

RT Volume 43, No. 2 Summer 2021

Editorial

Steve Sauvé 3

Centurion Mk. 5/1 in 1:35

Gary Barling, Ottawa Valley Plastic Modellers 4

Producing a Gunmetal Finish

Glenn Cauley, IPMS Ottawa 13

DHC-1 Chipmunk 18001 (decal subject)

multiple contributors 15

L-19A Bird Dogs (decal subject)

multiple contributors 17

RCAMC Jeep Ambulance (decal subject)

multiple contributors 24

(pre-C)F-5s in the RCAF (decal subject)

multiple contributors 26

CH-147D Chinook 147205 (decal subject)

multiple contributors 33

Cartoons

Dave Fletcher 3

Cover Comment: Gary Barling took a trip down memory lane and produced a fine 1:35 model of the Centurion that he used to learn his craft as an Armoured Corps officer. The story starts on page 4 and be sure to read his recount of tank gunnery!

Page 3

Editorial

Steve Sauvé, C#0323 RT@ipmscanada.com

You're kidding me - this is still going on?!?

While the vaccination count is increasing steadily in Canada and most other countries, the COVID pandemic is not over yet. I have to laugh when I think about my day job, back when this all got serious. We started getting punted out of the workplace temporarily and sent home starting at the end of February, but it wasn't immediately a full-time work-from-home thing. An email was sent out in March to let us know how to cancel our parking passes if we wanted to. I actually said to my boss, "nah, this thing will be over in a few weeks - why bother?" So here it is more than year later and I've only been back to the building once, in April 2020, to turn in my parking pass and pick up some stuff from my dust-covered desk. I wonder if I can convince Mrs. **RT** Editor the boss that the parking money savings can be redirected to some modelling supplies? Wish me luck.

(P.S. I know that a lot of people have been dealing with much bigger real problems stemming from this pandemic, so please don't think I'm making light of this.)

Research - kickin' it old school...

While digging around in a frustrating and unsatisfying online search for detail photos for an ongoing project it finally struck me that I had several dozen actual hardcopy books and publications on the subject in question. This brought me be out of my internet rabbit hole and back into digging through the many feet of shelves I have on the subject. It produced a lot of great material that I needed for the project and I was kicking myself in the butt for getting into the lazy habit of Google-searching reference material. Still, it would be nice to have the ability to do a **'Ctrl-F'** search on the physical collection.

'Colourizing' black and white reference photos - yes, that's a thing...

While we can now find all sorts of reference material online, both helpful and not-so-much so, there is an increase, alarming in my opinion, in PhotoShop 'artistes' posting 'colourized' imagery on various social media with no clear indication that the image started out as a greyscale photo. While some are technically quite good at their craft (others less so) some have made serious, serious in a modelling detail enthusiast geek scenario kind of serious, errors in colour interpretation, or have made complete guesses at secondary and even some primary colour details they think they see in the photo.

Sadly, I put in too much FB time trying to argue why 'colourists' should clearly label or watermark their work right on the image (and some of them certainly do); at least this way the casual viewers can be happily entertained while the more-discerning person can be fairly warned that they're not looking at a genuine colour photo. Without the watermark the unwary modeller (or industry person) looking for colour scheme information could easily be lulled into a trap and end up basing their model colours on somebody else's faulty or fanciful interpretations. It's not just the aircraft; this is being done to uniforms, ground equipment and buildings that might impact on a modeller's colour choices for their work.

No matter how good the work is, it's not the real thing. To borrow from a phrase that became way too popular, these colourized photos are **FAKE HUES!** (No? Oh well, at least I thought it was funny...)

Why am I so worked up about this? Well, this practice might not be as serious for some WW II RAF photos with their more-predictable colours, but imagine the mess this practice will create when more people start colourizing late-WW II Luftwaffe photos...

That's it for now, folks. Stay smart and stay safe!

1960's ARMOUR TRAINING: The Centurion Mk. 5/1

Gary Barling

C#0014

Ottawa Valley Plastic Modellers

Petawawa, Ont.

BACKGROUND

I started my tank training at the Meaford Tank Range (located at the south western corner of Georgian Bay, Ontario) in early 1968 after having completed Phase 1 (basic officer training) at the Canadian Army's Camp Chilliwack, British Columbia, the autumn of 1967 (Camp Chilliwack was renamed Canadian Forces Base (CFB) Chilliwack following Canadian Armed Forces (CAF) unification in February, 1968). Phase 2 (January to May, 1968) was training at Meaford on the Centurion tank, learning how to be a crew commander. Phase 3 (June to August, 1968, still in Meaford) was again on the Centurion, only this time we learned how to command a troop of four vehicles.

It was sheer coincidence that I was assigned to the same Centurion during the majority of both training phases. I got to know Centurion number 52-81060 quite well during that time, and it is the subject of this build.

THE KIT

My chosen kit was the AFV Club IDF Sho't (Whip) Centurion in 1:35 scale, kit number AF35159, **Fig. 1**.

It offers the modeller the option of building either a Mark 5 or a Mark 5/1 version*. On the "plus" side, the kit is generally well-moulded, very well detailed and includes a small fret of photo-etch, a small sheet of decals for an Israeli vehicle and a very detailed instruction booklet. On the "minus" side, although a number of the small parts are moulded to scale, they are so small that it is a real challenge to separate them from their sprues, clean up the separation area on each, and then glue them in place using tiniest amount of glue, **Fig. 2**. Otherwise there is a real risk of melting these tiny items. The best examples are the many "grab handles" on the back deck over the engine compartment. After ruining several of these items I decided to use thin wire to make the items instead. Details on this task are covered below.

