

Avro Canada CF-100

On 31 October, 1945, an agreement was reached between the Canadian Government and the still unformed company represented by Sir Roy Dobson and F.T. Smye. It was agreed that the new company would design, build and develop two 'Single Seater Jet-Type Fighter Airframes' in accordance with DND specification AIR 7-1, issue 1. Early in 1946 J.H. Millie, fighter project engineer, laid out three proposals for single-seat fighters under the direction of Stuart Davies of Avro in Manchester who was then visiting Malton. The three schemes were submitted for consideration by the RCAF. After rethinking its requirements the RCAF decided what was really needed for the defense of Canada was an all-weather, twin-engined, two-seat fighter.

Avro Canada then developed three new proposals to suit the new requirements and these were submitted to the RCAF in October 1946. The RCAF accepted one of these which was felt, with certain changes, to be suitable. These changes were introduced but work on the aircraft was slow in starting until the arrival of its project designer, John C.M. Frost, in May 1947.

The original design had been laid out by James A. Chamberlin but Frost did not like it. However he was unable to produce a better one so he accepted it. He then objected to the long nacelles and wanted short ones. Chamberlin protested that this would increase the drag and, more than that, under some conditions short nacelles could be lethal. Chief Engineer Atkin could not resolve the difference of opinion and it was agreed to make wind-tunnel tests of both nacelles. The long nacelles were tested first and the results were so good that the short ones were not tested. One change in the CF-100's design did take place in this early period but it and its consequences will be discussed later.

The aircraft had a circular-section fuselage mounted on a symmetrical [NACA](#) airfoil of 10% thickness, and the pressurized cockpit housed a crew of two provided with Martin-Baker ejection seats. The two engines were placed close to the fuselage in almost circular nacelles which were faired to the fuselage by an airfoil section following the latest German research. Rolls-Royce Avon engines were installed in the two prototypes to get them flying while the Orenda engine intended for the production machines was still under development.

The wing was of NACA 0010 section and had plain split flaps inboard of the ailerons. Ahead of the flaps, the prototypes had dive-brakes consisting of an interconnected flat surface on the top and bottom surfaces of the wing. These normally laid flush with the wing surface and were raised when deployed. Chamberlin did not approve of them and forbade their use. New serrated dive-brakes were installed on the Mk.2 and subsequent machines and Mk.2 wings were fitted to both Mk.1s early in 1951. Tip tanks each with 350.68 gal (1,327 l) capacity increased the ferry range.

Structurally, the CF-100 was of quite conventional stressed-skin construction. The wing had a single spar

located at the 40% chord line. The flying controls were manually operated with Fairey boosters.

The CF-100 prototype, RCAF 18101, was first flown at Malton on January 19, 1950, by William 'Bill' A. Waterton, a Canadian serving as Gloster Aircraft's Chief Test Pilot in England and who had been sent out for the preliminary test flying. The prototype was tested at the Central Proving Establishment at Ottawa and in November 1950 at Wright Field. Although Waterton had pronounced the aircraft as pleasant and safe to fly and ready for operational use, it was found that its longitudinal stability was not acceptable and its lateral control needed improvement.

These deficiencies were, of course, brought out in the tests but nevertheless the CF-100 received many favorable comments during its Wright Field trials. In particular, its short take off, good rate of climb, and maneuverability at altitude, as well as other points, were most favorably regarded. It was also regarded as a 'pilot's aircraft' and Lt-Col L.C. Moon, Chief Test Engineer at Wright Field, was quoted as saying 'This is the first aircraft I have flown for some time that I wouldn't mind going to war in'. The stability and control deficiencies noted were investigated and quickly corrected by Avro Canada.

The CF-100 was then developed through four more basic mark numbers along with several secondary versions, and these along with proposed versions were as shown below.

The armament and proposed armament of the CF-100 was changed several times during the development of the type. Originally it was to have four 1.18 in (30 mm) Aden guns, production designation EM-1. The Aden gun was being developed in Britain from the German Mauser Mk 213/30 and was felt to be a promising weapon, with a rate of fire of 1,200 rounds per minute. Avro Canada did considerable work on the Aden installation including firing trials with Canadian Arsenals Ltd at Long Branch, Ontario, but the formidable problem of feeding the large shells at the required high rate was still not solved when the scheme was stopped in November 1949.

