

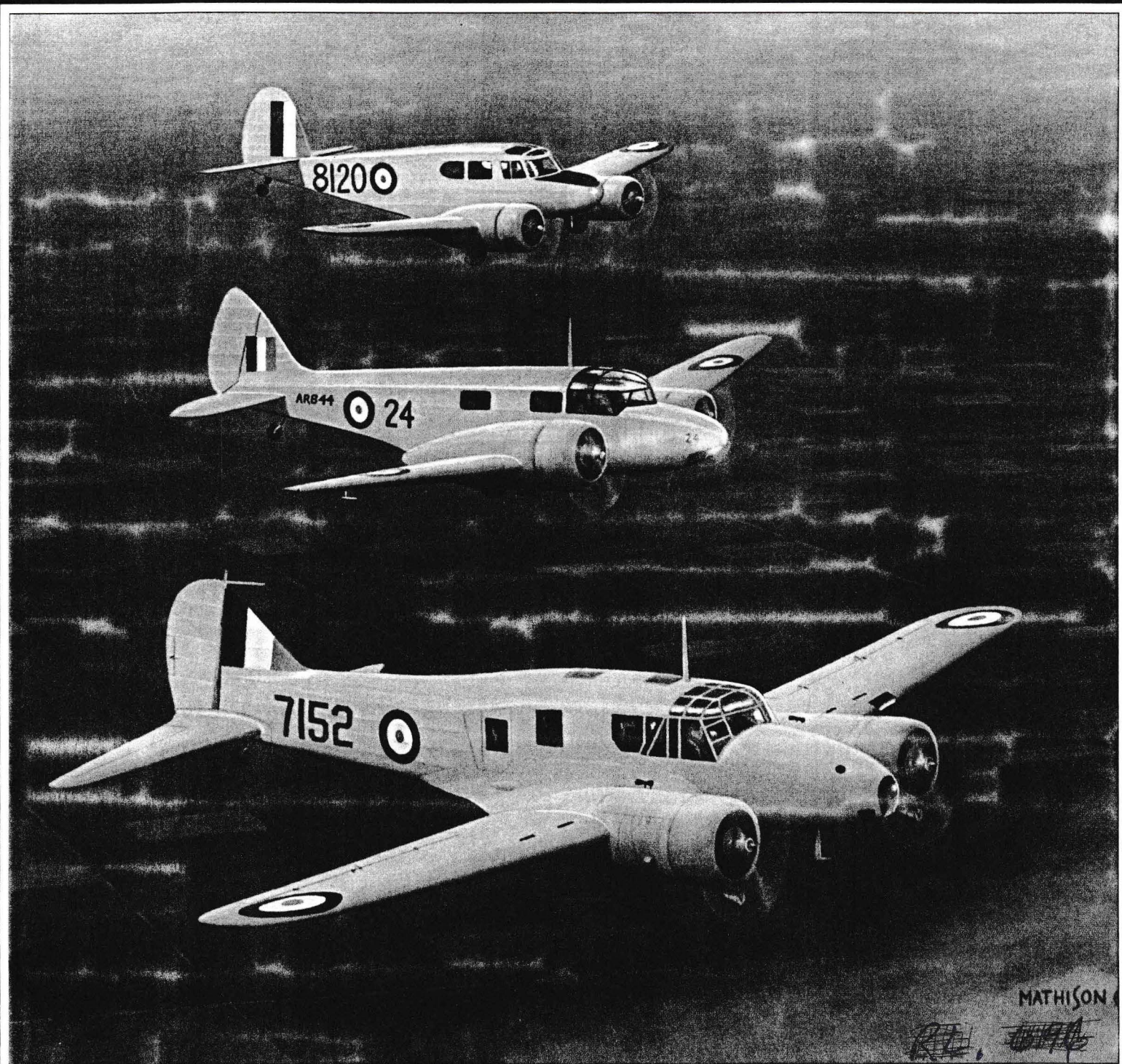
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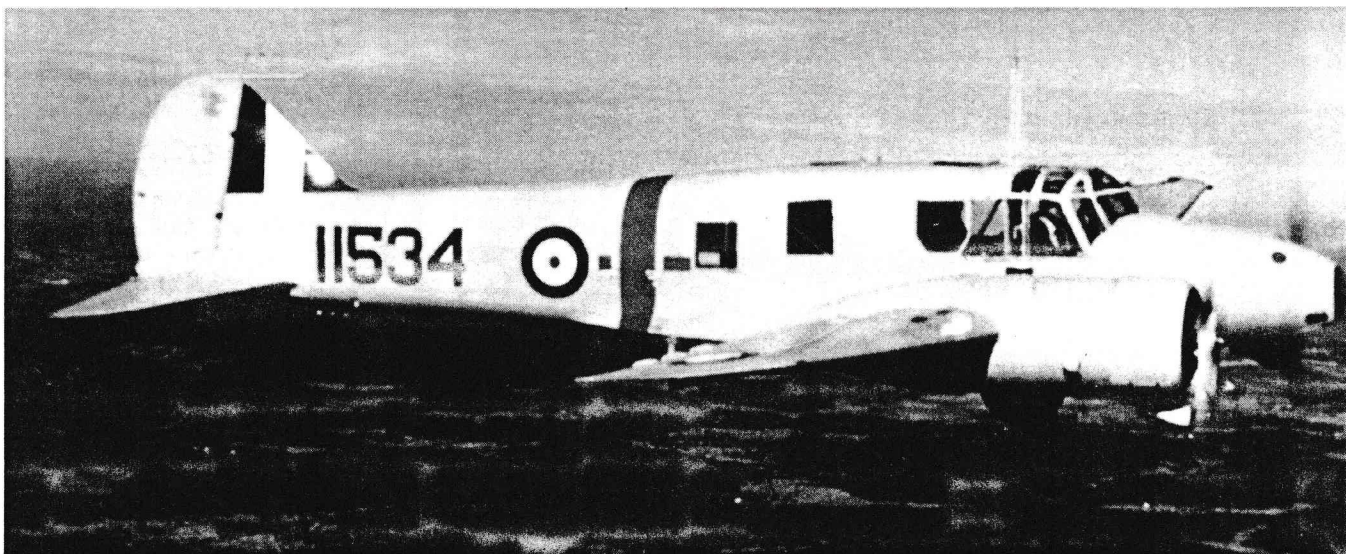