CONSTRUCTION

General Comments: It must be borne in mind right from the start that this kit represents the Israeli Centurion, replete with all of its modifications. Accordingly the modeller must be ready to identify those parts that do not apply to the Canadian version, which is not a difficult task. Examples of some of the differences are: some external tools; the Israeli radio antennas and fittings; the Israeli crew commander's machine gun on the turret roof; and the Israeli-style water cans. Also, the kit contained a sprue from an Australian Centurion kit serving in Viet Nam. Nothing was needed from it, so don't ask me why the extra sprue was included in this kit release!

Suspension: The first six steps in the instruction booklet deal with the assembly and fitting each side of the hull with six, two-wheeled suspension units, the rear sprocket final drive assembly, the front-mounted idler wheel and the six separate return rollers mounted above the suspension units, **Fig. 3**.

Warning: the axle part for the idler wheel has two "pins" on it, one on each side. The "axle pin" can be glued into the wheel, but **do NOT glue** the opposite, thicker, pin (part B23) into its location. This is into part H9 which itself is glued into place on the leading edge of either side of the hull, **Fig. 4**.

This feature allows the idler wheels to be rotated forward or backward later in the build to adjust the track tension (which somewhat mimics the way the track tension was adjusted on the real tank), especially in the event that the modeller uses (for example) a set of Fruiamodel Centurion tracks, which I did use for this build. See below for additional details on this feature.

Hull: The offered hull is a single-piece item consisting of the bottom, two well-reinforced sides and the lower front and rear plates. To this, the following parts are fitted: mid-rear plate; rear coolant plate; access doors for the radiator compartment; engine access doors; turret-mounting plate; drive's hatch plate; and the single glacis plate at the front of the hull, **Fig. 5**.

Additional items such as lights, tow hooks, air deflector, tow cable retainer and the horizontal fenders are then fitted. There are no key issues with the hull assembly, just take your time and study the instruction sheet. To paraphrase an old carpentry rule, "Measure twice, glue once!"

To reinforce a point I made earlier, here is where I recommend the use of fine wire to make the fifteen grab handles for the access doors you'll fit onto the back deck. I used fine brass wire and my trusty Grabhandler to form the handles and a drill to open the locating holes. To give them a stronger mounting I made the handles longer than usual, then drilled out the locating holes deeper than usual. A touch of PVA white glue on each end of a handle, then I located the handle into the holes and adjusted the handle's height as needed. This certainly made a positive difference in the appearance of the area, **Fig. 6**.

Turret: The turret offered by AFV Club is suitable, but it requires a number of additional and replacement parts. From back to front, here are the required amendments. First, the rear turret fittings, **Fig. 7**.

The round telephone wire carrier (right rear) and the three track links and their bracket (left rear) are both included in the kit and are kept for this build. However, the water can will have to be swapped out for a standard US/Canadian metal version as shown inset in **Fig. 7** (plastic jerry cans did not come along into CAF use until a few years later). These are easily sourced from several aftermarket dealers or (as mine was) found in the spare parts box.

Next, new radio antennas have to be fitted, **Fig. 8**. These two are fairly thin and are about five feet in length. I used stretched sprue to make them. Interestingly, the correct antenna mounts for a Canadian Centurion are included in the kit – part 35 on sprue "B," **Fig. 8a**. They aren't mentioned in the instruction book but they are there. A real Canadian antenna mount for a C42 radio set is shown at **Fig. 8b**.

The main gun on our Canada-based Centurions was the 20-pounder / 84 mm weapon, **Fig. 9**.

(It should be noted that some Canadian Centurions ended up carrying a later version of the 20-pdr gun that incorporated a fume extractor/bore evacuator, similar to what was standard on the 105 mm gun. Some tanks in Canada can be seen with this type of barrel, but the majority of Canada-based tanks had the barrel as depicted in this article)

The only provided barrel is an early 105 mm version so this will have to be swapped out for a 20-pounder. At time of writing, "the Barrel Store" stocks this item in, I think, turned aluminum. This is used for my build.

Finally, there are two machine guns fitted into the turret on the left side of the mantlet: a Browning M1919 .30" calibre coaxial machine gun and, mounted between this gun and the main gun, a .50" calibre ranging gun, **Fig.10**.

This ranging gun was used by the gunner to determine the range to a target. He would fire bursts of three rounds at increasing ranges until he hit the target. Then he would adjust the gunsight to engage the target at that range dependent on the type of ammunition called for by the crew commander. (see sidebar on next page for more details)

Tracks: As noted above, I used the Fruilmodel Centurion track set, ATL-65. The set contains 220 track links (which were called "trackpads" back at the time I was going through this training in 1968), more than enough for the build. A brand new Centurion steel track contained 107 track links, so there are six extra links available in the Fruilmodel set.

One small "real" detail: the Centurion track would "stretch" over usage and time. Once it got too long (denoted by the excess "sag" between the return rollers above the main suspension units), the crew would remove a track link, retighten the track by adjusting the idler wheel tensioner, and carry on. Up to five links could be removed over time, but after that, and as the track continued to stretch beyond the allowed limit, the whole track was removed and a new track fitted. So if you need only, say, 105 track links to get the correct tension on your model, don't worry about it. And, if any "rivet-counter" takes you to task by telling you that your track is short two links, just use the above information to educate him and put him in his place!

