18d)

BAE Systems HAWK

Student pilots in the NATO Flying Training in Canada (NFTC) programme selected for jet training will transit from the CT-156 Harvard II to the CT-155 Hawk and will continue to train at 15 Wing Moose Jaw. In addition, the Hawk will be used at 4 Wing Cold Lake during the fourth phase of jet pilot training. The BAE Systems Hawk 115 was selected for its similarities to sophisticated front-line fighter aircraft. Its principal features include an advanced glass cockpit with a head-up display (HUD); a multi-function display, hands-on throttle and stick controls; integrated navigation and weapon aiming systems; and a high-powered turbofan engine. It is considered one of the most advanced trainers ever built. With its advanced technology, the Hawk is capable of performing a wide range of combat missions, translating into a cost-effective bottom line for pilot training In Canada. Student pilots will spend 80 hours training on the Hawk in Moose Jaw, followed by an additional 45 hours in the fighter lead-in programme in Cold Lake. At this stage, pilots will be ready to join 410 Squadron, the operational training unit, which currently flies CF-188 Hornets.

This uniquely painted anniversary CT-155 Hawk aircraft belonging to 419 Sqn was paying homage to that unit's wartime history by wearing the colours of a Lancaster bomber. (RCAF photo CK04-2016-0538-005)

DETAILS

Designation: CT-155
Model No: 115
Role: Advanced jet trainer
TOS: 2000
SOS: In service
No: 22
Service: Leased from Bombardier (later CAE)

SPECIFICATIONS (for the Hawk 100 series)

Manufacturer:	British Aerospace Systems	
Crew:	Two pilots in tandem	
Power Plant:	One 5,900 lb Rolls-Royce Mk 871 Adour turbofan engine	
Performance:	Max speed: 1,609 mph (1,000 km/h) Service ceiling: 46,000 ft (14,021 m)	
Weights:	Empty: 9,700 lb (4,400 kg)	Gross: 20,062 lb (9,100 kg)
Dimensions:	Span: 32 ft 7 in (9.94 m)	Length: 40 ft 7 in (12.43 m)
	Height: 13 ft 1 in (3.98 m)	Wing Area: 180 sq ft (16.69 sq m)
Armament:	None, but provisions for under-wing drop tanks, rockets, missiles, practice bombs and an under-fuselage gun pod	
Cost:	Leased from Bombardier/CAE	
Affiliated Units:	2 CFFTS, No. 419 Sqn	
Serial Numbers:	155201–155222	

The Canadair CL-84 Dynavert is shown here on the deck of the USS Guam during naval trials. (Canadair photo)

Canadair CL-84 DYNAVERT TILTROTOR

The unique Canadair CL-84 Dynavert was started as the company's private venture in response to NATO specification. The NATO requirement provided for a transport, reconnaissance, search-and-rescue and ground-support aircraft that could takeoff vertically and perform short takeoffs and landings (STOLs). Canadair's response was a relatively conventional design, which featured a wing complete with turboshaft engines powering large 14 ft (4.3 m) diameter rotors that could be tilted upward through 100 degrees. The tailplane and twin vertical stabilizers also pivoted, and the most unconventional features were horizontally mounted contra-rotating tail rotors. This overall unique design foreshadowed the much later–successful tiltrotor designs by Bell/Boeing. However, despite successful vertical takeoff and landing (VTOL) demonstrations by the prototype and by three subsequently improved trial aircraft, the Canadair Dynavert never achieved production status. The aircraft had been accepted by the Canadian Armed Forces (CAF) for the trials and they were also subject to extensive tests by the US Navy and Marine Corps. The Canadair aircraft helped successfully pioneer the feasibility of the tiltrotor concept but unfortunately it proved to be ahead of its time.

DETAILS

Designation: CX-131
Model No: CL-84 and CL-84-1
Role: Test and evaluation
TOS: 1969
SOS: 1971
No: 1 x 4 CL-84 and 3 x CL-84-1
Service: CAF

SPECIFICATIONS

Manufacturer:	Canadair Aircraft Ltd	
Crew:	Two pilots in ejection seats	
Power Plant:	Two 1,500 hp Lycoming T-53 turboshaft engines	
Performance:	Max speed: 321 mph (517 km/h)	Cruising speed: 309 mph (497 km/h)
	Service ceiling: 10,000 ft (3,050 m) VTOL	Range: 420 mi (677 km)
Weights:	Empty: 8,775 lb (3,980 kg)	Gross VTOL: 12,600 lb (5,714 kg)
		Gross STOL: 14,500 lb (6,577 kg)
Dimensions:	Span: 34 ft 8 in (10.56 m)	Length: 53 ft 7 1/2 in (16.34 m)
	Height (wing at 90 deg): 17 ft 1.5 in (5.22 m)	Wing area: 233 sq ft (21.67 sq m)
Armament:	None, but provisions for two 100 gallon (455 l) drop tanks	
Cost:	Unknown	
Affiliated Unit:	AETE	
Serial Numbers:	8401–8403	

This photo of two Canadair CL-84 Dynaverts in formation illustrates the tiltrotor configuration in action. (Canadair photo)

The Canadair CL-84 Dynavert is shown here at the Canadair plant during its initial rollout. (RCAF photo REC69-10061)

The Consolidated RY-3 Privateer loaned by the RAF became the basis of the first RCAF "Rockcliffe Ice Wagon," which was used for early experiments in aircraft icing and de-icing trials.
(RCAF photo via the Jack McNulty Collection)

Consolidated PRIVATEER

A Consolidated C-87 RY-3 Privateer was originally loaned to the RCAF by the RAF in 1946. Known as the "Rockcliffe Ice Wagon," it was primarily used for in-flight de-icing tests along with cloud-seeding experiments. The first of the Rockcliffe Ice Wagons, this aircraft was later replaced by a purpose-modified Canadair North Star. The RY-3 was a military-transport version of the PB4Y-2 Privateer, which itself was a modified version of the Liberator, featuring a single fin and lengthened fuselage.

DETAILS

Designation: N/A
Role: Test
No: 1
Model No: RY-3
TOS: 1946
Service: RCAF
Marks: IX
SOS: 1949

SPECIFICATIONS (for the PB4Y-2)

Manufacturer: Consolidated Aircraft Corporation
Crew: Crew of 8 to 11, depending on the mission flown
Power Plant: Four Pratt & Whitney R-1830-94 radial piston engines rated at 1,350 hp each

Performance:	Max speed: 317 mph (510 km/h)	Cruising speed: 210 mph (338 km/h)
	Service ceiling: 36,000 ft (10,973 m)	Range: 2630 mi (4,232 km)
Weights:	Empty: 37,765 lb (17,232 kg)	Gross: 62,000 lb (28,123 kg)
Dimensions:	Span: 103 ft 9 in (31.62 m)	Length: 73 ft 10 in (22.50 m)
	Height: 19 ft 2 in (5.84 m)	Wing area: 1,420 sq ft (131.92 sq m)

Armament: None
Cost: Unknown
Affiliated Unit: Test and Development Establishment
Serial Number: RAF JT973

Sea Hornet TT193. (RCAF photo)

De Havilland SEA HORNET

The tremendous wartime success of the de Havilland Mosquito led to the development of a faster aircraft with the same basic features and construction techniques. The resulting design was elegant, streamlined and, with a top speed of 488 mph (780 km/h), the Hornet was faster than jet fighters of the day. The de Havilland Hornet in fact became the last piston-engine fighter to serve in the Royal Air Force. Unfortunately, it arrived too late to see active service in World War II, but the type remained in service well into the 1950s. The Royal Navy (RN) was also quick to see the usefulness of the design, and suitable modifications including folding wings, an arrestor hook and other specialized equipment for seaborne use resulted in the F.20 Sea Hornet. The RN deployed one Sea Hornet to Canada for cold-weather trials and the RCAF subsequently briefly acquired the aircraft for test purposes. The aircraft then briefly passed on to the civilian aircraft register for aerial survey work.

DETAILS

Designation: N/A
Role: Naval fighter/reconnaissance
No: 1
Model No: D.H.103
TOS: 1948
Service: RCAF
Marks: F.20
SOS: 1948

SPECIFICATIONS F.3 (RAF version)

Manufacturer:	de Havilland	
Crew:	One pilot	
Power Plant:	Two 2,030 hp Rolls-Royce Merlin 133/134 engines	
Performance:	Max speed: 488 mph (780 km/h)	
	Service ceiling: 37,500 ft (11,430 m)	Range: 2,500 mi (4,022 km)
Weights:	Empty: 12,875 lb (5840 kg)	Gross: 16,100 lb (7,303 kg)
Dimensions:	Span: 45 ft 0 in (13.71 m)	Length: 36 ft 8 in (11.17 m)
	Height: 14 ft 2 in (4.32 m)	Wing area: 222 sq ft (20.62 sq m)
Armament:	Four 20 mm cannon and provisions for 2,000 lb (907 kg) of bombs	
Cost:	Unknown	
Affiliated Unit:	Experimental Establishment / WEE	
Serial Number:	TT193	

These two views of the de Havilland Sea Hornet at RCAF Station Watson Lake illustrate its elegant lines and streamlined form. (T. F. J. Leversedge collection)

The Grob 120A aircraft shown are employed at Southport, Manitoba (formerly CFB Portage la Prairie), for ab initio pilot training. (CF photos)

Grob G120A ASTRA

First flown in 1999, the Grob 120A is a development of the company's G 115 trainer series and is designed to meet modern-airline-pilot and military-training requirements. The ultra-modern all-composite design incorporates numerous advanced features including an electronic flight instrument system (EFIS), a retractable landing gear and a 194 kW (260 hp) Textron Lycoming AEIO-540 flat-six engine. The aircraft replaces the Slingsby Firefly (which in turn replaced the CT-134 Musketeer) as the Air Force's ab initio pilot trainer. It is a modern, lightweight, composite civilian design adapted for military training, including aerobatic training. These aircraft do not actually belong to the military but are owned by the Allied Wings consortium led by Kelowna Flightcraft. The training location is still familiar to many military-trained pilots, as the Southport, Manitoba, training area was originally known as CFB Portage la Prairie during the time when the military maintained its own facilities there for pilot training.

DETAILS

Designation: CT-120
Role: Trainer
No: 9
Model No: G120A
TOS: 2006
Service: Contractor provided
SOS: In service

SPECIFICATIONS

Manufacturer:	Burkhart Grob Luft- und Raumfahrt GmbH & Co KG	
Crew:	Crew of two: instructor and student side by side	
Power Plant:	One 260 hp Textron Lycoming AEIO-540 flat-six engine	
Performance:	Max speed: 264 mph (426 km/h)	Cruising speed: 191 mph (307 km/h)
	Service ceiling: 18,000 ft (5,490 m)	Range: 955 mi (1,537 km)
Weights:	Empty: 2,116 lb (960 kg)	Max: 3,174 lb (1,440 kg)
Dimensions:	Span: 33 ft 5.25 in (10.19 m)	Length: 26 ft 5.5 in (8.07 m)
	Height: 8 ft 5.25 in (2.57 m)	Wing area: 143.16 sq ft (13.3 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Unit:	3 CFFTS	
Serial Numbers:	C-FPFG–C-FPFW	

This is a view an Mi-8 HIP similar to the one leased by the CF. (CF photo IS2009-3071-03)

Mil Mi-8/Mi-17V5 HIP

The CF initially leased six Mi-8 helicopters (NATO Code-name HIP) from Toronto-based Skylink Helicopters to transport and supply support operations in Afghanistan commencing in November of 2008. The leased helicopters were not marked with CF insignia. Subsequently, four Kazan-built Mi-17V5 helicopters were noted in full CF markings and were given the designation CH-178. The latter aircraft were used in support of special forces operations, as the aircraft were carrying full self-protection suites including armoured plate around the lower cockpit area. Serial numbers CH178404, 178405, 178406 and 178407 were noted for these particular aircraft.

DETAILS

Designation: CH-178
Role: Utility helicopter
No: 10

Model No: Mi-8 and Mi-17
TOS: 2008
Service: CF

Marks: Mi-8MTV and Mi-17V5
SOS: 2011

SPECIFICATIONS (for the Mi-8T)

Manufacturer:	Mikhail	
Crew/Passengers:	Two pilots, a flight engineer plus provisions for up to 24 pax each with 15 kg (33 lb) of baggage and 2,500 kg (5,510 lb) of external cargo	
Power Plant:	Two Isotov TV2-117A turboshaft engines, each producing a maximum of 1,700 SHP	
Performance:	Max speed: 140 kt (260 km/h)	Cruising speed: 122 kt (225 km/h)
	Service ceiling: 14,760 ft (4,500 m)	Range: 240 mi (445 km)
Weights:	Empty: 14,990 lb (6,799 kg)	Gross: 26,455 lb (12,000 kg)
Dimensions:	Rotor dia: 69 ft 10.25 in (21.29 m)	Length: 82 ft 9.25 in (25.24 m)
Height:	18 ft 6.25 in (5.45 m)	
Armament:	None	
Cost:	Unknown	
Affiliated Units:	Unknown	
Serial Numbers:	178404–178407	

This is a view of one of the original Mi-8 HIPs leased by the CF. (CF photo AR2008-012-03)

This is a view of one of the armed Mi-17V5 HIPs, in Canadian markings, flown by RCAF crews while in Afghanistan. A CH-146 Griffon can be seen in the background. (CF photo)

The sole CH-143 BK-117 is shown here. It was briefly employed in a test role as a surrogate for a maritime helicopter. (CF photo)

MBB BK-117

The BK-117 was a civilian rigid-rotor light helicopter manufactured by MBB (now Eurocopter) in Germany. Because of the lack of availability of a CH-124 Sea King and a lack of cabin space in unit CH-135 Twin Huey aircraft, the sole BK-117A3 was leased by Aerospace Engineering Test Establishment (AETE) for a test programme (used to evaluate helicopter integrated navigation system [HINS] equipment proposed for inclusion in the ill-fated New Shipborne Aircraft [NSA] programme, which was subsequently cancelled by the government). The BK-117 offered plenty of room for test equipment, and two pallets were installed as well as various antennas, receivers and test instrumentation. The serial number was CH143106. The test flights for the HINS evaluation were flown by AETE crews in the vicinity of Holloman and Vandenberg Air Force Bases in the US, and the aircraft was returned to MBB Canada for civilian use following termination of the programme.