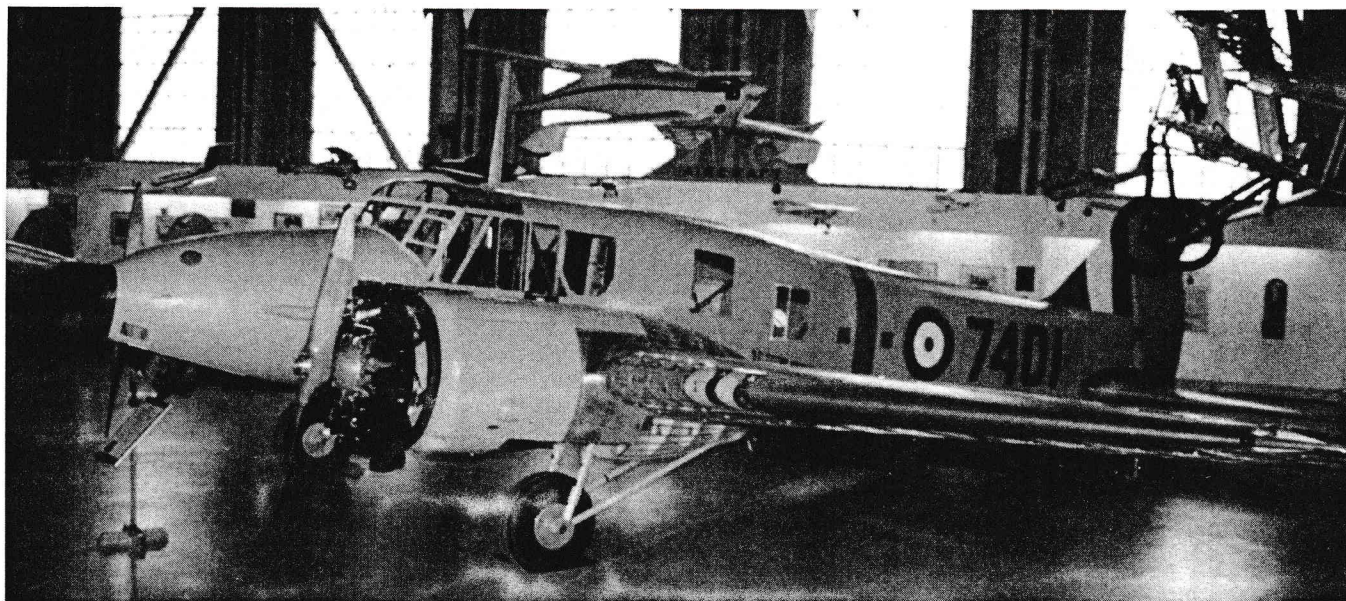
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THE REBIRTH OF A LEGEND