Then the installation of eight 0.50 in (12.7 mm) M-3 guns was specified. A gun pack housing these weapons and 200 rounds per gun was developed. It could be quickly hoisted into the fuselage gun bay, insuring a rapid re-arming of aircraft in service. The first missile considered for CF-100 installation was the Velvet Glove, an air-to-air missile being developed by the Canadian Armament Research & Development Establishment (CARD E) at Valcartier, Quebec. At least two CF-100s, a Mk.3A, RCAF 18117, and a Mk.3B, RCAF 18322, were fitted to carry four Velvet Glove missiles during development trials by the National Aeronautical Establishment. The Velvet Glove missile never entered production and the CF-100 program for its installation was cancelled in February 1956.

The CF-100 Mk.4 was originally intended to be armed with rockets only and to have both wing tip pods and a fuselage rocket pack. The tip pods each held twenty-nine 2.75 in (70 mm) folding-fin aircraft rockets (FFAR) and were fitted with frangible nose cones. These pods were used on both the Mk.4 and the Mk.5. A training pod holding seven rockets was also supplied. A rocket firing inter-valometer was developed to accommodate both the tip pods and the fuselage pack. A preselected rocket sequence was fired by the intervalometer upon receipt of a signal from the fire-control system.

The fuselage rocket pack never went into production although it was developed. The pack, holding 48 rockets and weighing over 1,000 lb (454 kg), upon receipt of the firing signal had to be quickly extended outside the fuselage and at the same time a trim compensating signal put into the control system to counteract the drag of the pack. Upon firing the preselected rockets, it then had to be ensured that no rocket had a hang-fire before the pack was retracted. The pack was developed and air tested in the MK.4, RCAF 18112, with Jan Zurakowski piloting. It was then decided that the threat to Canada would come from high altitude and the rocket pack development was stopped in favor of a high-altitude version (HAV) of the CF-100 which appeared as the Mk.5.

Versions of both the Mk.4 and Mk.5 were considered which mounted Bristol Orpheus engines at the wing tips in addition to the Orenda 11s. The Sparrow 2 missile (used on the CF-105) was to have been used on the Mk.6. Seven Mk.5s were modified to mount four Sparrows and had the MG-2C fire-control system installed. Two Mk.5Ms, RCAF 18138 and, probably, 18139, participated in the Sparrow development program at [NAS](#) Point Mugu in California. Development of the Sparrow 2 was stopped as was the Mk.6. In addition studies were done on the fitting of infra-red guided Falcon GAR-2A missiles and the installation of 2 in (50.76 mm) and 5 in (126.9 mm) rockets but neither of these studies was pursued extensively.

Early in the CF-100's career the type received a substantial setback. On October 17, 1951, the RCAF officially accepted its first CF-100, a Mk.2, RCAF 18104, during a ceremony at Malton. On November 19 it was returned with a cracked center section spar web. Wacław Czerwinski was asked to investigate the problem and find a cure. His cure was (a) to pin joint the nacelle structure to the spar which eliminated some difficult-to-handle loads, (b) to increase the skin thickness of the center portion of the nacelle and (c) to add local reinforcing to the spar. An emergency program was started to incorporate the necessary changes, and there was no further problem. Some CF-100s were still flying 25 years later.

The background of this serious problem was as follows. Originally the engines were mounted above the wing spar which ran through the center section unaffected. While Project Designer Frost was on a trip to Britain Chief Aerodynamicist Chamberlin found a stability problem which required lowering the engines. This was done and the top spar boom had to be kinked downward to clear the engines. On his return Frost protested at this solution but Chief Engineer (later Technical Director) E. H. Atkin agreed that the engines had to be lowered which left the aircraft with a poor structural feature. A stress report was issued showing the wing was under strength but no action was taken. W. Czerwinski, during a weight saving investigation, had found the wing under strength and reported it informally. In early flight trials a local spar cracking was experienced along with buckling of the wing-to-nacelle fairing. The spar was strengthened locally and a gap was left at the fillet which permitted the wing to flex without wrinkling the fillet.

Jan Zurakowski, who had joined Avro Canada as Chief Development Pilot in April 1952, soon became convinced that it would be possible for the CF-100 to exceed Mach 1 although earlier tests showed a normal limit of Mach 0.88. Building up speed gradually in a series of dives, he exceeded Mach 1 in a dive on December 18, 1952, while flying the Mk.4, RCAF 18112. This CF-100 then became the first straight-wing aircraft to exceed the speed of sound without rocket power.

