# RT Volume 38, No. 2 Summer 2016 article text



**Cover Comment:** *Ryan Cameron of Langley, BC used a variety of materials and scratchbuilding techniques to produce a 1/72 HMCS Esquimalt. See page 27 for the details..*

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# Editorial


**Steve Sauvé, C#0323** RT@ipmscanada.com


### "I like your model, but..."

While putting in some time at our IPMS Ottawa building display at the Canada Aviation and Space Museum, I was talking with a fellow club member about the differences in how models are judged in contests, and how they are (or should be, in my opinion) constructively critiqued in person. Big difference. Serious contest judging, as has been discussed online *ad nauseam*, is generally 'Find Faults First'. Judges certainly have to look at what was done well, but the winners are generally determined on whose model has the fewest basic modelling faults.

If a fellow modeller asks you for a critique of their work, don't assume that they are asking for a Nationals-level 'reaming out' of everything you think should have been done better. You shouldn't be ignoring 'areas for improvement', but before you constructively discuss these, do what you can to say what you do like about someone else's work. It's not an internet 'soccer league' "all your models are winners" thing, but a little discretion and finding a friendly way to help someone improve their modelling will go a long way to encouraging people to stay in our chapters and in the hobby.

### Nostalgia time...

On April 5th, 2016, a grand elder of the RCAF, CC-130E Hercules, tail number 130307, flew in to Rockcliffe Airport from 8 Wing Trenton, to take up its final place at the Canada Aviation and Space Museum in Ottawa. A poignant day for this editor, as during my career in the CAF I had flown on this very same aircraft several times (at least) while it was part of 429 Sqn at CFB Winnipeg, Manitoba. I was there from 1981-87 on my first posting as a newly-minted air force photographer.

Delivered to the RCAF in 1965, Herc 307 (*and it's **Herc** in Canada, not the US nickname '**Herky-bird**'*) gave over 50 years of faithful service to this country. But the time had come to take one last flight and go into a dignified retirement, where museum visitors could see this aerial workhorse for generations to come. As I watched 307 do its final flypast and come in for a neat and sedate landing for the last time, I couldn't help but feel a strong connection to these aircraft. You should forgive those who think of them as living machines. I spent many hours riding in the back of Canadian CC-130's, across Canada and the Arctic, the USA, crossing the Atlantic to Europe, England, Scotland, and from Kenya to Somalia. Only once do I recall having the cra-,... uh, the kittens scared out of me in flight, but it was extreme turbulence, not the Herc that did that.

I got my first Herc ride as an Army Cadet at summer camp in 1971. We were flying from London, Ont., to Quebec City for two-week exchange between camps. Life couldn't have been any cooler for a 15-year old aircraft nut. My last Herc trip was into the former Yugoslavia in 2003, and I still loved it just as much as that kid did. (although, some 32 years later, finding a place to get comfortable for the trip from Trenton to Scotland for the night, then on to Zagreb, Croatia the next day was a lot harder on the body).

It was a Herc, and there is a 1-in-4 chance that it was 307 (429 Sqn had 305, 306, 307 and 310 on strength), that brought me a stack of new (and at about half the Cdn price) Hasegawa 1/48 jet kits direct from Japan to Winnipeg. I had sniveled up to a Flight Engineer buddy of mine, who took my money and wish-list, and dutifully went hobby-shopping for me.

When I'd go on a 'work' trip in a Herc, sometimes it was just the aircrew and me, and sometimes a few extra passengers or

technicians. It was great feeling to act like part of their team.

A fun trip was taking off in March in Winnipeg, being diverted into Cold Lake, Alberta to pick up CF-18 engines, then heading to NAS Miramar, California to drop them off (and then having free run of the USN F-14 flightline with my camera!), and then back onto our original flight plan to Alaska and Canada's North, all within a three-day period.

Another good trip went from Winnipeg to Cold Lake to pick up two CF-104 engines, deliver them to Baden, West Germany, a quick flight back to Lahr for a night at the 'Fliegerhof', then on to Scotland the next day. We then flew VFR back to Lahr for the night to repair the aircraft after the radar equipment under the cockpit almost caught fire and fried itself during the aircraft start-up. Then it was back to Winnipeg, along with another stack of model kits I'd picked up cheap at the CANEX in Germany.

No matter how glamorous you think that all sounds, it is a lot of wear and tear and hard work by Canadians who serve our country in this way.

At best I was classed as a Herc's "walk-on cargo", but my love of these awesome machines is as strong as it ever was, and it still fuels my love of the hobby to this day.

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# National Director

**Bob Migliardi, C#0490 box626@ipmscanada.com**

And now, a word to our IPMS Canada members in the States, if I may. (The rest of you are welcome to eavesdrop... or go make a sandwich, if you'd rather.) I want to talk about your membership dues (I know... boring!). As most know, IPMS Canada membership costs **Cdn $37** for those of us living in Canada. If you live in the US, it's **Cdn $45**. On the surface, a considerable amount more, but is it really? First, this greater amount is due entirely to the extra postage it takes to ship **RT**s to the States. IPMS Canada does not make anything on the higher cost. But note that when you join or renew online at the IPMS Canada website, you will automatically be paying in Canadian dollars. That's what our PayPal settings default to. You don't have to concern yourself with currency conversion, as the software takes care of all that. Therefore – given the current rate of exchange – when you pay your 45 Canadian dollars, you are actually paying only around 36-37 US dollars... the same as Canadian members do! (well... in a manner of speaking) So, if you thought your IPMS Canada membership was a bit pricey, remember that you're paying in cheaper dollars, and are really getting a great deal! So the next time you tell your US Chapter mates about IPMS Canada and they say, "$45 bucks... that's quite a bit!", remind them that it's actually only about $36 in "real money"!

Next item. Is everyone out there receiving their PDF file of ***beaveRTales*** regularly? I know that some of you aren't, because each time it's emailed about 20 of them bounce back as being undeliverable. There seem to be two main explanations for this: We either have an incorrect email address for you; or for some reason your email software is not accepting our message and its attached ***beaveRTales*** file. I suppose there could be a third reason. Would it be possible that you don't want to receive this 24-26 page publication full of articles, tips, news, reviews, etc., four times a year?! If you are one of those unlucky members who is not receiving ***beaveRTales*** there are a couple things you can do. First, be aware that all members should be getting **BT**, and if you are not, you're missing out on a big part of your IPMS Canada membership. Then email us at box626@ipmscanada.com and we will check that your address is the same one we have on file and that we use to send you the **BT**s. Also, check your spam folder to make sure we're not ending up there. And check your email settings as well, as some email boxes are defaulted to not accept larger (4-5 Mb) attachments. I'm sure none of you want to miss ***beaveRTales*** intentionally, and maybe by the time the next issue goes out we can deliver it to everyone... everyone who has provided us a valid email address, that is.

# Chapter & Member Liaison

**Kerry Traynor, C#4083 CML@ipmscanada.com**

### The Competitive Side of Scale Modelling

As summer is fast approaching, the plastic model show season is up and running. And with most model shows, there is usually a competition, where modellers enter their latest builds into various categories and then the models are judged for building technique, finishing, etc..

I can't be sure as to how the competition side of the hobby started, but I suspect it has something to do with human nature; we are competitive beings. There is something about competition that gets the blood flowing and it pushes some of us to want to do better. For others, the idea of competing, especially in a hobby, leaves them cold.

Having helped organize more than a few model shows, I know that if there is ever a complaint about a show, it usually about the judging. Where there is competition, you will find someone who is not happy with the judging.

Want to stir things up amongst modellers? Bring up judging.

But let's try to put a little perspective on the matter. For starters, the chapter members who volunteer to organize and run the show have worked hard to put together the best show possible. Getting enough judges is always a challenge; especially experienced judges. Time is always an issue as most shows today are one-day affairs, and the judging of hundreds of models needs to be done in a couple of hours. For the Head Judge, keeping everyone focused and objective must be like herding cats. Do mistakes happen? On occasion, I am sure they do. Are the judges doing their level best in their thankless task? I have no doubt whatsoever that they are. And that is all we can ask.

For those interested in learning more about model building I suggest you volunteer to judge at the next show. When paired to judge with experienced modellers, I have learned a great deal by listening to their observations and comments. Good stuff to take back to the modelling desk.
For your information, IPMS Canada has produced a set of contest rules which are available to any chapter who wishes to use them. They can be found on our website, ipmscanada.com. IPMS Canada does not force the chapters to use our set of rules. Chapters are welcome to adopt or adjust to their liking. And as always, we are happy to offer support. All you need to do is ask.