Fruil provides a coil of wire to be cut to 12 mm lengths to be used as the track pins, which hold the links together. The coil I received was quite stiff and retained the coil's curve. I eventually went to a craft store and bought a coil of wire just slightly smaller in diameter when compared to the Fruil offering. This was much easier to straighten out by rolling a length

of it between two flat pieces of brass and then cut the lengths to 12 mm long. Then place two links together and slip the pin into place, thus joining the links. And there you go: only 105(±) more to do and then you can start on the *other* track length! **Fig.11.**

When it comes time to fit the completed track to the model, I really hope that you remembered NOT to glue the idler wheel mount (Part B23) at the front of the hull into Part H9. By not doing this, and therefore being able to rotate the idler rearward *before* you fit the track, you can then rotate the idler wheel *forward* to take up any slack in the track length once it's fitted on the suspension units.

MARKINGS:

Painting. I used Tamiya paints over a coat of Tamiya light grey sprayable primer throughout this build. The paint was mostly applied by airbrush: an Iwata Revolution for the main coverage and an Iwata HP-C for any detailed work required. I generally thin this paint using four parts paint to six parts thinner. My primer for this build was Alclad 2 Grey Primer and Microfiller. My two thinners are the standard Tamiya X-20 thinner, and Isopropyl Alcohol (99%), and my air pressure is 12-15 psi. The Centurions we used in 1968 were an overall faded Olive Drab (two parts XF62 [Olive Drab] and one part XF57 [Buff]) with lots of mud in the spring and a fair bit of mud (usually dried for the most part) and a fair coating of dust during the summer months. No disruptive camouflage paint pattern was used at this time.

Unit Markings: The Royal Canadian Armour School tactical sign (tac sign) was a diagonally-divided square with red at the upper right and yellow at lower left. These are carried on the left side of the front hull, and the right side of the rear hull, relative to the driver's point of view in his crew position in the vehicle, **Fig. 12.**

In other words they were carried on the left forward on the hull glacis plate and the right rear on the hull rear upper plate. I had these two decals in my decal binders for quite some time, but they reacted well to the soaking and setting solutions. The same source served up the white serial number (properly called a Canadian Forces Registration (CFR) number) decals in two sizes. 52-81060: "52" is the year that the vehicle came on charge to the Canadian military; "81" is the numerical code for a Centurion tank; and 060 denotes the 60th Centurion to be taken on charge in 1952. The numbers were applied by individual decals, guided into place by a strip of Tamiya tape and a sharp eye, **Figs 13 and 13a.**

Weathering: I used Mig Pigments P232 "Dry Mud" to represent the mud on the hull and suspension. Essentially it was mixed with some water, brushed on, and then streaked and modified with a damp brush to replicate the effect of rain and wear over time, Fig.14.

The summer dust was applied by airbrushing a very thin coat of Tamiya XF-55 Deck Tan over most of the horizontal surfaces and the suspension areas, Fig. 15.

CONCLUSION

This build was a bit of a challenge as I navigated through the Israeli kit and the detailed areas of the suspension and the hull. Fortunately my eight months on these vehicles stood me in good stead when dealing with the details of the build. Equally, with three Centurion tanks located at nearby Garrison Petawawa, I had more than enough 1:1 scale references to visit and photograph!

REFERENCES:

- Dingwall, Don, "The Centurion in Canadian Service," Service Publications, Ottawa, Ontario, 2005
- Bradford, George R, "AFV Scale Drawings, Centurion Mk 3/Mk 5/2," Cambridge, Ontario, February 20, 1995
- Garrison Petawawa Museum, Royal Canadian Dragoons Vehicle Display
- Personal experience and reminiscences...

RESOURCES:

- Turret Mantlet: AFV Club, Centurion Type "B," AC35009, thebarrelstore.com
 - Main Gun: AFV Club, A-Type Barrel (20-Pdr/84mm), AF-G35018, thebarrelstore.com
-

Producing a Gunmetal Finish

Glenn Cauley
C#3359
Kemptville, Ontario

One of the decal sets provided with this issue of **RT** covers a Spitfire FR Mk. XIVe, serial number NH899, of No. 411 "City of York" Sqn, RCAF.

Reference photos for this scheme were kindly provided by John Melson of Port Alberni, BC. The precise date of the photos is not known, but it is somewhere in the two-month period between late-September to the end of November 1945.

This was an interesting research exercise to sort out historical data, known elements of RAF Spitfire XIVs, and what could be gleaned from the reference photos. We hope the following notes will help you to better understand the markings on this Spitfire:

- NH899 was passed to 411 Sqn on 27 Sep 45 (from 414 Sqn) and was lost in a fatal crash in the Wadden Sea near Kongsmark, Denmark, on 1 Dec 45. The cause of the crash was not determined. RCAF Flight Lieutenant Kenneth S. Sleep died in the accident.
- It is painted in the standard late-war Day Fighter Scheme of Dark Green and Ocean Grey, with Medium Sea Grey undersides. There is no Sky band on the rear fuselage and it appears to carry the 4" wide yellow strips that wrapped equally around the leading edge of the outer portion of the wings
- 411's Spitfires were a mix of F and FR variants that came from several units, including 414 Sqn
- Most of the aircraft at this point in their lives were not in pristine 'showroom' condition. It's not hard to find lots of wear and weathering is in evidence.
- The propeller blades tend to display bare metal chipping along the leading edge protective sheath (which could be brass or steel). The wooden blades themselves are finished in a protective black plastic coating and they do not show paint chipping like a metal blade would.

