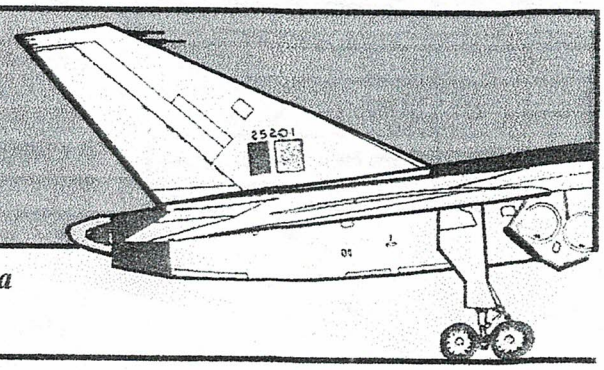
Pre-Flight



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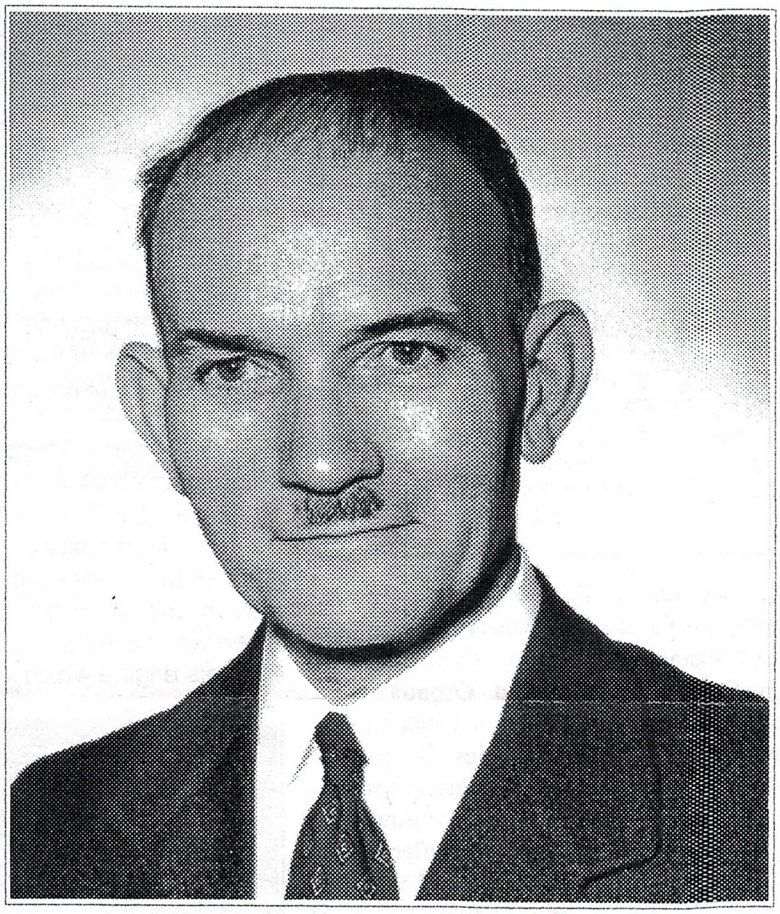
P.O. Box 246, Etobicoke "D", Etobicoke ON M9A 4X2

Vol. 12, No. 5 **September - October 2001**

From Turboprops to Gas Turbines

Engineer who led Arrow Engine Team dies at 98



Charles Albert Grinyer
on being named to Design Council (1955)

CHARLES ALBERT GRINYER, who led the Design Team on the Iroquois engine, designed for the Avro Arrow supersonic interceptor, was born on March, 1903 in Sydenham, Kent, England. He was educated at St. Michael's School and later at Goldsmith College, London. In 1912, his father accepted a position in Canada as a Locomotive Engineer and subsequently the family emigrated to Canada and settled in the Toronto area. They returned to Britain in 1915. At the age of 14, Charles Grinyer was apprenticed to the South Suburban Gas Company, where work experience combined with university completed his formal education. He progressed from apprentice to Chief Engineer and later General Manager in the gas industry. From 1936 to 1946, Charles Grinyer was with the British Air Ministry, and was responsible for co-ordinating all jet engine test procedures during his last four years as Technical Assistant to the Deputy Director of Engine Inspection in Britain's Ministry of Supply. He joined the Bristol Aircraft Company in 1946, where he was largely responsible for the development of the Theseus Turbo Prop, early Marks of the Proteus Turbo Prop (Bristol Britannia) and the Phoebus, the pure jet version of the Proteus. When he left Bristol Aircraft in December 1951,

