Fly North

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NEWSLETTER
OF THE
NORTHWESTERN ONTARIO AVIATION HERITAGE CENTRE

Preserving and celebrating the diverse history of aviation in the northwest, through the collection and preservation of artifacts and stories of the persons and events that made this region unique in aviation history

Welcome to the first newsletter of the Northwestern Ontario Aviation Heritage Centre (NOAHC). Our aim is to publish quarterly to provide information on the activities of the Centre. This first newsletter is in some ways experimental and future format and content may change based on feedback from the membership. It is expected that each issue will contain reports on the activities of the Centre, including information on meetings and material acquisitions, as well as interviews with aviators and others involved in aviation in the northwest whose stories will become part of the Centre's Archive. In addition there will be short articles on various aspects of the aviation history of northwestern Ontario (such as the piece in this issue on the Helldiver, by Ian Dew) book reviews and letters from our readers. One of the important services that a newsletter can provide is to bring local and personal knowledge to questions that cannot be answered from the resources in libraries or on the web. To that end it will include queries sent in by readers to test the memories of other readers and in so doing expand our knowledge of aviation in the northwest.

Although the Centre's main focus is on 'Heritage', the newsletter will also consider current aviation activities, particularly as they apply to our local history, and report on the activities of organizations similar to ours in other parts of Canada, North America and elsewhere.

For more information on the structure and aims of the Northwestern Ontario Aviation Heritage Centre visit our web page at www.noahc.org

Board of directors:

The Curtiss Helldiver (SBW)

Ian Dew

In May 1942, the announcement that the local Can-Car plant at Fort William had been awarded a contract to build 1000 Curtiss Helldivers was big news at the Lakehead. The Curtiss name was not unknown in the northwest, with the Ontario Provincial Air Service Curtiss H2SL flying boats being a common sight in the region in the 1920s, but the Helldiver was something else – a complex, carrier-based, dive bomber intended for use by the US Navy and Marines in the Pacific war.

Dive bombers had been developed as tactical weapons between the wars, and in 1942 the Helldiver was the latest in a line that included the Junkers Ju87 Stuka, the Douglas Dauntless SBD, the Blackburn Skua and the Aichi D3A Val. It was to be bigger than these, however, - in every way – flying faster and packing a much larger weapons' load over a longer range than its predecessors.

More than 7,000 Helldivers were built in plants across North America, with Can-Car ultimately contributing 835 of the 1000 in its contract. US-built machines were designated SB2C, those built at Fort William were SBW, but the basic models were essentially the same. Beyond its official designation, the Helldiver would go on to have more monikers than any aircraft in history, including the Beast or Big Tailed Beast, plus others more lurid.

The big tailfin, characteristic of the Helldiver, came about as the design engineers struggled to balance the problems created by the short fuselage required by the original specification, which demanded that two aircraft should fit on an elevator of the new *Essex* Class US aircraft carriers. Other issues requiring change meant that the aircraft bounced between the drawing boards and test flights between November 1940, when the prototype flew, and July 1942, when tooling began at Can-Car. One estimate is that in the development and production of the Helldiver, some 53,000 changes were incorporated in each machine. Lessons learned in combat meant that changes had to be made to aircraft

already under construction, at great cost in time and money. Building times stretched from days to weeks and months, and, at times, the production line stopped while special teams of trouble-shooters struggled to complete the aircraft. Production was also delayed by crashes during the testing of the prototype and aircraft off the production line.

The Helldiver was tricky to fly and more were lost at the Battle of Leyte Gulf through flying accidents in routine manoeuvres, like taking off and landing than in combat. Such was the wartime demand for aircraft, however, that orders kept coming. The Royal Navy ordered 240 machines, while there were plans for a dive bomber squadron in the RCAF, but plans were scrapped when reports on the performance became known. Gradually, however, version by version, production problems began to be ironed out, the aircraft became more reliable and, after a while, pilots learned to fly them tolerably well.

Epilogue

By the time the Helldiver could fly reliably, combat conditions had advanced so rapidly that it was already becoming obsolete for combat with contemporary front line aircraft. The Battle of Leyte Gulf in October 1944 –

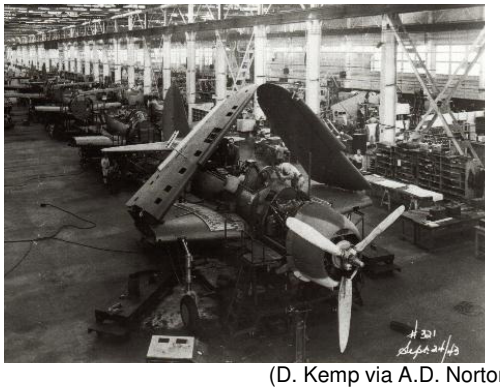
Helldiver over Fort William 1944

(Courtesy Thunder Bay Historical Museum)

the biggest sea battle ever fought – was the high point for the Helldiver. After that it was quietly withdrawn from service. Only one SB2C Helldiver is still flying, owned by the Commemorative Air Force, based in Graham, Texas. It was a major attraction at Thunder Bay's Air Show in 1998. Helldivers live on in silence in museums where they figured in history, including the National Air and Space Museum, Pensacola; Hellenic Air Force Museum, Greece; Royal Thai Air Force Museum, Bangkok.

In its history as an aircraft producer, Can-Car has built some of the best regarded and airworthy machines of their time, like the Hurricane and the Harvard trainer, which can be seen in aviation museums worldwide. The Helldiver was perhaps not in the same league, but given all of its problems, the fact that it was produced as efficiently as it was reflects great credit on the skills of the work force at Fort William plant.