NH899 Info Resources:

airhistory.org.uk/spitfire/p081.html

avlg.dk/GI/Romo/Romo_kronologi/1945.htm

DHC-1 Chipmunk 18001 (decal subject)

Commentary by Jim Bates, C#6008

Tacoma, WA

While the DHC-1 Chipmunk had its first flight on May 22, 1946, by the end of 1947, de Havilland Canada was struggling to find buyers for the aircraft that had been produced. Outside of company demonstrators, most had been dispatched to de Havilland subsidiaries overseas.

Russ Bannock demonstrated CF-FHI to the RCAF brass in Ottawa during the summer of 1947, but no order was immediately forthcoming. I'm sure that DHC management was excited when the Committee of the Privy Council authorized the purchase of three Chipmunks (plus spares) for a grand total of \$33,819.63 on March 23, 1948. The three aircraft, DHC serial nos. 23, 24, and 25, had been in storage since their test flights in May 1947.

The aircraft were purchased for the use of 444 Air Observation Post (AOP) Squadron based at RCAF Station Rivers, Manitoba. The three aircraft were taken on strength by the RCAF on April 1, 1948.

Our decal subject, DHC serial no. 23, was assigned the RCAF serial 18001. The aircraft, along with Auster AOPs, were used by 444 Sqn to provide airborne observation for the Artillery and to train Army aviators. They were the only RCAF Chipmunks to fly with an operational squadron.

De Havilland considered these aircraft DHC-1A-1s, but the RCAF called them Chipmunk Mk. Is. The Chippies were operated by 444 Sqn until it was disbanded on April 1, 1949. 18001 was transferred to Training Command after engine and radio upgrades and assigned to RCAF Station Centralia, Ontario. All three aircraft were struck off RCAF strength in 1959.

Our subject aircraft was sold to the United States and became famous at airshows and aerobatic competitions being flown by Art Scholl as N13Y. After Mr. Scholl's death the airplane was donated to the Smithsonian collection and now hangs from the rafters of the National Air and Space Museum's Steven F. Udvar-Hazy Center in Virginia.

There are two options for a Chipmunk kit in 1:72. Airfix was first off the bat in 1969, with a more recent kit coming from AZ Model in 2017. The Airfix kit is the easier build, but the AZ kit has nicer surface detail and a cockpit interior.

References:

- The DHC-1 Chipmunk – The Poor Man's Spitfire, by Hugh Shields, Ron Brown, José Gonçalves, and Rob Blievers. SBGB Publishing 2009. ISBN 978-0-9812544-0-1
- rwwalker.ca/RCAF_Chipmunk_detailed.html

L-19A Bird Dogs

In Canadian Army Service

Compiled by
Steve Sauvé, Editor
Jim Bates, C#6008, Tacoma, WA.

The L-19 Bird Dog

In 1954, the Canadian Army purchased 16 Cessna L-19A Bird Dogs as a replacement for the RCAF's Auster AOPs that were used for artillery spotting and general liaison duty at the Canadian Joint Air Training Centre (CJATC) at Rivers, Manitoba. The Bird Dogs arrived in Canada in natural metal finish and the first six were camouflaged at 6 Repair Depot (RD) Trenton, Ontario. The aircraft, assigned serials 16701 to 16716, were split between No. 1 Air Observation Post (AOP) Flight at Camp Petawawa, Ontario, and CJATC Rivers.

A second batch, consisting of nine L-19Es, were ordered in 1957. This batch, serials 16717 to 16725 were assigned to No. 2 AOP Troop at Camp Shilo, Manitoba, as well as Petawawa and Rivers. Two aircraft, 16723 and 16724 were assigned to RCAF Rockcliffe, Ontario.

During their service, the Bird Dogs operated both on wheels, skis and floats, and in addition to the above-mentioned stations, also served at RCAF Lahr, Camp Valcartier, Quebec, Camp Borden, Ontario, and Camp Gagetown, New Brunswick.

Five aircraft were written off in Category A accidents, and to replace these aircraft a final batch of four attrition replacements were purchased from the US Army in 1965. These L-19Es were assigned the serials 16732 to 16735. Following CAF unification in 1968, the surviving aircraft were designated CO-119s and reseried with '119' prefixes, and retaining the last three digits of their original serial numbers.

The Bird Dogs were replaced by the CH-136 Kiowa in 1973, with 19 of the surviving aircraft passing to the Royal Canadian Air Cadets and used as glider tugs. One L-19A, 16706/119706, was saved for display purposes and is now a part of the Garrison Petawawa Military Museum.

Cessna L-19A-CE - Aircraft 16702

- **6 Oct 1954** - Taken on strength. Ex US Army 53-8051. Received in natural metal finish.
- **6 Oct 1954** - To No. 6 Repair Depot, RCAF Trenton, Ont. for camouflage painting.
- **19 Nov 1954** - Served with No. 1 AOP Flight, Camp Petawawa, Ont.
- **24 Jul 1957** - To Central Experimental and Proving Establishment (CEPE) at RCAF Namao, Alta, for cold weather trials.
- **21 Mar 1958** - To Headquarters Practice Flight at RCAF Rockcliffe, Ont.
- **14 Nov 1958** - Back to No. 1 AOP Troop.
- **5 Apr 1962** - To RCAF Lincoln Park, Alta for Category B crash repairs.
- **2 Jan 1963** - At Army Aviation Tactical Training School, Rivers Camp, Man.
- **19 Feb 1964** - To Bristol Aerospace, Winnipeg, Man., for modifications.
- **27 Apr 1965** - To 3rd Regiment Royal Canadian Horse Artillery at Camp Shilo, Man.
- **7 May 1968** - To No. 4 Flight Training School at CFB Rivers, Man.
- **20 Feb 1969** - To 4 RCHA at CFB Petawawa, Ont.