DETAILS

Designation: CH-143 **Model No:** BK-117 A-3D
Role: Helicopter used for flight-test purposes **TOS:** 1990 **SOS:** 1990
No: 1 **Service:** CF

SPECIFICATIONS (for the Mi-8T)

Manufacturer:	MBB (Eurocopter)	
Crew/Passengers:	Two pilots and up to 10 passengers	
Power Plant:	Two 770 hp SNECMA Turbomeca Arriel 1E2 turboshaft engines	
Performance:	Max speed: 163 mph (262 km/h)	
	Hover ceiling: 8,300 ft (2,530 m)	Range: 336 mi (541 km)
Weights:	Empty: 3,891 lb (1,765 kg)	Gross: 7,385 lb (3,350 kg)
Dimensions:	Rotor dia: 36 ft 1 in (11.00 m)	Length: 42 ft 8 in (13.01 m)
	Height: 12 ft 7 in (3.84 m)	
Armament:	None	
Cost:	Leased from MBB Canada	
Affiliated Unit:	AETE	
Serial Number:	143106	

The Raytheon CT-156 Harvard II aircraft is seen here in NFTC colours. (Photo courtesy of Mike Kaehler)

Raytheon HARVARD II

The Raytheon Harvard II is an export version of the Raytheon Texan II currently in USAF and USN service. The Raytheon design is in fact a further-enhanced development of the original Pilatus-designed PC-9 trainer aircraft. Although based on the PC-9, the Raytheon Joint Primary Aircraft Training System (JPATS) submission for the US forces required extensive changes, including cockpit pressurization, improved bird-strike protection, zero-zero ejection seats and a single-point pressure refuelling capability. The Harvard IIs are, in turn, identical to the Texan II aircraft except for the additions of an automatic direction finder, a second VOR, a propeller de-icing system, a standby VHF transceiver and an approach chart holder installed on the cockpit glare shield. Student pilots chosen to attend NATO Flying Training in Canada (NFTC) complete their basic flight training in Moose Jaw, Saskatchewan, on the Raytheon CT-156 Harvard II aircraft. Canadian military pilots training on the Harvard II have arrived at Moose Jaw after initial screening at Portage La Prairie on contractor-leased Grob 120A aircraft. They then spend 95 hours on the Harvard II, at which point they are streamed into the fighter, multi-engine or helicopter programmes for further advanced training.

DETAILS

Designation: CT-156
Role: Trainer
No: 26
Model No: T-6A-1
TOS: 2000
Service: Leased from Bombardier
Marks: II
SOS: In service

SPECIFICATIONS (for the Harvard II)

Manufacturer:	Raytheon	
Crew:	Two pilots in tandem	
Power Plant:	One 1,700 shp Pratt & Whitney PT-6A-68 Adour turboprop engine derated to 1,100 shp driving a four-blade Hartzell variable-pitch propeller	
Performance:	Max speed: 448 mph (500 km/h)	
	Service ceiling: 35,000 ft (10,668 m)	Range: 2,736 mi (1,700 km)
Weights:	Empty: 4,600 lb (2,087 kg)	Gross: 6,300 lb (2,857 kg)
Dimensions:	Span: 32 ft 2.5 in (10.13 m)	Length: 33 ft 3.25 in (10.14 m)
	Height: 10 ft 8.5 in (3.26 m)	Wing area: 176 sq ft (16.29 sq m)
Armament:	None	
Cost:	Leased from Bombardier (later CAE)	
Affiliated Unit:	2 CFFTS	
Serial Numbers:	156101–156126	

The CT-156 Harvard II aircraft is fully aerobatic and is used to teach pilots more advanced flying manoeuvres and formation flying. (CF photo FA2011-1080-019)

A Slingsby Firefly aircraft shown here at the airport at Southport, Manitoba (formerly CFB Portage la Prairie), displays the Bombardier insignia on its tail. (CF photo WG2003-0252-04a)

Slingsby FIREFLY

Commonly known as “the Slingsby,” the Slingsby Firefly replaced the Musketeer as the Air Force’s ab initio pilot trainer. It was a modern, lightweight, composite civilian design adapted for military training, including aerobatic training. These aircraft did not actually belong to the military, but rather to a consortium led for a decade by Bombardier (Canadair) [Canadair logos were displayed on the side of the fuselage and the Bombardier insignia was on the tail]. Accordingly, the instructors were civilian employees of the contractor. The training location is still familiar to many military-trained pilots, as the Southport, Manitoba, training area was known as CFB Portage la Prairie during the time when the military maintained its own facilities for pilot training there.

DETAILS

Designation: CT-111
Model No: T67C3
Role: Trainer
TOS: 1995
SOS: 2006
No: 12
Service: Contractor provided to the RCAF

SPECIFICATIONS

Manufacturer:	Slingsby Aviation Limited	
Crew:	Two: Instructor and student side by side	
Power Plant:	One 160 hp Textron Lycoming AEIO 320-D2A “flat-four” piston engine	
Performance:	Max speed: 153 mph (246 km/h)	Cruising speed: 144 mph (231 km/h)
	Service ceiling: 12,000 ft (3,660 m)	Range: 650 mi (1,046 km)
Weights:	Empty: 1,450 lb (658 kg)	Gross: 2,100 lb (952 kg)
Dimensions:	Span: 34 ft 9 in (10.59 m)	Length: 24 ft 0.25 in (7.32 m)
	Height: 7 ft 9 in (2.36 m)	Wing area: 136.0 sq ft (12.63 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Unit:	3 CFFTS	
Serial Numbers:	C-GSTB–C-GSTZ	

Aerial view of the Boulton Paul Defiant. (RCAF photo)

Boulton Paul DEFIANT

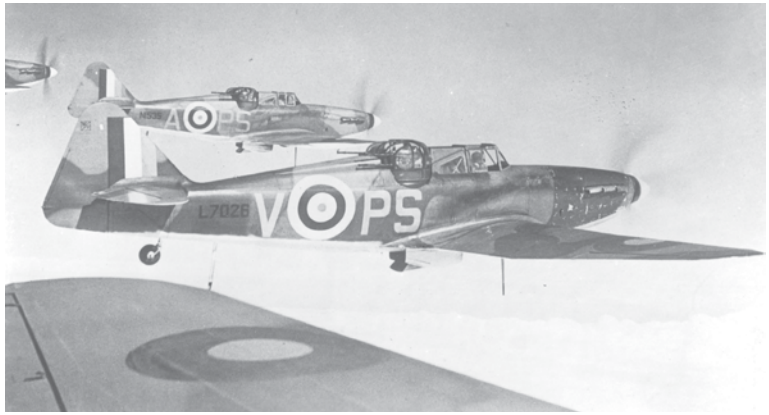
First flown in August 1937, the Boulton Paul Defiant did not participate in operations until 12 May 1940 during the Battle of Britain. An unusual design, the initial surprise afforded by a rear-firing, four-gun powered turret accounted for 65 enemy aircraft kills. However, once the aircraft's weaknesses were identified, by August 1940, the losses of Defiants were so great that the aircraft were withdrawn from front-line duties and transferred to night-fighting duties. In this latter role, two RCAF squadrons were equipped with Defiants. Nos. 409 and 410 Squadrons both used the aircraft type briefly but without any success.

DETAILS

Model No: P.82
Marks: I, II
Role: Fighter
Service: RAF/RCAF

SPECIFICATIONS (for the Mk II)

Manufacturer:	Boulton Paul Aircraft	
Crew:	Pilot and gunner in tandem	
Power Plant:	One 1,280 hp Rolls-Royce Merlin XX piston engine	
Performance:	Max speed: 313 mph (504 km/h)	Cruising speed: 260 mph (418 km/h)
	Service ceiling: 30,350 ft (9,250 m)	Range: 465 mi (748 km)
Weights:	Empty: 6,282 lb (2,849 kg)	Maximum takeoff: 8,424 lb (3,821 kg)
Dimensions:	Span: 39 ft 4 in (11.99 m)	Length: 35 ft 4 in (10.77 m)
	Height: 11 ft 4 in (3.45 m)	Wing area: 250 sq ft (23.23 m)
Armament:	Four .303 in (7.7 mm) machine guns in power operated dorsal turret	
Affiliated Units:	Nos. 409 and 410 Sqns	
Serial Numbers:	V1127 and unknown others	



This is an interesting formation view of several Boulton Paul Defiant Mk I aircraft. After a disappointing operational experience in daylight combat, the type was switched to a night-fighting role. (RCAF photo)

Above and below: These are two views of the Boulton Paul Defiant V1127 coded RA-R which belonged to 410 Sqn. The aircraft is in the matt black finish used for night fighting. (RCAF photos PL-4641 and PL-4642)

Complete with D-Day invasion markings, the Bristol Beaufighter TF Mk X (LZ451) from No. 404 (RCAF) Sqn shown here is armed with cannon and rockets while based at Strubby, England, in 1944. (RCAF photo)

Bristol BEAUFIGHTER

With a speed of 330 mph (531 km/h), an air intercept radar and a one-two punch of cannons and machine guns (or torpedoes or rocket projectiles when engaged in antisurface duties), the Bristol Beaufighter was one of the Second World War's most formidable night fighters as well as being the backbone of Coastal Command's anti-shipping war. Beaufighters were used to attack enemy shipping in the North Sea, the English Channel and the Mediterranean. Beaufighters were flown in both roles by many Canadians while in RAF service and specifically by Nos. 404, 406, 409 and 410 Squadrons in the RCAF. Despite this extensive Canadian use, the type was never officially "on strength" with the RCAF.

DETAILS

Designation: N/A
Model No: 156
Marks: II, VI, X, XI
Role: Night fighter / strike fighter
Service: RCAF/RAF

SPECIFICATIONS (for the Mark X)

Manufacturer:	Bristol Aircraft Company	
Crew:	Crew of two or three	
Power Plant:	Two 1,770 hp (1,320 kW) Bristol Hercules XVIII radial engines	
Performance:	Max speed: 303 mph (488 km/h)	Cruising speed: 249 mph (401 km/h)
	Service ceiling: 15,000 ft (4,570 m)	Range: 1,470 mi (2,366 km)
Weights:	Empty: 15,600 lb (7,076 kg)	Maximum takeoff: 25,200 lb (11,431 kg)
Dimensions:	Span: 57 ft 10 in (17.63 m)	Length: 41 ft 8 in (12.70 m)
	Height: 15 ft 10 in (4.83 m)	Wing area: 503 sq ft (46.73 sq m)
Armament:	Four .20 mm cannon and six .303 in (7.7 mm) machine guns: each in nose with one .303 in (7.7 mm) "k" gun in ventral position. Provisions for up to two 250 lb (113 kg) bombs, eight 90 lb (41 kg) rocket projectiles or one 1,605 lb (728 kg) torpedo	
Cost:	Unknown	
Affiliated Units:	Nos. 404, 406, 409 and 410 Sqns	
Serial Numbers:	Unknown	

This is another Bristol Beaufighter (NE355) from No. 404 (RCAF) Sqn again armed with both cannon and rockets in 1944. (RCAF photo)

In this rare colour view, a Hawker Typhoon is being marshalled for the camera. It is equipped with rocket projectiles. Note the pierced-steel-planking taxiway. (RCAF photo PC-2467)

Hawker TYPHOON

The Hawker Typhoon was originally designed as an interceptor but suffered from teething problems with the Napier Sabre engine, which proved to be unreliable and suffered from poor high-altitude performance. However, at low level the Typhoon was a superb aircraft. Its strength and firepower made it an ideal fighter-bomber, and it soon became the standard ground-support aircraft of the RAF's 2nd Tactical Air Force (2 TAF). The RCAF's Nos. 438, 439 and 440 Squadrons (Sqns), flew the Hawker Typhoon in 2 TAF during the Second World War. In Canadian service, it was renowned for its ground-attack abilities. Usually armed with 4 Hispano 20 mm cannons and either bombs or rockets, and with either 60 lb (27 kg) high-explosive or 25 lb (11 kg) armour-piercing warheads, the Typhoon could destroy any armoured vehicle on the battlefield. The three RCAF squadrons helped wreck the German Panzer divisions at Caen and Falaise, France, as well as in other places all over north-western Europe. They also attacked and destroyed V-1 rocket sites, radar stations, bridges, gun emplacements and lines of communication. Typhoons were subsequently replaced by an improved Hawker design known as the Tempest. Despite being flown by Canadian sqns, the Typhoon was never officially on strength with the RCAF.