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# The RCAF's Hawker Hurricanes, Part 1

*(Editor's comments: This is the first of a two-part article on Canada's home-based use of the Hurricane. The original plan was to publish all of Jim's material in one issue of RT, but there is simply too much great stuff to do it justice in one shot. We hope that you'll see that the decision is the correct one when you receive Part 2 in RT 38-3. SBS)*

While the history of the **Hawker Hurricane** in the Battle of Britain is generally well known, less has been written about its tenure with the Royal Canadian Air Force (RCAF) Home War Establishment (HWE). Unfortunately, much of what has been published on that aspect of the Hurricane's history is flawed or incomplete. There are many reasons for this, but the most likely is that much of the story is just plain confusing.

With this series of articles, I'm presenting the often-missing information as I've best been able to research and interpret it. I hope that if I have made any errors, readers with more information will step forward to help complete the story. *(Folks, if you have any additional information to help improve this material, please send it in and we'll publish any updates in* **RT** *or* ***beaveRTales****.)*

## Introduction

Canada's long and tortured fighter procurement story is much too complex to be summarized easily - it would take a whole book - but the RCAF has always struggled to find a fighter type to meet its needs. As the calendar turned to 1939, RCAF's only fighters were six **Armstrong- Whitworth Siskin IIIA's**, which had been delivered in 1926 and 1927. The RCAF had drawn up a list of requirements for a fighter in the mid-1930's and considered a two-place, twin-engine type ideal for its purposes. An evaluation of British and American types was undertaken, but nothing was found to fully meet the RCAF's requirements. (It is interesting to note that the RCAF considered the **Bell YFM-1 Airacuda** a possible fit for their requirements.)

With the clouds of war appearing on the horizon, the RCAF realized it would be forced to field a single-seat type and approached the Royal Air Force (RAF) to see if any **Supermarine Spitfires** or **Hawker Hurricanes** could be made available to Canada. The RAF would not release any Spitfires, but Hurricanes could be made available, and the first ten aircraft arrived in Canada in February and March of 1939. The second batch arrived later in 1939, and these aircraft constituted the RCAF's home front fighter force until May 1940, when No. 1 Fighter (F) Squadron (Sqn) packed up and moved to England, taking their Hurricanes with them. This left the HWE without modern monoplane fighters. The only fighter type (using the term "fighter" loosely) on strength was the Canadian Car and Foundry (CCF) constructed **Grumman Goblin**, of which there were 15 operated by 118 (F) Sqn located at RCAF Station (Stn.) Dartmouth, Nova Scotia. To bridge this gap, the RCAF converted **Bolingbroke Mk. I and Mk. IV** bomber-reconnaissance aircraft into fighters by adding a four-gun belly pack. These Bolingbrokes equipped 115 (F) Sqn located at RCAF Stn Patricia Bay, British Columbia. So, in November 1941, the East and West coasts of Canada were being defended by Bolingbrokes and Goblins. Oddly, the highest performance type based in Canada at the time was the **Curtiss Hawk H-75A** fighter, a few of

which were used to train pilots at “Little Norway” at Toronto Island Airport. Perhaps even more strange, was that front-line fighters were being built in Canada at the time.

In November 1938, the British Air Ministry (BAM) awarded CCF of Fort William, Ontario (now Thunder Bay), a contract to build 40 Hawker Hurricanes in Canada. There have been repeated references to CCF receiving Hurricane Mk. I **L1848** as a ‘pattern’ aircraft for production of the Canadian-built Hurricanes. It is interesting that while this factoid is repeated *ad nauseam*, no record exists showing that **L1848** was ever in Canada. Meanwhile, the aircraft was definitely in the United Kingdom, flying with 310 (Czech) Sqn during the Battle of Britain. Additionally, Hurricane Mk. I **L2144** has been listed as being both a CCF ‘pattern’ aircraft, or a final RCAF Hurricane that was not delivered. Again, no evidence exists that this aircraft ever made it to Canada. Whatever the case, the first Hurricane built by CCF, **P5170**, had its initial flight on January 10, 1940. By this time, further contracts had been awarded to CCF, which would go on to eventually build 1,451 Hurricanes during the war.

One can only imagine the RCAF’s frustration in late 1940 and early 1941 while trying to acquire a modern fighter aircraft, given that hundreds of an acceptable design were being built locally, but the BAM would not release a single aircraft to the RCAF. While the RCAF did not consider the Hurricane ideal (they were actually focused on the **Bell P-39 Airacobra** at the time - see sidebar below), it would have been substantially better than the fighter types they were operating at the time.

## Merlins

One might be wondering why the RCAF didn’t just place a direct order to CCF for Hurricanes. While this was considered by the RCAF, there was a very real concern that, while the BAM might consider releasing airframes, the Merlin engines to power them would not be made available. Although some sources state that **Rolls-Royce Merlin III** engines and **de Havilland Hydromatic** propellers were supplied to CCF, it appears that was not the case during early production. While CCF certainly had a small number of engines and props, these were supplied for the purpose of acceptance test-flying Hurricanes. Once accepted, the aircraft were delivered to the UK sans props and engines.

In some ways, the story of the RCAF Hurricanes is intrinsically tied to the Merlin engines that powered them. Again, the detail of that part of the story is probably too complex for a short article, but it will pop up over and over again that the RCAF decisions involving Hurricanes appear to be influenced by the supply of Merlin engines. It really was the supply of **Packard-built Merlins** from the United States that allowed the RCAF to acquire the Hurricane as a HWE-based front-line fighter. (The U.S.-built Merlins also affected CCF-produced Hurricanes on British-built contracts as well. Later in the war, CCF-built Mk. II Hurricanes for the RAF were shipped to the UK with **Packard-built Merlin 28’s** installed.)

## CCF-built Hurricane designations

Much of the confusion regarding Canadian-produced Hurricanes centres on their correct designations. Various books have repeatedly provided a bogus listing of Hurricane mark numbers for the Canadian production, essentially copied from a single British source, which bears little resemblance to reality.

There is no question that, as far as CCF was concerned, they built Hurricane Mk. I’s and Hurricane Mk. IIB’s. However, even to this day it is difficult to be sure of the official RCAF designations for their HWE aircraft. I will expand on the RCAF designations in each section below, but please recognize that this is not to be considered definitive and could be subject to change with more research and reference material turning up in the future.

## UK-built Hurricane Mk. I

As stated above, the first Hurricanes operated by the RCAF were British-built examples ordered in two batches. The intent was to convert 1 (F) Sqn, based at RCAF Stn. Calgary, Alberta, onto the Hurricanes, but there was some concern about the suitability of the Calgary airport for type conversion. Therefore, it was decided that 1 (F) Sqn would temporarily relocate to RCAF Stn. Sea Island, British Columbia, in February 1939. The ten aircraft from the first batch began to arrive in Canada in February 1939, and bore the RCAF serials **310 to 319**.

The first two aircraft to arrive, Hurricane **311** and **312**, were quickly erected at RCAF Sea Island. On February 25, 1939, Squadron Leader (S/L) Elmer Fullerton, the squadron commanding officer, took Hurricane **312** aloft on its first flight. The transition from the Siskin to the Hurricane was a rather large step, and this was demonstrated on March 2, when Sergeant Davis, on his first Hurricane flight, collided with **Ford Trimotor CF-BEP** in Hurricane **312**. The pilot survived the accident, but the Hurricane was a total write-off. A **Northrop Delta** was assigned to 1 (F) Sqn to assist with conversion training, and later a **Harvard Mk. I** was assigned to the unit. Additional Hurricanes were taken on strength with the squadron, but outside of putting up a small formation aircraft for a Royal Visit in May 1939, comparably little flying took place. All of the aircraft in this batch featured fabric-covered wings with an eight-gun wing, while those aircraft that were

shipped with propellers featured two-bladed Watts fixed-pitch airscrews. (It was discovered by 1 (F) Sqn that Hurricanes **315 to 319** were shipped with no propellers fitted.) In fact, props were a major reason for the minimal flying hours of the Hurricanes.

The RCAF found that the wood airscrews deteriorated rapidly when operated off hard surface runways and the RCAF had difficulty sourcing replacements from the British. After the Royal Visit, the serviceable Hurricanes returned to RCAF Calgary; sadly Hurricane **317** was destroyed in a fatal accident during the ferry flight.