□ **25 Apr 1969** - To 5^e Régiment d'artillerie légère du Canada at CFB Valcartier, PQ.

□ **11 Jun 1970** - Became CAF 119702

source: **Canadian Military Aircraft Serial Numbers** rwrwalker.ca

Cessna L-19A-CE - Aircraft 16714

□ **15 November 1954** - Taken on strength. Ex US Army 53-8063. Accepted at RCAF Station Lincoln Park, Alberta. To storage there on 19 November 1954.

□ **8 June 1955** - To CJATC, Rivers, Manitoba. Operated by Light Aircraft School, Rivers Camp, Manitoba, by September 1955.

□ **20 November 1959** - To Bristol Aerospace, Winnipeg on for winterization modifications. Still at CJATC in 1961, by which time unit was renamed Army Aviation Tactical Training School (AATTS).

□ **19 February 1964** - To Bristol on for modifications.

□ 17 May 1966 - To 1st Regiment, Royal Canadian Horse Artillery at Camp Gagetown, NB.

□ **19 September 1966** - Back to AATTS.

□ **12 March 1968** - To Bristol for Aircraft Sampling Inspection, back to CFB Rivers.

□ **17 June 1968** - To No. 4 Flying Training School at CFB Rivers.

□ **11 June 1970** - Became CAF 119714

source: **Canadian Military Aircraft Serial Numbers** rwrwalker.ca

Bird Dog Resources and References

□ cessnabirddog.org/

□ canadianarmyaviation.ca

□ silverhawkauthor.com/canadian-warplanes-5-cessna-l19-bird-dog_873.html

□ rwrwalker.ca/RCAF_16701_16735_detailed.html

□ aeroclubprealpivenete.it/wp-content/uploads/2015/03/Cessna-L-19-Bird-Dog.pdf

Photographic Walk-Arounds

□ net-maquettes.com/pictures/cessna-l-19-bird-dog-walk/

□ cybermodeler.com/aircraft/o-1/o-1_walk.shtml

□ ipms.nl/walkarounds/walkaround-vliegtuigen-props/2181-walkaround-cessna-o-1

□ modelarovo.cz/cessna-l-19o-1-bird-dog-walkaround/

RCAMC Jeep Ambulance

The only armour subject on the free decal sheet is a neat little Canadian Army Jeep Ambulance, seen in use by 22 Field Ambulance, 3 Canadian Infantry Division.

There are several 1:35 kit model options to provide you with a basic WW II Jeep. A Google search will help you produce the litter rack. But you will also see a great variety in configuration and equipment fit, like jerry cans and stowage. There doesn't seem to be a single pattern for these rigs, so you will have to dig through the references and make your best guess to create this. It appears to be a fairly simply affair, made of round pipes that fit inside the cargo box at the back and seem to be mounted outside the cabin at the front end.

For the less-adventurous builder, in April, 2021 a company released a Jeep ambulance resin conversion that looks very much like the Jeeps seen here.

□ [facebook.com/minor.web/](https://www.facebook.com/minor.web/)

□ [minor-web.com/](https://www.minor-web.com/)

(pre-C) F-5s in the RCAF

Compiled by
Steve Sauvé, Editor
Craig Baldwin, C#3781, Laval, P.Q.,
Jeff Rankin-Lowe, London, Ont.

Something a little bit different for you. It may be well-known that Canadair produced 115 licence-built copies of the Northrop F-5A and F-5B for Canada, which were named CF-5A and CF-5D in Canadian Armed Forces service.

The first CF-5 was rolled out at Canadair's Montreal-area plant on 6 February, 1968 and they were being delivered to the military at the end of 1968. They went into service as tactical fighters and as two-seat pilot trainers for pilots transitioning to fighter jets, serving well until the last remnants of the CAF fleet was retired in 1995.

Prior to the Canadian production, however, a few US-owned F-5's were loaned to the RCAF for unknown periods, and it is not even known exactly when these jets came to Canada or when they left again. The photo evidence supports that they were all here sometime in the 1965 to 1967-68 time frame.

The RCAF colour schemes

Two Northrop-built F-5A's and one F-5B were partially repainted into various versions of RCAF markings - one, **F-5A 63-8416**, had a simpler conversion of the standard USAF scheme (compare the photos above) while the other two were painted in similar, but not identical colour schemes, employing a distinctive two-tone blue 'swoosh' that was applied to the fuselage spine and vertical fin.

F-5B 63-8445 may have had an underwing roundel (not confirmed) and 'RCAF' (which is confirmed) applied, but the available photo evidence suggests that our decal subject aircraft, **F-5A 63-8421**, did not carry any markings under the wings.

The Blue Swoosh...

Photo evidence supports that the two-tone 'swoosh' was changed at some point on both of the jets that carried it. It seems to have started out as two-tone at the forward end and got changed to just the darker blue at some point. We know nothing other than the photo evidence supports the changed trim marking on both '421 and '445.

What else do we know about these jets?

Unfortunately, not much, or at least not enough. Despite there being a number of good reference photos of these jets, relatively little documentary evidence exists to give some background to the trio of F-5s (two A's and a B) that were loaned to Canada in advance of the CF-5 production in Canada in the late 1960s. If you go Google diving and end up down a rabbit hole you can find lots of conflicting information on these jets and on our own CF-5s.

From the markings it can be deduced that they were in RCAF hands somewhere between 1965 and when the first CF-5s were delivered in late-1968.

38416 - Although it is an F-5A-15 jet and was supposedly fitted with J85-GE-15 engines, 63-8416 does not appear to have had the louvred air intake doors fitted. It later went to the Greek Air Force.