DETAILS

Designation: N/A
Model No: N/A
Marks: IB
Role: Fighter / fighter bomber
Service: RAF/RCAF

SPECIFICATIONS

Manufacturer:	Hawker Aircraft Company	
Crew:	One pilot	
Power Plant:	One 2,180 hp (1,626 kW) Napier Sabre IIA in-line piston engine	
Performance:	Max speed: 405 mph (652 km/h)	Cruising speed: 254 mph (409 km/h)
	Service ceiling: 34,000 ft (10,363 m)	Range: 510 mi (821 km) with weapons load
Weights:	Empty: 8,800 lbs (3,992 kg)	Gross: 11,400 lbs (5,171 kg)
Dimensions:	Span: 41 ft 7 in (12.67 m)	Length: 31 ft 11 in (9.73 m)
	Height: 15 ft 4 in (4.67 m)	Wing area: 279 sq ft (25.92 sq m)
Armament:	Four 20 mm cannon plus provisions for 8 x 60 lb (27 kg) rockets or two 1,000 lb (454 kg) bombs	
Original Cost:	Unknown	
Affiliated Units:	Nos. 438, 439 and 440 Sqns	
Serial Numbers:	Unknown	

In another rare colour view, in a staged photo, an RCAF Typhoon from No. 439 Sqn is being rearmed with 20 mm cannon ammunition belts. (RCAF photo PC-2445)

This is an image of the two-seat Miles Magister trainer used by the RAF. The second seat is under a blind-flying hood for instrument-flying-training purposes. (RAF photo)

Miles MAGISTER

In 1936, after satisfactory results were obtained with Miles Hawk trainers at elementary flying schools operated by civilian contractors, the Hawk trainer was ordered into production for the RAF as an elementary trainer. Changes to the basic design of the Hawk trainer included larger cockpits and provisions for blind-flying equipment. It is notable for being the first low-wing monoplane to be adopted as a military trainer, where it was known as the Magister. It was also a departure from then RAF policy that only metal aircraft would be accepted for use. In RAF service, the Magister proved to be an excellent trainer. Magisters consequently served in most elementary flying schools and in all RAF command. The type also saw service with the British Army and the Fleet Air Arm (FAA). Many Magisters were also used as squadron "hacks" for miscellaneous communication duties, and most fighter (including RCAF) squadrons each had a Magister on strength. It is therefore no surprise that Canadian pilots flew the type while on training or while attached to RAF or FAA squadrons.

DETAILS

Designation: N/A
Model No: M.14
Marks: I, II, III
Role: Trainer
Service: RAF, FAA

SPECIFICATIONS (for the Mk III)

Manufacturer:	Miles Aircraft	
Crew:	Two: student and instructor in tandem	
Power Plant:	One 130 hp De Havilland Gipsy Major piston engine	
Performance:	Max speed: 140 mph (225 km/h)	Cruising speed: 122 mph (196 km/h)
	Service ceiling: 16,500 ft (5,029 m)	Range: 367 mi (591 km)
Weights:	Empty: 1,286 lb (583 kg)	Max takeoff: 1,845 lb (837 kg)
Dimensions:	Span: 33 ft 10 in (10.31 m)	Length: 24 ft 7.5 in (7.51 m)
	Height: 6 ft 8 in (2.03 m)	Wing Area: 176 sq ft (16.35 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	Unknown	
Serial Numbers:	Unknown	

Miles Master N7408. (RCAF photo)

Miles MASTER

By the mid-1930s, the Royal Air Force had begun to take delivery of high-performance monoplane fighters and bombers. Consequently, there was a need for an advanced trainer to introduce students to this high-performance regime. Reversing the trend of the time to metal construction, the Miles Master trainer was of all-wooden construction. But it was a very clean low-wing monoplane design. The initial versions were powered by in-line Kestrel piston engines. Problems with the Kestrel engine, however, prompted a redesign for alternative power plants. Radial engines including the Bristol Mercury and Pratt & Whitney Wasp Junior were consequently substituted. All variants of the Master had an instructor's seat in the rear cockpit that could be raised to provide a better view for takeoff and landing. Many Canadian pilots received their advanced or refresher training in the UK on Miles Master aircraft. Masters were also used as squadron hacks for communication duties.

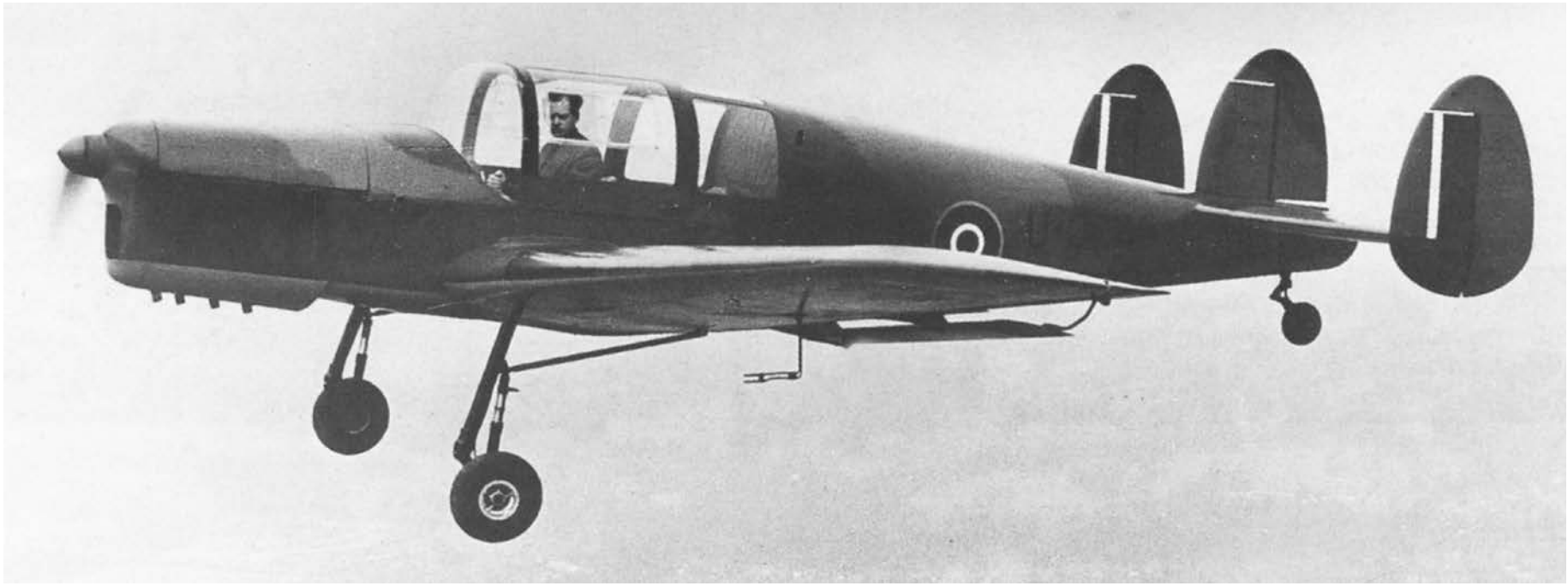
This is a view of the radial engine version of the Miles Master trainer as used by the RAF. (RAF photo)

DETAILS

Model No: M9 **Marks:** I, IA, II, III
Roles: Trainer, tow target, tow plane **Service:** RAF

SPECIFICATIONS (for the Mk II)

Manufacturer:	Miles Aircraft	
Crew:	Two: student and pilot in tandem	
Power Plant:	870 hp Bristol Mercury XX radial piston engine	
Performance:	Max speed: 242 mph (389 km/h)	
	Service ceiling: 25,100 ft (7,650 m)	Range: 393 mi (632 km)
Weights:	Empty: 4,293 lb (1,947 kg)	Max takeoff: 5,573 lb (2,528 kg)
Dimensions:	Span: 39 ft 0 in (11.89 m)	Length: 29 ft 6 in (8.99 m)
	Height: 9 ft 3 in (2.82 m)	Wing Area: 235 sq ft (21.83 sq m)
Armament:	Provisions for one fixed forward Vickers .303 (7.7mm) machine gun and practice bombs	
Cost:	Unknown	
Affiliated Units:	Unknown	
Serial Numbers:	Unknown	



This is a view of the diminutive RAF VIP communications aircraft known as the Miles Messenger. (RAF photo)

Miles MESSENGER

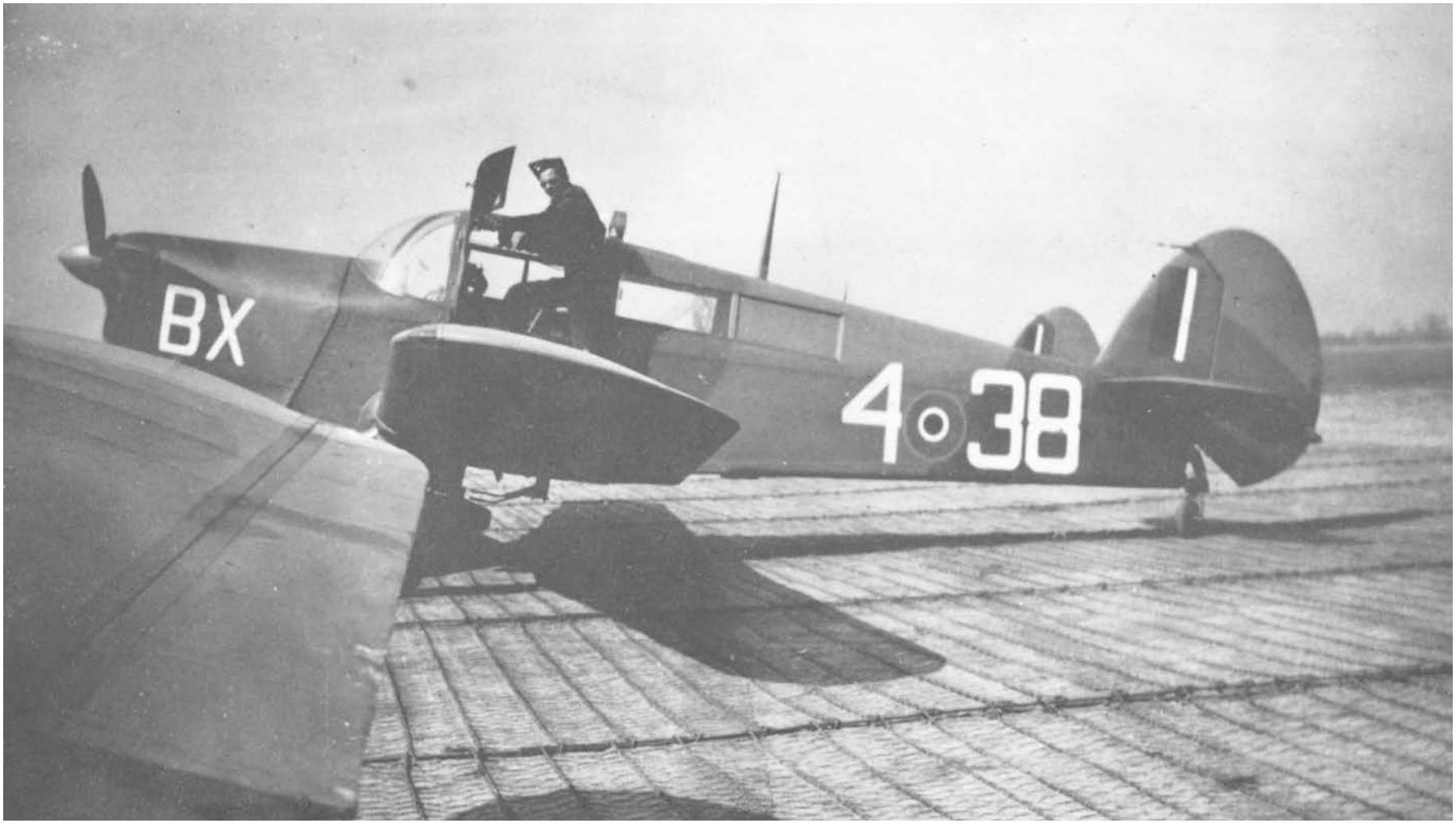
Developed to meet a requirement for an air observation post (AOP), the Miles Messenger was the result. The resulting design was very clean; it featured a one-piece wing with non-retractable external aerofoil flaps, a stalky fixed landing gear and a distinctive triple tail unit. The aircraft was eventually ordered in limited production primarily to be used as a VIP communications aircraft. It performed successfully in this role until the end of the war, and it was typically flown by Canadian personnel attached to RAF squadrons.