**The second batch of Hurricanes** arrived in mid-1939 and were assigned RCAF serials **320 to 329**. Most of these aircraft were immediately placed in storage, either at RCAF Jericho Beach, British Columbia or RCAF Dartmouth. Two aircraft from this batch were erected, with Hurricane **328** being assigned to the **Test and Development Flight** at RCAF Stn Ottawa, Ontario, and Hurricane **329** displayed at the Canadian National Exhibition (CNE) in Toronto in August, 1939. At least two of these Hurricanes featured the later three-bladed de Havilland propeller and spinner. From studying photographs, it appears that all of the UK-built Hurricanes had fabric wings and an eight-gun wing, but the last three aircraft, **327**, **328**, and **329**, were from production batches that some sources say were built with metal-skinned wings. With war looming, 1 (F) Sqn and its surviving Hurricanes were transferred to the east coast in August 1939. The squadron arrived at RCAF Stn. St. Hubert on September 3, 1939, with Hurricanes **311** and **316**. They were soon joined by Hurricane **315** and **324** which had been removed from storage. The two more-modern Hurricanes, **328** and **329**, were attached to the squadron and Hurricane **327** was fitted with a three-bladed propeller at RCAF Dartmouth and ferried to RCAF St. Hubert.

With a full complement of seven Hurricanes, the squadron was finally transferred to RCAF Dartmouth, arriving on November 6, 1939. No. 1 (F) Sqn's prime task was to protect Halifax's strategic harbour from air attack, but also provided naval cooperation sorties. In fact, the squadron's first operational mission was diving practice on naval vessels in the Bedford Basin on November 20, 1939. (The sortie was flown by Flying Officer (F/O) Reyno in Hurricane **324**.) The last mission flown in Canada was on April 24, 1940, when two Hurricanes conducted a reconnaissance mission in search of enemy ships outside of Halifax harbour. The squadron personnel then packed up all the surviving aircraft and shipped off to the United Kingdom in May of 1940. As stated in the caption to the photo of Hurricane **323**, it appears that the aircraft were flown in the UK by 1 (F) Sqn, but most were soon replaced with newer RAF aircraft.

## Colours and Markings

All twenty of the Hurricanes were delivered in the thenstandard **RAF Temperate Land Scheme** of **Dark Earth** and **Dark Green** over **Aluminum** dope. (The RCAF requested that the Hurricanes be delivered in overall aluminum dope, but Hawkers refused to comply to this request.) **Type A1** roundels were carried above the wing and on the fuselage. **Type A** roundels were carried under the wings. Aircraft serials were carried in **Black** *(note that 'Black' was the specified colour for Cdn production, not the British 'Night')* on the rear of the fuselage and under the wings. Squadron codes and individual aircraft letters were not applied. The Watts propeller aircraft had a two-colour propeller spinner, **Black** for the blades and hub, but it is unclear what the second colour was at the tip; possibly it was **Dark Earth** carried over from the upper surface paint scheme. The de Havilland propeller and spinner were overall **Black** with **Yellow** tips.

## The Sea Hurricane

The first CCF-built Hurricanes to join the RCAF were 50 **Sea Hurricanes** carrying serials **BW835 to BW884**. Originally built by CCF for the Fleet Air Arm (FAA), these aircraft were diverted to the RCAF. This transfer was in part because of the RCAF's contribution to the **Merchant Ship Fighter Unit** (MFSU) and to provide a fighter force to protect Halifax harbour. Additionally, the aircraft were intended for use as an operational training unit 'pool' for RCAF and MSFU pilots. It is interesting to note that the record cards for these aircraft state they are "UK Contribution". The Sea Hurricanes were taken on strength with 118 (F) Sqn at RCAF Dartmouth, which, had been operating and servicing Hurricanes on behalf of the Royal Air Force (RAF). (See MSFU Hurricanes, below.) No. 118 (F) Sqn formed a Hurricane Flight with their new RCAF Sea Hurricanes for east coast air defence and the Flight was renumbered as 126 (F) Sqn in April 1942. Other squadrons operating the Sea Hurricanes within Eastern Air Command (EAC) included 127 (F) Sqn, first at RCAF Dartmouth, then RCAF Stn. Gander, Newfoundland, and 129 (F) Sqn at RCAF Dartmouth. It appears that the vast majority of the operations of these aircraft centred around the Maritimes and Newfoundland, but detachments were made to other locations, including 118 (F) Sqn's Saguenay Fighter Detachment at RCAF Stn. Bagotville, Quebec. Finally, 123 (Army Cooperation Training) Sqn operated Sea Hurricanes at RCAF Stn Debert, Nova Scotia.

The RCAF Sea Hurricanes were diverted from a British contract so they were built to BAM standards as a Sea Hurricane Mk. Ib and fitted with Rolls-Royce Merlin III engines and an eight-gun wing. It is believed that all aircraft were delivered as 'hooked' Sea Hurricanes with catapult spools, but it appears from photographic evidence that at least a few had their tail hooks removed in RCAF service. Some appear to have had the tail hook recesses replaced with a standard Hurricane unit. All aircraft featured the short blunt de Havilland spinner and a de Havilland Hydromatic propeller.

Examples of RCAF Sea Hurricanes included **BW850 BV-T** of 126 (F) Sqn, **BW853 TF-L** of 127 (F) Sqn, and **BW883 HA-X** of 129 (F) Sqn.

So what were these things designated in RCAF service? Good question! The record cards for these aircraft list them as Sea Hurricanes until they were converted to Hurricane Mk. XIIA's in 1943. (The Hurricane Mk. XIIA will be discussed in Part 2 of this article.) The Hurricane Mk. X and Hurricane Mk XI been used in many publication with regard to RCAF Hurricanes, but no official RCAF record has been found to support the Mk. X and Mk. XI designations.

**NOTE**: While Sea Hurricane **BW841** was taken on strength by 118 (F) Sqn in 1941, the aircraft sailed away with the British and was replaced, by the BAM, with Hawker-built Hurricane Mk. I **V7402**. As with the **BW**-series Hurricanes, this replacement aircraft was also rebuilt to Hurricane Mk. XIIA standard in 1943.

**CAUTION**: While your author is of the opinion, based upon photographic evidence, that all of the RCAF Sea Hurricanes were built to Hurricane Mk. I standard, there is textual evidence which states that they were built with longer Mk. II fuselages. This distinction between the fuselage lengths of the two Marks will be discussed in **Part 2** of this article.

## Colours and Markings

All RCAF Sea Hurricanes were delivered in the **Temperate Sea Scheme** (**Dark Slate Grey** and **Extra Dark Sea Grey** upper surfaces over **Sky** under surfaces) commonly used the Fleet Air Arm, with standard **ROYAL NAVY** titles on the fuselage. Sometimes the titles were painted out and sometimes not. Roundels on all of the Hurricanes delivered from CCF were **Type A1** roundels on the fuselage, **Type B** on top of the wings and **Type A** below the wings. It is believed that **Sky** squadron and aircraft codes were applied to the the Sea Hurricanes, but it is also possible they were painted in **RCAF Light Grey** (specification equivalent to **Medium Sea Grey**) as required by RCAF specs. Aircraft serials were painted in the usual rear fuselage location in **Black**.

When the Sea Hurricanes were modified to Hurricane Mk. XIIA standard, they were repainted in the **Temperate Land Scheme** with **Sky** undersides.

## Hurricane 1351 to 1380

The next batch of CCF Hurricanes taken on strength with the RCAF was a diverted batch of 30 RAF aircraft, originally built with serials **AG287- AG332** and assigned Canadian serials **1351 to 1380**. Occasionally referred to unofficially as **Battle-Hurricanes**, these aircraft were transferred to the RCAF without engines or propellers. They were fitted with Merlin III engines and modified **de Havilland Hydromatic p**ropellers sourced from RCAF Fairey Battles.

These aircraft were part of a batch of 60 Hurricanes in storage at CCF. The exact reason that these aircraft were in storage is unknown, but it is very likely they had been earmarked for conversion into Packard Merlin 28-powered Hurricanes.

RCAF serial numbers were assigned to all 60 Hurricanes, but in the end only 30 were converted. This number was determined by the supply of engines. A total of 30 BCATP Fairey Battles from the various Bombing and Gunnery Schools had their engines and propellers removed and, along with a few spare engines sourced from CCF stocks, these were fitted to the Hurricanes.

The propellers were sent to Canadian Pratt & Whitney to be modified to the 11' 3" diameter required to fit the Hurricane. Again, these aircraft had the eight-gun wing, but this batch of Hurricanes was the first of the type with the RCAF to fly without spinners. It is assumed that they were delivered without spinners simply as a matter of expediency - the RCAF didn't have spinners available because the Fairey Battles flew without spinners. This batch of Hurricanes was allocated to 125 (F) Sqn, formed at RCAF Stn. Torbay, Newfoundland, and 128 (F) Sqn, formed at RCAF Stn. Sydney, Nova Scotia.

Examples of RCAF Hurricanes in squadron service include **1380**/**RA-S** of 128 (F) Sqn and **1352** with 125 (F) Sqn. Presumably, 125 (F) Sqn **airc**raft carried the squadron's assigned '**BA**' code letters, but I've never seen a photograph to confirm this.

