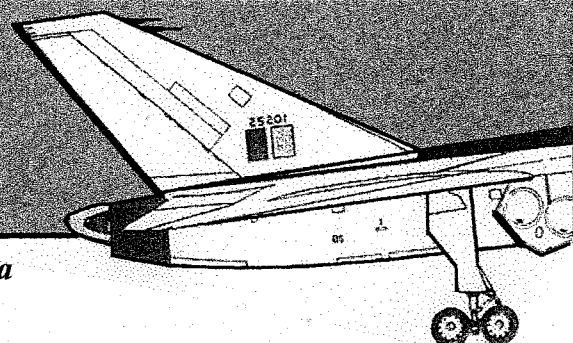


Pre-Flight



*A Publication of the Aerospace Heritage Foundation of Canada
P.O. Box 246, Etobicoke "D", Etobicoke ON M9A 4X2*

Vol. 14, No. 3

May - June 2003



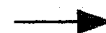
Michael Cooper-Slipper

and

His Years with Flying Machines

The wide experience Mike Cooper-Slipper gained as a young fighter pilot and test pilot during World War II provided him with the skill and judgement required of him in his subsequent career as test pilot in the Canadian aviation industry, at the dawn of the jet age and just at the time Canada's engineers, technicians and manufacturers were poised to do the work that led to international recognition for the industry. In the course of a third career in aviation sales, he identified and developed markets for Canadian aircraft. That experience led to a position as overseas marketing consultant for the Ontario Ministry of Industry, Trade and Commerce, during which he identified international markets for and created consortiums to supply a variety of Ontario-made products, notably manufactured items for the

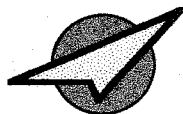
aerospace industry. During his career, he amassed nearly 4,000 hours of flying time, in some 75 different types of aircraft, many of them high performance. Mike Cooper-Slipper's career in aviation began in July, 1938, when, age 17, he joined the Royal Air Force (RAF). He completed his flight training in August, 1939, coming second in his class. In October, as Pilot Officer, he was posted to 74 Squadron as a fighter pilot and flew a wide variety of aircraft, especially Spitfires and Hurricanes. A posting to 605 Squadron at Wick, north Scotland, in February 1940 gave him valuable experience flying from a primitive airfield in adverse weather conditions. In May 1940, 605 Squadron was moved to Hawkinge to cover the evacuation of Allied troops from Dunkirk. Engaged in aerial combat for the first time, Cooper-Slipper destroyed his first enemy aircraft. He flew every one of 605 Squadron's sorties before the Squadron, having sustained extensive damage, was withdrawn from action. After a summer spent flying 80 hours a month training new pilots, Cooper-Slipper was promoted to Flying Officer and moved to Croydon at the height of the Battle of Britain.



Founded 1989

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From the Vice-President

On June 7, 2003. Life Member of AHFC, Mike Cooper-Slipper was inducted into the Canadian Aviation Hall of Fame at a ceremony held at the Westin Nova Scotian Hotel, Halifax, N.S. This issue of *PreFlight* and the following issue will pay tribute to Michael's history in the aviation field.

On the same day, 845 Avro Arrow Squadron, Royal Canadian Air Cadets held their Annual Inspection at the Hershey Centre, Mississauga, Ontario.

The Aerospace Heritage Foundation of Canada supports both these worthwhile organizations and will have a representative in attendance. Look to future issues of *PreFlight* for reports on these functions.

I would like to remind all members of our upcoming Annual General Meeting on June 14, 2003 at 10:00 AM, being held at the Toronto Aerospace Museum, Conference Room. Come and find out what the Foundation has been doing over the past year, and provide input to us on how the Foundation can succeed within our mandate.

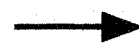
Frank

Cooper-Slipper, cont'd.

On September 15, Cooper-Slipper purposely rammed a Dornier 17 with his disabled Hurricane and was subsequently awarded the Distinguished Flying Cross, at 19 one of the youngest Battle of Britain pilots so honoured.

Following instructor's training and a variety of assignments flying an assortment of aircraft, Cooper-Slipper became Flight Commander of 74 Squadron in October, then was given command of 135 Fighter Squadron, which he took to Singapore, arriving in December, 1941. In the final days before the fall of Singapore in February, 1942, Cooper-Slipper took the remnants of his squadron to Palembang, Sumatra. There he flew two Hurricane sorties, but the airfield was attacked and Cooper-Slipper was captured by the Japanese. He then escaped, returned to Palembang, and led a group of fellow escapees south to Java. After hospital stays in India and South Africa, Cooper-Slipper found himself in a transit camp in Cairo, Egypt. In November, 1942 he was appointed Officer Commanding Special Performance Flight, Aboukir, and Chief Test Pilot of 103 Maintenance Unit. The Special Performance Flight used modified Spitfires to stop photographic reconnaissance by high altitude (40,000 ft) and high speed (400 m.p.h.) German aircraft. As Chief Test Pilot, Cooper-Slipper tested the modified Spitfires, taking one to 44,100 ft., as well as aircraft that were being developed for photo reconnaissance and low altitude, high speed tactical reconnaissance.