DETAILS

Designation: N/A
Model No: M.38
Role: AOP, liaison and VIP communications
Service: British Army/RAF

SPECIFICATIONS

Manufacturer:	Miles Aircraft	
Crew/Passengers:	Pilot and up to three passengers	
Power Plant:	One 140 hp de Havilland Gipsy Major piston engine	
Performance:	Max speed: 116 mph (187 km/h)	Cruising speed: 95 mph (153 km/h)
	Service ceiling: 14,000 ft (4,267 m)	Range: 260 mi (418 km)
Weights:	Empty: 1,518 lb (689 kg)	Max takeoff: 1,900 lb (862 kg)
Dimensions:	Span: 36 ft 2 in (11.02 m)	Length: 24 ft 0 in (7.32 m)
	Height: 9 ft 6 in (2.90 m)	Wing area: 191 sq ft (17.74 sq m)
Armament:	None	
Cost:	£2,500 (UK)	
Affiliated Units:	Unknown	
Serial Numbers:	Unknown	



The Percival Proctor was used by various squadrons of the RCAF. This view illustrates an aircraft belonging, appropriately, to No. 438 (RCAF) Squadron. (Photo courtesy of Carl Vincent Collection)

Percival PROCTOR

The Percival Proctor was developed from a pre-war design from the same company, the Percival Vega Gull. The RAF had previously acquired 15 Vega Gulls for communications duties and for use by overseas air attachés. With the outbreak of the Second World War, both the RAF and Fleet Air Arm (FAA) sought additional communications aircraft and radio training aircraft. The Percival Proctor then saw volume production, and more than 1,100 aircraft were eventually produced for both services. The aircraft performed very effectively in the communications role. Consequently, many squadrons, including Canadian units, also had Proctors on strength as "hacks."

DETAILS

Designation: N/A **Model No:** P.28, 30, 31, 34 **Marks:** I, II, III, IV
Role: Communications aircraft and radio trainer
Service: RAF/FAA/RCAF

SPECIFICATIONS

Manufacturer:	Percival Aircraft	
Crew/Passengers:	One pilot and up to three passengers	
Power Plant:	One 210 hp De Havilland Gipsy Queen II in-line piston engine	
Performance:	Max speed: 160 mph (257 km/h)	Cruising speed: 140 mph (225 km/h)
	Service ceiling: 14,000 ft (4,267 m)	Range: 500 mi (805 km)
Weights:	Empty: 2,370 lb (1,075 kg)	Max takeoff: 3,500 lb (1,588 kg)
Dimensions:	Span: 39 ft 6 in (12.04 m)	Length: 28 ft 2 in (8.59 m)
	Height: 7 ft 3 in (2.21 m)	Wing area: 202 sq ft (18.77 sq m)
Armament:	None	
Cost:	Unknown	
Affiliated Units:	Nos. 438, 439 and 440 Sqns and likely others	
Serial Numbers:	Unknown	

The less-than-successful Saro Lerwick was briefly used by Nos. 422 and 423 Sqns of the RCAF before both units ultimately converted to the Shorts Sunderland. (Comox Air Force Museum photo)

Saro LERWICK

Developed to work alongside the very successful Shorts Sunderland flying boat, the smaller twin-engine Saro Lerwick also entered service with the RAF in 1938. Unfortunately, the initial service trials revealed various deficiencies with the design. The Lerwick proved to have serious stability problems, both in the air and on the water. However, wartime necessity saw the type introduced into service regardless of its deficiencies. Attempts to resolve the problems did not prove entirely successful. Consequently, the type was quickly relegated to operational training duties, and by 1941, it was eventually withdrawn from service when suitable quantities of the more successful Sunderland aircraft were available. Although no Lerwick aircraft were officially on strength with the RCAF, in fact, two RCAF squadrons—Nos. 422 and 423—were initially equipped with Lerwick Mk I aircraft for operational training purposes before transitioning to the Sunderland aircraft type.

DETAILS

Model No: S.36
Marks: I
Role: Flying boat / ASW patrol
Service: RAF/RCAF

SPECIFICATIONS

Manufacturer:	Saro Aircraft	
Crew:	Crew of six	
Power Plant:	Two 1,375 hp Bristol Hercules II radial piston engines	
Performance:	Max speed: 216 mph (348 km/h)	Cruising speed: 166 mph (267 km/h)
	Service ceiling: 14,000 ft (4,267 m)	
Weights:	Max takeoff: 33,200 lb (15,059 kg)	
Dimensions:	Span: 80 ft 10 in (24.64 m)	Length: 63 ft 8 in (19.40 m)
	Height: 20 ft (6.10 m)	Wing area: 845 sq ft (78.50 sq m)
Armament:	Seven x .303 in (7.7 mm) machine guns in powered turrets plus provisions for up to 2,000 lb (907 kg) in bombs or depth charges	
Affiliated Units:	Nos. 422 and 423 Sqns	
Serial Numbers:	Unknown	

This RCAF Shorts Sunderland (EK591) shown on the takeoff run belongs to No. 422 Sqn. (RCAF photo PL-40991)

Shorts SUNDERLAND

Developed from the pre-war "C-Class" Empire flying boats developed for and used commercially by Imperial Airways, the Shorts Sunderland entered service with the RAF in 1938. The robust design was progressively improved and increasingly heavily armed. Readily able to attack and defend itself on long-range patrol missions, it earned the nickname the "Flying Porcupine" from its enemies because of these characteristics. Sunderlands used by Coastal Command participated in the destruction of 31 U-boats. Although no Sunderlands were officially on strength with the RCAF, in fact, two RCAF squadrons—Nos. 422 and 423—were equipped with Sunderland Mk III aircraft. These Canadian-flown aircraft participated in the sinking of five U-boats and heavily damaged at least two others. In addition, another submarine was sunk after a Sunderland from No. 423 Squadron homed two RCN destroyers onto the enemy vessel.

DETAILS

Model No: S.25
Marks: III
Role: Flying boat / ASW patrol
Service: RAF/RCAF

SPECIFICATIONS

Manufacturer:	Shorts Aircraft	
Crew:	Crew of thirteen	
Power Plant:	Four 1,065 hp Bristol Pegasus XVIII radial piston engines	
Performance:	Max speed: 212 mph (341 km/h)	
	Service ceiling: 15,000 ft (4,570 m)	Range: 3,000 mi (4,828 km)
Weights:	Empty: 33,000 lb (14,969 kg)	Max takeoff: 58,000 lb (26,308 kg)
Dimensions:	Span: 112 ft 10 in (34.39 m) (beaching gear)	Length: 85 ft 4 in (26.01 m)
	Wing area: 1,487 sq ft (138.14 sq m)	Height: 32 ft 2 in (9.79 m)
Armament:	12 x .303 in (7.7 mm) machine guns in powered turrets or fixed positions with twin .5 in (12.7 mm) machine guns in waist positions plus provisions for up to 4,960 lb (2,250 kg) in bombs or depth charges on a mobile bomb rack wound out under the wing from the fuselage	
Affiliated Units:	Nos. 422 and 423 Sqns	
Serial Numbers:	Unknown	

This is RCAF Shorts Sunderland DP151 belonging to 423 Sqn. It was photographed on 17 July 1944. (RCAF photo PL-41101)

This RCAF Shorts Sunderland (ML778) from 422 Sqn is about to receive fuel from a RAF refuelling lighter. (RCAF photo PL-41249)

This is a rare colour view of an unidentified RCAF Wellington and its crew just prior to a mission. (RCAF photo PC-2473)

Vickers WELLINGTON

The Vickers Wellington, affectionately known as the "Wimpy" (after J. Wellington Wimpy, Popeye's cartoon friend), was armed with twin .303 in (7.7 mm) machine guns in the nose and tail turrets. It also had two manually operated .303 guns in the beam positions and could carry a 4,500 lb (2,041 kg) bomb load. Its slow speed, limited ceiling and small bomb load soon made the Wellington obsolete, although one significant design advantage was famed designer Sir Barnes-Wallace's geodetic-latticework fuselage construction. This made the Wimpy extremely tough; it often survived battle damage that would have destroyed other aircraft. Its other nickname, the "Flying Cigar," alluded to the shape of the fuselage as seen from the profile perspective. After having proved early on the inadequacy of the turret firepower in fending off attacking fighters during daylight attacks, the Wellington went on to build up a great reputation for reliability and ruggedness in night-bombing operations. In April 1941, they were the first to drop the deadly "blockbuster" bomb during a raid on Emden, and they helped to initiate the Pathfinder target-indicating tactics. No Wellingtons were "officially" on RCAF strength in the Second World War, but in fact eleven RCAF bomber squadrons flew the aircraft in the European theatre from 1941 until 1944. A further two RCAF squadrons, Nos 407 and 415, flew Wellingtons on Coastal Command missions. No. 407 Squadron sank four U-boats with its Leigh light–equipped Wellingtons.

RCAF Wellington Mk II W5553 from No. 405 Sqn is shown here being bombed up and fuelled up in preparation for a mission. (RCAF photo PL-4051)

DETAILS

Model No: 415, 406, 417, 448, 455, 467 **Marks:** IC, II, III, X, XII, XIII, XIV
Role: Bomber/ASW patrol **Service:** RAF/RCAF

SPECIFICATIONS (for the Mk III)

Manufacturer:	Vickers Aircraft	
Crew:	Crew of eight	
Power Plant:	Two 1,130 hp Rolls-Royce Merlin X piston engines	
Performance:	Max speed: 235 mph (378 km/h)	
	Service ceiling: 19,000 ft (5,791 m)	Range: 1,540 mi (2,478 km)
Weights:	Empty: 18,650 lb (8,459 kg)	Max takeoff: 29,500 lb (13,381 kg)
Dimensions:	Span: 86 ft 2 in (26.26 m)	Length: 60 ft 10 in (18.54 m)
	Height: 17 ft 5 in (5.31 m)	Wing area: 840 sq ft (78.04 sq m)
Armament:	Eight .303 in (7.7 mm) machine guns in powered turrets or fixed positions plus provisions for up to 4,500 lb (2,041 kg) in bombs or depth charges	
Affiliated Units:	Nos. 405, 407, 415, 419, 420, 424, 425, 426, 427, 428, 429, 431 and 432 Sqns	
Serial Numbers:	Unknown	

This is a view of the CU-167 Silver Fox UAS in CF experimental service. (CF photo)

Advanced Ceramics Research SILVER FOX

As part of its continuing exploration into the potential utility of uncrewed aircraft (UA), the CF purchased the Silver Fox mini-UA system produced by Advanced Ceramics Research of Tuscon, Arizona. Thales Systems Canada was the prime contractor in the acquisition of this system, which was initially for a two-year period of combined concept development and experimentation. The Silver Fox mini uncrewed aircraft system (UAS) included the UAS platforms themselves plus associated payloads, ground-control stations, remote video terminal, spares support for two years, ground-support equipment, documentation, training and shipping containers. The Silver Fox was primarily based out of the Defence Research and Development Canada (DRDC) facility at Suffield, Alberta, but was operated across Canada by various CF organizations on a shared basis. The Silver Fox mini UAS was also employed during one of the phases of the Atlantic Littoral [intelligence, surveillance and reconnaissance] ISR Experiment, which took place on Baffin Island and across Atlantic Canada in August 2004.

DETAILS

Designation: CU-167
Model No: Silver Fox
Role: Tactical mini UAS
TOS: 2004
SOS: Unknown
No: 9
Service: CF/RCAF

SPECIFICATIONS

Manufacturer: Advanced Ceramics Research
Power Plant: One model aircraft engine

Performance: Cruising speed: 80 mph (129 km/h)
Max ceiling: 1,000 ft (305 m) Endurance: 10 hours
Weights: Empty: 134 lb (60.8 kg) Max: 170 lb (77.1 kg)
Dimensions: Span: 7 ft 0 in (2.13 m) Length: 5 ft 0 in (1.52 m)

Armament: None
Cost: $649,000 for the system, including training and service support
Affiliated Units: Various
Serial Numbers: 167001–167009

The CU-171 BTE Super Hauler was a surrogate UAS used for operational test and evaluation purposes at the Canadian Forces School of Aerospace Studies. It is shown here being trouble-shot after a mission. (CF photo)

Bruce Tharpe Engineering SUPER HAULER

The Bruce Tharpe Engineering (BTE) Super Hauler was a large-size, piston-engine, remote-control model aircraft design. The RCAF employed one BTE Super Hauler as a surrogate uncrewed aircraft system (UAS) for operational test and evaluation purposes at the Canadian Forces School of Aerospace Studies in Winnipeg. Capable of autonomous or remote-control flight operations, the RCAF CU-171 UAS could be equipped with both an electro-optic, infrared turret-mounted camera and a mini-synthetic aperture radar installation along with a forward-looking TV camera for remote operator purposes. The entire system was trailer mounted and was easily transportable.

DETAILS

Designation: CU-171 **Model Name:** Super Hauler
Role: Test and evaluation UAS **TOS:** 2012 **SOS:** Unknown
No: 1 **Service:** RCAF

SPECIFICATIONS

Manufacturer: Bruce Tharpe Engineering
Crew: None
Power Plant: Desert Aircraft DA-100 piston engine with 100 cc displacement

Performance: Max speed: 86 mph (139 km/h)
Endurance: 2 hours
Weights: Empty: 48 lb (22 kg)
Dimensions: Span: 12 ft (3.66 m) Length: 10 ft (3.05 m)

Armament: None, but 30 lb (13 kg) maximum for sensor payload
Original Cost: Unknown
Affiliated Unit: CFSAS
Serial Number: 171501

BOMARC missile being raised into launching position. (RCAF photo)

Above: This view illustrates the BOMARC missile stowed in its hangar.
Below: The missile has now been erected for launch and the erection arm is retracting. (RCAF Photos PCN-4077 and CPN-4083)

Boeing BOMARC

The BOMARC missile was designed by Boeing and the Michigan Aeronautical Research Center. The controversial Boeing CIM-10B BOMARC nuclear-armed surface-to-air interceptor missile equipped 446 and 447 Squadrons (Sqns) in North Bay, Ontario, and La Macaza, Quebec, respectively, for North American air defence from 1961 to 1972. The surface-to-air missile (SAM) was initially guided from the ground and then switched to an internal seeker for the terminal homing phase of the flight. Along with used CF-101 Voodoo interceptors, the missile was introduced to defend Canadian airspace after the cancellation of the sophisticated Avro CF-105 Arrow interceptor. As indicated in the 1971 White Paper on Defence, the siting of BOMARC missiles in Canada was a relatively important contribution in the days when a full anti-bomber defence existed to defend urban-industrial targets as well as to protect the deterrent, which consisted largely of the US bomber force. The deployment by the USSR of a missile force numbering in the thousands then considerably altered the strategic situation. The BOMARCs had become highly vulnerable to a missile attack, since they could not be dispersed like aircraft. Moreover, the Canadian BOMARCs were sited to defend the eastern part of North America, whereas the majority of US land-based strategic retaliatory forces were located in the US Midwest. Since no comprehensive defence of population against missile attack was available in the foreseeable future, the Government of Canada then concluded there was no longer sufficient reason to continue to deploy BOMARCs in Canada; therefore, this system was retired.