THE RESTORATION OF AVRO ANSON Mk II, RCAF 7401

Bruce W. Gowans

*Creating a Unique Exhibit for
the Aero Space Museum of Calgary*

More than one visitor to the Aero Space Museum of Calgary has been surprised to see on display, a completely restored Mark II Avro Anson. In 1982 when Molson and Taylor wrote *Canadian Aircraft since 1909* they remarked that while "the remains of some still survive — no complete example exists of a type that contributed so sub-

stantially to the success of the BCATP."

Not all aviation enthusiasts are aware that the RCAF operated Ansons than any other type of aircraft. In fact a total of 4,413 (Mk I to Mk VI versions) were operated by the RCAF from 1939 to 1953. The Mk I Anson was developed by the Avro Company in England. The aircraft was actually derived from the Fokker F.VII/3m which was built in England as

the Avro 10, a high-wing aircraft powered by three 225 hp Wright or A.S. Lynx engines. On the other hand, the Anson was a twin-engine low-wing aircraft powered by two 350 hp Armstrong Siddeley Cheetah IX engines. Construction of the Anson followed the Fokker practice of a welded steel tube fuselage and an all-wood wing. The Anson, which was designed for civil transport, first flew in

1935. Later the aircraft was adopted by the RAF for coastal reconnaissance.

In 1939 when the British Commonwealth Air Training Plan (BCATP) was established in Canada, the Anson was selected as the standard twin-engine trainer. Canada was to produce wings for the aircraft, with the engines and airframes supplied from England. By May of 1940, with the fall of France imminent, it became apparent that England would not be able to supply the previously agreed-to parts. This led to the development of the Mk II Anson. (See "Growing Pains," by Alan G. Wingate, *CAHS Journal*, Vol 34, No 3, Fall '96). In the meantime, the RCAF decided to look into the acquisition of the Cessna Crane to supplement twin-engine pilot training.

Heading, top: Anson II (RCAF 7401) on display at the Aero Space Museum of Calgary. **Heading, bottom:** a wartime shot of Anson II RCAF 11534. The red fuselage band denoted an aircraft involved in instrument landing training. **Below:** RCAF 7401 at the ASMC's 50th VE Day anniversary celebration. **Bottom:** the remains of a Mk II Anson on the Koehler farm at Claresholm, Alberta, in the Spring of 1985. Parts for 7401 came from the remains of some two dozen aircraft. ALL PHOTOS VIA G. RYNING.



The Mk II Anson was, in reality, a Mk I Anson built in Canada, powered by two Jacobs 330 hp L6MB engines. Three changes made to the aircraft that were much appreciated by the crew were: the incorporation of better heating, hydraulic brakes and the use of hydraulics to raise and lower the undercarriage. Other changes included the use of wooden components (e.g. wing fillets and nose cone) in place of aluminum which was expected to be in short supply. A total of 1,833 Anson IIs was built in Canada from 1941 to 1943. The project was under the direction of Federal Aircraft Ltd of Montreal with components supplied from the following companies: Boeing Aircraft of Canada, Canadian Car & Foundry, Cockshutt Plough Co Ltd, de Havilland of Canada, MacDonald Bros Aircraft, Massey-Harris Co Ltd, National Steel Car Co Ltd, Ottawa Car & Aircraft and White Canadian Aircraft Ltd.

While the Mk I Ansons were used by the Air Observer Schools (AOS) with a normal crew of four, almost all Mk II Ansons were allocated to the BCATP Service Flying Training Schools (SFTS) for twin engine pilot training. This was due to the fact that the Jacobs engine developed lower power than the Cheetah engine in the Mk I Anson. During training the Mk II Anson had a crew of two, a Flying Instructor and student. The Anson IIs were initially supplied with fixed-pitch wooden propellers which were later replaced by Hoover variable-pitch propellers.

The Mk III Anson designation was applied to Mk I Ansons that had their Cheetah engines replaced

by the Jacobs. The Mk IV designation was used for Mk I Ansons that had their Cheetah engines replaced by 420 hp Wright R-975 engines. With one exception, no new Mk III or IV Ansons were built in Canada. The exception was the prototype Mk IV Anson (RAF R9816 and later RCAF 10257). This aircraft was converted in England and then shipped to Canada. One hundred and fifty Ansons were converted to Mk IIIs and 70 to Mk IVs.