Restricted to lower altitude (10,000 ft.) flying for health reasons, Cooper-Slipper was posted in February, 1943, to the Middle East Communications Squadron and between May, 1944 to June, 1946 was test pilot for various Maintenance Units in the Middle East and England. He was promoted to Squadron Leader in July, 1944.



Cooper-Slipper, cont'd

Assigned to test repaired aircraft for airworthiness, he flew the full spectrum of aircraft from Tiger Moths and Mosquitoes through Spitfires, Hurricane, Sea Furies, Tempests and American Grumman naval fighters, to the B-24 Liberator and the B-17 Flying Fortress. Cooper-Slipper resigned from the R.A.F. in June, 1946, with the rank of Squadron Leader. He served in three theaters of conflict and had an enviable record of 14 enemy aircraft confirmed shot down, shared or damaged.

Decorations

Distinguished Flying Cross, 1939-1945, with Battle of Britain bar; Air Crew Europe; Africa Star; Pacific Star; Italy Star; Defence Medal, War Medal.

Test Flying in Canada

Mike Cooper-Slipper emigrated to Canada in November, 1947, joining Avro Canada Ltd. as an engine fitter. He spent much of his early time trying to persuade Avro management to let him fly. His wish came true when he was transferred to a test flight under Donald Rogers, doing post-repair and production testing on the four engine Lancasters, twin engine Mitchell B25s and Sea Furies.

In 1949, Cooper-Slipper was assigned to development of the Avro Jetliner, the first civilian jet transport in North America and the second in the world. At the time, there was widespread reluctance to consider jet aircraft for civilian transport. Many believed that flying such fast aircraft on commercial routes would be beyond the capabilities of the pilots, and therefore dangerous, that tarmac would be melted by the heat from the jet engines, and that jets would not be able to compete with conventional aircraft on short-haul commercial runs. The Jetliner exploded these myths one after the other. On a test flight between London and Toronto, the Jetliner achieved speeds exceeding 500 m.p.h., a record for those days. Handling the aircraft posed no problems for its experienced pilots. When Cooper-Slipper took the Jetliner to Montreal's Dorval Airport for a series of accelerate-stop tests, the airport manager had fire trucks follow the plane to put out the expected fires. There were no fires.

In April, 1950, Cooper-Slipper crewed the first international jet transport flight in North America, along with Donald Rogers and Bill Baker. The Jetliner completed the Toronto to New York flight, a two hour trip in a conventional commercial aircraft; in 59 minutes. Cooper-Slipper was co-pilot from Toronto to New York and captain on the return flight, carrying the first air

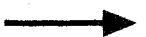


mail in North America to be transported by commercial jet. Although the Avro Jetliner never went into production, the flight tests proved that jet-powered air transports could be successfully and safely flown and operated on commercial air routes. Design of subsequent jet aircraft was influenced markedly by the results of the Jetliner tests, and the widespread interest in the Jetliner put the spotlight on Canada as a leader in the development of this new sector of the aviation industry.

In 1951, Cooper-Slipper was on loan to Orenda Engines, the gas turbine division of Avro, for engine development work. His reputation as a specialist in this area was made on a converted Avro Lancaster Mk10, whose outboard engines were fitted with the initial Orenda engines. He subsequently test-flew the Canadair built Orenda powered F-86 Sabre, in which he broke the sound barrier, and the Avro CF-100 Canuck, the first jet fighter designed and built in Canada.

Today, computer simulations generate the data that, in the 1950s, test pilots gathered in the air. Cooper-Slipper pushed the aircraft to their limits to test fuel consumption, turned off the engines and let the aircraft drop to determine at what altitude the engines would relight, and generally put the engines through their paces to provide the engineers with the information that would result in design modifications to improve engine performance.

The Orenda engine revolutionized the Sabre. At the time, the J-47 engine common in the U.S. designed jet aircraft delivered 5,400 lbs. thrust. The Orenda engine fit many of the same planes, provided 7,200 lbs. thrust, greatly improving the Sabre's performance and taking jet engine technology another step forward.