38445 - This Northrop F-5B-5-NO was painted in pseudo-RCAF markings with a blue "F-5" above the flag, black "38445" on the tail and black "RCAF 445" on the forward fuselage for a demonstration tour said to be in September 1966. 63-8445 later became the prototype YF-5B-21-NO and also served as a testbed for the F-5F Tiger II.

38421 Our Decal Subject - This F-5A-15-NO, s/n 63-8421 wore full RCAF markings with a black "CF-5" and "38421" on the tail, and black "RCAF 421" on the fuselage, and a two-tone blue fuselage spine. It had a CEPE badge and a red 'X' added to the rudder at some point. It went to the Turkish Air Force as s/n 38421 in 1968 so at least it must have gone back to the US before then.

Here are some things to watch for on your model:

- it has the two-position nose gear like the CF-5A had fitted. The 'V' of the lower torque link 'points' to the rear of the aircraft. (On the standard F-5A and B, and the CF-5D the V of the torque link points to the front.
- it has the louvred air intake side doors fitted
- it does not carry an arrestor hook
- it does not have the extra air scoops on the belly
- the antenna fit is different from a CF-5

Can you add to the story?

As you can see we have presented a pretty light history of these unique jets and our decal subject. If you can provide any further information or imagery that will add to the story please contact the editor at RT@ipmscanada.com.

Background on the CF-5 story

This is a revised version of original material written ca. 1995 by Jeff Rankin-Lowe, London Ont.

In late 1964, the RCAF was giving consideration to finding a replacement for the CF-104 Starfighter. The types reviewed included a **Rolls-Royce Spey-powered McDonnell F-4 Phantom II** (similar to that ordered by the RAF and Royal Navy and briefly considered by the USN for use on its smaller aircraft carriers), the **General Electric J79-powered McDonnell F-4 Phantom II**, **Northrop F-5A Freedom Fighter**, **Republic F-105 Thunderchief**, **Convair (later General Dynamics) F-111A**, **Grumman A-6A Intruder**, **Vought A-7A Corsair II**, **Fiat G-91**, **North American A-5A Vigilante**, **North American F-107A**, and a proposed development of **North American's F-100 Super Sabre known as the F-100S**. (*How often have all of those aircraft been mentioned in the same sentence?*)

Opposition from the RCN and Canadian Army, at least partly due to budget constraints, led to a reduction in the RCAF's requirement from 218 to 100 aircraft and eliminated any possibility of the RCAF getting its first choice, the **F-4 Phantom II**. In early 1965, the **Douglas A-4 Skyhawk** was also considered by the RCAF (and by the RCN), but the final decision was for the **Northrop F-5A** to be built under licence by Canadair. Reportedly, the **Vought A-7A Corsair II** was the runner-up. The Canadian government's insistence on licence production was, according to some sources, the reason that the other, more advanced, aircraft were not selected. This was due to U.S. reluctance, in particular by McDonnell Aircraft, to allow them to be built under licence by any other companies.

At about the same time, the USAF chose the A-7D over the F-5A. Some sources state that the choice of the CF-5 was the sole responsibility of then-Minister of National Defence Paul Hellyer, who refused to consider anything else, and that the F-5 was well down the RCAF's list. It has also been reported that the F-4 Phantom II was the RCAF's favourite, but that the U.S. would not authorize licence production of the aircraft at that time. (*Hellyer's autobiography offers a different interpretation of how the CF-5 was selected.*)

The choice of the less expensive F-5 pushed the RCAF's initial requirement back up to 200, but this was again reduced, this time to 130 to 135 aircraft, by the summer of 1965. When the order was announced in September, it was for only 125, but actual deliveries totalled just 115.

Orenda was selected to produce the engines under licence. The resulting General Electric J85-CAN-15 turbojets (first used on the batch of 73 Northrop F-5A-15-NO aircraft) produced 4300 pounds of thrust with afterburner, making them more powerful than the GE J85-13 engines installed in some other Northrop-produced F-5A/Bs.

Many of the changes to the basic F-5A and F-5B were incorporated into the CF-5 production; some of these were also later incorporated in the development of **Northrop's F-5E/F Tiger II**.

Some of the improvements of the CF-5A compared with the standard F-5A included:

- ❑ **interchangeable reconnaissance nose section** (*improved from the Northrop RF-5A version*);
- ❑ **removable air-to-air refuelling probe** (*mounted on the right side for the CF-5, vice the left side as developed for the F-5C*);
- ❑ **strengthened windscreen for improved bird-strike protection**;
- ❑ **engine inlet and windscreen anti-icing**;
- ❑ **more powerful J85-15 engines to improve take-off performance by 13 to 17%** (*introduced on the F-5A-15-NO*);
- ❑ **louvred auxiliary intakes in the rear fuselage** (*introduced on the F-5A-15-NO*);
- ❑ **two-position nose gear to raise the nose 11½ inches (3°) for an increased angle of attack on takeoff** (*seen on F-5A-15-NO*);
- ❑ **more sophisticated avionics package**;
- ❑ **arrestor hook** (*first incorporated on Norway's 1964 F-5A purchase*); and
- ❑ **doubled electrical generator capacity**.