DETAILS

Designation: IM-99B
Model No: CIM-10B
Role: Guided missile
TOS: 1961
SOS: 1972
No: 56
Service: RCAF/CF

SPECIFICATIONS

Manufacturer:	Boeing	
Crew/Passengers:	None	
Power Plant:	One 50,000 lb Aerojet General LR59-AG-13 liquid propellant motor and two 14,000 lb Marquardt RJ43-MA-3 ramjet engines	
Performance:	Service ceiling: 70,000+ ft (21,336 m)	Range: 400 mi (644 km)
Weights:	Gross: 15,500 lb (7,031 kg)	
Dimensions:	Span: 18 ft 2 in (5.54 m)	Length: 47 ft 4 in (14.43 m)
	Height: 10 ft 3 in (3.12 m)	Fuselage dia: 34.6 in (0.88 m)
Armament:	Nuclear warhead (US controlled)	
Cost:	Unknown	
Affiliated Units:	Nos. 446 and 447 Sqns	
Serial Numbers:	(No 446 Sqn only) 60-861–60-941	

The BOMARCs on the top were just two of the 26 missiles from 446 (SAM) Squadron at RCAF Station North Bay. A total of 56 missiles were in Canadian service. On the bottom, a rare view of a Canadian test launch. (CF photos)

This is an airborne view of the CU-163 Altair UAV. Note the flex in the wings. (CF photo)

General Atomics ALTAIR

Between 22 and 31 August 2004, the Canadian Forces Experimentation Centre (CFEC) tested a single CU-163 Altair UA from CFB Goose Bay. Despite its being given a CF designation and serial number (163301), the Altair was not purchased by the Department of National Defence (DND). Instead, this aircraft (as with the I-GNAT UA before it) was on short-term lease from its US manufacturer, General Atomics, the company having been awarded a DND contract in February of 2004. These CFEC tests were part of ALIX—the Atlantic Littoral [intelligence, surveillance and reconnaissance] ISR Experiment. Three different scenarios were to be tested: 1) a reconnaissance in support of Exercise NARWHAL in Nunavut; 2) a maritime surveillance and targeting mission in the Gulf of St. Lawrence (followed by an overflight of CFB Gagetown, where the Altair operated alongside the Silver Fox mini UAV); 3) and a final ISR mission over the Grand Banks.

This is the CU-163 Altair UAV in CF colours. (CF photo IS2004-0543d)

DETAILS

Designation: CU-163 **Model Name:** Altair
Role: Surveillance UAV **TOS:** 2004 **SOS:** 2004
No: 1 **Service:** CF – leased from General Atomics Aeronautical Systems Inc.

SPECIFICATIONS

Manufacturer: General Atomics Aeronautical Systems Inc.
Power Plant: One 708 kW (950 SHP) Honeywell TPE331-10T turboprop, flat rated at 522 kW (700 SHP) for max continuous operation; McCauley three-blade, variable-pitch aluminum pusher propeller

Performance: Max speed: 259 mph (416 km/h) Cruising speed: 81 mph (130 km/h)
Max ceiling: 60,000 ft (18,290 m) Range: 2,975 mi (4,787 km)
Weights: Max: 7,000 lb (3,175 kg)
Dimensions: Span: 84 ft 0 in (25.60 m) Length: 36 ft 2.4 in (11.03 m)
Height: 11 ft 9.5 in (3.59 m) Wing area: 302 sq ft (28.06 sq m)

Armament: None
Cost: Leased from General Atomics Aeronautical Systems Inc.
Affiliated Unit: CFEC
Serial Number: 163301

The Eagle UAV, designated CU-160, as leased by the CF. (CF photo)

Israeli Aircraft Industries EAGLE

The Canadian Forces Experimentation Centre (CFEC) continued its ongoing UAV tests with Israeli Aircraft Industries' large Eagle-1 off the west coast of Vancouver Island on 11 July 2003. Israeli technicians ran the UAV through its paces in front of military observers from Canada, Britain, France and the US. The Eagle-1 follows the twin-boom pusher propeller arrangement of earlier Israeli UAVs. The Eagle-1 as tested was fitted with search radar in a large-belly radome to suit it for maritime patrol of Canada's coastlines.

DETAILS

Designation: CU-160
Model Name: Eagle
Role: Surveillance UAV
TOS: 2003
SOS: 2003
No: 1
Service: Leased from Israeli Aircraft Industries

SPECIFICATIONS

Manufacturer:	Israeli Aircraft Industries	
Power Plant:	One 84.6 kW (113.4 hp) Rotax 914 F turbocharged engine, driving a two-blade pusher propeller	
Performance:	Max speed: 144 mph (231 km/h)	
	Operational ceiling: 25,000 ft (7,620 m)	Range: 1,956 mi (3,148 km)
Weights:	Empty: 1,448 lb (657 kg)	Max: 2,535 lb (1,150 kg)
Dimensions:	Span: 53 ft 5.7 in (16.30 m)	Length: 29 ft 4 in (8.94 m)
Armament:	None	
Cost:	Leased from Israeli Aircraft Industries	
Affiliated Unit:	CFEC	
Serial Number:	Unknown	

Another view of the Eagle UAV, designated CU-160, as leased by the CF. (CF photo)

The Heron UAV, designated CU-170, as leased by the CF, for use in Joint Task Force Afghanistan. (CF photo AR2008-A036-03)

MacDonald Dettwiler and Associates / IAI HERON

After successful experiments with Israeli Aircraft Industries' large Eagle-1 UAV off the west coast of Vancouver Island in July 2003, the CF eventually leased the IAI Heron UAV (which was a development of the Eagle platform) for support of operations in Afghanistan. Procured under Project NOCTUA, starting in 2008, four Heron UAVs were leased under an arrangement with MacDonald Dettwiler and Associates (MDA) for a period of two years, with an option for an additional year. The contractor consortium provided in-theatre support, but the platform and intelligence assessments were flown and provided by RCAF/CF personnel. The Herons were designated as the CU-170.

Another view of the Heron UAV. (CF photo AR2008-A035-01)

DETAILS

Designation: CU-170
Role: Surveillance UAV
No: 4
Model Name: Heron
TOS: 2008
Service: RCAF/CF
SOS: 2011

SPECIFICATIONS

Manufacturer: Israeli Aircraft Industries
Power Plant: One 84.6 kW (113.4 hp) Rotax 914 F turbocharged engine, driving a two-blade pusher propeller

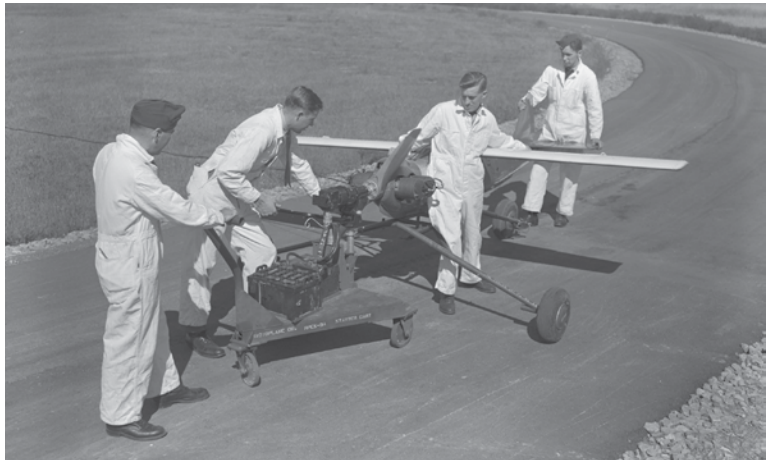
Performance:	Max speed: 138 mph (222 km/h)	Cruising speed: 75 mph (120 km/h)
	Operational ceiling: 30,000 ft (9,144 m)	Range: 1,956 mi (3,148 km)
Weights:	Empty: 1,448 lb (657 kg)	Max: 2,535 lb (1,150 kg)
Dimensions:	Span: 54 ft (16.6 m)	Length: 28 ft (8.5 m)
	Height: 7 ft 6 in (2.3 m)	

Armament: none
Cost: Leased
Affiliated Unit: TFA
Serial Numbers: 170251, 170252

These photos provide three views of the little-known Radioplane OQ-19 target drone being tested by the RCAF. (RCAF photos)

Radioplane (Northrop) OQ-19

The OQ-19 was a simple, propeller-driven, full-scale aerial target. In production in various versions for over 40 years, this family of target drones was one of the most successful targets ever built. In 1945, Radioplane created the Model RP-19 by replacing the O-45 engine in the previous OQ-17 series of targets with a higher-rated piston engine. The RP-19 was tested by the United States Army Air Forces in July 1945, and ordered into production in 1946 as the OQ-19A. The OQ-19A had a metal fuselage and wooden wings (later OQ-19As would employ metal wings). Like all following members of the family, it could be launched from a catapult launcher, from a rotary launcher or from a "zero-length" launcher with the aid of a 2,160 lb (9.6 kN) thrust solid-fuelled booster rocket. The OQ-19s were controlled from the ground by a radio command link, which used an AN/URW-3 transmitter and an AN/ARW-26AY receiver. Post-flight recovery was achieved by parachute, which was deployed by radio command or automatically after loss of vital systems. Photographic evidence indicates the RCAF employed or tested the OQ-19 drone, but no service details are available.



DETAILS

Designation: N/A
Model No: OQ-19A
Role: Gunnery target drone
TOS: Unknown
SOS: Unknown
No: 10
Service: RCAF

SPECIFICATIONS

Manufacturer:	Radioplane Corporation (later Northrop)	
Crew:	None	
Power Plant:	One 54 kW (72 hp) McCulloch 0-100-1 piston engine, driving a two-blade propeller	
Performance:	Max speed: 230 mph (370 km/h) Operational ceiling: 25,000 ft (7,620 m)	Endurance: 60 minutes
Weights:	Maximum: 320 lb (145 kg)	
Dimensions:	Span: 11 ft 5 in (3.48 m)	Height: 2 ft 7 in (0.79 m)
Armament:	None	
Original Cost:	Unknown	
Affiliated Unit:	RCAF Station Trenton (possibly the AAS)	
Serial Number:	Unknown	

The CU-161 Sperwer UAV along with its launch system as deployed to Op ATHENA in Afghanistan is shown here. (CF photo LT2005-0467d)

SAGEM SPERWER

In 2003, the Canadian Army hastily acquired a target acquisition and surveillance uncrewed air vehicle (UAV) for deployment with Operation (Op) ATHENA in Afghanistan. The new system, known as the Sperwer UAV, was designed by SAGEM SA of France. Oerlikon Contraves of Saint-Jean-sur-Richelieu, Quebec, was the prime contractor in Canada. The UAV was launched by catapult and then recovered by parachute. For Op ATHENA, the Army purchased four UAVs, the associated ground data and launching equipment (including vehicles) as well as simulators for training. The all-weather UAVs had a de-icing capability. A team of 28 CF personnel initially operated the system in Afghanistan. Most were from E Battery, 2nd Regiment, Royal Canadian Horse Artillery in Petawawa. For this initial mission, Air Force personnel oversaw areas such as airworthiness and maintenance. This successful initial deployment resulted in a number of losses of the air vehicles due to malfunctions. The RCAF subsequently assumed programme management for the Sperwer, and additional platforms and system components were purchased in various batches. The Sperwer subsequently deployed on repeat occasions to Afghanistan. The entire Sperwer fleet was withdrawn from service in 2009 and struck off strength by 2010. CU161001 was then presented to the Canada Aviation Museum. The Sperwer fleet flew more than 4,500 hours and conducted more than 1,400 missions before reaching the end of their operational employment. The final operational mission was flown on 18 April 2009.

