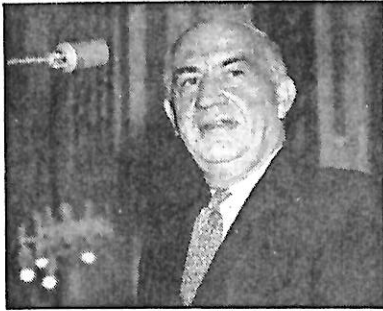


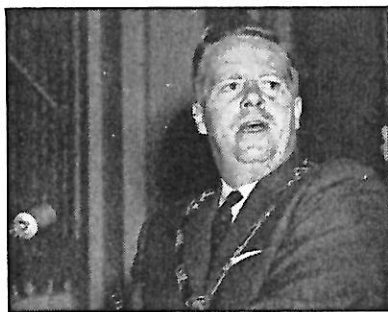
# Technical Talk



Above is Hon. Clifford C. Furnas, U.S. Asst. Sec. of Defence, who was principal speaker at the annual IAS/CAI international meeting dinner.



Dr. Edward R. Sharp, IAS president, spoke briefly at the dinner, Nov. 26. Dr. Sharp is Director of the NACA's Lewis Flight Propulsion Laboratory.



Above is Thor Stephenson, CAI president, shown wearing his chain of office. Below is a general view of the banquet hall at the meeting dinner.

**A** CALL for more basic research and more and better education at higher levels, was sounded by the Hon. Clifford C. Furnas, U.S. Assistant Secretary of Defence, Research & Development, when he addressed the third international joint meeting of the Institute of the Aeronautical Sciences and the Canadian Aeronautical Institute. Dr. Furnas spoke at the annual joint dinner on the first day of the two-day meeting, held in Toronto, Nov. 26 and 27.

Dr. Furnas, whose topic was "New Horizons — Military and Civilian", dwelt at some length on the theme of international co-operation. Along these lines, he outlined Canadian participation on the Dew Line project, noting that of the 35,000 individual flights so far required with the construction of the Line, Canadian carriers had carried out 29,000. For this, they had been paid \$54,000,000. Civilian carriers participating in the Dew operation have so far flown 17,000,000 air miles, Dr. Furnas said.

**Sixty Percent:** He also said that of the \$300,000,000 total cost of the equipment and gadgetry required for the Dew Line, \$185,000,000 was going to Canadian firms, who had been given orders to supply some 60% of the warning line hardware. To date, 18,000 Canadian employees of the Dew project have received \$50,000,000 in salaries and wages. When the Line is com-

pleted, 5,000 Canadians will be employed in its operation and these will be paid \$750,000 per week in salaries and wages.

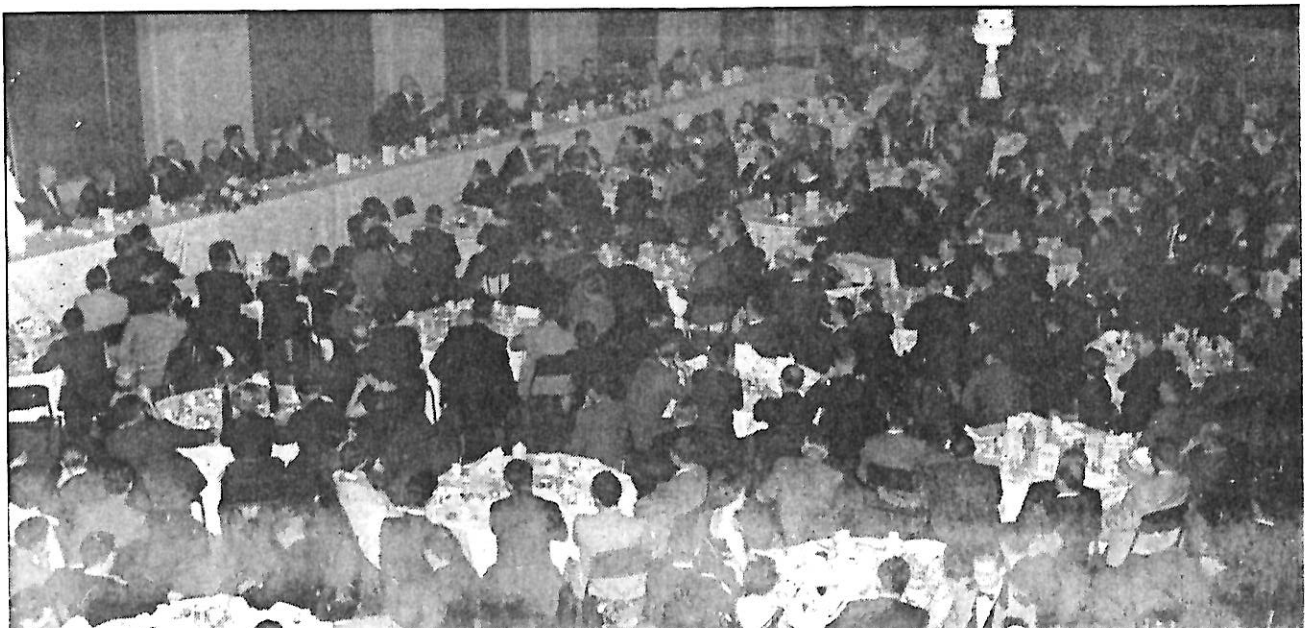
Looking into the future, Dr. Furnas foresaw that the demand for energy would increase at least 50 times in the the next century. He stated that . . . "we are not short of energy, we are short of ingenuity."