Skill and efficiency remain a hallmark of the plant in its role as a supplier of highly sophisticated mass-transit equipment, as part of the Bombardier group of companies – another great Canadian success story.



(D. Kemp via A.D. Norton)

. **Helldiver Production Line – Fort William 1943**

Basic Specifications for the Helldiver SBW-5

- Length: 11.2 m
- Wingspan: 15.2m
- Height: 4.2 m
- Wing area: 39.2 m2
- Empty weight: 4,588 kg
- Loaded weight: 6,202 kg
- Max take-off weight: 7,600 kg
- Powerplant: 1 x Wright R-2600 Cyclone Radial engine 1,900 hp (1,400kW)

Performance

- Maximum speed: 473 km/h
- Range: 1,900 km
- Service ceiling: 7,600 m
- Rate of climb: 8.9 m/s

Further Reading

Gordon Burkowski, *Can-Car, a history 1912-1992*, (graphics by John E. Johnston); Thunder Bay, Ontario; Bombardier, 1995.

Jim Lyzun, *Aviation in Thunder Bay*, Thunder Bay; Thunder Bay Historical Museum Society, 2006.

A.J. Shortt, *Curtiss Helldiver*, Ottawa; Aviation and Space Division, National Museum of Science and Technology, 1977.

Book Review:

(by David Kemp)

Richard I. Bourgeois-Doyle (2008) *Her Daughter the Engineer: The life of Elsie Gregory MacGill*, NRC Research Press, Ottawa, Ontario, Canada, 332pp

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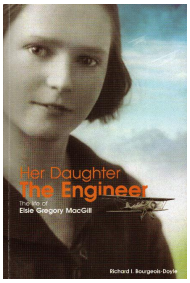

Her Daughter the Engineer is a biography of Elsie Gregory MacGill, the title being a play on MacGill's biography of her mother which she called, *My Mother the Judge*. The link is a clever one, but also an appropriate one, given the strong influence that Elsie MacGill's mother had on her life. As her story is developed two themes appear – aviation engineering and women's rights – which may seem disparate at first sight but as the author shows, become more and more intertwined as MacGill's life progresses. Although she had a handful of contemporaries also trying to enter the male dominated aeronautical engineering field between the wars, Elsie is generally considered to have been the first to succeed, becoming the first female aeronautical engineer and professional aircraft designer in North America, and perhaps even in the world. Remarkable a feat as that was, for her it was obviously not an end in itself; for she went on to use the skills she had acquired to make a significant contribution to the design, development, modification and production of aircraft for the growing Canadian aviation industry. All this she achieved while battling the effects of a viral infection that struck just as she graduated and continued to trouble her for the rest of her life.

Elsie MacGill is remembered in Thunder Bay for her work at Can-Car, where she designed a training aircraft – the Maple Leaf II – and was in charge of engineering for the Hawker Hurricane and Curtiss Helldiver programs. All of this is well-described in the book, including the production problems with the Helldiver and the issues that led to her departure from the company in 1943, after only five years. It was, however, perhaps the most intense five years in her career as an aeronautical engineer, which had started at Fairchild in 1934 and continued with consulting work into the 1950s.

By the latter date, she was becoming more and more involved in women's issues. Both her grandmother and mother participated in the fight for women's suffrage in Canada, and it must have seemed natural for Elsie to continue along that path, which she did with great success as a member of the Royal Commission on the Status of Women between 1967 and 1970, and subsequently as one of the leaders in the National Action Committee on the Status of Women. By all accounts, her participation in both organizations was stellar and contributed much to their success.

Despite increasing health problems stemming from her viral infection as a young woman, Elsie MacGill continued to work in a variety of public service roles until her death at age 75 in 1980. This book is a fine account of the life and times of a remarkable Canadian woman whose exploits not only provided an inspiration for the generations of women who will follow her, but also helped to create the conditions that will allow them to pursue that inspiration.

Her Daughter the Engineer is available at the Thunder Bay Museum.

Richard I Bourgeois Doyle, author of the book, will present a lecture on *The Life of Elsie Gregory MacGill* at the Museum on Tuesday, March 24 at 8:00 pm.

Information, please…

This is the Burnelli CBY-3 Loadmaster, a flying wing design for which Can-Car had marketing rights. It visited Fort William in 1946, the idea apparently being that it might be built in the city. Does anyone remember the visit or have any additional information on the aircraft? If so we would be happy to hear from you. Send your comments to dkemp@lakeheadu.ca or write to us at our mailing address.

(National Museum of Science and Technology:*via* A.J. Shortt)

Restoration News…

The February, 2009 edition of *Aeroplane* reports that Hawker Restorations in England has completed the restoration of a Hawker Hurricane IIB for the Hanger 11 Collection. It has been painted as a "Hurribomber" of 147 Squadron, based at Manston in the spring of 1942. The original was built as a Hurricane Mk XII (RCAF registration 5403) by Can-Car at Fort William in 1942.

A Canadian built F-86 Sabre Jet painted in the colours of the Golden Hawks has been restored by Vintage Wings of Canada to take part in the 100th anniversary of flight in Canada. Arrangements are being made by NOAHC to have it available for viewing in Thunder Bay on August 17 2009.

Further information will be made available when confirmation is received

Comments, questions…

We plan to have space in the next issue for readers' letters. If you have any comments or questions, or information on aviation in the northwest, that you would like to share, please e-mail us at dkemp@lakeheadu.ca . If you prefer to put pen to paper send your letter to our mailing address. Looking forward to hearing from you!