

Glidepath

The quarterly newsletter of the
Canadian Museum of Flight



Issue #120
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Parts R Us: Aircraft Parts Exchanges at the Museum

by Vic Bentley

How did the Canadian Museum of Flight get into the parts exchange business? It's a long and interesting story.

In the 1970s, there was a flow of historic aircraft and parts leaving Canada for the USA and Europe. A group of enthusiasts led by the Zalesky family in Surrey, BC, made a huge effort to collect as many remnants as they could while that was still possible. They scoured far and wide across the country looking for aircraft parts, and hauled their treasures home on a trailer behind a pickup truck. Some were lugged down mountain-sides. A major underwater recovery effort retrieved a rare British Hampden bomber from Pat Bay.

Often, their sleuthing for wrecks led to farmers fields: in the 1940s and '50s many farmers bought aircraft for a song as government surplus, and all the useful parts were distributed around the farm – wheels for trailers, sheet metal for the cattle-feed shed roof, cable to fix the hay bailer. Often the fuel still in an aircraft was used all summer to run the farm equipment, on its own offsetting the purchase cost to the farmer.

The aircraft became a source of amusement for generations of

farm kids. After the fun wore off sitting in the pilot's seat making aircraft noises, they found other forms of entertainment. "What target are you going to use with the .22 rifle you got for your birthday?" To a teenage boy, wouldn't it make perfect sense to use the old wreck out in the back yard? It already had a bulls-eye painted on it! By the 1980s, collecting the remains of the once-proud fleet of aircraft that had helped win WW2 was a long and occasionally discouraging job.



A pile of aircraft parts outside "The Barn", perhaps shocking at first glance, gives a sense of the daunting task of sorting and identification that faced the Museum of Flight inventory team.

The collection was originally arrayed on the Zalesky property on Crescent Road, on the way to Crescent Beach in South Surrey, but then the City of Surrey wanted the foreshore for a park. After a lengthy search, Langley Airport was selected as the new display site. However, not all the collection would fit in the available space. An additional storage site was chosen at a farm in Langley Township north of Highway 1.

Stepping forward 15 years to nearer the present day brought a new generation of Museum managers and

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**Please visit our website www.canadianflight.org for more news and updates on events.
You can also follow us on the Museum facebook page and twitter.**



B. J. MacMillan inspects parts overgrown by the underbrush around The Barn.

volunteers who did not have intimate knowledge of the contents of the storage site, 'The Barn' as it is known affectionately to members. Tromping around the building and the surrounding farmyard turned up an amazing collection of aircraft parts – many classic and antique shapes scarcely recognizable in the overgrown blackberries as parts of a once-proud Canadian heritage.

