

# Glidepath

The quarterly newsletter of the  
Canadian Museum of Flight



Issue #117  
Summer 2013

## A Stranraer for Shearwater

### The Stranraer Project - Background

by Terry Brunner

In December, 2012, I received a call from the Langley Airport manager, George Miller, asking if I would like to join him and a friend for lunch to discuss the Stranraer aircraft. It came out during the conversation that George's friend, Craig Widsten, was from Shearwater, a fishing resort across from Bella Bella on the west coast of B. C. Craig wanted to pay homage to the men and women who had served in Bella Bella and Shearwater during the Second World War. He had already commissioned a mural of First Nations people and others who had played a major role in the development of Shearwater and of Bella Bella. Craig also had a cairn and totem pole erected, and had been looking for an example of French 75mm artillery once used on the coast. Unable to locate a suitable artillery piece, his next option was to honour the Supermarine Stranraer flying boats and crews that had operated out of Shearwater.

I suggested that we fashion a model of the Stranraer that would be erected as a weather vane. This idea was immediately accepted and, after agreeing on terms, the next order of business was to form a team of skilled craftsmen to complete the task. We assembled a group of four very talented gentlemen who had just completed wing reconstruction on the Handley Page Hampton: Peter Roberts, Alfie Frost, Gord Varney and Cyril Meadows.

The project started January 6th and the model was completed, transported to Shearwater and erected as a weather vane by July 4th, 2013. The Museum volunteers who built the model were invited to attend the unveiling; all four made the trip. Sadly, Gord Varney passed away in September.

*continued on Page 2*

**Photo at right: The Stranraer model sits proudly on its pole at Shearwater, British Columbia. Equally proud is the team of builders, left to right, Alfie Frost, Peter Roberts, Gord Varney and Cyril Meadows.**



**Please visit our website [www.canadianflight.org](http://www.canadianflight.org) for more news and updates on events.  
Follow us on the Museum facebook page and twitter.**

# The Stranraer Project *continued from Page 1*

## Constructing the Model

by Peter Roberts

The first challenge was to get a set of three view drawings, which we obtained from Scale Model Research in California. The fuselage, vertical fins, tip floats and nacelles were all constructed the same way with the profiles cut from cabinet grade plywood. The fuselage profile (about 11 feet long and 3 feet high) was cut from  $\frac{3}{4}$ " plywood and the rest from  $\frac{1}{2}$ " material. The fuselage piece was drawn directly onto the plywood; the others were drawn onto cardboard templates which were in turn used to draw the parts onto plywood.

The fuselage cross-section pieces were attached to the main longitudinal profile piece. We next cut to shape the chines and added them to the main structure to form the front shape; at this point we also attached the lower wing stubs with threaded steel rods running from the port outer to the starboard outer ribs through the main fuselage core. We then started to fill in the spaces with foam blocks, filling all except the center section - that is where we estimated the balance point would be, and thus the location of the vertical pipe on which the Stranraer would be mounted.



**The Stranraer model fuselage, illustrating the method of construction using foam blocks fitted between plywood formers.**

For ease of construction the wing panels were all made the same size and built in the usual method: leading edge, trailing edge, main spar and wing ribs. At this time we attached the hard mounting points for all the flying wires, landing wires, struts and floats. The same method was used as for the fuselage, cutting foam blocks and gluing them into each of the spaces in the wing frames. The foam was then trimmed to shape with hot wire cutters. The stab and fins were made the same way. The top wing was made in one piece to make it easier to ship; it is comprised of a center section with the nacelles attached and two outer panels. These were also put together with steel threaded rods. The cowls are of fiberglass construction built over foam molds.

The pivot pipe was next. It was made with a piece of 3" diameter schedule 40 steel about 5' long, with a slot cut on the centerline. The slot was 30" long by 2  $\frac{1}{4}$ " wide, accommodating the triple plywood thickness at this point on the fuselage. The  $\frac{1}{4}$ " thick steel plates were welded at 90

degrees to one another, and bolted through the fuselage and one of the main formers to hold it in position. The external part of the pipe is machined to fit into two ball races; a piece of larger pipe was machined for the bearings to fit in. Welded on one end of the pipe is a flange with six  $\frac{1}{2}$ " diameter holes drilled in it. The corresponding plate was welded to the receiving pole, with six  $\frac{1}{2}$ " NC tapped holes. The receiving pole was set in about six feet of concrete, and the pole itself also filled with concrete.

After filling and sanding, the airframe components were covered with 6 oz fiberglass cloth and epoxy resin. Next came the struts. They were shaped and cut to length; a slot was cut on centerline approximately  $\frac{3}{4}$  of the way through to accept  $\frac{1}{8}$ " flat steel bar which was riveted to the struts. The protruding ends were drilled on  $\frac{1}{4}$ " diameter to accept  $\frac{1}{4}$ " stainless steel bolts.