Several CF-100s were lost during flight testing at Malton. The second Mk.1, RCAF 18102, dived nearly

vertically into a small swamp near London, Ontario, on April 5, 1951, killing its pilot, Flight Lieutenant Bruce Warren, and engineering observer, Robert Ostrander, possibly caused by the pilot's lack of oxygen. Glendon J. Lyons, flying alone near Malton, entered a spin at low altitude on October 20, 1955, and ejected but was too low for his parachute to function. During a fuselage rocket pack test flight in RCAF 18112 on August 23, 1954, Zurakowski had an explosion on board and then a second one; he ejected safely but his engineering observer, Jack Hiebert, was killed. (Read the [News Report](#)) Zurakowski concluded that a fuel leak, caused by buffeting during the rocket pack test, created fumes which were ignited electrically.

The RCAF investigated why the observer Hiebert did not eject. The RCAF actually carried out a test where they jettisoned the canopy of a CF-100 and the test flight observer had to pull the ejection seat blind. The seat was inert for the test, but the observer could not get his hands to the handle. They were thrown backwards into the jet stream and he could not get them back into the aircraft until the pilot realized the problem and landed immediately. In a subsequent RCAF airborne emergency in which the pilot advised the navigator to eject, he also saw that the observer was unable to pull the handle. The pilot stayed with the aircraft and managed a successful landing. The navigator in that flight lost some of his fingers as they froze solid. Avro then designed a wind screen for the navigator in the back seat which proved to be successful.

The RCAF named the CF-100, the Canuck, after the sobriquet of the Curtiss JN-4(Canadian) of WW I. The name was hardly appropriate for a fighter and was never generally accepted, and its crews, in its later years, dubbed the aircraft the Clunk. The RCAF had once considered naming the Mk.4 the Jaeger.

In RCAF service the type was first assigned to squadrons on the northern defense of Canada and stationed at North Bay, Ontario; Bagotville, Quebec; Comox, British Columbia; and Uplands (Ottawa). In 1956 four squadrons of CF-100s replaced four Sabre squadrons in the No. 1 Air Division serving in France and West Germany. CF-100s served with all of the following squadrons, 409, 410, 413, 414, 416, 419, 423, 428, 432, 433, 440, 441 and 445.

Though not quite as fast as some of the smaller contemporary fighters, the CF-100's good climb, excellent radar and fire-control system, twin-engine reliability and all-weather capability, made the type most suitable for the defense of northern Canada, and in Europe their reliability and all-weather capability made them much appreciated in the fog and murk of West Germany. There was only one other contemporary fighter in its class and that was the Northrop F-89 Scorpion. It was significant that when Belgium was selecting an all-weather fighter, the CF-100 was chosen in competition with the F-89, and fifty-three CF-100 Mk.5s were supplied to Belgium, paid for 25% by Canada and the balance by the USA.

After being replaced in its fighter role, a number of CF-100s were fitted with electronic counter measure (ECM) equipment, and some were fitted as target tugs, in which capacity some still serve.

[Avro Canada CF-100 Canuck Mk.4A](#) Manny Soberal Collection

Models

Mk.1: Prototype and development aircraft. Two 5,700 lb (2,585 kg) st Rolls-Royce Avon RA.2 engines. No armament or radar. First flight January 19, 1950. Pilot William A. Waterton. Two aircraft: 18101,