As with the Sea Hurricanes, the exact designation of these Hurricanes is confusing. The record cards for these aircraft list them as Hurricane Mk. I's (or just Hurricanes) until they were converted into Hurricane Mk. XIIA's in 1943. Both the Hurricane Mk. X and Hurricane Mk. XI designations have been applied to these aircraft in some publications, but no official RCAF record has been found to support the Mk. X and Mk. XI designations.

**CAUTION**: As with the Sea Hurricanes, there is some conflict as to the fuselage length of these aircraft. Your author is of the option that these Hurricanes were built to Hurricane Mk. I standard.

## Colours and Markings

As CCF was building Hurricanes on British contracts, these diverted Hurricanes were painted in British Air Ministry-promulgated schemes using locally-produced paints matched (or accepted as equivalent) to British Directorate of Technical Development (DTD) chemical and colour specifications. This means that the Battle-Hurricanes were delivered to the RCAF in the Temperate Land Scheme of **Dark Earth** and **Dark Green** with **Sky** undersides. Roundels were **Type A1** on the fuselage, **Type B** on top of the wings and **Type A** below the wings. Squadron and aircraft codes were painted in **RCAF Light Grey** (equivalent to **Medium Sea Grey**). Aircraft serials were painted in the usual rear fuselage location in **Black**.

## MSFU Hurricanes

One of the harebrained ideas that the RAF tested during World War Two was to launch Hurricanes off merchant ships in order to provide some air defence against German bombers in the middle of the Atlantic. This operation was run by the **Merchant Ship Fighter Unit** (MSFU). While a general discussion of the MSFU and its tactics are outside the scope of this article, the RCAF was involved in the operation. As early as April 1941, records show that 118 (F) Sqn at RCAF Dartmouth was assembling and test-flying Hurricanes that were part of the MSFU. This was part of an agreement worked out by Canada and the British in 1941, for Canada to provide personal and a dedicated hangar to overhaul the MSFU Hurricanes. The Hurricanes were removed from their ships and transferred to the 118 (F) Sqn “Hurricane” hangar to be completely overhauled by RCAF personnel. The aircraft were fitted with new fabric and repainted in Canada. The pilots of 118 (F) Sqn were assigned test pilot duty and it must have been a nice change for the pilots to fly a Hurricane rather than the squadron’s antiquated Goblins. Between June 1941 until the MSFU program was wound down in the summer of 1942, approximately 90 Hurricanes were overhauled by the RCAF. According to aviation researcher Carl Vincent, there is a remark in one of the official RCAF files as to the variable appearance of the refurbished MSFU Hurricanes. This is explained by the fact that the RCAF personal mixed paint from the supplies available to the squadron, rather than using official ‘ready mixed’ paint.

## Acknowledgments:

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**About the author:**

**Jim Bates, an expat Canadian, is now a US lawyer living in Seattle, Washington. Jim is the modelling editor of RCN News Magazine and the Social Media Coordinator for IPMS Canada. He builds RCAF, RCN, US Navy, and Commonwealth aircraft in 1/72 scale. This is his first article for RT.**

### Photo captions

**(above) The first of the many... in Canada. Hurricane Mk. I, RCAF serial number 310, in 1939. It is wearing the RAF Temperate Land Scheme, in the ‘A’ pattern, over Aluminum undersides. Type A1 roundels on the fuselage and upper wings, with Type A on the lower wings. The aircraft carried just the ring-and-bead gun sight and sports a two-bladed Watts propeller. Note the rudder has the small antenna wire post, but the forward post is not fitted behind the canopy. (City of Vancouver Archives CVA 260-1021)**

**What might have been - RCAF Airacobras**
**Airacobra Mk. I, AH621, visiting RCAF Stn Rockcliffe, Ont. For a long period of time the RCAF was convinced that the Bell P-39 Airacobra was its best choice for a new fighter. Airacobra Mk. I AH621 arrived at Rockcliffe during November 1941 for evaluation by RCAF Test and Development Flight. Sadly, it was written off within the month, on November 26, 1941, when Flight Lieutenant Robert Middleton of 12 (C) Squadron ran out of fuel and crash-landed near the Gatineau Hills in Quebec. (Carl Vincent collection)**

**Three of 1 (F) Sqn’s Hurricanes in action at Vancouver. Note that Hurricane 311 is in the ‘B’ pattern camouflage, with 310 behind it in the ‘A’ pattern. (Canada Dept. of National Defence via Larry Milberry/CANAV collection) The first Hurricane to fly in Canada was Hurricane 311. Note that it is fitted with an antenna mast. Radios were a constant source of trouble with the Hurricane fleet. (Carl Vincent collection)**

**Though it is sequentially the first RCAF Hurricane, 310 was not the first Hurricane to fly in Canada. That honour was held by Hurricane 311. Note the space between the spinning prop and the engine cowling. This is an often- missed feature on models of early Hurricanes. (City of Vancouver Archives CVA 260-1020)**

**A well-known photo of Hurricane 313. Note that it has the 'B' pattern camouflage. (Canada Dept. of National Defence via Larry Milberry/CANAV Collection) Of course, the RCAF was excited to show off their new hot ship. A series of photos were taken on April 3, 1939, of S/L Fullerton flying Hurricane 313 over Vancouver. (Carl Vincent collection)**

**With fabric-covered wings (the 'rag wing') Hurricane 314 is seen at Sea Island, B.C. Note the two-bladed Watts propeller, venturi under the cockpit, 'A' camouflage pattern, and the lack of an antenna mast. (Carl Vincent collection)**
**The public inspects two of the RCAF's newest monoplanes in Vancouver. Hurricane 314 and Northrop Delta 675. 314 is wearing 'A' pattern camouflage.**

**A very nice view of Hurricane 315 at RCAF Stn Ottawa. Details abound in this photo, including the exposed engine and the removal of the leading edge of the wing around the gun ports. It is unclear why the ground crew member is taping off the leading edge of the wing. Also, note the five-spoke wheels. This is one mistake in the recent Airfix 1/72 Hurricane 'rag wing' Mk. I kit, which only includes the four-spoke wheels more appropriate to a Battle of Britain metal-wing Hurricane Mk. I. (Carl Vincent collection)**

**Another of the first batch of Hurricanes in Canada, RCAF 315 illustrates some detail differences from the earlier aircraft. 'A' pattern camouflage. Note that lack of venturi underneath the cockpit, but the small cowl scoops are now present. Additionally, an antenna mast is fitted.**

**This September 6, 1939 photo was taken at RCAF Stn Ottawa (later, in 1940, renamed RCAF Stn Rockcliffe), just a few days before Canada declared war on Germany. (City of Vancouver Archives CVA 260-1024)**
**Hurricanes 315 and 316 outside the hanger at RCAF Stn Calgary. (Carl Vincent collection)**

**Though of poor quality, this is one of the few wartime photos of RCAF Hurricanes at RCAF Stn Dartmouth, taken in either the fall of 1939 or the spring of 1940. Notice that the Hurricanes in the background are missing propellers. (Carl Vincent collection)**

**A very nice view of Hurricane 328 at RCAF Stn Ottawa with the RCAF Test and Development Flight, August 26, 1939. Note the three-bladed de Havilland propeller with the early pointed spinner, 'B' camouflage pattern, and radio antenna mast on this the second-to-last UK Hurricane delivered to the RCAF. (Canada Dept. of National Defence HC-8928)**

**Another nice photo of Hurricane 328 at RCAF Stn Ottawa with the RCAF Test and Development Flight, August 26, 1939. (Canada Dept. of National Defence HC-8930)**

**Hurricane 323 YO-D with 1 (F) Sqn in the U.K. during the Battle of Britain. When 1 Sqn arrived in Britain, its outdated Hurricanes were quickly replaced by the RAF with British-built examples. However, for some reason 311 and 323 were updated and transferred to the squadron. 323 is a rather special RCAF Hurricane as it is the only known RCAF HWE Hurricane to fire its guns in anger. On October 5, 1940, F/L Pitcher shot down a Bf 109 while flying 323. Note that while it retains the fabric wing, it has been fitted with a Rotol propeller - a rarely-seen combination.**

**While the serial is not visible in the photo, it believed that none of the ex-RCAF Hurricanes were assigned RAF serials during their RAF service. (National Air Force Museum of Canada) Maybe the most interesting markings seen on a RCAF Sea Hurricane. Sea Hurricane BW883 has its previous 129 (F) Sqn HA-X codes painted out and replaced with 2-X. Notice the multicoloured spinner, the aircraft number on the cowl, and the eye painted above the cowling.**

**The '1' and '2' codes were official assigned to the Dartmouth Maintenance Pool in 1942, but it appears they were used to differentiate between the Hurricane squadrons at the station. Therefore, it is very likely that this Hurricane is still on the books of 129 (F) Sqn when the photo was taken. Also, note that either the hook and housing have been removed or were never there in the first place. (Screen shot of video from the Library and Archives Canada / Julian Roffman fonds via James Lloyd)**