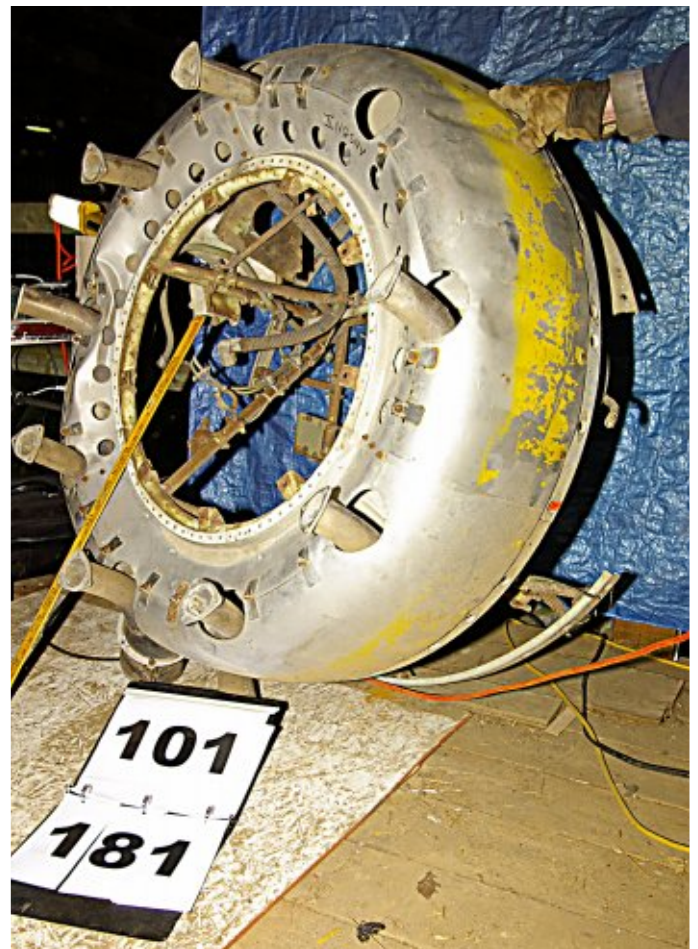
But what all was at the barn? The old-timers referred to various artefacts that most of us had never seen. Where was the printout of the inventory? "What inventory?" was the reply. With the mammoth task of simply moving the collection to the Langley sites taking a couple of years, there was no energy left over to compile a list, except in a few individuals' memory banks – and they were getting fuzzier by the year. What was to be done about all the artefacts hidden away – ignore them, or tackle the huge task of taking inventory? Of course, another factor was that storage is not free. The land owner had been very accommodating in keeping the collection, but he had a business to run. The cost to the Museum was sizeable so there was a strong incentive to rationalize the collection and to see if the storage area could be condensed.

The Board wrestled with the situation, and ultimately decided the challenge could be met with a serious effort. Fortunately, two people stepped forward to lead the project. Starting in 2009 and continuing, weather permitting, for a couple of years a determined group of volunteers headed by Colin McDonald and Matt Offer toiled away in the accumulated grime of the ages and catalogued the collection. Every part in the large barn was lifted, examined, labelled, photographed, entered in a database, and returned to storage. Parts in outside storage were likewise treated. The passage of time had not been kind to many wooden parts and some were discarded after being recorded, the metal fittings being retained. Many items to this day are listed as 'Numerous fairings and fittings' awaiting the right person to come along to provide specific identification.

This monumental effort succeeded in consolidation, partly through disposal but mainly through concentration of items, and thus a reduction of space and rental fees. Our Cornell, Bell 47 and Norseman were placed in secure shipping containers, keeping them safe from the elements, and keeping all the parts in one location. The large parts of the Bolingbroke and Anson were located in an adjacent building.

What about the disposal part of the story? In the aviation industry there is terminology for some things that are beyond hope – BER (beyond economical repair). Perhaps most of our barn collection would fall under this classification. Parts in outside storage have suffered from the weather. However, after reading of some miraculous restorations – think DH Mosquito – we were reluctant to call in the scrap merchants until some serious referral work had been done. An example of this was the crew from Winnipeg who travelled out here with a trailer to collect various parts for an ancient Fairchild aircraft they are rebuilding. Their most exciting find was a wing locking mechanism. Did we know we had such a thing – NO! It is only through the keen eyes of veteran restorers that such treasures are revealed. Do we have more treasures in the barn? Certainly. Canadian Warplane Heritage in Hamilton, ON, were looking for a crew door for the Grumman Avenger they are restoring. Did we have one? In fact we had five of them – but no Avenger to go with them.

A satisfying sideline was the identification of several old British engines of obscure design. Sleuthing the military records suggested the engines were spares for British planes sent to the West Coast in the early days of WW2. Now they are so rare that even the British museums scarcely mention them.



Each artefact is numbered, tagged and photographed, and entered into the inventory with a "quick and dirty" description, to be firmed up with subsequent research where possible.

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The Noorduyn Norseman fuselage is eased in to a "seacan" where it awaits its turn for restoration, safe and dry.

