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Cover: The "half-moon" face of Mars. Photographed in color by the Viking spacecraft in June 1976, the planet is revealed as a brown, crater-strewn expanse of sand and rock. Arid as it appears, there may be water locked beneath the surface. (Story page 4). Photo-graph courtesy of NASA.

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Sir Frank Whittle-Jet engine pioneer



The modern air traveller, speeding towards his destination in a comfortable jet airplane, is often unaware of the remarkable progress in air transportation over the past few decades, particularly the work of such pioneers as Sir Frank Whittle, the British inventor of the turbojet engine.

Speaking before a capacity crowd of NRC scientists at the auditorium of the Division of Electrical Engineering, Sir Frank evoked the by-gone days of the late thirties when he, along with a handful of enthusiasts, helped develop the first practical jet engine, a forerunner of the modern jet engines in use today.

Born in 1907, at Coventry, War-wickshire, Frank Whittle was first a test pilot and later an engineer with the R.A.F. Along with the simple turbojet, he also developed the turbo fan and the so-called aft-fan jet engine. His pioneer work on jet propulsion earned him a large number of awards and distinctions.

After retiring from the R.A.F. in 1948, Sir Frank pursued an active career as a consulting engineer, author and lecturer, inventing in recent years the turbine drill, while maintaining an active interest in the latest developments of aviation.

Concerning the rapid advances in aviation technology, Sir Frank commented: "I have just come to America by Concorde. When I was working on the design of the first jet engine, in my

wildest dreams I never saw myself as a passenger crossing from London to Washington in 31/2 hours.'

He then discussed the Concorde itself, addressing his remarks to some of the concerns of environmentalist groups, from take-off noise and smoke emission to sonic boom and the effect of exhaust gases on the Earth's ozone layer. According to Sir Frank, the available scientific evidence shows that none of these effects represent serious problems. "I really think that there is no case whatever for opposing overland supersonic flights by Concorde or any other supersonic aircraft," he stated.

As to the future of the Concorde, Sir Frank thinks that substantial improvements in fuel economy and reduction of take-off noise are possible by using more powerful engines and possibly by modifying the shape of the wings, in flight, for added lift at takeoff

He concluded by saying that "designing the next generation of supersonic transports is going to be too big a job for either France and Britain or for America alone. The best brains of the U.S., France and Britain should work together in an international consortium to create the next generation SST, which will be able to take 300 passengers from San Francisco to Tokyo, non-stop, at a velocity of Mach 2.2 — over twice the speed of sound."