- Mk.2:** 18102.
pre-production aircraft. Two 6,000 lb (2,724 kg) st Avro Canada Orenda 1 engines. New dive-brakes.
- Mk.2T:** No armament or radar. First flight June 20, 1951. Pilot Donald H. Rogers. Three aircraft: 18103,
- Mk.2P:** 18104, 18106.
- Mk.3:** As Mk.2 but with dual controls. Two aircraft: 18105, 18107.
- Mk.3A:** Proposed photographic conversion. Not built.
Similar to Mk.3B. Two 6,000 lb (2,724 kg) st Orenda 8 engines. Three aircraft: 18139, 18148, 18149.
- Mk.3B:** Production fighter. Two 6,000 lb (2,724 kg) st Orenda 2 engines. Eight-gun pack. Hughes APG-33
- Mk.3D:** radar and E-1 fire control system. 21 aircraft: 18113, 18115 to 18134.
- Mk.3T:** Production fighter. As Mk.3A except Orenda 8 engines. 45 aircraft: 18135 to 1818, 18140 to 18147, 18150 to 18182.
- Mk.4:** Trainer version. Conversion of Mk.3A to dual control. Earlier designation Mk.3CT. One aircraft: 18114.
Trainer version. Similar to Mk.2T but with Orenda 2 engines. First flight (first Mk.3) June 22, 1952. Pilot Janusz Zurakowski. Four aircraft: 18108 to 18111.
pre-production gun and rocket fighter. Two 7,300 lb (3,314 kg) st Orenda 11 engines. New nacelle
- Mk.4A:** lines. Free blown, one piece, canopy. Electrical de-icing on wing and tail. Hughes APG-40 radar and MG-2 fire control system. Hinged and interchangeable radar nose. Eight-gun pack and two 29-rocket
- Mk.4B:** tip pods. First flight October 11, 1952. Pilot Janusz Zurakowski. One aircraft: 18112.
Production gun and rocket fighter. As Mk.4 but with two 6,300 lb (2,860 kg) st Orenda 9 engines. 137
- Mk.4X:** aircraft: 18183 to 18319.
Production gun and rocket fighter. As Mk.4A but with Orenda 11 engines. 191 aircraft: 18320 to
- Mk.5:** 18474, 18477 to 18449, 18481 to 18513.
Proposed version of Mk.4B with 8% thickness/chord wing and afterburners. Submitted to RCAF July
- Mk.5M:** 1952. Thin wing variants of the Mk.5, 6, and 7 were also considered.
High-altitude rocket fighter. Orenda 11 engines. Two 29-rocket tip pods. Hughes APG-40 radar and
- Mk.6:** MG-2 fire control system. First flight of production aircraft October 24, 1955. Pilot Janusz Zurakowski. 332 aircraft.
- Mk.7:** High-altitude missile fighter. Modified Mk.5. Four Sparrow 2 missiles. MG-2C fire control system. Seven aircraft modified.
- Mk.8:** Proposed high-altitude missile fighter. Orenda 11R engines. Four Sparrow 2 missiles. MG-2D fire control system. Improved cockpit heating. Combat ceiling 50,000 ft (15,239 m). Cancelled July 1953.
Proposed high-altitude fighter. E-9A fire control system. The Mk.7 was cancelled and some features were transferred to the Mk.6, but this, too, was cancelled.
Proposed high-altitude fighter. Armstrong Siddeley Sapphire 7 engines. Two 29-rocket tip pods. Maximum speed 603 mph (970 kmh) at 35,000ft (10,667m). Project cancelled.

Specifications

1	Mk.1	Mk.2	Mk.3	Mk.4	Mk.5
Span: ft in (m)	52 0 (15.85)	52 0 (15.85)	52 0 (15.85)	49 10.6	57 2.6 (17.44)
Span over tip tanks:	-	-	57 6 (17.52)	(15.20)	64 9.6 (19.75)
ft in (m)	-	-	-	57 5.6 (17.51)	53 6.25

Span over pods: ft in	52 6 (16.00)	52 3 (15.92)	52.3 (15.92)	53 6.25	(16.31)
(m)	14 6.4 (4.43)	14 6.4 (4.43)	14 6.4 (4.43)	(16.31)	54 1.75
Length: ft in (m)	540 (50.17)	540 (50.17)	540 (50.17)	54 1.75	(16.50)
Height: ft in (m)	19,185	-	-	(16.50)	14 6.4 (4.43)
Wing area: sq.ft	(8,710)	33,100	34,000	14 6.4 (4.43)	591 (55.14)
(sq.m)	31,877	(15,072)	(15,436)	526.6 (48.92)	23,100
Empty: lb (kg)	(14,472)	-	-	-	(10,487)
Loaded: lb (kg)	552 (899)	-	-	37,000	33,528
Max speed: mph	40,000	-	-	(16,798)	(15,222)
(kmh)	(13,124)	-	-	604 (972)	554 (891)
at ft (m)	-	-	-	5,000 (1,524)	30,000
Cruise speed: mph	-	-	-	460 (741)	(9,143)
(kmh)	9,800 (2,987)			35,000	472 (760)
at ft (m)	50,000			(10,667)	38,000
Climb: ft (m)/min	(15,239)			7,600 (2,316)	(11,582)
Ceiling: ft (m)				41,000	8,750 (2,667)
				(12,496)	45,000
					(13,715)

Avro Canada CF-100 Canuck Mk.4 – RCAF 18112 – crash on August 23, 1954

Crewman Gave Life in Saving Secret Equipment From CF-100 Which Crashed and Burned in Farmer's Field at Ajax

ACE'S SURVIVAL OF CRASH MAY SAVE MANY LIVES THOUGH CREWMAN DIED

Jan Zurakowski, Avro's famed test pilot jumped from a rocketing CF-100 carrying top secret equipment before it crashed near Ajax yesterday, said from his Oshawa hospital bed today, "I tried everything but nothing worked." Blown clear in his ejector seat, Zurakowski parachuted to a hard landing 500 yards from where the \$800,000 fighter disintegrated in a field killing its flight observer, John Hiebert, 28 of Rexdale. Zurakowski steered the plane clear of Ajax homes before he jumped.