The turnbuckles were manufactured in-house from  $\frac{5}{16}$ " diameter brass rod, drilled and tapped with left hand and right hand threads. The flying and landing wires are  $\frac{1}{16}$ " stainless steel cable with copper crimps.

After a final sanding of the airframe it was painted in silver aircraft paint. Three identical two-bladed propellers were made and then each cut, providing the components to make two three-bladed props. The props were mounted on aluminum hubs that contained two ball races; steel shafts were put into the nacelles for the props to run on.

Decals were put in place to finish the aircraft.

Some model specifications are as follows:

- Span – 17 feet (1/5 scale)
- Fuselage length – 11 feet 6 inches
- Weight – Approximately 340 pounds



**The completed Stranraer hangs from a hoist. Predicting the balance point was a critical challenge, as the model will function as a weather vane, swivelling on its central pole.**



**Three proud members of the Stranraer model construction team: left to right, Peter Roberts, Gord Varney and Alfie Frost (missing: Cyril Meadows).**

## Members Day 2013

***Members Day 2013 was billed as "A Great Day Out for Aviation Enthusiasts". Off to a slow start as mist and low cloud delayed the start of flying, the day built steadily in activity and energy to the climax, the outstanding Crab Fest Dinner prepared by Terry Brunner and his team of chefs. Dinner was accompanied by the sounds of the '60s and '70s spun by D.J. "Philly Dog" Phil Mulholland, punctuated by the roar of the '50s from the Firecat's two mighty radial engines.***

### TechTalk: Harvard

Vic Bentley kicked off Members Day with the third in our series of in-depth looks at the guts and the history of one of the Museum's fleet of vintage aircraft.



***Above: The small but enthusiastic audience for the TechTalk Harvard presentations by Vic Bentley and Rick Church. Below: Vic's Harvard Mark IV with inspection panels removed, allowing appreciation of the aircraft systems of that era.***



The Techtalk information handout was chock full of interesting snippets. Did you ever wonder how North American Aviation sprang from nowhere to within a few years create the Harvard, and then on to the Mustang and Mitchell?

"December, 1928, North American Aviation was incorporated in Delaware to become a holding company. North American Aviation, Inc., had interests in a number of leading airlines and aircraft manufacturing companies". Then we read "General Motors Corporation had taken a controlling interest in NAA and merged it with its General Aviation division in 1933. The company set new production records, building 41,000 airplanes during World War II. In fact, between 1935 and 1967, North American Aviation built more military aircraft than any other airplane maker in U.S. history." Ah ha! General Motors!

### Flying for Members

Vintage aircraft sights and sounds! Our Museum loves to keep interesting old aircraft in the air where they belong, to be admired and appreciated. Response to the new Museum Aircraft Sponsorship Program

has been very encouraging. Numerous members are sponsoring an aircraft they hope to see in the air. On Members Day the fleet was flying for the enjoyment of all, and, where practical, to give aircraft sponsors the thrill of a flight in "their" aircraft.



***A novel opportunity this year was a flight with Rick Church in an amphibious aircraft, complete with water landing, takeoff, and a picnic on the beach.***



***The fleet waits for the fog to lift.***

Cool, misty weather put a damper on the morning flying, but the sun did eventually burn off the fog, and aircraft and happy members were soon up and away. The flight operations team did yeoman duty, squeezing in as many flights as possible (albeit with one eye on preparations for dinner!).

### Speakers Corner

Members were treated to talks by a roster of speakers keen to share their knowledge on a wide range of aviation topics. Ralph Rowe shared stories from his time in RCAF flight training, Patricia McCuaig gave a glimpse into the life of a BC pilot (her book "Flying Duchesses", is sold in the gift shop).



***Peter Roberts described some of the technical challenges faced, and solutions developed, in building the Stranraer model (see Page 3).***



***It was a privelege to hear Wolf Czaia recount some of his adventures as the test pilot for the Me262 project. (check out [stormbirds.com/project/index](http://stormbirds.com/project/index))***

## Members Day 2013 *continued*

### Crab Fest Dinner

Once again, for Members Day our General Manager Terry Brunner laid on a spread that couldn't be beat, with help from a great team of cooks and servers. The full-house crowd of almost 150 members and guests were most appreciative. The piles of crab shells kept growing, and the group kept eating, until everyone agreed - that was outstanding. At the risk of missing many willing hands, our

thanks for preparing and serving the feast, er, fest, go to Terry, Bruce Bakker, B. J. McMillan, Laurie and Stewart Bellamy, and Jane Armstrong.