**Another of the 129 (F) Sqn Sea Hurricanes, this time BW864 2-A. Again the hook and housing have been either removed and replaced with a Hurricane unit, or this was another aircraft delivered without a hook. Also, the serial numbers are not repeated on the nose of this aircraft. Finally, it is very interesting to note that the ROYAL NAVY markings has been retained, even though this is an RCAF Sea Hurricane. (Screen shot of video from the Library and Archives Canada / Julian Roffman fonds via James Lloyd)**

**This unidentified BW series Sea Hurricane was coded BV-W of 126 (F) Sqn. Notice that it retains its arrestor hook. Additionally, the standard de Havilland propeller and small spinner are well-illustrated in this photo. (Carl Vincent collection)**

**Sea Hurricane BW850 BV-T of 126 (F) Sqn. This Sea Hurricane retains the arrestor hook, but the Royal Navy has been painted out. (Canada Dept. of National Defence via Larry Milberry/CANAV collection)**

**Sea Hurricane BW866 in the snow. The codes are a little bit of a mystery, but it is believed that the '1' signifies either 126 (F) or 127 (F) Sqn when they were based at RCAF Stn Dartmouth. While it is hard to tell because of the reflection of the snow, it**

**appears that BW866 also had its arresting hook and housing removed. (Carl Vincent collection) Sequentially, the first RCAF Sea Hurricane, BW835 was not taken on strength by the RCAF until the spring of 1942. Note the ROYAL NAVY markings on the fuselage. (Carl Vincent Collection)**

**A group of 125 (F) Sqn CCF Hurricanes on the ramp at RCAF Torbay. Hurricane 1352 is in the foreground. (Carl Vincent collection)**

**A very clear photo of CCF-built Hurricane Mk. I 1359 on strength with 125 (F) Sqn at RCAF Torbay. The photo is dated June 9, 1942. (Carl Vincent collection)**

**This anonymous "Battle-Hurricane" illustrates the modified Fairey Battle propellers that were a distinguishing feature of this version. Note that it does not have the larger domed prop hub cap of the later Hurricane XII's. (Carl Vincent collection)**

**A very atmospheric photo of MFSU Hurricane Mk. I Z4934 taken at a RCAF Stn Dartmouth. Note the larger Rotol prop and spinner, normally seen on the Mk II Hurricanes. Also note the segmented Sky fuselage band around the serial. (Canada Dept. of National Defence PMR 77-266)**

**MSFU Hurricane Mk. I Z4874/J aboard a Catapult Aircraft Merchantman (CAM) ship in Halifax Harbour during November 1941. (Canada Dept. of National Defence/Library and Archives Canada PA-105736)**

**MSFU Hurricane Mk. I V7246 mounted its CAM ship during August 1942. Notice it has Type C1 roundels on the fuselage, Type C roundels under the wings, and the later fin flash. It is also missing the Sky fuselage band. (Guy Joseph Aime Goulet / Canada Dept. of National Defence /Library and Archives Canada PA- 105863)**

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# KeilKraft 1/72 1924 Atkinson 6-Ton Steam Lorry

**by Al Magnus, C#4579**
**Regina Scale Modellers, Regina, Saskatchewan**

This is an old kit released sometime in the 1980's. Detail is basic but the overall shape is very good. The plastic is excellent - not too soft or brittle and very easy to sand and scrape. There's not a lot to the kit - just a mere 30 parts, a small instruction sheet and an even smaller decal sheet.

As can be guessed, the decals weren't the best as befitting the age of the kit. Parts are somewhat on the thick side, this being very evident on items such as the cabin walls, fenders and mud flaps. Others are very nice, like the boiler, steam engine and wheels. It was obvious that the majority of the kit would need detailing to take it from toy like to display worthy.

I knew nothing about this vehicle before ordering it and I found that information on this vehicle is scarce. Fortunately there's some very useful information to be found on the reverse side of the instruction sheet, something that is sadly lacking in a lot of today's kits. The following snippet of information has been extracted from the very informative instruction sheet.

The Atkinson Vehicle Ltd. built over 500 steam trucks between 1916 and 1929. This kit represents the 1924 Type Model D version. Atkinson steamers used a patented vertical water tube boiler with a working pressure of 230 PSI and a steam temperature of 580 degrees F. It could be fueled with either coke or coal, which was added via a floor mounted chute. The engine was a two-cylinder design; each cylinder had a bore of 7" and a stroke of 10". Maximum RPM was 170. For a total weight of 1,076 lbs it produced 60 BHP at 100 rpm. Power was transmitted to the wheels via a 2.5" roller chain, mounted on an 11-tooth sprocket driven directly from the crankshaft, running to a differential mounted on the rear axle. Different sized sprockets were available to give higher or lower gearing as required. Top speed was 16 MPH. Suspension springs are semi-elliptical. The front and rear axles are solid. Braking systems consisted of engine retardation, mechanical drum brakes at the rear wheels and a parking brake.

Though details on the web may be sparse, there are plenty of photographs to be found. They are almost exclusively for the vehicle portrayed in the kit, a preserved example located in Australia, which was in use by various companies until 1945. Most of my external changes were guided by these pictures. The cabin interior changes were mostly taken from the few period photographs I could find.

## Construction

I started with the cabin as this needed the most work. It is pretty much devoid of detail with just a steering wheel and the boiler.

I figured the least I could do was to add some piping to the boiler and scribe some paneling to the walls. I also decided to add seat cushions, a brake lever, a pressure gauge and what appears to be a hatch in the floor (most likely for adding the fuel).

Once the boiler was assembled and placed a variety of piping from plastic rod and wire was run using reference pictures. I wasn't overly concerned about accuracy except for the visible upper portions since the majority of the pipes would be hidden by the cabin walls.

Panel lines were scribed into the front and back surfaces of the cabin's rear bulkhead and ceiling (**Photo 1**). The ceiling also got cross members from plastic strip plus one more to the inside of the rear bulkhead. Thin framing was added to the inside of the doors (**Photo 2**). From the parts box a spare AFV hatch supplied the floor chute and hand brake. A small plastic disc was glued to the pipe closest to the seats to represent a pressure gauge and some plastic sheet was cut and shaped for seat cushions. The cabin modifications are shown in **Photo 3** and **Photo 4**.

I next moved to the frame and suspension. Working on the assumption that Atkinson wouldn't have changed their frame design too much over the years, I added cross members cut from plastic strip, their location determined from a period photo of a 1918 steam truck (**Photo 5, and reference photo on next page**). If I had had a desire for a lot of extra punishment the plastic between the frame beams should have been removed first.

The drive chain and sprockets come as a solid piece. The positions for the gear teeth were marked, holes drilled and then the excess plastic was removed (**Photo 6 and 7**).

The suspension was detailed some. The spring brackets had their poor radius rods replaced with sections of round plastic rod. Small discs represented mount points (**Photo 8**).

On the real truck the steering column extends under the floor to a small gear box. From there a link runs back to the steering knuckle. I duplicated this as best as I could with some plastic rod. If I possessed some real talent I would have replaced the kit's overly simplified cylindrical shaped wheel knuckles with some proper ones. The kit's overly thick front mud flaps were replaced with new versions cut from some plastic sheet. Braces running from the flap to the rear face of the cabin bulkhead were cut from brass strip salvaged from an old photo-etched frame.

I scraped and sanded down the excess plastic on the rear fenders until they were closer to scale thickness (**Photo 9 & 10**).

The steam engine assembly is one of the nicest parts of the kit. All it needed was some minor detailing. There is a plethora of piping running along the chassis which I unfortunately couldn't find any good pictures showing it. I settled on adding one pipe bent from brass rod running from the underside of the cabin floor, along the left side of the chassis to the engine.

The water tank is very basic. It has a hollow bottom which was filled. I added a hose and its hanger. The hose is a section of 1 mm diameter round lead wire from **UMM-USA**. The nozzle was taken from a spare aircraft oleo leg, sanded to shape and a hole was drilled in the tip. On top of the tank are a pair of protrusions which were also added. I suspect one is a water filler cap (the short squat one) and the other is possibly a water level gauge (the tall thin one).

A rear bumper cut from some U-channel strip was added to the rear of the frame (**Photo 11**). To both the front and the back of the truck towing eyes were added. These were fashioned from plastic strip with holes drilled through them to accept a pin made from bent wire.

Lines were scribed on the underside of the flat bed to represent the bottom of the wood planks. Spacing of the bed supports here made the work difficult. As a result my scribed lines don't quite match the spacing of the lines on the upper side but with the underside mostly hidden from view by the frame it is not that noticeable.

