

A Meeting of Minds

IN A REMARKABLY short span of time, the Canadian Aeronautical Institute has become a full-fledged and functioning organization to which the Aircraft Industry in Canada is responding with gratifying enthusiasm.

Ample proof that the CAI is filling what was a technical void of considerable proportions was presented at the recent joint meeting of the Canadian organization with the Institute of the Aeronautical Sciences. At this meeting, held October 14 and 15 in Montreal's Sheraton-Mount Royal Hotel, there were some 350 registrations, while attendance at the dinner Thursday evening soared to nearly 475. It is doubtful if there has often before been a meeting in Canada that could boast such a high concentration of some of the best technical brains on this continent.

Nine Papers: The meeting featured three technical sessions at which a total of nine papers were read on subjects ranging from research activities through to design and manufacture. Such operational themes as air traffic control and pilot training were also dealt with competently by experts in their respective fields.

A highlight of the dinner was a talk by Dr. Hugh L. Dryden, director of the NACA. Dr. Dryden emphasized that aviation was a matter of teamwork, and that its development rested on many men in the past and many men in the future. The handbook engineer was of little value in aeronautics today, he thought. The skill required was the capability of finding new combinations of old elements.

"The designer is a gifted artist like the architect," Dr. Dryden said, "or like the composer of a great symphony. He must write for all the instruments. I have seen aircraft design expand from the solo effort of the designer to the symphony of the team."

Vote of Thanks: The speaker was

thanked, appropriately enough, by Prof. T. R. Loudon. In his remarks, Prof. Loudon drew a parallel between the CAI/IAS joint meeting and the fact that the first aero research ever to be carried out in Canada—by the team of Bell, McCurdy, Selfridge, and Baldwin—was also a joint effort.

Earlier in the evening, Dr. J. J. Green, CAI president and chairman of the dinner, paid tribute to the late J. A. Wilson (see "Names in the News"), who was one of the small group to receive the first honorary fellowships in the CAI.

Dr. Green also announced that George H. Dowty, who had done much to encourage the establishment of the CAI during his term of office as president of the Royal Aeronautical Society, had accepted an honorary fellowship in the CAI.

THE TECHNICAL sessions, held in the improbable and seductive surroundings of the Mount Royal's Normandy Room, were teed off by E. B. Schaefer, chairman of the CAI's Montreal Branch, the host organization, who welcomed the visiting members before turning the meeting over to the chairman of the first technical session, Thor E. Stephenson, Director of the Aircraft Division of the Department of Defence Production.

Two of the first three papers dealt with some highly technical aspects of aeronautical research, while the third took the audience into the realm of supersonic flight. The man who presented this paper should have known what he was talking about . . . he was A. Scott Crossfield, an NACA Aero Research Scientist and supersonic pilot of note, the first human to exceed Mach 2.0 (in a Douglas Skyrocket).

The other two papers were "The Role of Fluid Mechanics in Aeronautical Development", by Dr. Gordon N. Patterson, and "The Nature and Stiffness of Swept Wing Deformations with Reference to the Prediction of Normal Modes and Frequencies," by Albert

H. Hall. Mr. Hall is an Associate Officer at the National Aeronautical Establishment of Canada, while Dr. Patterson is director of the Institute of Aerophysics and head of the University of Toronto's Department of Aeronautical Engineering.

Afternoon of the First: The afternoon session on the first day was chaired by W. K. Ebel, engineering vice president of Canadair Ltd., and featured full coverage of Avro Canada's current production projects, in two papers. The first, by B. A. Avery, Assistant Chief Design Engineer of the Canadian firm's Gas Turbine Division, was entitled "The Orenda and the Future—Mechanical Design Considerations of Canada's First Production Turbojet". The other, "Production of an All-Weather Long-Range Jet Fighter", was given by R. K. Anderson, Assistant Industrial Engineering Manager in Avro Canada's Aircraft Division.

The third paper of the afternoon (actually the second to be given) provoked considerable interest. Given by water-based airpower's most vocal exponent, Ernest G. Stout, Chief of Naval Aircraft Research for Convair, "Bases Unlimited" was further enhanced by an accompanying color film which featured Convair's VTO project, as well as the Sea Dart and the R3Y-1 flying boat. Especially fascinating were the sequences showing vertical flight, including take-offs and landings, by the XFY-1.