One of the CU-161 Sperwer UAVs is seen here being recovered after completing a mission in Afghanistan. (CF photo IS2006-0280[1])

DETAILS

Designation: CU-161
Role: Target acquisition and surveillance
No: 31
Model Name: Sperwer
TOS: 2003
Service: CF/RCAF
SOS: 2010

SPECIFICATIONS

Manufacturer: SAGEM SA
Crew/Passengers: None
Power Plant: Two-cylinder engine (made by Bombardier's Austrian subsidiary, ROTAX) generating 48 kW (65 hp) at 6,500 rpm

Performance: Max speed: 127 kt (235 km/h); Cruising speed: 90 kt (167 km/h); Service ceiling: 16,400 ft (4,999 m); Range: 93 mi (150 km)
Dimensions: Span: 14 ft 1 in (4.30 m); Length: 8 ft 10 in (2.70 m)

Armament: None
Cost: Can$33.8M for four UAVs with two ground control stations, one launcher, two ground-data terminals, four remote video terminals, and three simulators, plus three generator trailers as well as training and support
Affiliated Unit: TFA
Serial Numbers: 161001–161031

Two RCAF Lancaster Mk 10s were modified as launch and control platforms for Teledyne-Ryan Firebee drones in Canadian service. Recovery of the drones was effected by parachute. Note the mission tally on the Firebee drone in the photo on the opposite page. (RCAF photos PCN-1962)

Teledyne-Ryan FIREBEE

The Teledyne-Ryan Firebee drone was acquired by the RCAF to provide training for interceptor crews, probably in anticipation of the procurement of the CF-105 Arrow interceptor. At the same time, two Lancaster Mk 10 aircraft were reactivated from storage to act as "mother" ships for the drones. The Lancaster modifications were carried out by Fairey Aviation and included the fitting of Firebee launch racks under each wing along with the associated electrical wiring and control units. The Lancasters were then operated by the Central Experimental Proving Establishment and the drones were primarily planned for testing and evaluating of then present and proposed future weapons systems. After release from the launch aircraft, the Firebees under remote control could climb to 40,000 feet (12,192 m) in approximately 10 minutes and could be made to perform any manoeuvre of which contemporary high-performance aircraft were capable. An airborne duration of one hour and 20 minutes was typical. The drones could also be fitted with wingtip-mounted radar reflector pods to ensure optimum radar energy reflection. Assuming the drone was not shot down, recovery was then effected by means of a two-stage parachute, which had a built-in flotation system. Refurbishment and reuse for up to 15 operational flights were possible.

DETAILS

Designation: N/A
Role: Target drone
No: 30
Model No: KDA-4 or Q2A
TOS: 1957
Service: RCAF
SOS: Unknown

SPECIFICATIONS

Manufacturer:	Teledyne-Ryan	
Crew/Passengers:	None	
Power Plant:	1,000 lb (454 kg) thrust Fairchild K-20 jet engine	
Performance:	Max speed: 610 mph (976 km/h)	Cruising speed: 575 mph (920 km/h)
	Service ceiling: 42,500 ft (12,960 m)	Stalling speed: 162 mph (259 km/h)
Weights:	Empty: 1,181 lbs (536 kg)	Gross: 1,849 lb (839 kg)
Dimensions:	Span: 11 ft 2 in (3.40 m)	Length: 17 ft 3 in (5.26 m)
	Height: 5 ft 10 in (1.79 m)	
Armament:	None	
Cost:	Can$45,000	
Affiliated Unit:	CEPE	
Serial Numbers:	KD4507–KD4789	

A KC-30A Multi Role Tanker Transport and F/A-18F Super Hornet transit to the main air operating base in the Middle East following a mission in support of Operation OKRA. (Royal Australian Air Force photo)

Airbus Industries A330 MRTT

In 2021, Canada notified Airbus Defence and Space that its A330 multirole tanker transport (MRTT) was solely qualified to bid in a process to replace the RCAF fleet of A310s. A rival offer of the Boeing KC-46 Pegasus was rejected in the qualification review process. This qualification process was for Canada's Strategic Tanker Transport Capability (STTC) project. A draft request for proposals to replace the RCAF's four CC-150 Polaris in its service was anticipated in the third quarter of 2021. The STTC programme looks to replace the RCAF CC-150 Polaris tanker fleet with a multirole aircraft capable of conducting a wide range of missions including NATO and NORAD operations, ranging from air-to-air refuelling (AAR) to strategic Government of Canada transport and aeromedical evacuation (AEROMEDEVAC). The new aircraft is intended to improve flexibility, responsiveness, interoperability with allied nations, communications security and self-protection of the RCAF's current fleet. The analysis phase for the STTC requirement was launched in March 2018. The new tanker/transport fleet will be introduced at 8 Wing Trenton, with Ottawa expecting initial operational capability to be declared in 2028–29, with full operational capability to follow by 2030–31. In July 2022, the government announced the purchase of two used A330-200 from Airbus to be converted to MRTT status with an expected delivery of 2023.

Based on the successful Airbus A330-200 commercial passenger airliner, the A330 MRTT is the military variant adapted to strategic transport and AAR capabilities. This example is an A330 MRTT belonging to the Royal Netherlands Air Force. (Photo courtesy of Airbus Defence and Space)

DETAILS

Designation: TBD
Model No: A330 MRTT
Role: VIP transport / AAR / AEROMEDEVAC
TOS: 2028
SOS: N/A
No: 6
Service: RCAF

SPECIFICATIONS

Manufacturer: Airbus Defence and Space

Crew/Passengers: Crew of three: two pilots and one AAR operator. Various passenger configurations are available, including up to 291 passengers and 8 military pallets, 1 LD6 container, 1 LD3 container (lower-deck cargo compartments) and/or provisions for 2 intensive-care units plus 16 stretchers, with 91 economy class seats

Power Plant: Two Rolls-Royce Trent 772B or General Electric CF6-80E1A4 or Pratt & Whitney PW 4170; turbofans, 320 kN (72,000 lbf) each

Performance:	Max speed: 547 mph (880 km/h)	Cruising speed: 534 mph (860 km/h)
	Service Ceiling: 42,700 ft (13,000 m)	Ferry range: 8,000 NM (14,816 km)
Weights:	Empty: 275,600 lb (125,000 kg)	Cargo Load: 99,000 lb (45,000 kg)
Dimensions:	Wing-span: 198 ft (60.3 m)	Length: 193 ft (58.80 m)
	Height: 57 ft (17.4 m)	Wing area: 3,900 sq ft (362 sq m)

Armament: None, but provision for self-defence
Cost: Two used A330-200 a/c purchased (Can$120M) for conversion to MRTT
Unit Affiliations: TBD
Serial Numbers: TBD

An Australian F-35 over the Hopi Reservation, Arizona, USA. (Royal Australian Air Force photo)

Lockheed Martin LIGHTNING II

Lockheed Martin's joint strike fighter (JSF) concept called for a family of aircraft that met multi-service needs while accommodating unique service requirements, including low observability (stealth). Three variants share a highly common structure, including the same fuselage and internal weapons bay. The aircraft employs a derivative of the Pratt & Whitney F119 engine that powers the F-22 stealth fighter. The JSF offers conventional takeoff and landing (CTOL) capability for the Air Force, carrier suitability for the Navy, and short takeoff and vertical landing (STOVL) capability for the Marine Corps, Royal Navy and Royal Air Force. Lockheed Martin received one of two JSF Concept Demonstration Phase contracts awarded by the US government in November 1996 (Boeing offered a competing design). The programme included development, manufacture and flight test of two demonstrator aircraft by each team; a number of concurrent technology-demonstration programmes for critical-risk reduction; and design trade studies to refine the Preferred Weapon System Concept for the operational JSF version. The Lockheed Martin design was selected as the winner and, following an engineering and manufacturing development phase, went into production. Approximately 3,000 JSF aircraft were originally planned for the US Air Force, Navy and Marine Corps, as well as for the UK Royal Navy and Royal Air Force, replacing multiple aircraft types. Other international governments have now joined in Lockheed Martin's JSF/F-35 programme, including Australia, Denmark, the Netherlands, Norway, Italy, Singapore, Israel, Switzerland and Finland. Canadian participation has included limited partner status throughout the JSF programme, and this guaranteed an option to purchase, which the government has now decided to exercise.

DETAILS

Designation: TBD
Model No: F-35A
Role: Fighter / strike aircraft
TOS: TBD
SOS: Under contract
No: 88
Service: RCAF

SPECIFICATIONS

Manufacturer:	Lockheed Martin Aircraft Corporation	
Crew:	One pilot in an ejection seat	
Power Plant:	One Pratt & Whitney F135-PW-100 afterburning turbofan engine	
Performance:	Max speed: Mach 1.6 (1,200 mph [1,931 km/h])	
	Cruising speed: Mach 1.2 (913 mph [1,469 km/h])	
	Combat radius: 703 NM (1,093 km)	Ceiling: 50,000 ft (15,000 m)
Weights:	Empty: 29,002 lb (13,155 kg)	Maximum takeoff weight: +70,107 lb (31,800 kg)
Dimensions:	Length: 51 ft (15.7 m)	Height: 14 ft (4.38 m)
	Span: 34 ft 11 in (10.65 m)	Wing area: 406 sq ft (42.7 sq m)
Armament:	Provision for one 25 mm GAU-22/A cannon, two AIM-120 AMRAAMs, two 2,000 lb munitions internally plus additional bombs, rockets or tanks on underwing pylons	
Cost:	Projected to be less than US$90M but this cost has continued to decrease	
Affiliated Units:	TBD	
Serial Numbers:	TBD	

This is a digital rendering of an MQ-9B SkyGuardian RPAS in RCAF colours. (Photo courtesy General Atomics Aeronautical Systems, Inc.)

General Atomics SKYGUARDIAN

In December 2023, the Government of Canada announced that it would spend $2.49 billion to acquire a remotely piloted aircraft system (RPAS) capability. The acquisition will be completed through a direct-commercial-sales contract with General Atomics Aeronautical Systems Inc., with some specific components acquired through a foreign military sale with the United States government. The RPAS acquisition includes 11 remotely piloted MQ-9B SkyGuardian aircraft; six ground control stations; a new ground-control centre; two new aircraft hangars; initial weapons; sustainment services; a training solution that includes training devices; mission crew and technician courseware; supporting information management and technology; as well as associated work and equipment. The first delivery is anticipated in 2028 and full operational capability is expected by 2033. The SkyGuardian will be certified for flight in civilian airspace. At home, the RPAS capability will allow the CAF to monitor Canada's large territory and long coastline. It will support civilian aid operations such as responding to forest fires and floods. The MQ-9B will be able to carry and fire Hellfire missiles and other weapons.

DETAILS

Designation: TBD
Model No: MQ-9B
Role: Surveillance and strike RPAS
TOS: 2028 (planned)
SOS: TBD
No: 11
Service: RCAF

SPECIFICATIONS

Manufacturer: General Atomics Aeronautical Systems Inc.
Crew: One pilot, one sensor operator and one mission intelligence coordinator
Power Plant: 1 x Honeywell TPE331-10 turboprop, 900 hp (671 kW) with digital electronic engine control

Performance:
Max speed: 242 mph (390 km/h)
Cruising speed: 194 mph (313 km/h)
Max ceiling: 44,300 ft (13,500 m)
Endurance: 28+ hr
Range: 1,200 mi (1,900 km, 1,000 NM)

Weights: Max: 10,500 lb (4,763 kg)

Dimensions:
Span: 78.7 ft (24 m)
Length: 36 ft (11 m)
Height: 12 ft 6 in (3.81 m)
Wing area: 302 sq ft (28.06 sq m)

Armament: Up to eight AGM-114 Hellfire air-to-ground missiles can be carried or four Hellfire missiles and two 500 lb (230 kg) GBU-12 Paveway II laser-guided bombs. The 500 lb (230 kg) GBU-38 joint direct attack munition (JDAM) can also be carried.

Cost: Can$2.49B for 11 remotely piloted aircraft with weapons, 6 ground control stations, a new ground control centre, two new aircraft hangars and other support/sustainment requirements

Unit Affiliations: 14 Wing Greenwood, 19 Wing Comox and Ottawa

Serial Numbers: TBD

This digital rendering depicts how the P-8A Poseidon might appear in future RCAF service. (Image courtesy of Boeing)

Boeing P-8A POSEIDON

In a statement published on November 30, 2023, the Government of Canada announced the acquisition of the Boeing P-8A Poseidon maritime patrol aircraft to replace the RCAF's ageing Lockheed CP-140M Aurora fleet. This selection comes as the culmination of the Canadian Multi-Mission Aircraft (CMMA) project, a part of *Strong, Secure, Engaged: Canada's Defence Policy*. In total, Canada is seeking to acquire 14 P-8As, with an option for 2 additional aircraft, as well as the associated equipment, training devices, initial in-service support activities and access to technical data relevant to the platform. The Poseidon's selection comes after the Department of National Defence issued a request for information to industry in February 2022 to explore prospective solutions to fulfil its CMMA requirements. In its statement on November 30, 2023, the Canadian government outlined that it had selected the P-8A because it was "the only currently available aircraft that meets all of the CMMA operational requirements." The P-8A specializes in antisubmarine and anti-surface warfare and is optimal for command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR), while being fully upgradeable, resilient and interoperable with the RCAF's joint, interagency, multinational and public partners.