But we have them – an Armstrong Siddeley Tiger and a Bristol Taurus. The whole field of parts identification is another chapter – endless scanning through pictures of obscure damaged, decayed, deteriorated damn parts that may or may not be shown in the parts books for the Cornell, Anson, Bolingbroke or Avenger.

Now comes the interesting part. For one Avenger crew door, Canadian Warplane Heritage were willing to trade a set of glazing for the nose section of our Bolingbroke on display in the hangar. They had made a set of windows for their own flying aircraft, thus had the forms suitable to bend another set for ours. Do they need a starter for a P&W R-1830? Would they trade it for a starter that would fit our Harvard or Waco? So the exchanges go on. Cash sales are also possible. One significant artefact that was sold to a good home was the



Bristol Taurus 1000 hp sleeve-valve engine, probably from a Bristol Beaufort patrol bomber.

Volunteers Needed!

Got some time? Know something about airplane parts? Just want some exercise? We can use you!

We need to do some re-organizing of the material stored at the barn. The objective is to reduce the amount of stuff in storage, and the attendant cost.

We are looking to apply some specific criteria to the collection, and identify items we will never use, and earmark them for sale, trade, or trash.

Keepers for our collection will be re-grouped, exact location updated, and the items made more accessible. A lot of stuff is well known and described, but some things are not.

This all takes effort, and some things require knowledge and research skills – like looking through parts catalogues to figure out “what the heck is that thing?”.

Your help could be sitting in a chair giving input (“that looks like a flap from a ...”), to reviewing photographs, or on site actually lifting and carrying stuff. Whatever you can comfortably do, works for us.

If you have some time and are interested in helping, let Colin McDonald, Matt Offer or Vic Bentley know.

skeletal remains of a Hawker Hurricane: the centre section went to a restorer in Ontario.

This process could not start until we had a catalogue of parts, pieces, wreckage and all the other real good stuff. The Museum Board formulated our policy of considered disposal of surplus items. This states that items that are surplus to our needs will first be offered to other CAPA (Canadian Aeronautical Preservation Association) Museums, then to other facilities. Of course, only those parts that are not in our own restoration plan will be let go.

Where does that leave us today? We now have a much better idea of what we have in the barn storage area and in the Museum itself. We are able to respond to other restorers with intelligent answers to their questions, like, “Do you have the wing-lock mechanism for a 1928 Fairchild 71?” with an answer like, “Yes we certainly do have such a thing.” rather than, “We have no idea of what we have.” Also, we now use significantly less storage space at the barn with a consequent reduction in rent. In short, we have come a long way. Although there is still some distance to go, we are moving steadily in the right direction.

The longer-term plan being formulated by Colin and Mike Luedey includes an online database where we can display what we have and our ‘customers’ can pick and choose. At present it is only possible to share with others what we have by sending several DVDs and letting them troll through all the stuff until they stumble across something of interest.

Fleet Finch "4725" Gets a New Wooden Main Spar

by Rick Church

During the annual inspection on the Fleet Finch this year, the lower left wing was discovered to have a split in the front spar through the area of the fuselage attach fitting.

The split itself could have been an easy repair, solved by gluing a plywood plate on each face of the spar. Unfortunately the design of the attach fitting does not allow room for repair plates. With this in mind it was obvious our only option was to replace the spar completely. The wing was removed from the aircraft and delivered across the street to the Langley Aero Structures shop for the work. I offered to do the repair in my shop to free up the volunteers for other projects, in view of the considerable number of volunteer hours expended on recent required repairs to the Tiger Moth wing spar, which put other projects behind. In addition I had several friends and employees that had expressed interest in learning the processes involved with aircraft fabric and wood work.

The museum is fortunate to have in stock several aircraft quality quarter sawn Sitka spruce blanks. One was chosen for the replacement spar.