Craig Baldwin, IPMS Canada member in Laval, Quebec, is a former CF-5 maintainer with 419 'Moose' Sqn. He provided the following observations on the differences seen between a CF-5 and the two F-5A's loaned to Canada. As we were going over the reference material and the photos in the article, Craig noted:

- ❑ there was no arrestor hook on the USAF F-5A's.
- ❑ the auxiliary air louvred inlet doors on the aft fuselage sides are not seen on most US F-5As, except for the batch of F-5A-15-NO's. Like them, on the Canadair jets these doors were located over the flaps and are often hard to see in photos.
- ❑ similar to the cooling air scoops on both sides of top of the rear fuselage, Canadair added a second set on the bottom of the fuselage but they were mounted further forward and offset to the left side of the engines' centrelines. (**Editor's note:** *these are called Constant Speed Drive (CSD) Cooling Air Scoops. They appear to augment the simpler cooling air inlets found on the F-5A. The CSD ran the hydraulic pump and AC generator. With the increased generator capacity on the CF-5 there must have been a need for increased air flow in this area.*)
- ❑ Orenda-built General Electric J85-CAN-15 engines with 4,300 lb (19 kN) thrust were used, requiring the extra engine air louvred side intakes
- ❑ two bottom fuselage mid/rear blade antennas on the US F-5A's are not found on the CF-5
- ❑ the antenna behind the canopy is not seen on CF-5s
- ❑ the CF-5 has a small sensor/probe on top aft of the cockpit; it is hard to see in some pictures.

Some F-5 Web links

Because of the few detailed references found online it was easy to get dragged down a rabbit hole in a search for solid information on these early F-5s. These links provided some good and/or interesting information:

- ❑ **F-5 history** - militaryfactory.com/aircraft/detail.php?aircraft_id=159
- ❑ **F-5A** - joebaughner.com/usaf_fighters/f5_2.html
- ❑ **F-5B** - joebaughner.com/usaf_fighters/f5_3.html
- ❑ **RF-5A** - joebaughner.com/usaf_fighters/f5_4.html
- ❑ **F-5A / F-5C in USAF service** - joebaughner.com/usaf_fighters/f5_5.html
- ❑ **F-5A and F-5C discussion** - forum.warthunder.com/index.php?/topic/437720-northrop-f-5c-skoshi-tiger-the-tiger-iis-ancestor-best-american-counterpart-for-the-farmer/page/2/

□ [CF-5 development \(in Polish\) - dziennikzbrojnny.pl/artykuly/art,6,26,2898,lotnictwo,samoloty-po-1945-r,samolot-northrop-f-5ab-freedom-fighter-czii-uzytownicy-i-licencje](http://dziennikzbrojnny.pl/artykuly/art,6,26,2898,lotnictwo,samoloty-po-1945-r,samolot-northrop-f-5ab-freedom-fighter-czii-uzytownicy-i-licencje)

□ [J85 engine history - en.wikipedia.org/wiki/General_Electric_J85](http://en.wikipedia.org/wiki/General_Electric_J85)

Page 26

CH-147D Chinook 147205

“2 for Hooking!”

Compiled by Jim Bates, C#6008, Tacoma, WA and Steve Sauvé, Editor

You gotta wonder what the Canadian Armed Forces (CAF) was thinking in 1991 when they retired their first Boeing-Vertol CH-147 Chinooks. Like most decisions, it was probably about money, but in 2001 it sure seemed pretty short sighted when the CAF got involved in various operations in Afghanistan. The government recognized this issue and signed a contract for 15 new CH-147F Chinooks in July 2006. However, they would not be delivered until 2013. After the Manley Report was issued, a deal was signed with the US Army in August 2008, to purchase six used CH-47Ds for almost three hundred million dollars (The contract for the CH-147F's was over \$1 billion). The Chinooks were handed over to the RCAF in late December 2008, and flew their first operations as CH-147Ds by early 2009. The final Chinook operation was flown on July 30, 2011. During that time the fleet flew 7084.5 hours, carried 90,723 passengers and 7,097,989 pounds of cargo. Chinook 147202 was lost to enemy fire on August 5, 2010, with no loss of life, and Chinook 147205 was destroyed in a landing accident on 15 May 2011. After the loss of Chinook 202, a replacement aircraft, 147207 (formerly USA Army 87-00096) was rented from the US Army for use during 2011. The Chinooks are somewhat unique in the modern RCAF in that they never flew in Canada during their Canadian ownership. They are also the only Chinooks operated by the Canadian Forces that were not assigned to 450 Sqn.

Fleet History

□ **147201 “MISS. BEHAVIN’ ”** - built as CH-47C 68-16017 and then converted to CH-47D standard with the new US Army serial **89-00130**. Now on display at the National Air Force Museum of Canada, Trenton, Ontario. This aircraft served in Vietnam with C Troop, 7th Squadron, 17th Cavalry at Camp Holloway. [1] [2] [SEP]

□ **147202 “The Magic Bus”** - built as CH-47C 67-1855 and converted into CH-47D standard with the new serial **84-24181**. Lost to enemy fire August 5, 2010. [1] [2] [SEP]

□ **147203 “Red Devil”** - built as CH-47A 62-02133 and converted to CH-47D standard with the new US Army serial **87-00086**. Sold to Boeing following CAF service. [1] [2] [SEP]

□ **147204 “Black Jack”** - built as CH-47A 64-13140 and converted to CH-47D standard with the new US Army serial **84-24154**. Sold to Boeing following CAF service.

□ **147206 “JACK’D Up - Old No. 7”** - built as CH-47A 65-08015 and converted to CH-47D standard with the new US Army serial 86-01651. Now on display at CFB Petawawa, Ont. [1] [2] [SEP]

□ **146207 “GOIN’ IN HOT”** - built as CH-47A 63-07906 and converted to CH-47D standard with the new US Army serial **87-00096**. This aircraft was a 2011 rental after **147202** was written off in 2010. The aircraft was returned to the US Army in 2011.