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From the President:

I hope that everyone had a good s ummer. It was a busy time for the Board. As mentioned in the last Pre-Flight, the Board meeting in August was devoted to the question "Where are we going from here". Many interesting ideas were presented, most of which need further study to establish their practicality. Some of these suggestions were:

1. A large scale model of the Jetliner.
2. A full-scale replica of the Curtis flying boat, the first a/c built in Toronto, circa 1909.
3. Assist in re-printing certain out-of-print books on Canadian aviation.
4. Refurbish the Viscount simulator.
5. Refurbish our CF-100 and Arrow display models.
6. Try and obtain a J75 engine (ex-Thunderchief) from USA. This was also used in the Arrow.

It was decided to approach Parc Downsview Park to see if AHFC can get a home of its own, with secure lock-up and displays.

On another front, discussions with GTAA at L. B. Pearson Airport regarding AHFC installing a display in the new terminal building has met with a positive response. Dita Vadron and I will be meeting with these people shortly to define what they would like. AMRP, the anticipated sonar grid-search did not occur. I am looking into other means of completing this search. The main problem is funding; we are in discussions with a company that helps non-profit groups, such as AHFC, find sponsors.

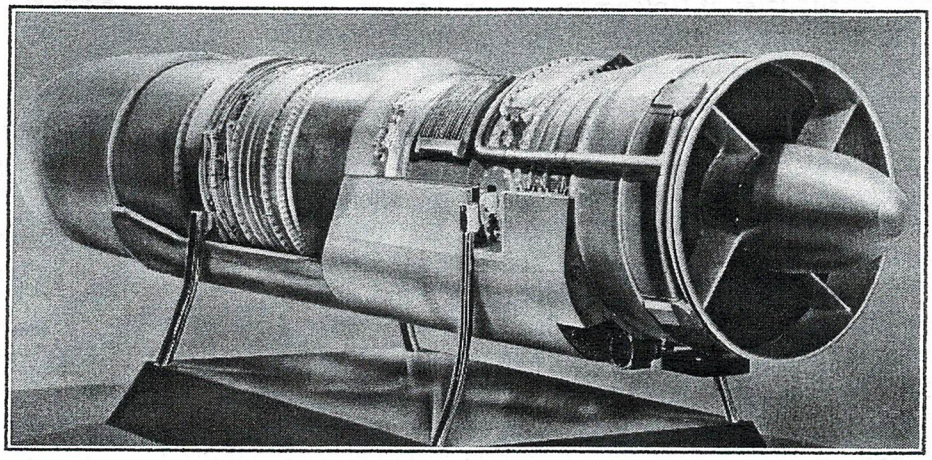
Don

***Engineer,** cont'd.*

Mr Grinyer was Technical Assistant to the General Manager advising on jet engine manufacture and production.

Mr Grinyer joined A.V. Roe Canada Ltd., Orenda Engines Division, in April 1952. The appointment became effective January 01, 1952. He held the postiion of Assistant to the Chief Development Engineer, Chief Development Engineer, Assistant Chief Engineer, prior to his appointment of Chief Engineer, Gas Turbine Division, on January 1, 1954.

On January 01, 1955 he was appointed Vice-President, Engineering, of Orenda Engines Ltd., which became a separate company on this date. He was in charge of the development of the Orenda series of engines which powered the Avro CF-100, the Canadair F-86 Sabre fighters and later the Iroquois engine which was planned to power the Arrow.