Replacement of the spar required removal of all fabric off the wing. The wing was quickly stripped down and the spar removed (upper photo). A replacement spar was cut, planed to thickness and bevel edge planed to match the old spar. Holes were drilled for attach fittings and compression rib bushings, and the spar was protected with 2 coats of epoxy sealer.

Several other small repairs were required in the wing, on ribs and the leading edge skin, and these were accomplished.

The new spar was installed, the ribs re-attached, and all the other details of internal wing structure re-instated (centre photo).

The old tie-down system was a section of aircraft cable crimped around a compression rib below the interplane struts. It was discovered this cable had been chafing into the spar, and had caused minor damage. A new tie-down ring was fabricated of aluminum and bolted onto the interplane strut fitting.

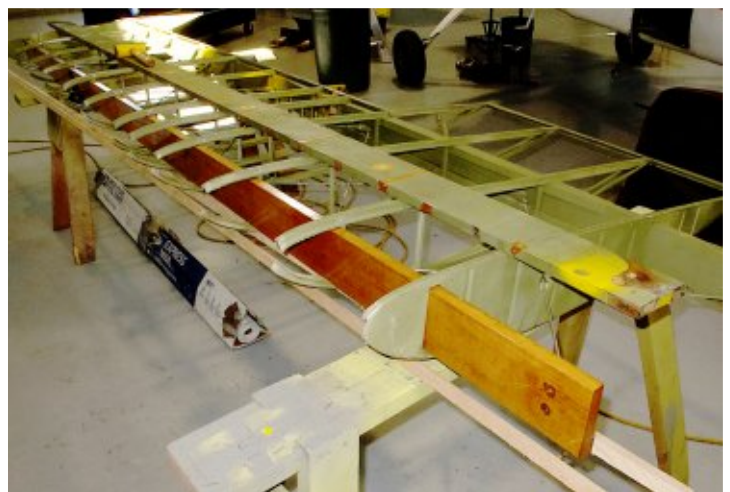
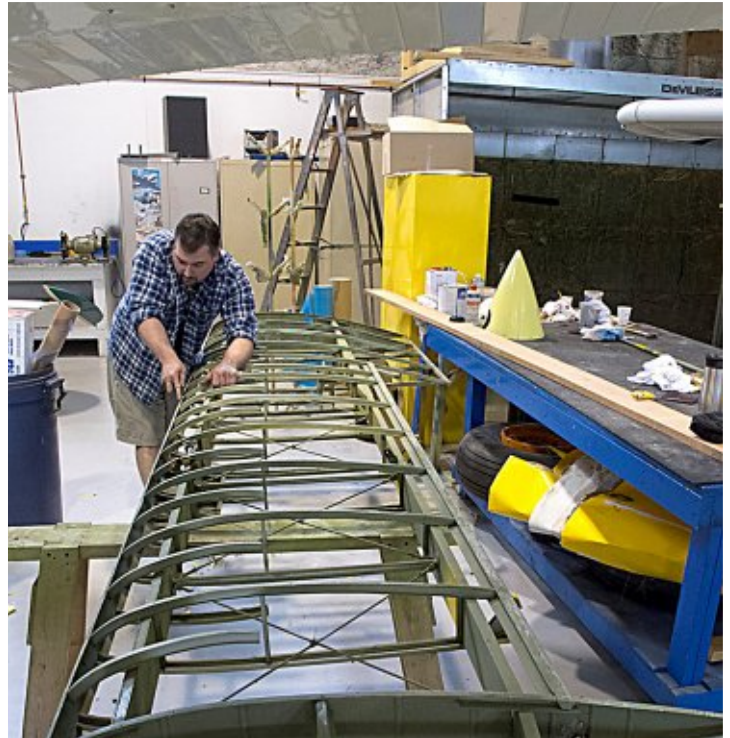
Fabric was applied using the Poly-Fibre process. The fabric process was started with the required pre-coating of the metal surfaces with Poly-Brush, followed by gluing on of the fabric material, and heat shrinking (lower photo).