Cooper-Slipper, cont'd

Cooper-Slipper was the third pilot to fly the CF-100. One program involved testing and evaluating a partial pressure suit designed for back-up safety in case of high altitude depressurization. The twin engine CF-100 became operational in April, 1953, and served ten years in NORAD and NATO squadrons, contributing significantly to Canada's role in international air defence.

Orenda separated from Avro in 1956 and Cooper-Slipper became Orenda's Chief Test Pilot. Most notable was his work on development of Orenda's Iroquois turbojet engine, intended to become the power plant for the Avro Arrow. Test flights had indicated that, with the right engine, the Arrow could become the world's fastest, most advanced interceptor aircraft. The Iroquois, delivering over 19,350 lbs. of thrust during testing, was too large and powerful for most aircraft of the day, so when the time came to try it on a flying test bed, the United States Air Force agreed to lend a Boeing B47 bomber for the purpose.

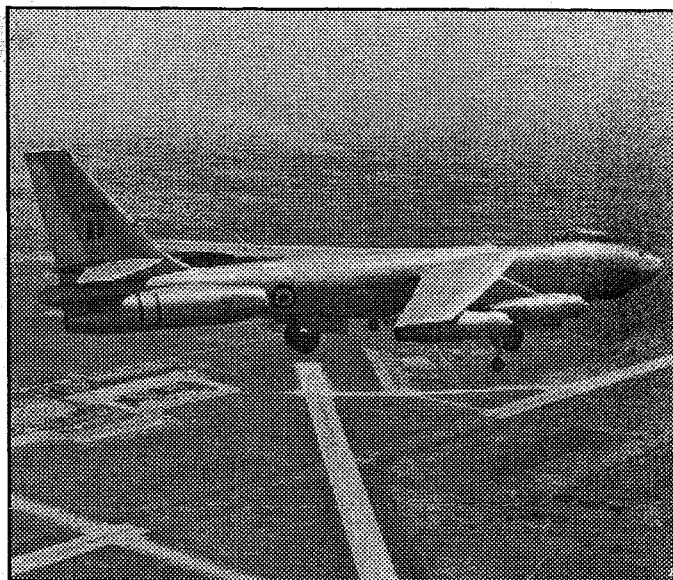
Cooper-Slipper and two other Avro-Orenda personnel took 10 weeks training at the U.S.A.F. Strategic Air Command Training Base in Wichita, emerging as a fully qualified B-47 crew, with Cooper-Slipper qualified as a S.A.C. Commander, a notable achievement for a civilian test pilot. The B-47 was modified by Canadair to carry the Iroquois as a seventh engine, mounted on the rear of the aircraft, and flight testing began.

The changes to flight characteristics resulting from the placement of the rear engine pod made the modified B-47 quite a challenge to fly, but Cooper-Slipper and his crew ran successful low altitude and climbing acceleration tests. At full throttle, the Iroquois engine was too powerful even for the B-47. Cooper-Slipper's crew had to develop a unique method of staggered engine thrust on the B-47's six engines, with the Iroquois running, to prevent a severe asymmetric thrust condition.

Although the Avro Arrow program was cancelled before testing on the Iroquois was completed, the knowledge generated during test flights had considerable influence on later engine development. At the time of cancellation, Arrow RL-206 was being readied to accept the first Iroquois engines and Cooper-Slipper was preparing himself for further engine development work in the Avro Arrow. During his employment at Avro and Orenda, Mike Cooper-Slipper demonstrated an aptitude for selling aircraft, as well as flying them.

(End of Part 1.

Conclusion in the next issue of Pre-flight.)



Iroquois on the B-47 being inspected.

Members Matter

Halifax Happenings

Dignitaries from government and aircraft-related buffs, historians, as well as interested individuals, will have come and gone from Halifax by the time you will have received this issue of *Pre-flight*. The event they attended, was, of course, was the investiture of **Michael Cooper Slipper** into the Canadian Aviation Hall of Fame.

Michael had a strong Avro connection, as the short overview of his long association with the aircraft industry in Canada. Lots of people see him as an able pilot who tested aircraft, engines and whatever else needed to be done. He was a capable and dedicated professional. Details of this prime event, in this Centennial Year of Aviation, will be summarized in our following issue of *Pre-Flight*.

Our collection of **aerospace artifacts** are still in storage, while AHFC negotiating for space to exhibit more of them. Some, however, are on the floor at TAM. Our school visits will stop until the Fall and the beginning of a new school year.

Some of our members have sent in stimulating (!) stories connected with the glory days at AVRO. Their info and anecdotes will appear, with much thanks, in our newsletter.

NICK DORAN,
Membership