Last of the major parts was the wheels. These got hub caps obtained from my spares box. Four suitable wheels were found and the caps trimmed from them.

To finish off construction a few extras were added. First was a small resin pail from **Armand Bayardi**. This pail is absolutely exquisite with super thin walls. All the modeller need do is add a handle from thin wire. The second extra is a length of chain from **Hawk Graphics**. This chain is very fine and made of metal. It comes pre-finished with a rusty look saving the modeller the work of having to add the rust effect.

## Painting

I decided early that this was going to be a well used truck mainly because that would fit well with my skill level as an armour modeller. No shiny finish for me!

I use enamels almost exclusively. Painting started with a primer coat of **Testors Light Gray** to the cabin parts, frame and water tank/bed parts. **Testors RAF Middle Stone** was then spayed onto all the wood paneling and the bed and some streaks of **Testors Dark Earth** were applied. The **Middle Stone** was masked and pre-shading was added with **Testors Flat Black** over top of the primer. **Testors Flint Grey** was lightly sprayed on the cabin parts, allowing some of the black to faintly show through. The steam engine got a coat of **Testors Insignia Red**, also allowing some of the black pre-shade to faintly show through.

The grey parts were then masked and the cabin floor, boiler and frame were sprayed **Testors Flat Black**. **Flat Black** was also sprayed on the tires.

The steering wheel rim and the handles for the parking brake were painted **Testors Wood** and when dry they got a wash of **Tamiya Rust** weathering powder to simulate wood grain. Everything got a coat of **Testors Glosscote** and then the kit was put into the drying box for a week.

The wood in the cabin and the bed got a filter of **Tamiya Panel Line Accent Color (Dark Brown)** to highlight the lines. The seats were painted **Testors Flat Brown** (in the little square bottle) and dry brushed with **Testors Leather**.

Weathering started with a wash and a filter of **Testors Afrika Dunkelgrau**, plus some dry brushing of the same, to the frame, wheels, tires and cabin floor. Some more **Afrika Dunkelgrau** was stippled onto the cabin floor to represent muddy footmarks and scuffs.

A dial face was cut from a spare aircraft instrument panel decal and added to the small disk in the cabin to represent the face of a pressure gauge. Seats were glued in place, and to make life easier the pins, chain and pail were added to the towing eyes. Then the cabin walls and roof were attached to the floor.

Before adding the cargo bed, the hose was placed onto its holder and glued down. It had previously been painted **Humbrol 103** and dry brushed with more **Dunkelgrau**. Then the brass wire steam line was glued into place, followed by the bed to the frame, and the wheels to their axles. Final weathering to the frame consisted of and additional light coat of **Dunkelgrau** spray, followed by a brushing and rubbing of **Tamiya Soot** weathering powder. Some more soot was lightly rubbed to the top of the cabin to represent stains from the smoke stack. Using **Vallejo German Grey** some random rub marks were added to the water tank edges, and random chips added to both the cabin and the water tank.

## Conclusion

The kit as it comes out of the box is very basic. If you compare the box top picture with my finished build, you can see what was done to improve the detail. Was the extra work worth it? You bet! I can't wait for its debut at our club's model car contest. It will be fun seeing the car guys' jaws drop when the see me, a 'dyed in the wool' military modeller, enter a civilian automotive subject. Should be priceless!

## Accessories Used

- ◇ Round Lead Wire from UMM-USA (part no. RLW 1,0mm)
- ◇ Resin pail from Armand Bayardi (part no. M72/17)
- ◇ 27 links per inch Black Chain from Hawk Graphics (part no. A003)

## References


- ◇ trucksplanet.com/catalog/model.php?id=1595
- ◇ archive.commercialmotor.com/article/15th-august-1918/15/new-engine-for-atkinson-steam-lorry


**About the author**

Al Magnus was born in Regina where he has spent the majority of his life. His modelling got started during his pre-teen years, followed by about a 20-year hiatus. Returning to the hobby in the mid-1990s he joined the Regina Scale Modellers

soon afterward. Al exclusively builds to 1/72 scale and his primary interest is armour, with some dabbling in aircraft, sea vessels and rockets/missiles. He retired in 2009 after 29 years as a public servant. Al and his wife Janice have been married for 34 years and they have a son and daughter.

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# You Oughta Build... an Otter (You Ought to Build an Otter)

**By Barry Maddin, C#6000**
**Truro NS**

## Background

The Otter was built by General Motors (GM) in Oshawa, Ontario to meet the demand for armoured reconnaissance (recce) vehicles. It was based on the Canadian-designed **Chevrolet C15 CMP** (Canadian Military Pattern) truck chassis and used standard GM components. The Otter was used by divisional reconnaissance regiments (e.g., the **Princess Louise Dragoon Guards** in Italy) as well as by **Royal Canadian Engineers** (RCE) Field Squadrons and **Royal Canadian Army Service Corps** (RCASC) Transport Companies. Its many tasks included probing enemy positions, finding minefields and other obstructions, clearing convoy routes and providing escort or liaison duties. The vehicle carried a crew of three (vehicle commander, driver, gunner), and it could be equipped with a No. 19 radio set, with armament consisting of a hull-mounted Boys Anti-tank Rifle, smoke bomb launcher, and a Bren 0.303" calibre light machine gun mounted in a small open-topped turret.

The Otter was used by Canadian units in the Italian and North West Europe campaigns. The kit was built representing a vehicle of the 2nd Platoon, 11th Field Company, RCE, 2nd Canadian Infantry Division, Normandy, France in August 1944.

## The Kit

The kit is the **IBG 1/35 scale Otter Light Reconnaissance Car (35019)** (**Photo 1**). The kit's parts are cast in grey styrene, plus a photo-etch sheet, nicely-printed decals and an excellent instruction booklet. The casting is crisp and there are a few ejector pin marks on the inside of the hull plates, which are visible only if you have the engine compartment open. The cleanup is minimal with the few mould lines and flash on the smaller items easily removed with a sharp knife and file. The instruction book is one of the best I have used. Each step shows a 3-D image of the parts and a 3-D image of the assembled component clearly indicating where the parts are positioned.

## The Build

The instructions start you off with the wheels, of which you get three complete sets although only one is specified for the Otter (more for the spares' box). The next six steps cover the folding of the photo-etch parts. Very clear directions make this folding task a piece of cake. You then build the nicely-detailed engine and transmission (**Photo 2**) followed by the transfer case and differentials. I added tie-down strips to the crew tools secured on the rear body plate. Take care when building the gunner's seat to get the mounting arms straight so that it will hang from the roof correctly. I then built the small turret but left off the Bren gun which I would add after painting (**Photo 3**). I then built up the frame ensuring I got it square and then mounted the drive components and exhaust but left off the wheels. I masked off gluing surfaces for the wheels and body panels and primed the chassis with **Krylon Gray Primer** (**Photo 4**).

I installed the driver's and commander's roof pads and mounted the gunner's seat to the roof panel and glued the turret in place. I then painted the inside of the roof and gunner's seat **Krylon White Primer** and detailed painted the gunner's seat and roof pads **Vallejo 818 Red Leather** dry brushed with **Vallejo 836 Mahogany**. I painted the Bren gun magazines alongside the gunner's seat **Vallejo 950 Flat Black** dry-brushed with **Vallejo 863 Gunmetal Gray** (**Photo 5**).

Following the instructions I constructed the floor and side wall assemblies. I then painted the floor and side walls **Krylon White Primer** and detail painted all the components. I painted the No. 19 radio set and mounted it to the radio tray and added a scratch built handset and headset. I also added extra data decals to the driver's dashboard and the grenade stowage box.

I then deviated from the instructions and, leaving off all the exterior bits, I put together the floor and side panels (**Photo 6 & 7**). I then added the exterior parts and glued the roof in place. I replaced the kit grab handles on the rear access hatches with wire and soldered together a brass jerrycan holder and with a **Ultracast British jerry can** mounted it on top of the left fender storage box. I also added an **Ultracast ammo box** to the right fender storage box (**Photo 8**). I left off the spare tire and the driver's and commander's viewing hatches for detail painting and to install scratchbuilt actuating handles for the hatches (**Photo 9**). With the doors mounted in the open position the details of the interior are readily visible (**Photo 10**). My research indicated that the RCE Otters normally didn't mount the Boys Anti-Tank rifle so I kept the rifle hatch closed (**Photo 11**).