Friday morning's session was ably guided by TCA President Gordon R. McGregor and lead off with a discussion of jet traffic control problems, "Air Traffic Control for Turbine Transports", by Henry S. Chandler, deputy chief of the Airways Operations Division of the U.S. CAA. Wing Commander C. H. Mussells, commanding officer of the RCAF's Central Flying School at Trenton, followed Mr. Chandler with a comprehensive presentation

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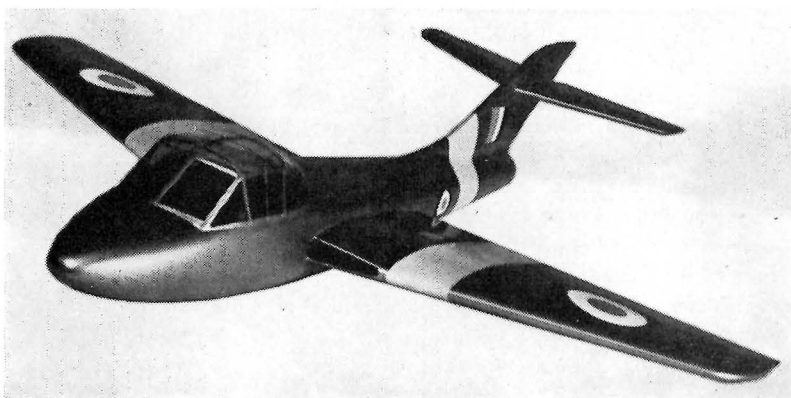
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JET TRAINER PROPOSAL: Shown in model form, as presented at the SBAC Display, is the Boulton Paul P.24, a turbojet-powered basic trainer. Plans call for the side-by-side jet trainer to be powered by an Armstrong Siddeley Viper ASV-5 developing 1,640 lb. th. Maximum gross weight is quoted at 5,380 lbs.; span, 32 ft.; length, 30 ft. 6 in. Design cruising speed is 320 mph and maximum speed will be 380 mph. The wings are swept slightly; a wide-track, retractable tricycle gear is used.

What this means to the non-instrument pilot who finds himself in below-limits weather is self-evident.

Arcon has no effect on pitch or roll. It is not an automatic pilot, its chief purpose in life being only to sense any directional change as it is occurring, then apply appropriate force in the rudder system to cancel out this change. It has no "memory" of its own, and won't return an airplane to its original line of flight, though it may be slaved to a directional gyro to accomplish this purpose.

However, Lear says, even without the addition of a directional gyro, the Arcon has demonstrated unbelievable ability to hold the airplane on course to within a few degrees of the desired heading. The instrument does its work automatically and leaves the pilot free to concentrate on other flight activities. It is a proportional type instrument, applying to the rudder exactly the right amount of force to cancel out the tendency to turn.

The complete Arcon is made up of three separate units — a rate gyro weighing 1.25 lbs., a servo unit (which operates continuously, but imparts corrective forces to the rudder system only when they are needed) weighing 7.5 lbs., and the amplifier, weighing 3 lbs.

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on "RCAF Training Operations". Final paper of the technical sessions

was "Design Aspects of the Boeing Model 707", by Kenneth C. Gordon, manager of commercial sales for Boeing Airplane Company, who hinted strongly that Boeing intended to do some energetic pushing of commercial sales of the first U.S. jet airliner.

GAS TURBINE LAB

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systems including a temperature-controlled, dust-free room for tear-down and assembly of the finely machined components. An ignition system laboratory will be provided to test ignition equipment under normal and simulated high altitude conditions.

With the exception of the aerodynamics laboratory, these facilities are intended not only to serve the engineering groups in development programs, but also to provide assistance to the Production and Sales & Service Departments when required. An additional task will be to carry out quality control checks, particularly on materials and fuel system components.

In declaring the cornerstone well and truly laid, Sir Thomas said that: "The tremendous growth of aviation in Canada has been paced by the advances in Canadian research and development of both aircraft and aero engines. Here, in this building of science to be erected on this site, Canada will have engineering facilities for aero engine development second to none for its type and size anywhere on