Ansons (Mks 1 to IV) were used by the following BCATP schools:

Service Flying Training Schools (SFTS)

20 of the 29 schools used the Anson

Air Observer Schools (AOS)

All ten schools used the Anson exclusively

Air Navigation Schools (ANS)

All five schools used the Anson exclusively

General Reconnaissance Schools (GRS)

The two schools used the Anson exclusively

Bombing and Gunners Schools (B&GS)

All 11 schools used the Anson

Operational Training Units (OTU)

Two of the six schools used the Anson

Flying Instructors Schools (FIS)

All three schools used the Anson

The Anson was also used by the Central Flying School (CFS) and the Central Navigation School (CNS)

The Anson, by all accounts, was well liked and performed its duties well. Some recorded comments follow:

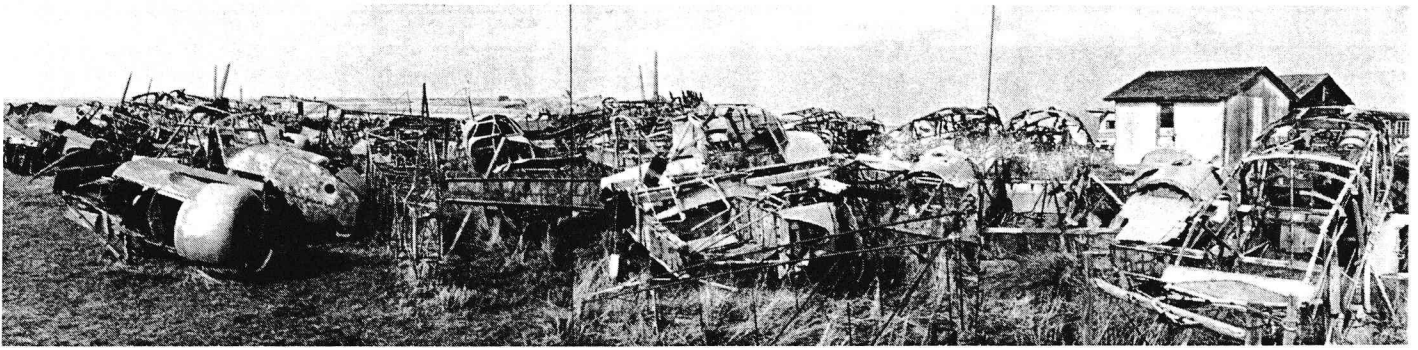
"The Anson had an amazing reputation for safety."

"Steady, reliable, and totally comfortable."

"Forgiving characteristics, good visibility. It was an interesting and pleasant aircraft to fly." Al Wingate

"There were many forgiving aircraft, but the Anson was downright lovable." John Griffin.

The Mk V Anson was a much improved version of the earlier model. The major improvement was the use of the 450 hp Pratt & Whitney Wasp Jr engine and a completely new fuselage made from moulded plywood, a process which had been developed by Eugene L. Vidal. The fuselage was made in five sections and bolted together. The first 100 fuselages were supplied by Universal Moulded Products Corp of Rochester, NY with the balance from Cockshutt Moulded Aircraft of Brantford, Ontario. A total of 1,049 Anson Vs were supplied to



the RCAF from 1943 to 1945. The first Anson V was Taken On Strength (TOS) on 15 February '43 (RCAF 11581) and the last on 15 March '45 (RCAF 12628). With the added power and streamlined fuselage, the Mk V Anson was a much improved aircraft. For the first time the Anson had reasonable single-engine performance, and the cruising speed went from 140 mph (Anson II) to 175 mph. In addition to the improved performance, the aircraft was much quieter than the previous models, due to the wooden fuselage.

A Mk VI Anson was developed at the same time as the Mk V. This aircraft was equipped with a dorsal gun turret. The turret was not successful and the project was scrapped. Only one Mk VI Anson (RCA)13881, TOS 10 December '43) was built.

Those selected for pilot training in the BCATP were first sent to an Elementary Flying Training School (EFTS) where they learned to fly on a Tiger Moth or Fairchild Cornell (Other aircraft such as the Fleet Finch and Fleet Fawn were used to a lesser extent). Upon graduating from an EFTS the pilot was sent to an SFTS where he was trained as a fighter or bomber pilot. Fighter pilots received their training on the Harvard whereas bomber pilots were given twin-engine training on either the Mk II Anson or Cessna Crane (RAF pilots were given

their training on the Oxford).