DETAILS

Designation: TBD
Model No: P-8A
Role: ASW/C4ISR
TOS: 2026 (planned)
SOS: TBD
No: 14 (option for 2 additional aircraft)
Service: RCAF

SPECIFICATIONS

Manufacturer:	Boeing	
Crew:	Eight, including two pilots, two air combat system officers and four sensor operators	
Power Plant:	2 x CFM-56-7BE turbofans, 121 kN (27,300 lbf) each	
Performance:	Max speed: 564 mph (907 km/h)	Cruising speed: 440 kt (815 km/h)
	Service ceiling: 41,000 ft (12,496 m)	Range: 1,200+ NM (2,225+ km) with >4 hr TOS
	Ferry range: 4,500 mi (7,242 km)	
Weights:	Empty: 138,300 lb (62,730 kg)	Max: 189,200 lb (85,820 kg)
Dimensions:	Wing span: 123.6 ft (37.64 m)	Length: 129.6 ft (39.50 m)
	Height: 42.1 ft (12.83 m)	
Armament:	129 A-size sonobuoys, 4 x anti-ship missiles, 5 x anit-submarine torpedoes or survival kits	
Cost:	US$5.1 billion (based on 14 aircraft)	
Unit Affiliations:	404, 405 and 415 Sqns at 14 Wing Greenwood and 407 Sqn at 19 Wing Comox	
Serial Numbers:	TBD	

Abbreviations List

AAED	Air Armament Evaluation Detachment
AAR	air-to-air refuelling
AAS	Air Armaments School
AB	Alberta
AC	Army Co-operation
A/C	aircraft
AD	Air Demonstration
A.D.C.	Aircraft Disposal Company
AES OP	airborne electronic sensor operator
AETE	Aerospace Engineering Test Establishment
AFS	Advanced Flying School
AI	Air Intercept
AIMP	Aurora Incremental Modernization Project
AIS	automatic identification system
ALIX	Atlantic Littoral Intelligence, Surveillance and Reconnaissance Experiment
AMRAAM	advanced medium-range air-to-air missile
ANS	Air Navigation School
AOP	Air Observation Post
AOS	Air Observer School
ASDU	Aurora Software Development Unit
ASW	antisubmarine warfare
AT	armament training
ATU	Air Transport Unit
AW	All-Weather
AWACS	airborne warning and control system
AWS	Avro Wright Seaplane
B	Bomber
BC	British Columbia
BCAM	British Columbia Aviation Museum
BCATP	British Commonwealth Air Training Plan
B&G	Bombing and Gunnery
B&GS	Bombing and Gunnery School
BOMARC	Boeing and the Michigan Aeronautical Research Centre
BR	Bomber Reconnaissance
BRF	base rescue flight
BTE	Bruce Tharpe Engineering
c.	circa
C4ISR	command, control, communications, computers, intelligence, surveillance and reconnaissance
CA	Canadian Army
CAC	Coastal Artillery Co-operation
CAF	Canadian Air Force
CAF	Canadian Armed Forces
C Air Force	Chief of the Air Force Staff
cal	calibre
Can	Canadian
CA&SM	Canada Aviation and Space Museum
cc	cubic centimetre
CCA	Controller of Civil Avation
CEPE	Central Experimental Proving Establishment
CF	Canadian Forces
CFANS	Canadian Forces Air Navigation School
CFB	Canadian Forces base
CFEC	Canadian Forces Experimentation Centre
CFFTS	Canadian Forces Flying Training School
CFS	Canadian Forces station
CFSAS	Canadian Forces School of Aerospace Studies
CIBG	Canadian Infantry Brigade Group
CJATC	Canadian Joint Air Training Centre
CMMA	Canadian Multi-Mission Aircraft
CNS	Central Navigation School
Co.	Company
Comm	Communications
Coop	Co-operation
Cpl	Corporal
C&R	Communications and Rescue
CS	Combat Support

CX	Cargo Experimental
deg	degrees
Det	detachment
DEW	Distant Early Warning
D.H.	De Havilland
dia	diameter
DND	Department of National Defence
EAC	Eastern Air Command
ECM	electronic countermeasures
EFIS	electronic flight instrument system
EFTS	Elementary Flying Training School
EO	electro-optic
ESHP	equivalent shaft horsepower
ESM	electronic support measure
Est	Establishment
EW	electronic warfare
EWU	Electronic Warfare Unit
F	Fighter
FAA	Fleet Air Arm
FIS	Flying Instructors School
Flt	Flight
ft	foot
FTS	Flying Training School
FTTU	Field Technical Training Unit
G	acceleration of gravity
gal	gallon
GE	General Electric
GP	General Purpose
HELAIRDET	helicopter air detachment
HINS	helicopter integrated navigation system
HMCS	Her Majesty's Canadian ship
HOTEF	Helicopter Operational Test and Evaluation Flight
HOTU	Helicopter Operational Training Unit
hp	horsepower
hr	hour
HT	Heavy Transport
HUD	head-up display
HWE	home war establishment
IAI	Israeli Aircraft Industries
IFF	identification friend or foe
imp	imperial
in	inch
ISR	intelligence, surveillance and reconnaissance
JATO	jet-assisted takeoff
JSF	Joint Strike Fighter
K	Composite
km/h	kilometres per hour
kN	kilonewton
kt	knot
KU	Composite Unit
kW	kilowatt
LAC	Library and Archives Canada
lb	pound
lbf	pound force
Ltd	Limited
M	Maritime
M	million
MAD	magnetic anomaly detector
MB	Manitoba
MDA	MacDonald Dettwiler & Associates
MEDEVAC	medical evacuation
MFO	Multinational Force and Observers (Sinai)
mi	mile
mil	million
min	minute
misc	miscellaneous
mk	mark
MPEU	Maritime Proving and Evaluation Unit

mph	miles per hour
MRTT	multirole tanker transport
MT	Maintenance Trainer
MTOW	maximum take-off weight
N/A	not applicable
NAGS	Naval Air Gunners School
NF	Newfoundland
NF	night fighter
NFTC	NATO Flying Training in Canada
NM	nautical mile
no.	number
NS	Nova Scotia
NWAC	North West Air Command
OFU	Overseas Ferry Unit
ON	Ontario
ONUCA	United Nations Observer Group in Central America
Op	operation
OT	Operational Training
OTU	Operational Training Unit
pax	passengers
PEI	Prince Edward Island
PR	photo reconnaissance
PRU	Photo Reconnaissance Unit
PT	pilot training
PWS	Pilot Weapons School
QC	Quebec
RAAF	Royal Australian Air Force
RAF	Royal Air Force
RCA	Royal Canadian Artillery
RCAC	Royal Canadian Armoured Corps
RCAF	Royal Canadian Air Force
RCHA	Royal Canadian Horse Artillery
RCN	Royal Canadian Navy
recce	reconnaissance
RFC	Royal Flying Corps
RN	Royal Navy
RNAS	Royal Naval Air Service
RPAS	remotely piloted aircraft system
rpm	revolutions per minute
RU	Rescue Unit
S	Service
SAM	surface-to-air missile
SAR	search and rescue
SAR TECH	search and rescue technician
sec	second
SENSO	sensor operator
SES	Software Engineering Squadron
SFTS	Service Flying Training School
Sgt	Sergeant
SHP	shaft horsepower
SOS	struck-off strength
sq	square
sqn	squadron
SR	Search and Rescue
S&R	Search and Rescue
Stn	Station
STOL	short takeoff and landing
STR	Strike and Reconnaissance
STTC	Strategic Tanker Transport Capability
STU	Sabre Transition Unit
T	Transport
TACCO	tactical coordinator
TAF	Tactical Air Force
TB	Torpedo Bomber
TBD	to be determined
T&D	Test and Development
tech	technician
TFA	Task Force Afghanistan

T/O	takeoff
TOS	taken on strength
TOS	time on station
T&R	Transport and Rescue
TS	two-seat
TSU	Technical Support Unit
TTS	Technical Training School
UA	uncrewed aircraft
UAS	uncrewed aircraft system
UAV	uncrewed air vehicle
USAAF	United States Army Air Force
USS	United States Ship
VOR	very high frequency omnidirectional radio range
VTOL	vertical takeoff and landing
WEE	Winter Experimental Establishment
WPU	Weapons Proving Unit
WS	Wireless School

RCAF Aircraft List by Manufacturer

MANUFACTURER	NAME	DESIGNATION
Airbus Industries	POLARIS	CC-150
Airbus Industries	KINGFISHER	CC-295
Airspeed	HORSA	
Airspeed	OXFORD	
Armstrong Whitworth	ATLAS	
Armstrong Whitworth	SISKIN	
Auster	AOP	
Avro	504/WRIGHT/VIPER	504/552/552A
Avro	AVIAN	616
Avro	TUTOR	
Avro		626
Avro (Canada)	ANSON	
Avro (Canada)	CANUCK	CF-100
Avro (Canada)	LANCASTER	
Avro (Canada)	LINCOLN	
Barkley Grow		T8P-1
Beechcraft	EXPEDITOR	CT-128
Beechcraft	MENTOR	T-34A
Beechcraft	MUSKETEER/SUNDOWNER	CT-134 / CT-134A
Bell		47
Bell	IROQUOIS (SINGLE HUEY)	CH-118
Bell	KIOWA	CH-136
Bell	JET RANGER	CH-139
Bell	TWIN HUEY	CH-135
Bell	GRIFFON/OUTLAW	CH-146
Bell	AIRACOBRA	P-39
Bellanca	PACEMAKER	
Blackburn	SHARK	
Boeing		247-D
Boeing	707	CC-137
Boeing	FLYING FORTRESS	B-17E/F
Boeing	STRATOJET	B-47
Boeing	GLOBEMASTER III	CC-177
Boeing Vertol	CHINOOK	CH-147C/D/F
Boeing Vertol	LABRADOR/VOYAGEUR	CH-113
Brewster	BERMUDA	
Bristol	BLENHEIM	
Bristol	BOLINGBROKE	
Bristol	BEAUFORT	
Bristol	FREIGHTER	

MANUFACTURER	NAME	DESIGNATION
Canadair	ARGUS	CP-107
Canadair	CHALLENGER	CC-144
Canadair	COSMOPOLITAN	CC-109
Canadair	FREEDOM FIGHTER	CF-116
Canadair	NORTH STAR	
Canadair		C-5
Canadair	SABRE	F-86
Canadair	SILVER STAR	CT-133
Canadair	STARFIGHTER	CF-104
Canadair	TUTOR	CT-114
Canadair	YUKON	CC-106
Canadian Vickers	VANCOUVER	
Canadian Vickers	VANESSA	
Canadian Vickers	VARUNA	
Canadian Vickers	VEDETTE	
Canadian Vickers	VELOS	
Canadian Vickers	VIGIL	
Canadian Vickers	VISTA	
Cessna	BIRD DOG	L-19/L-182/CO-119
Cessna	CRANE	
Cessna		L-182
Consolidated	LIBERATOR	
Consolidated	CATALINA/CANSO	
Consolidated	COURIER	
Consolidated	PRIVATEER	RY-3
Curtiss		HS2L
Curtiss	TOMAHAWK/KITTYHAWK	
Curtiss	SEAMEW	
Curtiss	REID RAMBLER	
Dassault/Mystere	FALCON	CC-117
De Havilland		D.H.4
De Havilland		D.H.9a
De Havilland	GIPSY MOTH / CIRRUS MOTH / GENET MOTH	
De Havilland	HAWK MOTH	
De Havilland	PUSS MOTH	
De Havilland	MENASCO MOTH / TIGER MOTH	
De Havilland	FOX MOTH	
De Havilland	HORNET MOTH	
De Havilland	DRAGONFLY	

MANUFACTURER	NAME	DESIGNATION
De Havilland	MOSQUITO	
De Havilland	VAMPIRE	
De Havilland	COMET	
De Havilland	SEA HORNET	
De Havilland (Canada)	CHIPMUNK	CT-120
De Havilland (Canada)	OTTER	CSR-123
De Havilland (Canada)	CARIBOU	CC-108
De Havilland (Canada)	BUFFALO	CC-115
De Havilland (Canada)	TWIN OTTER	CC-138
De Havilland (Canada)	DASH-7	CC-132
De Havilland (Canada)	DASH-8	CT-142
Douglas		MO2B
Douglas	BOSTON (HAVOC)	
Douglas	DAKOTA	CC-129
Douglas	DIGBY	
Fairchild	ARGUS	
Fairchild		51
Fairchild		71
Fairchild	SUPER 71	
Fairchild	FLYING BOX CAR	CC-119
Fairchild		FC-2
Fairchild		KR34
Fairchild	CORNELL	
Fairey		IIIF
Fairey	ALBACORE	
Fairey	BATTLE	
Fairey	SWORDFISH	
Fleet	FAWN	
Fleet	FINCH	
Fleet	FORT	
Fleet	FREIGHTER	
Fokker	UNIVERSAL	
Ford	TRIMOTOR	
General Aircraft	HOTSPUR	
Gloster	METEOR	
Grumman	ALBATROSS	CSR-110
Grumman	GOBLIN	
Grumman	GOOSE	
Grumman	TRACKER	CP-121
Handley Page	HALIFAX	
Handley Page	HAMPDEN	
Handley Page	HARROW	
Hawker	AUDAX	
Hawker	HART	
Hawker	HIND	
Hawker	HURRICANE / SEA HURRICANE	
Hawker	TEMPEST	
Hawker	TOMTIT	
Hiller	NOMAD	CH-112
Keystone	PUFFER	
Lockheed	ELECTRA	10
Lockheed	ELECTRA JR	
Lockheed		212
Lockheed	AURORA/ARCTURUS	CP-140 / CP-140A
Lockheed	HERCULES	C-130B/E/H
Lockheed Martin	SUPER HERCULES	CC-130J
Lockheed	HUDSON	L-214 / 414
Lockheed	LODESTAR	18-56
Lockheed	NEPTUNE	P2V-7 / CP-122
LockheedVega	VENTURA	PV-1 / PV-2 / B-34
Martin	BALTIMORE	
Martinsyde		F.6
McDonnell	VOODOO	CF-101
McDonnell-Douglas / Boeing	HORNET	CF-188
Noorduyn	NORSEMAN	
North American	MITCHELL	B-25
North American	MUSTANG	P-51 / F-51
North American	HARVARD/TEXAN, NA-26, NA-44, NA-66/76	
North American	YALE	
Northrop	DELTA	
Northrop	NOMAD	
Percival	PRENTICE	
Piasecki/Vertol		H21A & B / H44 / CH-125 / CH-127