Falls Semi-Conscious

News of his crewman's death caused the usually stoic Zurakowski to lapse into semi-consciousness at the hospital. It was found later that his ankle had received a minor fracture. The Battle of Britain ace was at the controls of the hush-hush Mark IV fighter in a routine flight and aviation experts say his survival may save countless other lives and untold millions or research dollars as he fills in answer to the mystery crash. Mrs. Zurakowski, who visited her husband in the hospital said he told her he fought desperately to save the aircraft. The following statement was issued today by A.V. Roe, Canada, Ltd: "The aircraft involved in yesterday's accident was the Mark IV prototype which has been in service for the past three years as a development test vehicle. The aircraft was returning to Malton after completing a normal routine test flight. An inquiry is now under way in an effort to determine the cause of the accident."

Sacrificed Life

Hiebert died a hero, Zurakowski revealed. In the last frantic seconds of the dive, the observer insisted upon jettisoning top secret equipment before blowing himself to safety. The delay cost him his life but the equipment was later recovered. "I called out to my observer over and over," the pilot recounted. "I kept saying: 'Get out! Bail out! Get out!' I waited and waited. Then I finally had to get out myself." Zurakowski told interviewers: "As soon as I realized something was wrong, I tried to pull the plane up but I couldn't do it." He said that it was the first time he had to bail out of an aircraft on a test flight. "During the war I had to bail out of burning planes twice." Zurakowski's heroism in steering the jet away from the population centers from of Ajax and Pickering was attested to by the thousands who watched the aircraft in its death dive. As flames engulfed the fuselage and trailed far behind it, eye-witnesses believed escape to be impossible.

Asked About Mate

The fighter screamed to less than 2,000 feet before the pilot's parachute billowed out. He struck the ground heavily. But when rescuers rushed to his side, he dismissed his own injuries saying: "How is the other fellow?" It is believed Hiebert, flung into his seat by the tremendous pressure of the air stream after the canopy was jettisoned was unable to pull down the screen which sets off the explosion charge. Top Avro officials, including Crawford Gordon, president, met in secret today. Although many spectators claimed to have heard explosions before the jet erupted into flame, company officials were inclined to discount these stories. However, they added they could make no statement until an inquiry had been held.

Saw Flash of Flame

"There was a terrific explosion and I saw a flash of flame coming from the rear of the plane." recounted John Chubb, 19, who saw the crash from his rear veranda. "Suddenly it veered off and seemed to pancake down." The CF-100 was at 5,000 feet en route back to Malton when Zurakowski found himself in trouble. When he decided it was out of control, he fought it over the farm fields before telling Hiebert to prepare himself for ejection procedure. Pilot and observer then prepare themselves for ejection from the cockpit, a procedure that must be followed precisely and one which allows for no mistakes or omissions. Once all connections between the two men are cut, the cockpit canopy is jettisoned. the pilot in the front seat and the observer behind, separated from him a bulkhead, are now on their own. since the slipstream fills the cockpit with tremendous pressure, only limited movement is now possible. To leave the aircraft, a safety pin which prevents the ejector seat's explosive charge from being accidentally discharged, must first be removed. the flier then pulls down a protective screen in front of his face. This activates the charge which throws the seat and its occupant clear of the aircraft.

Must Take Chance

In an extreme emergency, when there is not enough time to jettison the canopy, the flier may be forced to take his chances on being shot through it on his ejector seat. Examination of the wreckage of the CF-100 may show why Hiebert failed to get clear of the aircraft. An employee of A.V. Roe for several years, Hiebert was in the flight test department a short time. He and his wife, also employed at the plant, have parents living in Winnipeg. A 19-ton plane, the CF-100 has been pushed through the sound barrier and cartwheeled through the skies by Zurakowski. In active service with the RCAF, it is the backbone of the "seek and destroy" squadron based at North Bay. It is the only all-Canadian aircraft in use by the RCAF. Some spectators screamed when they saw the rocket pods jettisoned by Zurakowski hurtle downward, they believed them to be the crew members.