Up to this point good progress had been made in a short period of time, but things got busy at Langley Aero. Work involved travel for myself, and the job stagnated somewhat at this point.

Recently, I was able to get the majority of the finishing tapes installed. I'm back at the shop, and hope to hurry completion of the finishing tapes, and heat smoothing of all tapes and imperfections. Completion of the fabric process, and painting, I'm hoping will follow in short order.

Installation of the wing after painting will be a short, one day job most likely.

I think it would be wise to either protect the opposite lower wing forward spar from chaffing from its tie down cable, or to replace that arrangement with a tie-down ring similar to that installed on the left wing.



746 Lightning Hawk Royal Canadian Air Cadet Squadron

50th Annual Ceremonial Review

On June 14th, the 746 Lightning Hawk Royal Canadian Air Cadet Squadron held its Annual Ceremonial Review at H.D. Stafford Middle School. This year marks the 50th Anniversary of the squadron. The Reviewing Officer for this year was Mr. Ed Beauregard, a former 746 Cadet from the 1960s. Dignitaries included Mayor Jack Froese from the Township of Langley and Member of Parliament Mark Warawa.

The Annual Ceremonial Review is the result of months of preparation and a great deal of training. The accomplishment and pride evident in a formal parade demonstrate the cadets' achievements and successes throughout the training year.

Numerous awards were presented at the ceremony, to celebrate the accomplishments of the cadets and the squadron, including a Power Pilot Scholarship to WO2 Poirier; Glider Pilot Scholarships to FSgt Yoon, FSgt Ouellette and Sgt Walters; International Air Cadet Exchange to WO1 Ardila; and Advanced Aviation Technology Courses to Sgt Lumidao and FSgt Liu.

Following the parade, the squadron held their 50th Anniversary Mess Dinner at the Canadian Museum of Flight. The CMF is proud to be associated with 746 Lightning Hawk Squadron and was honoured to provide the venue for the Mess Dinner. Our sincere congratulations to the Cadets, Officers and the entire organization!



Photos: Top left, 746 Lightning Hawk Squadron on parade; top right, Reviewing Officer Mr. Ed Beauregard cutting the 50th Anniversary cake assisted by WO1 Ardila and WO2 Poirier; below left, the Squadron Mess Dinner held at the Canadian Museum of Flight.



746 Lightning Hawk Squadron serves the Fraser Valley as one of British Columbia's best Air Cadet Squadrons. With close to 140 cadets, nine Canadian Armed Forces Officers, one Canadian Armed Forces NCO, four civilian staff and an active Parent Sponsoring Committee, the Squadron offers youth aged 12 to 18 an interactive and beneficial training program centred around aviation, leadership, survival training, range, drill and citizenship.

Through the partnership between the Air Cadet League of Canada and the Department of National Defence this exciting youth program has prospered and attained its 50th anniversary milestone.

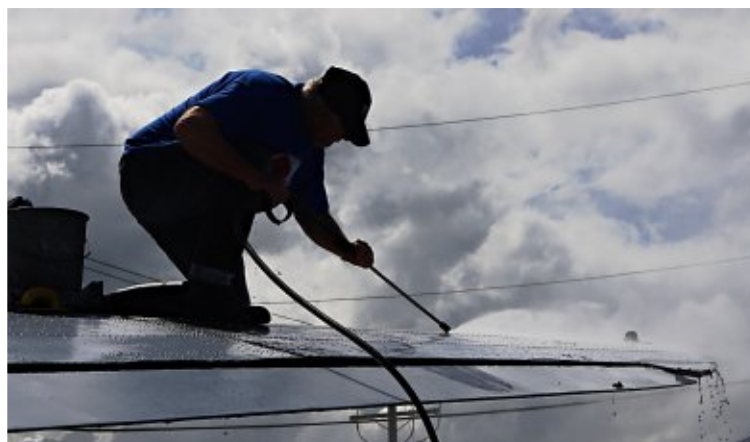
The Squadron moved into its current home, Hangar 4 at Langley Regional Airport, in September, 2012. This is a fantastic opportunity for the cadets to parade at a working airport, exposed to all the aviation activities the airport has to offer.