MANUFACTURER	NAME	DESIGNATION
Pitcairn	MAILWING	
Royal Aircraft Factory		SE5a
Sikorsky		S-51 / H-5
Sikorsky		S-55 / H-19
Sikorsky		S-58 / H-34 / CH-126
Sikorsky	CYCLONE	CH-148
Sikorsky	SEA KING	CH-124
Sopwith	CAMEL	F.1/2F.1
Stearman	KAYDET	
Stinson	VOYAGER	
Supermarine	SPITFIRE	
Supermarine	STRANRAER	
Supermarine	WALRUS	
Vickers	VIKING	
Waco		AQC6
Waco		CG15
Waco		PG2A
Waco	HADRIAN	CG-4A
Westland	LYSANDER	
Westland	WAPITI	
Westland-Augusta / Leonardo	CORMORANT	CH-149

NON-RCAF (CIVILIAN LEASED, ETC.) AIRCRAFT FLOWN BY RCAF PERSONNEL DURING TRAINING, TESTS OR OTHER MILITARY MISSIONS

MANUFACTURER	NAME	DESIGNATION
Avro (Canada)	ARROW	CF-105
Boeing	SENTRY	E-3A
Beech	KING AIR / SUPER KING AIR	CT-145 / CE-145
British Aerospace Systems	HAWK	CT-155
Canadair	DYNAVERT	CL-84 / CX-131
Grob	ASTRA	G120A / CT-120
Mil	HIP	Mi-8MTV / Mi-17V52
MBB		BK117 / CH-143
Raytheon	HARVARD II	CT-156
Slingsby	FIREFLY	CT-111

BCATP ARTICLE 15 AIRCRAFT TYPES FLOWN BY THE RCAF IN OPERATIONS OR COMBAT

MANUFACTURER	NAME	DESIGNATION
Boulton Paul	DEFIANT	
Bristol	BEAUFIGHTER	
Hawker	TYPHOON	
Shorts	SUNDERLAND	
Vickers	WELLINGTON	

UAVs & REMOTELY PILOTED VEHICLES

MANUFACTURER	NAME	DESIGNATION
Advanced Ceramics Research	SILVER FOX	CU-167
Bruce Tharpe Engineering	SUPER HAULER	CU-171
Boeing	BOMARC	IM-99B
General Atomics	ALTAIR	CU-163
Israeli Aircraft Industries	EAGLE	CU-160
MDA/IAI	HERON	CU-170
Radioplane (Northrop)	OQ-19	
SAGEM	SPERWER	CU-161
TeledyneRyan	FIREBEE	

RCAF AIRCRAFT (POTENTIALLY) UNDER CONTRACT

MANUFACTURER	NAME	DESIGNATION
Airbus Industries	A330 MRTT	TBD
Boeing	P-8A POSEIDON	TBD
General Atomics	SKYGUARDIAN	TBD
Lockheed Martin	LIGHTNING II	TBD

RCAF Aircraft List by Name

NAME	MANUFACTURER	DESIGNATION
	Fairey	IIIF
	Bell	47
	Fairchild	51
	Fairchild	71
	Fairchild	FC-2
	Lockheed	212
	Boeing	247-D
	Avro	626
	Waco	AQC6
707	Boeing	CC-137
	Waco	CG15
	Canadair	C-5
	De Havilland	D.H.4
	De Havilland	D.H.9a
	Martinsyde	F.6
	Piasecki/Vertol	H 21A & B / H 44 / CH-125 / CH-127
	Curtiss	HS2L
	Cessna	L-182
	Fairchild	KR34
	Douglas	MO2B
	Waco	PG2A
	Royal Aircraft Factory	SE5a
	Sikorsky	S-51 / H-5
	Sikorsky	S-55 / H-19
	Sikorsky	S-58 / H-34 / CH-126
	Barkley Grow	T8P-1
504/WRIGHT/VIPER	Avro	504/552/552A
AIRACOBRA	Bell	P-39
ALBACORE	Fairey	
ALBATROSS	Grumman	CSR-110
ANSON	Avro (Canada)	
AOP	Auster	
ARGUS	Canadair	CP-107
ARGUS	Fairchild	
ATLAS	Armstrong Whitworth	
AUDAX	Hawker	
AURORA/ARCTURUS	Lockheed	CP-140 / CP-140A
AVIAN	Avro	616
BALTIMORE	Martin	

NAME	MANUFACTURER	DESIGNATION
BATTLE	Fairey	
BEAUFORT	Bristol	
BERMUDA	Brewster	
BIRD DOG	Cessna	L-19 / L-182 / CO-119
BLENHEIM	Bristol	
BOLINGBROKE	Bristol	
BOSTON (HAVOC)	Douglas	
BUFFALO	De Havilland (Canada)	CC-115
CAMEL	Sopwith	F.1 / 2F.1
CANUCK	Avro (Canada)	CF-100
CARIBOU	De Havilland (Canada)	CC-108
CATALINA/CANSO	Consolidated	
CHALLENGER	Canadair	CC-144
CHIPMUNK	De Havilland (Canada)	CT-120
CHINOOK	Boeing Vertol	CH-147C/D/F
COMET	De Havilland	
CORMORANT	Westland-Augusta / Leonardo	CH-149
CORNELL	Fairchild	
COSMOPOLITAN	Canadair	CC-109
COURIER	Consolidated	
CRANE	Cessna	
CYCLONE	Sikorsky	CH-148
DAKOTA	Douglas	CC-129
DASH 7	De Havilland (Canada)	CC-132
DASH 8	De Havilland (Canada)	CT-142
DELTA	Northrop	
DIGBY	Douglas	
DRAGONFLY	De Havilland	
ELECTRA	Lockheed	10
ELECTRA JR	Lockheed	
EXPEDITOR	Beechcraft	CT-128
FALCON	Dassault/Mystere	CC-117
FAWN	Fleet	
FINCH	Fleet	
FLYING BOX CAR	Fairchild	CC-119
FLYING FORTRESS	Boeing	B-17E/F
FORT	Fleet	
FOX MOTH	De Havilland	
FREEDOM FIGHTER	Canadair	CF-116
FREIGHTER	Bristol	

NAME	MANUFACTURER	DESIGNATION
FREIGHTER	Fleet	
GIPSY MOTH / CIRRUS MOTH / GENET MOTH	De Havilland	
GLOBEMASTER III	Boeing	CC-177
GOBLIN	Grumman	
GOOSE	Grumman	
GRIFFON/OUTLAW	Bell	CH-146
HADRIAN	Waco	CG-4A
HALIFAX	Handley Page	
HAMPDEN	Handley Page	
HARROW	Handley Page	
HART	Hawker	
HARVARD/TEXAN, NA-26, NA-44, NA-66/76	North American	
HAWK MOTH	De Havilland	
HERCULES	Lockheed	C-130B/E/H
HIND	Hawker	
HORNET	McDonnell-Douglas / Boeing	CF-188
HORNET MOTH	De Havilland	
HORSA	Airspeed	
HOTSPUR	General Aircraft	
HUDSON	Lockheed	L-214 / 414
HURRICANE / SEA HURRICANE	Hawker	
IROQUOIS (SINGLE HUEY)	Bell	CH-118
JET RANGER	Bell	CH-139
KAYDET	Stearman	
KINGFISHER	Airbus Industries	CC-295
KIOWA	Bell	CH-136
LABRADOR/VOYAGEUR	Boeing Vertol	CH-113
LANCASTER	Avro (Canada)	
LIBERATOR	Consolidated	
LINCOLN	Avro (Canada)	
LODESTAR	Lockheed	18-56
LYSANDER	Westland	
MAILWING	Pitcairn	
MENASCO MOTH / TIGER MOTH	De Havilland	
MENTOR	Beechcraft	T-34A
METEOR	Gloster	
MITCHELL	North American	B-25
MOSQUITO	De Havilland	
MUSKETEER/SUNDOWNER	Beechcraft	CT-134 / CT-134A
MUSTANG	North American	P-51 / F-51
NEPTUNE	Lockheed	P2V-7 / CP-122
NOMAD	Hiller	CH-112
NOMAD	Northrop	
NORSEMAN	Noorduyn	
NORTHSTAR	Canadair	
OTTER	De Havilland (Canada)	CSR-123
OXFORD	Airspeed	
PACEMAKER	Bellanca	
POLARIS	Airbus Industries	CC-150
PRENTICE	Percival	
PRIVATEER	Consolidated	RY-3
PUFFER	Keystone	
PUSS MOTH	De Havilland	
REID RAMBLER	Curtiss	
SABRE	Canadair	F-86
SEA KING	Sikorsky	CH-124
SEAMEW	Curtiss	
SEA HORNET	De Havilland	
SHARK	Blackburn	
SILVER STAR	Canadair	CT-133
SISKIN	Armstrong Whitworth	
SPITFIRE	Supermarine	
STARFIGHTER	Canadair	CF-104
STRANRAER	Supermarine	
STRATOJET	Boeing	B-47
SUPER 71	Fairchild	
SUPER HERCULES	Lockheed Martin	CC-130J
SWORDFISH	Fairey	
TEMPEST	Hawker	
TOMAHAWK/KITTYHAWK	Curtiss	
TOMTIT	Hawker	
TRACKER	Grumman	CP-121
TRIMOTOR	Ford	
TUTOR	Avro	
TUTOR	Canadair	CT-114
TWIN HUEY	Bell	CH-135
TWIN OTTER	De Havilland (Canada)	CC-138
UNIVERSAL	Fokker	

NAME	MANUFACTURER	DESIGNATION
VAMPIRE	De Havilland	
VANCOUVER	Canadian Vickers	
VANESSA	Canadian Vickers	
VARUNA	Canadian Vickers	
VEDETTE	Canadian Vickers	
VELOS	Canadian Vickers	
VENTURA	LockheedVega	PV-1 / PV-2 / B-34
VIGIL	Canadian Vickers	
VIKING	Vickers	
VISTA	Canadian Vickers	
VOODOO	McDonnell	CF-101
VOYAGER	Stinson	
WALRUS	Supermarine	
WAPITI	Westland	
YALE	North American	
YUKON	Canadair	CC-106

NON-RCAF (CIVILIAN LEASED, ETC.) AIRCRAFT FLOWN BY RCAF PERSONNEL DURING TRAINING, TESTS OR OTHER MILITARY MISSIONS

NAME	MANUFACTURER	DESIGNATION
	MBB	BK-117 / CH-143
ARROW	Avro (Canada)	CF-105
ASTRA	Grob	G120A / CT-120
DYNAVERT	Canadair	CL-84 / CX-131
FIREFLY	Slingsby	CT-111
HARVARD II	Raytheon	CT-156
HAWK	British Aerospace Systems	CT-155
HIP	Mil	Mi-8MTV / Mi-17V5
KING AIR / SUPER KING AIR	Beech	CT-145 / CE-145
SENTRY	Boeing	E-3A

BCATP ARTICLE 15 AIRCRAFT TYPES FLOWN BY THE RCAF IN OPERATIONS OR COMBAT

NAME	MANUFACTURER	DESIGNATION
BEAUFIGHTER	Bristol	Bristol
DEFIANT	Boulton Paul	Boulton Paul
SUNDERLAND	Shorts	Shorts
TYPHOON	Hawker	Hawker
WELLINGTON	Vickers	Vickers

UAVs & REMOTELY PILOTED VEHICLES

NAME	MANUFACTURER	DESIGNATION
ALTAIR	General Atomics	CU-163
BOMARC	Boeing	IM-99B
EAGLE	Israeli Aircraft Industries	CU-160
FIREBEE	TeledyneRyan	
HERON	MDA/IAI	CU-170
OQ-19	Radioplane (Northrop)	
SILVER FOX	Advanced Ceramics Research	CU-167
SPERWER	SAGEM	CU-161
SUPER HAULER	Bruce Tharpe Engineering	CU-171

RCAF AIRCRAFT (POTENTIALLY) UNDER CONTRACT

NAME	MANUFACTURER	DESIGNATION
A330 MRTT	Airbus Industries	TBD
LIGHTNING II	Lockheed Martin	TBD
POSEIDON P-8A	Boeing	TBD
SKYGUARDIAN	General Atomics	TBD

Author Biography

Terry Leversedge was born in Moose Jaw, Saskatchewan, while his father was serving at RCAF Station Moose Jaw. He graduated from the Royal Military College of Canada in Kingston, Ontario, with a degree in mechanical engineering in 1979, and then received a master's degree in aerospace vehicle design from the Cranfield Institute of Technology in the United Kingdom. His career in the RCAF's aerospace-engineering classification encompassed a wide range of positions, both at field units and within the headquarters of the RCAF. After 35 years of service, he retired at the rank of brigadier-general. Now a publisher and amateur historian, he is the author of other commercially available books on Canadian military aviation through Kestrel Publications. He has published numerous articles as the editor in chief of *Airforce Magazine*, the flagship publication of the RCAF Association.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