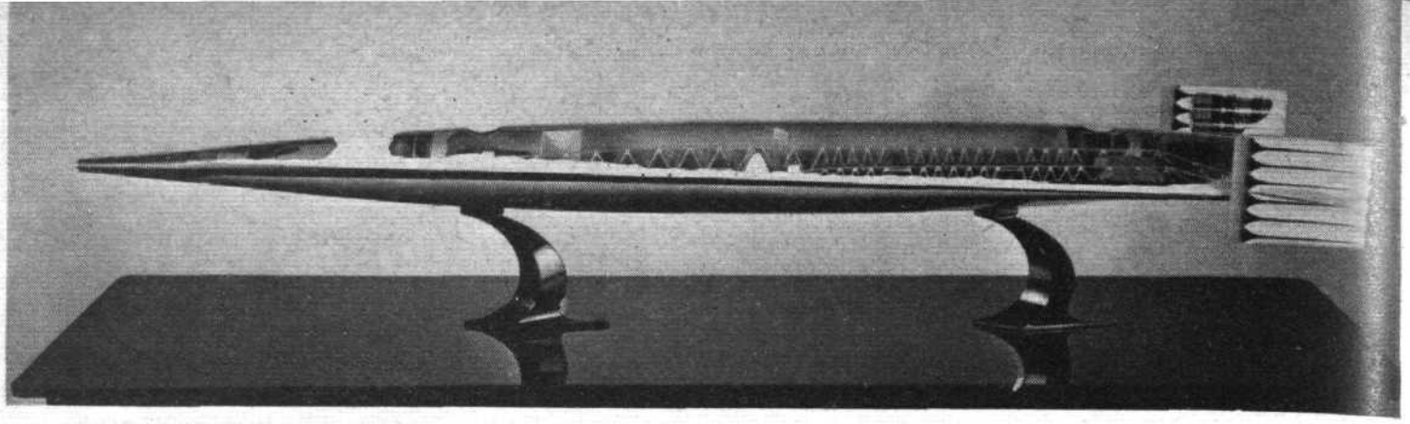

FORMULA FOR THE FUTURE? In model form is seen the newest version of the Griffith supersonic VTO airliner, with shock-body in the extended nose. Dr A. A. Griffith—whose retirement from Rolls-Royce is announced below—originally conceived the project ten years ago

FROM ALL QUARTERS . . .

Dr Griffith Retires

AFTER 21 years' service with Rolls-Royce Ltd, Dr A. A. Griffith, CBE, DEng, FRS, chief scientist to the company, has retired. He will continue as a consultant.

The following are extracts from an appreciation written by Dr Griffith's colleague, Mr A. A. Rubbra, technical director of Rolls-Royce (the two men have more in common than their initials): "From very early in his career Dr Griffith was an advocate of the gas turbine engine for aircraft. At the Royal Aircraft Establishment, while still in his twenties, he studied the then new science of aerofoils and formulated new theories of compressor and turbine design. In 1926, on the basis of these theories, he proposed a gas turbine engine which he claimed would be lighter, smaller and more efficient than piston engines for aircraft.

Dr A. A. Griffith

"Dr Griffith's proposal—unlike that of Sir Frank Whittle, whose work on jet propulsion began in 1928—was based on the axial type of compressor. Both men were right; Whittle's simpler centrifugal compressor enabled quicker development of the jet engine in the short run, but Griffith's belief in the superior efficiency of the axial type is vindicated by its subsequent adoption throughout the world.

"Dr Griffith's best-known proposals have stemmed from his belief in the possibilities of the axial engine. He led the company's first investigations of gas turbines—then known as 'internal combustion turbines'—during the early years of the Second World War. It was a technical memorandum prepared by him in 1945 which was the basis of the Avon engine, the first Rolls-Royce jet with an axial compressor. . . .