After dinner, Terry presented recognition plaques to many of the volunteers who contributed so much to the Museum over the past year. The Volunteer of the Year Award went to an exceptional worthy recipient, Gord Varney. Sadly, Gord had passed away one week earlier. The award was accepted by on his behalf by Cyril Meadows.



*Clockwise from top left: The outstanding crowd enjoying the Crab Fest dinner; Stewart Bellamy and a trophy crab; Volunteer of the Year for 2013, Gordon Varney; the "morning after" crew left to right Jim Beswick, B. J. McMillan, Jeff Jeffery and Bob Fowles.*

### Model A Clubs Visit the CMF - Notes by Bill Day

Fifteen members of the Lions Gate Model A Club, the Totem A and T Club, and the Pacific Model A Club descended on (actually chugged into) the Canadian Museum of Flight on Members Day, September 14.

We had been at the annual Model A Swap Meet in Langley nearby, and, through the good offices of Matt Offer, had arranged for a Show and Tell at the airport. We felt that there should be a lot in common with the Museum volunteers and staff – we are all sentimentalists, sometimes hiding under the guise of hardened technical people, loving old machinery and memories of admired previous generations. So, we thought it would be an opportunity for us to renew inter-club friendships and make new ones with airborne people.

It was a great visit. We were very impressed – bowled over in some cases – by the extent and variety of exhibits, and by the obvious enthusiasm and camaraderie of your volunteers. We were greeted

with great friendliness

and offers of assistance everywhere we went, including the patient reiteration of instructions on getting to, into, and out of washrooms – one area of service you might want to think about.

Our members were anxious for photo opportunities and appreciated very much the chance to have our “babies” nestled up to your Waco biplane – a real treasure, beautifully restored – just like ours. We still think that the sound of our engines – the unmistakable chugging of the Model A – is a bit more distinctive than the sound of the Waco’s five cylinders, but what the heck ...

Your President invited us to the Crab Fest, and a number of us were able to come. The meal was fantastic, as was the social chatter. A great experience for us all. Thank you!



*A line-up of beautifully restored and maintained Ford Model As graces our Museum.*



*My great aunt would say "That's a well-turned ankle!" Mary and Brian Carlson and their Ford Model A; Matt Offer and the Museum of Flight Waco INF.*

## Airshow Season 2013

The 2013 airshow season was a huge success for our Museum, with good weather, good flying, and an exceptional response from the public.

### FANTASTIC TEAM for this year's Abbotsford International Airshow Sales Booth!

We had an amazing team this year evidenced by our best-ever sales results. We beat our previous best sales dollar value by over 50%! We had a highly cohesive team that did their best to ensure our success through their up-beat, friendly, courteous and prompt service to customers leaving a great impression with those with whom they dealt.



*A few of the enthusiastic sales volunteers at the Abbotsford Air Show, led by Chris Ryan (left).*



*At an airshow, selling and buying sometimes take a back seat to watching the flying!*



It all started with excellent prep work on the part of Museum staff members Terry Brunner, Caitlin Ringland and Jocelyn Statia. Bob Fowles managed to get us a much better spot on the Static Display Line rather than Center Spoke, and arranged for suitable numbers of passes. Volunteers Adrian Moore and

The call for volunteers netted a surprising turnout. In all, over 20 people accepted the challenge of full-day shifts at the show. This resulted in comfortable staffing levels at all times during the show. The Operations Team ensured that we had an aircraft on display right in front of the booth for a



*Three CMF aircraft were displayed on the ground and in the air at Abbotsford, garnering interest for the Museum.*

Trish McAuley organized all the merchandise that was to be taken to the show, and packed the items up ready for loading into the trailer rented for this year's show, the Camel trailer now being too old and in need of replacement.

large part of each day - the Finch one day and the Tiger Moth on another - helping to draw attention to the booth.

Special thanks go to B.J. MacMillan for his tireless efforts before and after the show. Well done to all who participated!



*Matt Offer made good use of the Finch as his prop for pitching the Museum to Air Show visitors.*



*The Museum had great sales successes at Chilliwack and Boundary Bay too. Jocelyn Statia is seen here with a mound of merchandise at Boundary Bay.*

# Around the Museum - Summer Projects

## The Moth



Annual inspection of the CMF Tiger Moth indicated it was showing its age and was in need of some tender loving care. Top: the lower left wing draws a crowd of opinions (AME Rick Church is second from right). Bottom: Peter Roberts and Cyril Meadows get down to brass tacks.

## Gift Shop



Our renovated gift shop now sports a clean, open look. Top: Jim Beswick and B. J. McMillan. Bottom: Rob Piva and B. J.