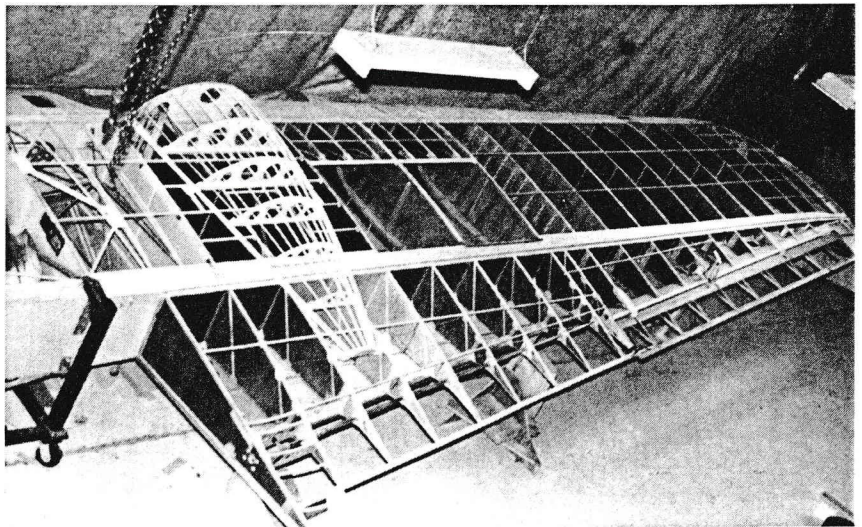
While many individuals were involved in the restoration of the Museum's Anson, the project's prime mover was George Ryning. George was born in Alberta in 1922 and grew up on the family farm at Rowley, some 75 miles north east of Calgary. From 1943 to 1946 George was an airframe mechanic with the RCAF. After that he returned to Calgary where he enrolled in the Aeronautics course at the Provincial Institute of Technology and Art (since re named the Southern Alberta Institute of Technology or SAIT). After graduating in 1949 George was employed by Avro in Toronto and later returned to Calgary where he worked for Canadian Pacific Airlines Repairs (CPALR) at the RCAF No 10 Repair Depot (10 RD). In 1955 he joined SAIT as an Aeronautics Instructor. He remained at SAIT until his retirement in 1985. George obtained his private pilot's license as well as a glider pilot's license. For many years he supervised the Cu Nim Gliding Club's aircraft maintenance. For this and other contributions he was awarded a life membership in the club.

In the meantime the Aero Space Museum of Calgary had established itself at the Calgary airport and was interested in creating a display to honour the BCATP. Bill Watts, the energetic President and retired commercial pilot, was touring southern Alberta in his

Cessna 180 looking for artifacts for the museum. The project Anson had come from the Widdifield farm at Seven Persons in 1994. Two other airframes were located on a farm east of Claresholm. While derelict fuselages were quite obtainable the same could not be said of the wooden wing.

When the museum learned of George's retirement they asked him if he would lead the Anson Restoration team. He eagerly accepted and on 4 February 1985, with a crew of five, began work on the project. Many other volunteers joined the project. Some came and went, while others took on a particular task, such as instrumentation or electrical work. Among the volunteers were some retired members from the gliding club including Owen Wright, Bruce Hea, and Garth Schieb. Louis Tortorelli, a skilled metal worker, restored all of the

"After lying on these farms for over 40 years, little was left of the wooden wing structures."



metal work to its original shape. Other volunteers included Arnold Bohni, Don Heiken, and Ernie Taube. This list is far from complete and does not do justice to the many other individuals that contributed so much to the project.

In most cases when the surplus Ansons were purchased by farmers, the wings were cut off at the root which made transportation to the farm possible. After lying derelict on these farms for over 40 years, little was left of the wooden wing structures. To further complicate the issue, no factory drawings for the Anson wing could be found. The museum was fortunate in finding a complete wing spar on the Stangey farm near Claresholm; while it could not be used in the project, the spar did provide a pattern. In 1996 when George and his wife were on an extended holiday, they visited the Royal New Zealand Air Force Museum in Christchurch where the restoration of an Anson was in progress.

This museum had been working with about 15 original factory drawings. George located some more wing drawings on a subsequent visit to the South African Air Force Museum in Pretoria. They were also working on the restoration of an Anson. Both museums provided copies of their drawings for the Calgary project. Thus the Anson project took on International dimensions.