Our Decal Subject - 147205 - “2 for Hooking!”

□ Built as a CH-47A for the US Army, serial 66-00103, company number B.235, accepted on September 15, 1966. It logged 2,938.1 hours as a CH-47A. [1] [2] [SEP]

- It was converted to a CH-47D with a new US Army serial **86-01650** assigned. (Boeing modification number M.3155.) It carried the nose art "*Social Distortion*" while serving with the US Army in Kandahar.
- The airframe was over 42 years old when purchased by the CAF. It was operational in Canadian markings by January 2009. The nose art was modified to become "*2 for Hooking!*"
- The aircraft was destroyed in a operational landing accident on May 15, 2011. The night mission called for two CH-147D Chinook helicopters to simultaneously insert troops to an unprepared Helicopter Landing Site (HLS) while two CH-146 Griffon helicopters provided force protection. After arriving on scene, the Chinooks maneuvered around the high ground to the south and established themselves on final approach, with Chinook 147205 following the lead aircraft. As it landed, the lead Chinook generated a large dust ball, which the 147205 crew assessed would not jeopardize their approach and landing. Descending through approximately 30 feet above ground, both pilots lost visual ground references despite their use of night vision goggles. The landing flare continued until touchdown, at which point the pilots felt an unusual aircraft motion to the right. Realizing that the aircraft would roll over, the Aircraft Captain tried to take control and salvage the landing as the rest of the occupants braced for the crash. Once the helicopter came to a rest on its right side, both engines were shut down, and the five crew and 26 passengers egressed. One passenger sustained serious injuries while eight more sustained minor injuries; the helicopter was destroyed. The investigation concluded that the use of inadequate landing procedures in a degraded visual environment (DVE) resulted in the helicopter landing with right drift, causing it to dynamically roll over once the forward right-hand landing gear dug into the ground thereby providing a pivot point. The airframe was salvaged but further damaged by the combat recovery efforts and was later declared a write-off. It was airlifted from the accident site by a USMC CH-53E helicopter.
- Struck off Strength: May 15, 2011 - Category "A" write-off. The airframe was returned to Canada and last sighted at CFB Borden, Ont. in 2019.

The Chinook in Scale

1:72 - CH-47D Chinooks have been released by Matchbox in 1986, Italeri (first released in 1996 and reboxed by Airfix and Revell), and Trumpeter (first released in 2008) in 1:72. *2 for Hooking!* will require modification to all available kits, including defensive fittings, armament, and the Pall's PUREair sand filters. The filters are available from Shapeways at [shapeways.com/product/N8JH4N8C9/chinook-sand-filters-1-72?optionId=60596468&li=marketplace](https://www.shapeways.com/product/N8JH4N8C9/chinook-sand-filters-1-72?optionId=60596468&li=marketplace).

1:48 - A CH-47D Chinook has been released in 1:48 by Italeri, but Trumpeter have announced a CH-47A in 1/48 for release in 2021. It stands to reason a CH-47D will follow. Again, the Italeri kit will require the same modification mentioned above to represent a CAF CH-147D. The sand filters can be found on Shapeways at [shapeways.com/product/LZKCFMQV/chinook-sand-filter-1-48](https://www.shapeways.com/product/LZKCFMQV/chinook-sand-filter-1-48).

CH-47D and CH-147D Resources

- Storey, W.E.: CH-147D Chinook Nose Art in Afghanistan - scholars.wlu.ca/cmh/vol20/iss1/7
- Mantle, Craig: The Loss of a Canadian Chinook in Afghanistan: The Pilot's Recollection of 5 August 2010 scholars.wlu.ca/cmh/vol24/iss2/12
- CH-47D Photo Walk Around - primeportal.net/hangar/bill_spidle3/ch-47d_92-0309/index.php?Page=1

National Executive

National Director **Bob Migliardi**
Treasurer..... **John MacDonald**
Membership **John MacDonald**
Secretary **Mark Heyendal**
Chapter & Member Liaison **Kerry Traynor**
RT Editor **Steve Sauvé**
beaveRTales Editor ... **Bob Migliardi**
Modelling Information Coordinator **Chris Aleong**
Webmaster **Daryl Dean**
Social Media Coordinator.. **Jim Bates**
Industry Liaison (vacant)
Marketing (vacant)
Special Products (vacant)
Staff Cartoonist **Dave Fletcher**
e-correspondence management **Igor Kabic**
Ministers without portfolio **Gary Barling, Kim Elliott**

Are You Interested in Contributing?

IPMS Canada publishes material in **RT** and **beaveRTales** on subjects of interest to our members. We depend upon donated submissions from the national membership, although articles from other sources will be considered if they benefit members' interests. Contributions and enquiries may be sent by email to the appropriate address indicated below. For more information, write or visit: ipmscanada.com/ipms/ipmsinvolved.html

Are You Moving?

Send us your complete new mailing address and email address. Include your membership number. If your mailing label contains errors, please advise us.

Contacting IPMS Canada

Please direct your e-correspondence to the correct address, as follows:

Membership	box626@ipmscanada.com
Online renewals	box626ipmscanada@gmail.com
Address changes	box626@ipmscanada.com
Chapter issues	CML@ipmscanada.com
RT	RT@ipmscanada.com
beaveRTales	box626@ipmscanada.com
Webpage	box626@ipmscanada.com
Facebook	www.facebook.com/CanadaIPMS
Other topics	box626@ipmscanada.com

For those who prefer a more traditional method you can also reach us by postal mail at:

IPMS CANADA
BOX 626, STN B
OTTAWA ON K1P 5P7
CANADA