"In 1941—before the first British jet aircraft had even flown—he had foretold the development of vertical take-off based on the high power-to-weight ratios which he knew were possible with the axial engine. The Flying Bedstead and the Short SC.1 are successive stages in the development of his idea. The company's present unique experience of lightweight engines for jet lift, in which an increasing interest is being shown all over the world, owes much to Dr Griffith's initiative. The supersonic jet-lift airliner which he first proposed nearly ten years ago now seems far less incredible than it did to many then. . . .

"Dr Griffith has always avoided any sort of public recognition of his work. He is of a naturally retiring disposition, although with those who know him well he has a dry sense of humour which finds the weak point in an argument with unerring accuracy. He talks about his work very little. There are very few people able to keep up with his reasoning, and nearly all his work has been secret, precluding public discussion. This is why he gave no lectures or papers. By the time a subject could be aired publicly it was—by his standards—out of date and of little further interest. Despite his avoidance of publicity, his work was recognized by Fellowship of the Royal Society in 1941, by a CBE in 1948, and by the award of the Silver Medal of the Royal Aeronautical Society in 1955."

U-2 Trial Evidence

AS recorded on page 286, the American U-2 pilot Francis Powers was sentenced in Moscow on August 19 to ten years' imprisonment. Below are given various points of technical interest which emerged during his trial.

In his answers to the Public Prosecutor, Powers said he set out from Peshawar at about 0630hr on May 1. He flew at his maximum height, which was about 68,000ft. Before he was shot down near Sverdlovsk, he had flown about 1,200 miles above Soviet territory for three or three-and-a-half hours. "I was told it was absolutely safe and at such an altitude I would not be shot down." His machine carried equipment in the tail which distorted radar signals. It had a downward-pointing periscope which enabled the pilot to see aircraft beneath him.

Describing the route, Powers said that one of the points over which he had to fly was east of the Aral Sea; another, north-west of Chelyabinsk; others, before and after the city of Kirov. He was to land at Bodø in Norway.

Powers said that after training in the US he had been sent to Detachment 10-10 at Adana. Its task was primarily to collect information along the borders of the Soviet Union, and also to carry out weather research and take samples of air radioactivity. The detachment was under military command but most of its personnel were civilians. He said he could not say whether NASA (National Aeronautics and Space Administration) had any relation to "10-10."

His flight on May 1 had been undertaken in accordance with a contract he had signed with the US Central Intelligence Agency. He gave his altitude when the aircraft was hit as 68,000ft, though he said he had no idea what had shot him down. A report from the rocket commander near Sverdlovsk was read, stating that a rocket had been launched and had destroyed its target. Powers said he attempted to eject, but the ejection seat failed. At 30,000ft he released the canopy; g forces threw him half out of the aircraft, but he had forgotten to disconnect his oxygen equipment. He got out at 14,000ft, his parachute opening automatically.

Points from evidence by Soviet experts revealed that (a) there were no identification markings on the aircraft; (b) from an examination of negatives, it was estimated that photographs had been taken from a height of between 65,600ft and 68,900ft and covered an area from the north of the Soviet border with Afghanistan to the vicinity of Sverdlovsk; (c) aerials on the aircraft were capable of picking up four different wavebands and the receivers could pick up various sorts of radar signals, an analysis of signals registered by a tape recorder in the U-2 showing that they belonged to Soviet anti-aircraft radar stations, long-range spotting and fighter direction radars; and (d) the U-2 contained enough explosive—about 3lb of hexogen—to destroy the aircraft and its equipment. A photographic expert said the U-2 had a special wide-angle camera of the 73-B type. It could photograph a strip of territory about 100-125 miles wide.

Other specialist witnesses referred to documents which included (a) parts of the map on which were marked the route from Peshawar to Norway, and points over the Soviet Union where Powers was to switch on his reconnaissance equipment (the flight was to be made at an average speed of 470 m.p.h.); and (b) Powers' logbook, with entries made during the flight, a chart with a weather forecast, and reserve charts in case of deviation from the route or a forced landing.