## Painting & Finishing

I considered the best way to mask the vehicle with all the open doors, hatches and turret opening and decided to fill the openings with cotton batting dampened with water. I base painted the Otter with **Krylon Gray Primer** and top coated it and the wheel hubs with **Tamiya XF- 62 Olive Drab**. I applied the kit decals by floating them in a pool of **Future Floor Finish** then pressing them down into the **Future** and applying more **Future** over top (**Photo 12 & 13**). I then hand-painted the various tools on the vehicle with **Vallejo Panzer Aces 310 Old Wood** and **Vallejo 950 Black** and the wheels **Vallejo Panzer Aces 306 Dark Rubber**. I also painted the jerrycan and ammo box with **Vallejo 941 Burnt Umber**. I then glued the wheel assemblies on the vehicle and gave the complete vehicle a wash of **Autumn Brown Acrylic** craft paint except the inner door faces, as I wanted them to have a different colour tone. I glued a Sten sub-machine gun (SMG) onto the left front fender and a pair of binoculars on the commander's door. I painted up some **Black Dog** stowage items with **Vallejo** colours and made a camouflage net from cheese cloth painted **Vallejo 893 US Dark Green** and glued them on the Otter. I then went over the welds, fenders, tools and hatch edges with a silver pencil and installed the Bren gun. I finished with a coat of **Testors Dullcote** (**Photo 14, 15 & 16**).

## Conclusion

Overall it was a pleasant build. The kit fits together very well with just a small amount of putty used on the rear body panels. The excellent instruction book is something that other manufacturers should pay attention to. Since I plan to include the Otter in a diorama I didn't weather it any further. If you are looking for a nice addition to your Canadian armour collection then this is it.

## References:


- Canadiansoldiers.com
- Warwheels.net


Barry retired from the CF in 2009 after a 37-year career as a Navy Stoker, an Army Vehicle Technician, and finally as an Army EME officer. In 2009 he and his wife moved to Truro NS from Ottawa where they built their retirement home, including a hobby workshop, which is strictly off limits to the cats. Barry started building models before he could spell 'plastic' and currently builds mostly 1/35 WW II armour and military vehicles, although he does dabble in other areas. He is a member of AMPS and has been a member of IPMS Canada since 2000.

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# Within sight of shore - HMCS Esquimalt
# A 1/72 multi-media scratchbuilt model of the RCN's last ship loss of WW II

**by Ryan Cameron, C#6026**
**Langley, BC**

## History

**HMCS Esquimalt** was a Bangor-class diesel-powered minesweeper that served in the Royal Canadian Navy (RCN) during the Second World War (WW II). Even though Esquimalt was classified as a minesweeper, she carried no

minesweeping gear and operated primarily as an anti-submarine escort.

Esquimalt was laid down on 20 December 1940, by Marine Industries Ltd. at Sorel, Quebec, and launched 8 August 1941. She was commissioned into the RCN on 26 October 1942, at Sorel, serving in the Battle of the Atlantic and in the Battle of the St. Lawrence.

On the evening of 15 April 1945, Esquimalt sailed from Halifax to go on an anti-submarine patrol in the harbour approaches and then proceed to rendezvous with **HMCS Sarnia** (another Bangor). In the early morning of 16 April she was fired upon by **U-190**, a German Type IXC/40 U-Boat that had been operating around Halifax since early April. U-190's torpedo struck Esquimalt's starboard side, with the explosion knocking out the onboard power instantly; this prevented any distress signal being sent. She started to list heavily to starboard, pushing Esquimalt's lifeboat under water, but the crew managed to get four Carley floats clear of the ship. Esquimalt sank in less than five minutes. Because of the lack of distress calls or signals, and the unfortunate timing of the attack itself, the rescue effort was substantially delayed, which resulted in many men losing their lives to exposure. The crew, wearing only light clothing, was adrift on the Carley floats in frigid waters for about six hours. Forty four men died as a result of the attack and the exposure that followed the sinking.

**HMCS Esquimalt** was the last Canadian ship sunk by enemy action during the war. As for the U-Boat that sank the Esquimalt, the RCN commissioned U-190 a few days after her surrender and it served in the RCN for two years. Canadian naval aircraft sank the U-Boat on 21 October 1947, near the position where she had sunk HMCS Esquimalt in 1945. (*Editor's note - we have an on the U-190 coming in a future RT article*)

## The Model

In 2015 I completed a 1/72 U-190 Type IXC/40 for the Canadian Forces Base (CFB) Esquimalt Naval Museum (near Victoria, BC) and was asked at the time if I could build the HMCS Esquimalt for a new permanent display to help show the story of this ship.

With no commercial hull available, I knew it was going to be a challenge as I have never built my own hull from scratch. I was fortunate enough to get a set of hull lines from John Lambert, who, sadly, passed away in January 2016, along with the profile drawings of a diesel Bangor found in Ken Macpherson's book, **Minesweepers of the RCN**, and photos supplied by the Esquimalt Naval Museum, I had what I needed to get started.

Not having built a plank-on-frame style hull from scratch before, I turned to some of the model ship websites and message forums on how to make your own hull. Thankfully there are some great model builders out there who are willing to share their tips and ideas.

After scaling up the hull lines and profile drawings to 1/72, I started by cutting the keel and frames from 1/4" plywood on my scroll saw. Making sure the keel was level and square, the frames were glued, clamped and left to dry overnight. (**Photo 1**). Now came the 'fun' part of laying various widths of 1/16" balsa strips full length of the frames starting where the deck and hull meet. This took about two weeks laying down two to five strips at a time, using good quality carpenter's glue along with various clamps and T-pins to temporarily hold the strips in place while the glue set. T-pins are easier on the thumb pushing them through the balsa strips into the frames.

Once completed, balsa blocks were glued to the bow and stern, then sanded to shape based on templates made from the hull lines drawing. Good quality two-part marine epoxy resin (I used the **West System**) and fibreglass cloth was applied in several coats to the inside of the hull. This was done to add strength and to prevent holes forming during the finish sanding of the outer hull, which also got a brush coat of the marine epoxy only. Once cured and finish sanded, it was sprayed with several coats of **Dupli-colour sandable primer**, sanding with 400 grit wet-dry paper between coats. (**Photo 2**)

Next, 1/32" plywood was glued down for the deck. Since styrene was going to be used for the structures on the deck, I chose to glue some 0.020" styrene sheet to the plywood deck, which made adjusting the structures to be built easier. Be sure to use the 'old school' contact cement from **LePage's**, as I found that the new low-odour eco-friendly stuff is garbage. Trust me, I know after peeling off my first attempt.

In 1/72 scale, hull plating would be seen and I thought I would use 0.010" styrene cut to size. All was good, up until the compound curves of the hull came into play. The styrene plates didn't want to cooperate and lay down for me, so that idea was scrapped. A fellow ship modeller friend of mine told me about gum strip tape for creating the hull plating effect (thanks, Kerry), so I was off to the local art supply store and picked up a large roll for less than ten dollars. The gum strip tape was cut into plate-sized pieces, based on the profile drawing and photos; these were dipped into a bowl of water and laid onto the hull. Once dry, it looked the part to me. (**Photo 3**)

Based on the plans, the rear deck structure locations were laid out in pencil and then built using 0.040" styrene. (**Photo 4**) At this point, portholes were marked out and drilled with short lengths of 1/8' brass tubing inserted into the holes. (**Photo 5**) After the hull was painted, glass was added to the portholes with **Micro Crystal Klear**.

Since the wheelhouse deck extended over the aft structures, I needed to add the doors, rope reels, vent pipes, Downton pump and various boxes to the forward area of the lower deck for ease of installation as well as pre-paint due to the limited access. (**Photo 6**)

Once that was done, the wheelhouse deck was glued to the plywood. The wheelhouse deck was made using 0.040" styrene, this time for strength, due to it extending over the rear deck. Pencil lines were again laid down for the wheelhouse, funnel, vent, engine room skylights and the breakwater at the bow. These were then built again with more 0.040" styrene and the breakwater out of 0.020". (**Photo 7**)

To make the ship's funnel, a length of 3/4" dowel was first trimmed flat on one side using a table saw. It was then cut into two pieces slightly longer than needed to account for the angle cuts for the final length, and glued together (**Photo 8a**) The funnel was left off until the details were added such as the ladder, funnel cap, ship's horn etc. When it was dry, 0.010" styrene was wrapped around the wooden dowels and fixed in place with CA glue. Two more layers of 0.010" styrene were glued around the dowel and the small seam from the overlap was taken care of with a little putty and a few swipes of the sanding stick.