Desmond Kavanaugh, the man who drove the test pilot to hospital said: "What brought me out of the house was the screams of a neighbor. I saw the parachute going down in a field about a mile from my house." Mr. Kavanaugh picked up his two-year daughter, Margaret, jumped in his car and raced east along Highway 2. He turned up a lane on the Blake farm, which borders the Fleming farm on which the fighter crashed, and drove almost to the spot where Zurakowski was sitting. "He told me his leg was broken and asked if I'd seen the other fellow. He was conscious but he didn't say anything all the way to the hospital." He had to wait with the injured man until police were able to clear the way for his car.

Zurakowski will go home today, Dr. Claude Vipond of Oshawa General hospital said. The pilot suffered a minor fracture of the ankle and has been fitted with walking cast. He has some bruised muscles but suffered no shock, the doctor said.

Tony Hubers, herdsman on the Fleming farm, was eating supper when he heard the jet explode overhead. "I rushed outside and saw it crash in the field. Black smoke was swirling all around and the whole tail was burning," he said.

Mr. and Mrs. Russell Fleming, who own the farm where the CF-100 crashed and their son Gordon, 11, were just going to dinner when they hear the low flying jet almost above their house. "The whole house shook and some pots and pans I had drying on the window sill crashed to the ground." said Mrs. Fleming.

RON DUPAS COLLECTION

No. 1063. Avro Canada CF-100 Canuck Royal Canadian Air Force

Photographed at RCAF Station Namao, near Edmonton, Alberta, Canada, by Ron Dupas



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View also a photo of a [derelict CF-100](#), taken at Richmond, British Columbia. Read also the History Brief [1](#).

Created November 24, 2001

JOHN MENZIES COLLECTION

No. 13885. Avro Canada CF-100 Canuck Mk.1 (18101) Royal Canadian Air Force

[APS](#) No. 4886



John Menzies Collection

1000aircraftphotos.com

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Read the History Brief [f](#).

Created November 15, 2020

CURTISS ALDRICH COLLECTION

No. 9870. Avro Canada CF-100 Canuck Mk.1 (18102) Royal Canadian Air Force

Source unknown



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05/31/2010. Remarks by [Johan Visschedijk](#): "Painted black and fitted with a nose-mounted pitot tube while on trials with Avro Canada, this was the second prototype, it introduced the wing tip fuel tanks, but still lacked ejection seats, dual control, armament and radar. Fitted with two 5,700 lb (2,585 kg) st Rolls-Royce Avon RA.2 engines it was first flown on January 19, 1950, by William A. Waterton. In October 1950 it went to the Central Experimental and Proving Establishment at RCAF Station Rockcliffe, Ontario, for initial RCAF trials and was allotted the code "FB-K".

The aircraft was lost on April 5, 1951, when it crashed into Komoka Bog, some 10 mls (16 km) west of London, Ontario. The first and fatal Canuck loss was probably caused by the failure of the pilot's oxygen system. Pilot Flight-Lieutenant Bruce Warren and Avro engineer Robert Ostrander were killed. The aircraft was retrospectively taken on charge by RCAF on June 23, 1951, and struck off the same day."

Read the History Brief [i](#).

Created May 31, 2010

CURTISS ALDRICH COLLECTION

No. 9871. Avro Canada CF-100 Canuck Mk.2 (18103) Royal Canadian Air Force

Source unknown



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05/31/2010. Remarks by [Johan Visschedijk](#): "The first pre-production aircraft was fitted with two 6,000 lb (2,724 kg) st Avro Canada Orenda 1 engines, and new dive-brakes. It was first flown by Donald H. Rogers from Malton, Ontario on June 20, 1951, and taken on charge by the RCAF on September 2, 1952. It was used by Avro Canada for engine and armament development, including the underbelly gun pack, and all-weather and anti-icing tests in spring of 1953. It was fitted with the US-built T-160 0.787 in (20 mm) cannon, for firing trials from May 1954 to April 1955. The aircraft was struck off charge on June 3, 1955."

Read the History Brief [f](#).

Created May 31, 2010

JACQUES TREMPE COLLECTION

No. 1949. Avro Canada CF-100 Canuck Mk.2 Royal Canadian Air Force

Photographed at Quebec Airport, Quebec, Canada, by Jacques Trempe



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Read the History Brief [i](#).