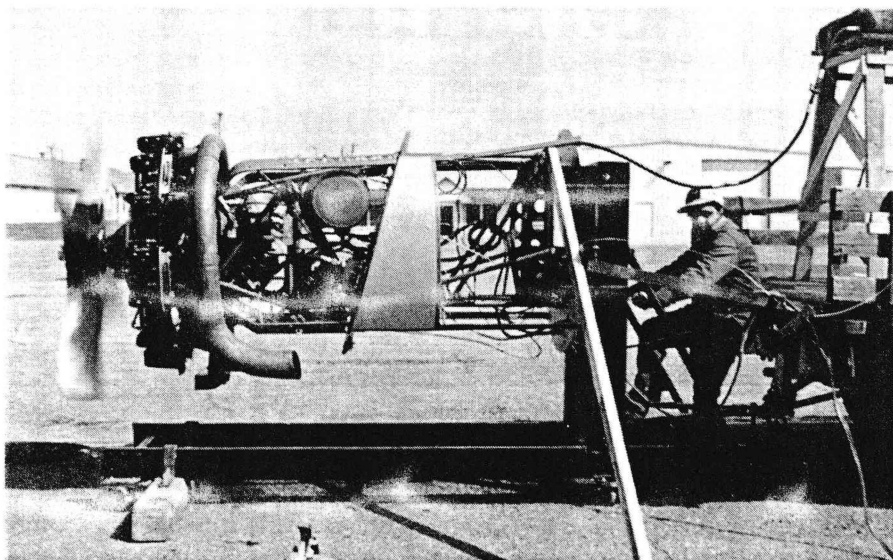
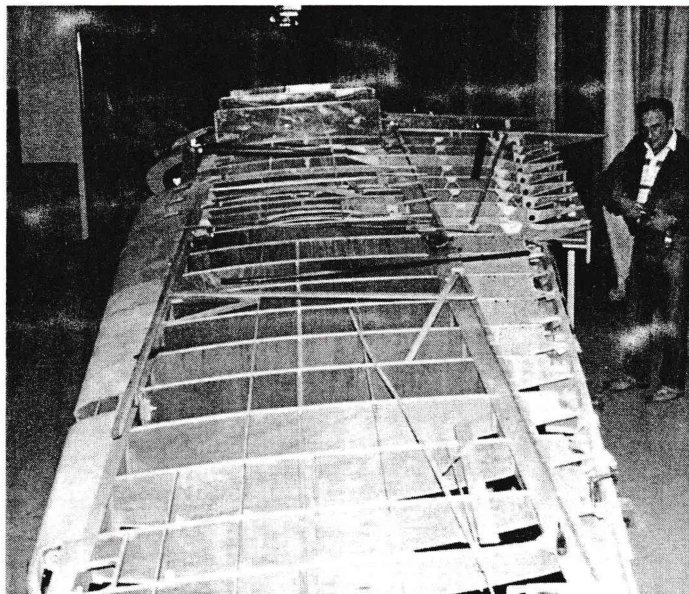
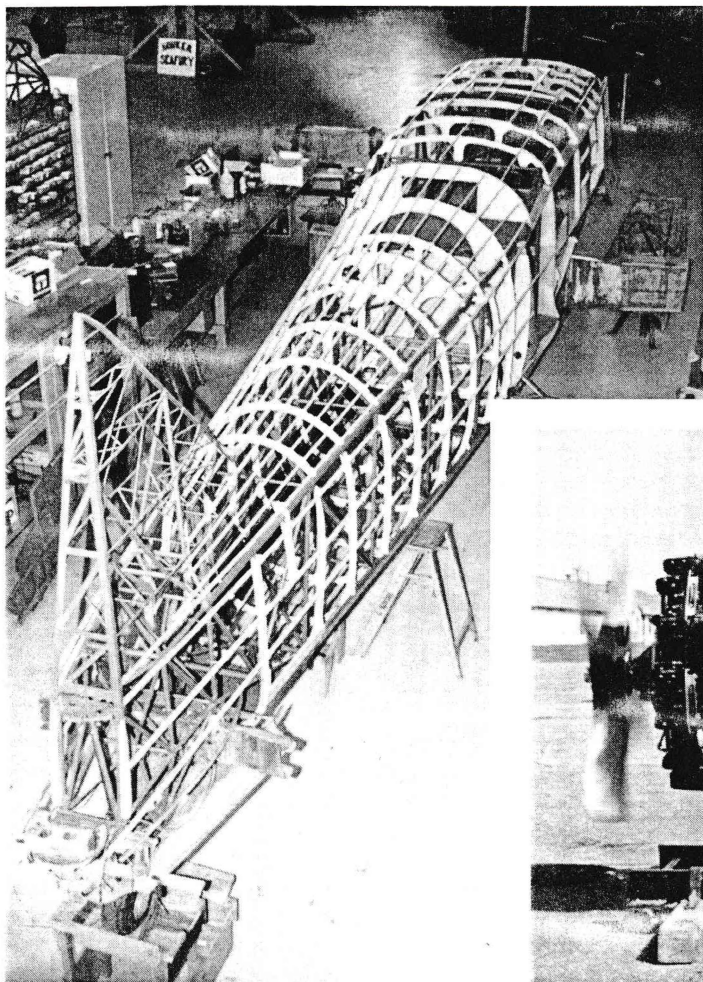
The construction of the wing received a boost when, in 1987, Ted Dickson joined the restoration team. Ted, another retiree, was an excellent draughtsman and woodworker. Using the information assembled by George, Ted generated drawings for the two wing spars and all the wing ribs. After the completion of all the drawings, work could begin on the 56-foot-six-inch wing. A large worktable was constructed and the wing slowly took shape. The starboard wing was covered with plywood sheeting, and painted in RCAF colours. Plywood sheet-