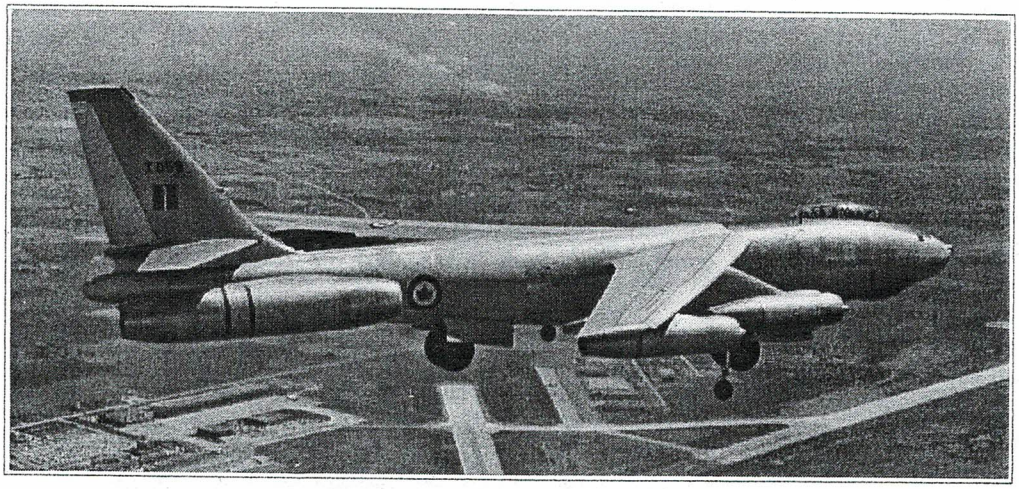


Two Iroquois engines, with a thrust rating in the 20,000 lbs. class, were to be used to power production models ofAvro's Arrow.

***Engineer**, cont'd*

The Iroquois engine represented a quantum leap not only in the design and materials selected for the construction but also in the power/weight ratio in the thrust produced.

The design of the P.S.13 (Iroquois) started in September 1953 and the first development run was on December 15, 1954, just 11 months after release of the first drawings to the Manufacturing Shop. Significant performance achevements were recorded in December 1955, when design dry thrust was achieved during a sustained run at maximum speed. A B-47 bomber, which had been allocated by the United States Air Force to the Royal Canadian Air Force for Orenda's use and was modified by Canadair in Montreal to have a seventh engine pod on the right rear side of the fuselage, arrived at Malton on April 15, 1957.



Boeing B-47, the flight test bed for the Iroquois, over Malton ('57).

The first in-flight light-up was on November 13, 1957. The official unveiling of the Iroquois was in July 1957 by Defence Minister, the Hon. George R. Pearkes, V.C. In January 1958, when the first phase of testing at simulated altitude and forward speed conditions were completed at NACA Laboratories in Cleveland, Ohio, over 100 hours running was achieved during this test phase. The Iroquois engine recorded what was at that time the highest dry thrust achieved by turbo jets on the North American continent.

Further development continued and significant progress was made, and the engine was scheduled for installation in Arrow No.206. Unfortunately, the government cancelled the Arrow and Iroquois contracts on February 20, 1959, thus ending an era of engineering achievements in the aircraft industry.

Charles Grinyer was awarded the 1959 McCurdy Award of the C.A.S.A. for his contribution of Canadian Aviation Engineering. After resigning from Orenda Engines, Mr Grinyer rejected the many substantial offers he received from the United States aircraft industry, and elected to join Atomic Energy of Canada, where Lorne Gray, President of Atomic Energy of Canada of Canada, Limited, appointed Mr Grinyer Vice President, Enginering at Atomic Energy's Chalk River Ontario location, in August 1959. He would handle Atomic energy of Canada's Chalk River construction.

In October 1960, Mr Grinyer moved back to Toronto and Lorne Gray appointed him Manager N.P.D. (the reactor in Rolfton, Ontario), reporting to H.A. Smith, Manger, Nuclear Power Plants Divisiion.

In 1962, he was appointed to the Atomic Energy of Canada Limited Board of Directors and its Executive Committee, and was employed as Lorne Gray's trouble-shooter.

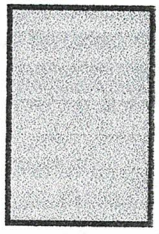
Mr Grinyer retired from the Board in 1965. During this time on the Board, he led several of the technical exchange missions to Great Britain, Russia and Italy.