CAI President Thor Stephenson addressed the dinner meeting briefly, giving a condensed progress report on the Institute. He noted that CAI membership now exceeded 1,700, commenting that this was about twice what the Institute's founders had anticipated the maximum possible membership would be by the end of 1957. Mr. Stephenson also pointed out that new branches had recently been formed at Halifax and Cold Lake.

The several hundred engineers and technicians who attended the technical sessions also heard the second annual W. Rupert Turnbull lecture, given this year by Simon Ramo, executive vice president of the Ramo-Woolridge Corp. Dr. Ramo spoke on "The Guided Missile as a Systems Engineering Problem."

**Papers Read:** In addition to the talks by Dr. Furnas and Dr. Ramo, there were technical sessions on test flying, quality control, electronics, and missiles.

The test flying session was under the



AIRCRAFT DEC 56 96



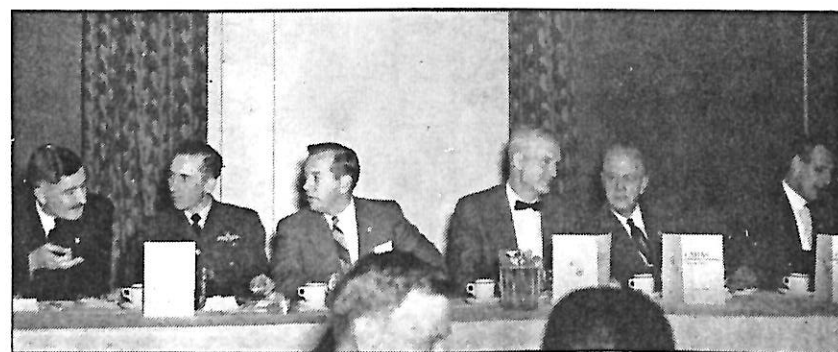
Head table guests at the IAS/CAI dinner included, above, left to right: H. W. Grant, Standard Aero Engines Ltd., Winnipeg; Group Captain H. R. Footitt, RCAF, Ottawa; R. B. McIntyre, Dowty Equipment of Canada, Ajax, Ont.; D. L. Wallis, Cold Lake, Alta.; C. C. Young, Northwest Industries, Edmonton; R. R. Dexter, secretary of the Institute of the Aeronautical Sciences, New York City.



Head table (continued, left to right): Dr. H. J. E. Reid, director of NACA Langley Aeronautical Lab.; R. D. Richmond, Canadair Ltd., Montreal; F. H. Keast, Orenda Engines Ltd., Malton, Ont.; G. F. Kelk, George Kelk Ltd., Toronto; G. D. Watson, director of Weapons Research, Defence Research Board, Ottawa. Dinner was attended by several hundred CAI and IAS members.



Head table (continued, left to right): T. W. Siers of Canadian Pacific Airlines, Vancouver; H. S. Rees, Department of Transport, Ottawa; W. S. Longhurst, Canadair Ltd., Montreal; J. C. Floyd, Avro Aircraft Ltd., Malton, Ont.; E. B. Schaeffer, Canadair Ltd., Montreal. Guests at dinner heard Dr. C. C. Furnas, U.S. Asst. Defence Sec., speak on "New Horizons, Military and Civilian".



Head table (continued, left to right): H. Charles Luttman, secretary of the Canadian Aeronautical Institute; Squadron Leader B. D. McArthur, RCAF, Cold Lake, Alta.; S. L. Britton, Orenda Engines Ltd., Malton, Ont.; A. T. Gilmour, Trans-Canada Air Lines, Vancouver; Douglas A. Newey, Bristol Aircraft (Western) Ltd., Winnipeg; R. J. Conrath, Railway & Power Engineering, Montreal.

chairmanship of W. S. Longhurst, Canadair's chief of flight operations, and featured papers by Donald H. Rogers, Avro Aircraft chief of flight operations (The Canadian Test Flying Scene); Richard Johnson, Convair chief engineering test pilot (Flight Testing of High Speed Aircraft); Squadron Leader O. B. Philp, formerly chief test pilot, RCAF Central Experimental & Proving Establishment (RCAF Test & Development).

H. S. Rees, the DoT's chief aeronautical engineer, was in the chair for the quality control meeting. On this subject, papers were given by Group Captain Robert McMillan, RCAF chief of Quality Control (Quality Control Policy in the RCAF); Charles P. Albertson, supervisor of sonic testing, and Philip Melara, supervisor, both of Grumman Aircraft Engineering's quality control laboratory (Applications of Ultrasonics in Aircraft); Harold G. Dickie, supervisor, quality review, Canadian Pratt & Whitney Aircraft Co. Ltd. (Control of Deviating Material).

Chairman for the electronics presentations was G. F. Kelk, president of George Kelk Ltd. Papers read were by Murray Block, air traffic control specialist for Federal Telephone & Radio Co. (Operational Use of TACAN); Earl F. Johnson, head of the semiconductor engineering department of Computing Devices of Canada Ltd. (A Survey of the Advantages of Transistors in Airborne Electronic Equipment); Bruce McCaffrey, project engineer in Raytheon Manufacturing Co.'s radar department (Airport & Airways Surveillance Radar for Canadian Air Traffic Control).

The last technical session dealt with missiles and had as its chairman, G. D. Watson, director of weapons research for the Defence Research Board. The papers were presented by A. G. Carlton, division supervisor for the applied physics laboratory of The John Hopkins University (Guidance & Control of Missiles); R. D. Richmond, chief development engineer, and J. F. Perrier, missiles systems engineer, both of Canadair Ltd. (The Technology of Guided Missiles & Its Effect on Industry); R. J. Weber and Roger Luidens, aeronautical research scientists from the NACA's Lewis Flight Propulsion Laboratory.