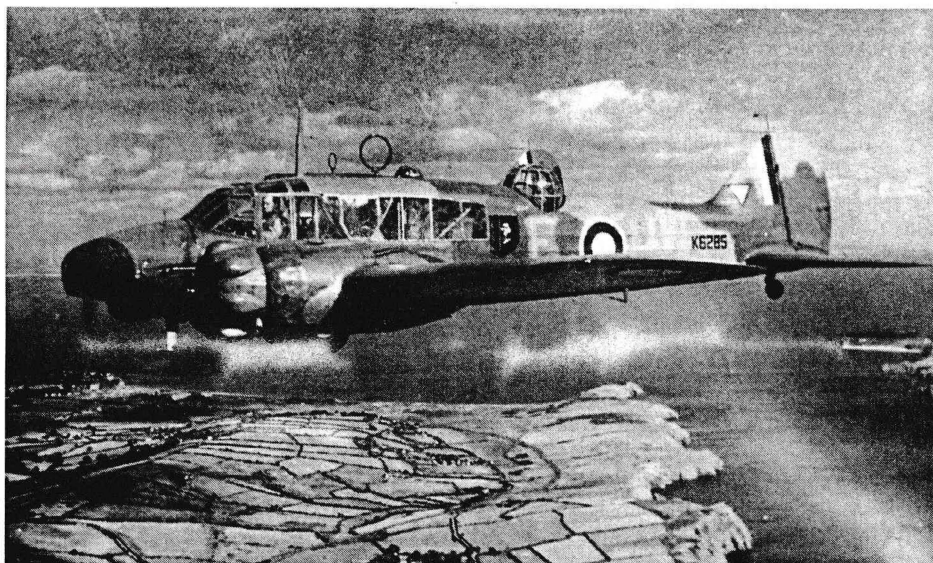
ing was left off of the port wing and it was covered with clear plastic thus viewers can see details of its construction. The drawings for the wing and its construction took five years to complete. Since completing the wing drawings, copies have been distributed to at least three other aviation museums.

Meanwhile work continued on the fuselage. The Anson from Claresholm had a better rear structure so it was mated to the one obtained from Seven Persons. Volunteers visited many Anson fuselages in southern Alberta, each of which contributed some missing item, such as a floorboard or a missing panel. A complete rudder was donated by Gordon Willdig, who had stored it inside since 1946. A complete tailplane was also acquired and, although the wood had deteriorated, drawings for a new one were made from it. Ron

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Opposite, top: composite photo of aircraft remains, mostly Ansons, stored at Nanton, Alberta. At middle/left, the fuselage of a Bristol Bolingbroke is identifiable. **Opposite, bottom left:** George Ryning, a "prime mover" in the project, sews Anson fuselage panels. **Opposite, bottom right:** the uncovered starboard wing and engine nacelle. **Right:** the wing under construction, upside down. Ted Dickson, draughtsman and woodworker extraordinaire, personally built about 90% of the one-piece mainplane. **Below:** the uncovered fuselage of 7401 as of December '86. **Bottom right:** May '91, the starboard Jacobs engine of 7401 being run up on a test stand. ALL PHOTOS VIA G. RYNING.





RAF KG285, an RAF Anson 1, similar to those flown by the author.
AUTHOR

celled takeoffs for the night, and we went out to the scene. Next morning, never was an aircraft checked or run up so thoroughly as was ours. Overload-heavy, we used the entire runway before lifting off over the wind-tossed Atlantic Ocean.

Gibraltar next stop -- but that's another story. (See Wellington Renaissance by A. B. Wahlroth, CAHS Journal, Vol 21, No1, Spring '83).

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REBIRTH OF A LEGEND

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Jackson took on the task of building a new one.

RCAF 7401 was selected for the restoration as this Anson had served with No 19 SFTS at Vulcan, the closest air station to Seven Persons from where the Anson airframe had been retrieved. The manufacturer's plate on the museum's aircraft was too corroded to be read.