## Steps



Access to aircraft exhibits is easier and safer with new steps. Top: Jeff Jeffery and the Canuck. Bottom: Gord Naslund and the T-33.

## Hampden Repainted



Alfie Frost (in rear) and a team of assistants repainted the Hampden.

## DC-3 Gets Seats



## Artifact Storage



Work continued through the summer to organize and store Museum artifacts. Above: A team, led by Colin Macdonald, transferred the contents of Hangar 30 to our South Langley storage unit. Below: General Manager Terry Brunner always seems happiest when operating a piece of mobile equipment!



Below: Vic Bentley will go to any (arm) length to track down the identities of Museum artifacts, in this case photographing the back side of an instrument panel from a Fairey Battle.



For more information on Canadian Museum of Flight collections and events, please visit our website at [www.canadianflight.org](http://www.canadianflight.org) and the Museum Facebook page "Canadian Museum of Flight".

## THESE TWO NEED TO TALK!



...and we can help them!



WACO INF RADIO FUNDRAISER

GOAL \$4000



Did you ever wonder what kind of person volunteers at the Museum of Flight? As this "random" selection of vehicles in the volunteer parking area one Tuesday attests, all kinds! Perhaps you would fit in as well?

Please consider supporting our work.  
Join us as a Member, volunteer, or make a financial contribution.

**Yes, I want to support the Canadian Museum of Flight!**



### MY CONTACT INFORMATION:

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_  
Province: \_\_\_\_\_  
Postal Code: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
email: \_\_\_\_\_

### OPTION 1: A ONE-TIME GIFT

Donation amount: \$ \_\_\_\_\_  
by ☐ Cheque ☐ Credit Card  
Credit card issuer (e.g. VISA) \_\_\_\_\_  
Credit card #: \_\_\_\_\_  
Credit card expiry date: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

### OPTION 2: A MONTHLY CONTRIBUTION

I would like to donate \$ \_\_\_\_\_ once a month

- ☐ for \_\_\_\_\_ months, or  
☐ until I tell you to stop  
☐ I would like to make these monthly donations by credit card:  
Credit card issuer (e.g. VISA) \_\_\_\_\_  
Credit card #: \_\_\_\_\_  
Credit card expiry date: \_\_\_\_\_  
Signature: \_\_\_\_\_

- ☐ I authorize the Canadian Museum of Flight to withdraw these monthly donations from my bank ("voided" cheque is attached).  
Signature: \_\_\_\_\_

I understand I can cancel my monthly contributions at any time by contacting the Museum at 604-532-0035.

# The Canadian Museum of Flight

## Bringing British Columbia's Aviation Past into the Future

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### Museum Staff

Terry Brunner  
Douglas Tait  
Jocelyn Statia

### Museum Coordinates

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Website www.canadianflight.org  
Facebook Canadian Museum of Flight  
Address Hangar #3  
5333 - 216th Street  
Langley, BC V2Y 2N3

### Museum Hours

Open daily from 10:00 a.m. to 4:00 p.m.

#### Membership Benefits!

- **Partnerships!** Members are entitled to visit, free of charge:
  - Flight Museum in Seattle*
  - West Coast Rail Museum in Squamish*
  - Military Education Centre in Chilliwack*
- **Discounts in the Gift Shop increased from 10% to 15%**

#### Volunteers Welcome!

*The Canadian Museum of Flight is always looking for new volunteers. We are always in need of history and aviation enthusiasts of all kinds, for aircraft restoration, gift shop operations, facility maintenance, and many other tasks. No experience is necessary. We invite everyone, from young students to retirees, to join the team. If interested, please contact the Museum General Manager, Terry Brunner, at 604-532-0035.*

### The Runway Café

The Museum of Flight is pleased to welcome to its facility The Runway Café, now open for business and serving customers in the north-west corner of the Museum building, affording diners a great view of airport operations.

A large group of CMF volunteers gave the new restaurant a trial run on October 15, its first Tuesday of operation, and the comments were all positive: good, wholesome food and good value for money.

Key elements of the new operation, designed to attract airport "traffic" include: all day breakfast; call-ahead for take-out or for food ready to serve when the customer arrives; and a promise of good pie. We wish them good luck with their new venture!

### Cover Photo

*A lovely study, by Vic Bentley, of the Museum of Flight North American Harvard Mark II, waiting patiently for the mist to burn off, to get started on the Members Day flying program.*

*The Glidepath Newsletter is published quarterly by the Canadian Museum of Flight; Editor Bruce Friesen. Contributions in the form of articles, news items, letters and photos are always welcome, as are comments and suggestions, although no payments are made for manuscripts submitted for publication in the Newsletter.*