Created November 25, 2002

AUBRY GRATTON COLLECTION

No. 8996. Avro Canada CF-100 Canuck Mk.3A (18124) Royal Canadian Air Force

Source unknown



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Read the History Brief [i](#).

Created May 31, 2009

AUBRY GRATTON COLLECTION

No. 9297. Avro Canada CF-100 Canuck Mk.3T (18108) Royal Canadian Air Force

Source unknown



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Read the History Brief [i](#).

Created August 31, 2009

JOHN MENZIES COLLECTION

No. 13886. Avro Canada CF-100 Canuck Mk.4 (18112) Royal Canadian Air Force

[APS](#) No. 4891



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11/15/2020. Remarks by [Johan Visschedijk](#): "Ordered as a Mk.2 and destined to be converted to the Mk.2P prototype of a photo reconnaissance version. As this project was cancelled, the aircraft was converted to the Mk. 4 prototype and first flew on October 11, 1952. Coded FB-S the aircraft was used by Avro Canada for development trials from Malton, Ontario. Chief Development Pilot Jan Zurakowski took it to Mach 1.06 on December 18, 1952.

From January 1954 on the aircraft was used for belly pack rocket firing, initially on a test stand, first aerial firing took place on February 11, 1954. During these firing tests the aircraft was struck in nose by rocket, but landed safely. Following an in-flight explosion, probably resulting from fuel leaks produced by heavy buffeting when modified rocket pallet was lowered, the aircraft crashed on August 23, 1954 near Ajax, Ontario, pilot Zurakowski ejected safely, however, test engineer Hiebert went down with aircraft."

Read the [crash story](#) and the History Brief [i](#).

Created November 15, 2020

MANNY SOBERAL COLLECTION

No. 7579. Avro Canada CF-100 Canuck Mk.4A (18207) Royal Canadian Air Force

Photograph from RCAF, taken in the vicinity of RCAF Station Marville, France



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03/31/2008. Remarks by [Johan Visschedijk](#): "Delivered to the RCAF on March 1, 1954, this aircraft is shown in the markings of No. 419 All-Weather (Fighter) Squadron, RCAF Air Defence Command, based at RCAF Station North Bay, Ontario. The squadron operated Canuck Mk. 4As between early 1955 and August 1957, from then the Squadron operated from Baden-Soellingen, Germany. 18207 was struck off charge on July 28, 1960."

Read the History Brief [i](#).

Created March 31, 2008

JOHN VOSS COLLECTION

No. 7114. Avro Canada CF-100 Canuck Mk.4A (18211) Royal Canadian Air Force

Photograph from Orenda



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12/31/2007. Remarks by [Jack McKillop](#): "Delivered to the RCAF on May 31, 1954, this aircraft is shown in the markings of No. 428 All-Weather (Fighter) Squadron, RCAF Air Defence Command, based at RCAF Station Uplands, Ontario. The squadron operated Canuck Mk. 4As between June 1954 and April 1955. 18211 was struck off charge on July 28, 1960."

Read the History Brief [i](#).

Created November 30, 2007

RON DUPAS COLLECTION

No. 292B. Avro Canada CF-100 Canuck Mk.4A (18245) Royal Canadian Air Force

Photographed at RCAF Station Namao, near Edmonton, Alberta, Canada, by Ron Dupas



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08/31/2010. 18245 was taken on strength November 15, 1954, it was assigned to No. 3 All-Weather (Fighter) Operational Training Unit by 1960, when it flew in the OTU's demonstration team, the Bald Eagles. The OTU was formed at RCAF Station North Bay, Ontario, on November 3, 1952 and then moved to RCAF Station Cold Lake, Alberta, on May 22, 1955. The aircraft was struck off charge October 18, 1962, and subsequently scrapped. View also the History Brief [i](#).

RON DUPAS COLLECTION

No. 292A. Avro Canada CF-100 Canuck Mk.4A (18290) Royal Canadian Air Force

Photographed at RCAF Station Namao, near Edmonton, Alberta, Canada, by Ron Dupas



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Remarks by [Jack McKillop](#): "18290 was assigned to No. 3 All-Weather (Fighter) Operational Training Unit. This unit was formed at RCAF North Bay, Ontario, on November 3, 1952 and then moved to RCAF Station Cold Lake, Alberta, on May 22, 1955." View also the History Brief [i](#).