The Anson, although not completed, was first displayed to the public during the 50th anniversary celebrations of VE day. The next two years were used to complete the interior of the aircraft.

The Anson on display is a wonderful tribute to the many volunteers and the hours they put in on the project. It also serves as lasting recognition of Canada's contribution to the BCATP and the many pilots trained in this historic aircraft. The Federal Government's New Horizons program provided the museum with much needed financial support. It is believed that Anson RCAF 7401 is the only Mk II Anson on display in the world.

ACKNOWLEDGEMENTS

Reference material for this article included the following:

The Mark V Anson by B.W. Gowans

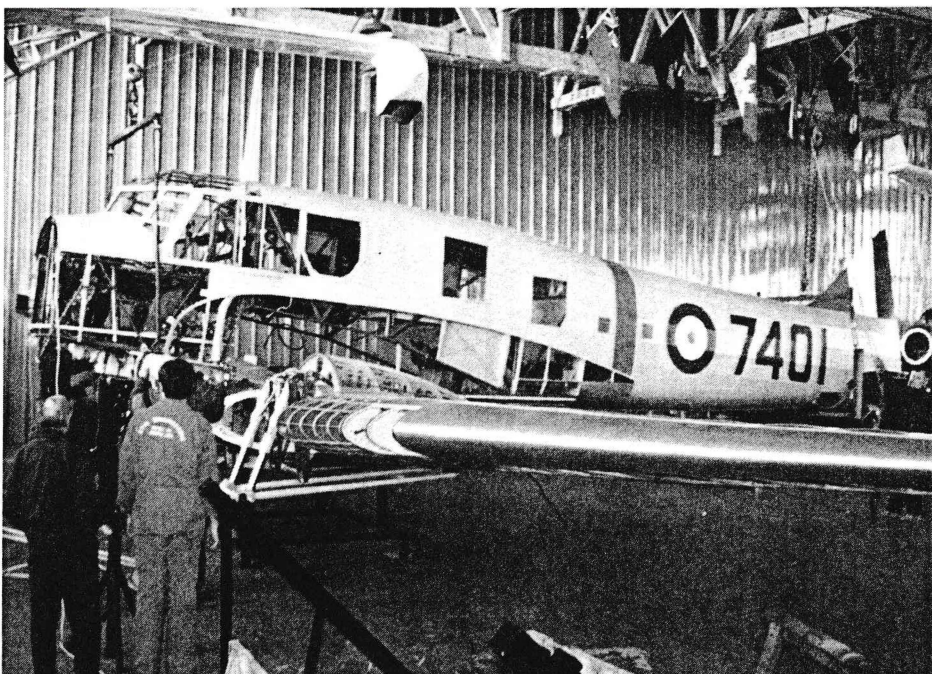
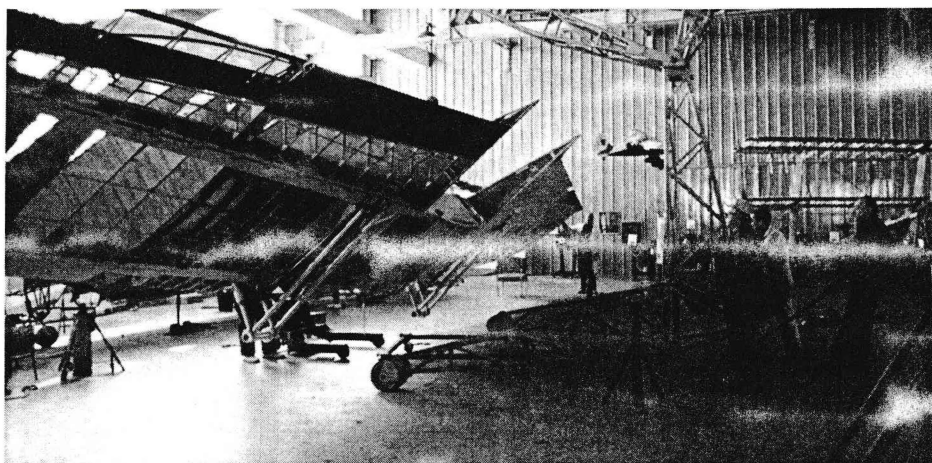
Paper presented at the (1999) 37th Annual CAHS Convention and 5th Annual Air Force Historical Conference

Anson Mark II "7401" by George Ryning
Calgary Flypast Number 7

Interview with George Ryning;
November 1999

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Top: turning the one-piece mainplane (span 56ft. 6in.) top-sided up with the aid of two mobile cranes. **Bottom:** lowering the fuselage of RCAF 7401 onto the cradled mainplane in March '95. G. RYNING