Charles Grinyer died in his sleep in his 99th year, at Shelburne Hospital, in Shelburne, Ontario, on March 10, 2001.

He was predeceased by his wife Rosalind and is survived by his son Ivan and daughters June, Barbara and Susan, nine grand-children and five great-grand-children.

The above was prepared with input from June Chubb, Jim Floyd and Bert Scott.

Recognized by Peers



Charles A. Grinyer, Orenda's VP-Engineering and Chief Engineer, was named a member of the Hawker Siddeley Group's Design Council, thus becoming the second Canadian to join this body. The other Canadian member is James C. Floyd, Avro Aircraft's VP-Engineering.

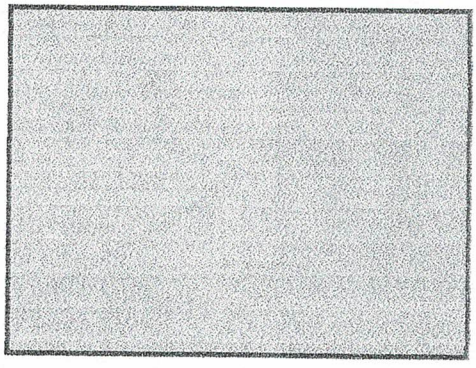
The Design Council, regarded as the greatest single collection of aeronautical brains in the world, is composed of the technical heads and chief designers of the Hawker Siddeley Group. Its purpose is to provide for an interchange of ideas and to map out research and experimental plans and ensure an adequate supply of trained people and equipment to carry out these plans. The Council meets twice yearly.

Mr. Grinyer, whose early training included work on combustion problems and centrifugal and axial flow compressors when they were virtually unknown in the aero engine industry, became associated with the jet aero engine industry at its birth. During the early years of WW II, he was named co-ordinator of all jet engine test procedures in Britain while Technical Assistant to the Deputy Director of Engine Inspection in Britain's Ministry of Supply.

He joined Orenda Engines in 1952 as Assistant to the Chief Development Engineer, and held successively the positions of Assistant Chief Development Engineer; Chief Development Engineer; Assistant Chief Engineer, Development; and VP-Engineering and Chief Engineer.

Mr. Grinyer joined Orenda from Bristol Aeroplane Co., Ltd., where he went in 1946. While there, he was largely responsible for development of the Theseus turboprop and the Phoebus, the pure jet version of the Proteus. When he left Bristol Aeroplane, Mr. Grinyer was Technical Assistant to the General Manager advising on jet engine manufacture.

–Source: *The Orenda Newsletter - I, 11 (1955)*



1955

Those were the days ...

FOR SALE

Easy washing machine.
Good condition. $25. CH 1-0214.

Man's bicycle.
New tires, tubes and seat. Excellent condition. $20. RO 9-8819.

Smith-Corona portable typewriter.
Valued at $74.50, and selling for $55. Please call John Brennan WA1-7203.

Pease all-steel coal furnace.
Practically new. Complete with pipes and Minneapolis Honeywell janitor control. Brampton 1850W.

Combination radio and record player.
Stromberg Carlson. Also five albums of records, 26 & 60 cycle motors. $50. P. Meredith, LO1- 9893.

8 mm movie camera.
Revere "80", 4 speeds, f2.8 lens, as new. $60. Also f2.5 telephoto lens, $15. RO 2-5588.

1952 four door Ford Sedan.
Radio, heater, slip covers, perfect condition, $1,100. RO 9-6248.

Reward $5.
No questions asked for the return of the grey tool box that was removed from brown VW, license 770-537, and motorcyle parts. Urgently needed. Mike Pope,CH 1-8011.

4 roomed frame house and bath.
Gas heating and cooking. Lot 40 X 100. 5 minutes to plant. $7,400. 2/3 cash required. BR 7-4566.

Corner lot, Caledon East.
100 X 150. High, dry and level, sandy loam. Ideal for new home. $575. Geo. Jackson, 212 Lakeshore Rd., Port Credit. CR 8-9618.

An exclusive new apartment.
Architect designed in residential district, business couple. Plate-glass entrace porch opening into spacious sunny living-room, large bedroom with two cupboards with sliding doors. $150 monthly. CH 1-3924.