BILL EWING COLLECTION

No. 6981. Avro Canada CF-100 Canuck Mk.4B (G-BCYK)

Source unknown



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01/31/2008. Remarks by [Bill Ewing](#): "Under serial 18393 the aircraft was delivered to the RCAF on May 5, 1955 and served in West Germany with No. 419 AW(F) "Bruce the Moose" Squadron, 4 (F) Wing, at Baden-Soellingen, and No. 440 AW(F) "Bat" Squadron, 3 (F) Wing, at Zweibrücken.

On December 31, 1962, all CF-100 Squadrons in Europe stood down and the aircraft were flown to Scottish Aviation at Prestwick, Scotland in January/February of 1963 for scrapping, 18393 being donated to the Imperial War Museum, Duxford, England. It was flown for some time, registered as G-BCYK, and is now on indoors display."

Read the History Brief [i](#).

Created October 31, 2007

JIM LYZUN MEMORIAL COLLECTION

No. 1233. Avro Canada CF-100 Canuck Mk.4B (18321) Royal Canadian Air Force

Photographed at Isle of Wight, UK, September 1955



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RCAF 18321 over the white cliffs of the Isle of Wight during its demo at the SBAC Display at Farnborough, Hampshire, England, UK. View also the History Brief [i](#).

Created January 30, 2002

RON DUPAS COLLECTION

No. 479. Avro Canada CF-100 Canuck Mk.5 (18517) Royal Canadian Air Force

Photograph from RCAF



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View also the History Brief [i](#).

ROBERT M. SULLIVAN & BURTON H. BERENSON COLLECTION

No. 12137. Avro CF-100 Canuck Mk.5 (18539 c/n C-100-5-439) Royal Canadian Air Force

Source unknown



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Read the History Brief [i](#).

Created March 31, 2013

AL ROBINSON COLLECTION

No. 12448. Avro Canada CF-100 Canuck Mk.5 (18642) Royal Canadian Air Force

No. 12448. Vickers 706 Valiant B.Mk.1 (WZ368) Royal Air Force

Photographed by Al Robinson



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Read the Canuck History Brief [1](#).

Created June 30, 2014

BILL EWING COLLECTION

No. 5955. Avro Canada CF-100 Canuck Mk.5 (18668) Royal Canadian Air Force

Photographed at RCAF Station Bagotville, Quebec, Canada



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This aircraft was taken on strength on July 10, 1957 and struck off charge on March 18, 1965. It is pictured in the colours of No. 425 AW(F) Squadron that was nicknamed "*Alouetté Squadron*". View also the History Brief [i](#).

Created November 30, 2006

BILL EWING COLLECTION

No. 6186. Avro Canada CF-100 Canuck Mk.5D (100504) Canadian Armed Forces

Photographed at Moose Jaw, Saskatchewan, Canada, July, 1973, by Bill Ewing



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Read the remarks on page [9456](#) and also the History Brief [1](#).

Created February 28, 2007

MANNY SOBERAL COLLECTION

No. 9456. Avro Canada CF-100 Canuck Mk.5C (100772) Canadian Armed Forces

No. 9456. Avro Canada CF-100 Canuck Mk.5D (100504) Canadian Armed Forces

Photograph from CAF



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100504 was one of the 144 aircraft ordered as Mk.4B and delivered to the RCAF on June 28, 1955. Sometime in its existence the aircraft was one of 50 Mk.4As and Mk.4Bs that were converted to Mk.5, and it was listed as Mk.5D when the aircraft was reseried from RCAF 18504 to CAF 100504.

Beside the 50 conversions there were also 329 aircraft produced from the outset to Mk.5 standards, 53 being delivered to the Belgian AF. Typical for the Mk.3 and Mk.4, the production Mk.5 had no ventral weapons pack. On this Mk.4B conversion the eight 0.5 in (12.7 mm) guns have not been removed.

The Mk.5 had a 6 ft (1.83 m) increase in wing span and had the tail plane also extended. While the Mk.4 had an elevator that spanned the entire tail plane, as visible in the photo on the Mk.5 the extended tail plane had not an extended elevator. View also photo [6186](#).

100772 was produced as a Mk.5 with s/n 18772, later converted to a Mk.5C, and on November 1, 1970 it was transferred to the CAF with the new s/n 100772. On November 10, 1980 it was struck off charge and subsequently scrapped.

Read also the History Brief [1](#).

Created November 30, 2009