Chad Brownlee Concert

Country singer Chad Brownlee flew coast to coast on Wednesday, June 4, 2014. Starting out in Nova Scotia and including appearances at Tim Hortons restaurants along the way (in Toronto, Calgary and BC); Brownlee's final stop for this tour was at the Canadian Museum of Flight!

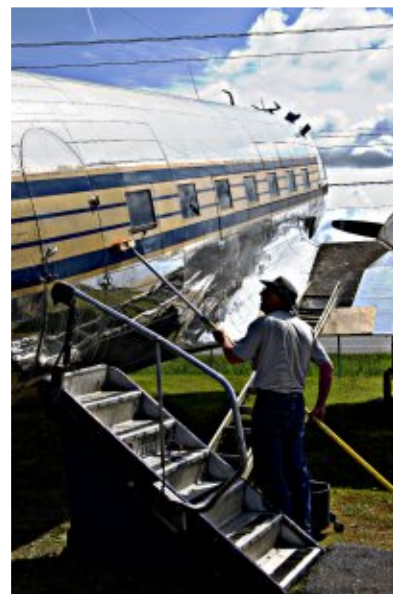
Tim Hortons and 93.7 JRfm were promoting the release of Brownlee's new album *The Fighters*. All proceeds from the song *We Don't Walk This Road Alone* will go to the Tim Horton Children's Foundation. The CMF was asked to be a part of the Chad Brownlee CD Release Party.

The Canadian Museum of Flight was happy to provide a venue for this event and the opportunity to give back to the community.



Volunteers at Work

Just a few scenes from around the Museum as volunteers work to maintain and enhance our facility! Clockwise from top left: Roy Demcheson and Bill Butler form the curved skylight for the Fleet Canuck; Ralph Rowe powerwashes the DC-3 wing; John Jouan scrubs the DC-3; Ray Fessenden, Roy Demcheson, B. J. MacMillan and Robb Neufield deconstruct a helicopter for material salvage value.



Our 2014 / 2015 Board of Directors:

In alphabetical order by surname:

Dave Arnold - Vice President

Bruce Bakker - President

Vic Bentley - Secretary

Matt McCallum - Director

Inder Matharu - Treasurer

Matt Offer - Director

Bill Thompson - Lifetime Director

Rachel Twine - Director

Gord Wintrup - Director

Thank you to all who attended the 2014 Annual General Meeting. Attendance at the meeting, and member participation in the Board election, were excellent. Thank you, also, to all the Director candidates who offered to serve on the Board.

Upcoming Events for 2014

Aug. 8, 9 and 10	Abbotsford Airshow
August 17	Chilliwack Airshow
September 20	CMF Members' Day
September 22	Battle of Britain Day

Canadian Museum of Flight Aircraft Sponsorship Program

Museum Members now have the opportunity to sponsor their favourite flying aircraft in the CMF fleet. This is a great way to make a valuable contribution to bringing BC's aviation past into the future, supporting the Museum's work to keep these wonderful examples of flying history in the air where they belong.

To become an Aircraft Sponsor, or to get more information on how you can become a Sponsor, please contact the Museum at (604) 532-0035, or visit <http://canadianflight.org/content/aircraft-sponsorship>

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

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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Lieutenant Governor of British Columbia

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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 host in its facility The Runway Café, serving customers in the north-west corner of the Museum building, affording diners a great view of airport operations. Key elements of this cafe, 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.

Cover Photo

This lovely image of the Museum of Flight Fleet Finch C-GBJS, "4725", was taken on Members Day, 2013. Photo credit: Mike Luedey. Excellent work, as always, Mike!

The Glidepath Newsletter is published quarterly by the Canadian Museum of Flight. 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.