Bridge wings and their supports were added, along with the windbreak around the front of the bridge deck; thankfully having **'The Chopper'** made the job easier. You may have noticed the yellow putty repair job on the bridge deck and wondered why. I marked out the hole for the main mast, and when it was dry-fitted, I found there was too much stress on the bridge floor, so I cut a hole and glued a basswood block in place. Once repaired, there was no flex with the mast inserted into block of basswood. (**Photo 8b**)

Detail parts for the inside the wheelhouse now needed to be made, due to the open side at the rear of this part of the ship. This was done now, because once the window frames and roof were on, adding and painting them would have been difficult. I used a little artistic license, as the drawing showed what went where, but not what they looked like for this class of ship. I referred to the internet for examples. (**Photo 9 and 10**)

I now turned my attention to the bow, starting with the anchor winch. Since it wasn't a steam winch that was used on the corvettes, the **Great Little Ships** (**GLS**) winch was going to supply some of the parts and I made my own winch, based on the drawing and reference photos. I also took the plunge and drilled out the openings for the anchors… a nerve-wracking process of getting the angle right so that the anchors come through the deck in the right place. (**Photo 11 and 12**)

## Painting

With the hawse pipe openings done, it was time to paint the hull and deck. The camouflage pattern found on the Esquimalt was common for the Atlantic escort vessels, which were painted with my own mix of **RN White** and **White Ensign Models (WEM) B30 Medium Blue-Green.**

First I laid down a coat of black for the boot stripe and once masked off, a coat of **WEM RN Hull Red**. I next use my own mix of **RN White**: **Model Master (MM) flat white** with a little bit of **MM Camouflage Grey** and a touch of **MM Radome Tan** followed up with **WEM B30 Medium Blue-Green**. For the decks I used **Humbrol 106 Ocean Grey**. (**Photo 13**) After the masking was removed a few touch ups were needed, then a few coats of **Future Floor Finish** for the application of decals.

## Markings and Deck Finishing

The decals were a custom job made by Bill Burns at **CanMilAir** and as usual were excellent to use. (**Photo 14**) The Bangor class had large areas of wooden decks fore and aft; what better material to use than real wood? I found some 0.020" birch strips the exact width I needed from **Bluejacket Shipcrafters**. I copied the deck lengths and pattern based on the **GLS brass decking** for the corvette and spent an evening chopping the various lengths needed for the decks using my **Chopper** again, which made quick work of it. I glued each piece in the pattern shown and, using a dark brown pencil crayon, I would colour one edge of the side and the end between each strip to make the deck pattern visible. It was a long process, but I was happy with how it turned out after a light sanding to clean up the glue joints. (**Photo 15 and 16**)

## More Details

It was now time to add details to the ship by starting in the mid ship area. I like to work my way out from the centre of the ship, which helps prevent me accidently knocking parts off. Flag lockers were made from styrene and I had a crazy idea to add signal flags to each locker, supplied by **BECC Model Flags**.

The ship's funnel, now detailed, and the support cables were added while there was room to work. I used quite a few parts from the David J. Parkins **Great Little Ships** line that were geared toward the **Matchbox 1/72 Corvette**. I had experience with them when I built my grandfather's corvette, **HMCS Buctouche**.

The vegetable and refrigerated storage lockers were built, detailed and then glued in place. For the fresh air vents I used **Shapeways** for the first time, as they were the exact size I needed. After they were given a good cleaning with an old toothbrush and some **Simple Green all-purpose cleaner** to remove the waxy finish on them, I gave them a light sanding followed up by a brush coat of **Future** to help seal them. It is recommended to use acrylic paint on the 3D-printed parts, but I had no issues using my enamels after the base coat of **Future** was applied. I also liked the fact that they come hollow and with the addition of the brass tubing, they really look the part. (**Photo 17 and 18**)

The Esquimalt's 27ft. whaler davits were a different style than found on other escort ships. With no aftermarket versions available, I had to make some based on a few photos from the museum collection. (**Photo 19**)

Various sizes of deck storage lockers were made from styrene, painted and then pinned into placed around the deck. I soldered some of the photo-etch GLS hatches, 20 mm and 2-pounder ammo lockers. These are very detailed and worth the effort, even though they can be fiddly to assemble. I do check often on the **Shapeways** site for new ship parts and what wasn't there five months ago, suddenly appears. I was fortunate to find that someone designed a 12-pounder H/A gun in 1/72, just what I needed for the Esquimalt's main gun and couldn't click the website's 'Buy' button fast enough.

I received the 12-pounder gun a couple of weeks later and it looked good, but it could have been better. The barrel was good, but the ridges common with the current quality level of the 3D-printing process were quite heavy on the gun shield and base. I may have ordered them in the wrong material, but even after cleaning and sanding I was still not happy with how they looked. I ended up building my own using the gun barrel from **Shapeways** and a base made from styrene and brass rivet strips. The gun shield was trimmed down from a spare **GLS** set and once fitted in place it looked good. (**Photo 20 and 21**)

I procrastinated on building the masts as I could not decide whether to use brass or wood. I eventually opted to use fine wood dowel due to the taper of the masts and yardarms and the ease of adding the details. I put some dowel stock into a lathe and with various grits of sandpaper, I tapered the masts to shape. The yardarms were glued then pinned for strength into place and small white metal pulleys and ladders were added prior to painting. (**Photo 22**) Once painted, the masts were glued into place and all rigging was done with thread. I like to do the rigging of the masts without many of the fittings and railings on due to them getting in the way of tying off the ends and trimming them.

The resin Carley floats were bought from **GLS**, but I felt they needed to be detailed after seeing some good close-ups on the internet. After cleaning up the mould seams, **Tamiya tape** was cut to width and wrapped around the floats to give it the appearance of the real thing. Once primed, they were then painted a dirty yellow as seen in photos and the brass inserts were added and painted brown. These were mounted on some frames made from soldered **K&S brass angle** and part of the **GLS** set. (**Photo 23**)

With the soldering iron still hot, assembly of the 2-pounder pom-pom, 20 mm Oerlikons and the depth charge throwers was next. The throwers were easy to do with a few simple bends, but the 2-pounder and Oerlikons were more difficult, with lots of small parts to be added. Using a combination of soldering and CA glue they look good and worth the effort. (**Photo 24, 25, 26**)

The **GLS** depth charges are cast in white metal and come with photo-etch ends. With a few swipes of a sanding stick, these were cleaned and assembled followed by primer and paint. These were finished off with the addition of the depth charge markings from the **CanMilAir** sheet. After a flat clear coat they were put on their holders/racks and glued into place.

The resin 27ft. whaler is from **Quaycraft** and after quick assembly of adding the thwarts it was ready for painting. Oars are not supplied with the whaler and these were made from styrene rod and strip. Originally as fitted, the diesel Bangors came with a 16ft. dinghy. As the war progressed, these were replaced with two Carley floats mounted on a rack mid ships. This was made with **K&S brass angle** and styrene; once painted, the Carley floats were glued in place. Lead foil cut to width was used for the strapping on all the Carley float holders as well as the 27ft. whaler. (**Photo 27**)

All the small vents were made from various widths of styrene tube and rod. After a coat of **RN White**, these were pinned into place to prevent them from being knocked off during the final assembly. A Direction Finding (D/F) loop was needed

for the roof of the wheelhouse and was made with a couple of loops of wire and styrene for the base. (**Photo 28**)

The white metal anchors from **GLS** were assembled, painted and inserted through the hawse holes that were pre drilled earlier. Chain was supplied from the spares box, painted black and attached to the winch. The bollards, cleats and smoke floats are nice castings from the **GLS** range. The smoke floats come with photo-etch holders and decals were from the **CanMilAir** sheet which are a nice final touch.

With most of the fittings in place, it was time to add the railing. Cast white metal stanchions from **GLS** were painted white before attaching them to the deck. These are very fragile on their own, but once the fine gauge wire (I like to use this as the cable for railing) is fed through the holes and a touch of CA added, they're very durable. The canvas dodgers around the bridge wings and aft railing were made with a couple of layers of white tissue brushed with diluted PVA glue. Once dry, a coat of **RN White** was applied.

## Conclusion

While there is a great selection of large scale hulls available, sometimes you have to scratch build to get what you need. After seven months of build time, the Esquimalt was very liberating, as it challenged me to do something I have never tried before, making my own hull.

The Esquimalt was the last RCN ship sunk by enemy fire, tragically so close at the end of the war and this model is dedicated to those that lost their life 16 April 1945. The last survivor of the Esquimalt passed away in January 2012, but their story will live on at the Esquimalt Naval Museum where the model of HMCS Esquimalt and U-190 will be part of a permanent display in their memory.

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◇ Great Little Ships- djparkins.com/home.php?cat=264

◇ BECC Signal Flags- modelflags.com/

◇ To the many on modelling message boards for all the tips and suggestions whether you build ships, aircraft or armour subjects.


**About the author**
Ryan Cameron is a firefighter with the City of Vancouver. Married to an understanding wife who 'gets' the hobby, he has two sons. When he's not modelling, Ryan plays hockey, rugby and enjoys travelling with his wife, Kim. He has been modelling on and off since he was ten and primarily builds Canadian aircraft, naval and armour subjects. It's only been a few years of building the large scale ships and has a few more to build. This is his third article for RT.

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