

THE JOINT INSTITUTE OF AERONAUTICAL SCIENCES— SOARING SOCIETY of AMERICA SESSION on SOARING FLIGHT

by

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The Soaring Flight session was divided into two parts this year. The first part consisted of a paper by Harry N. Perl of the Nelson Speciality Corporation on the design, construction and flight characteristics of the Nelson "Hummingbird," the first powered sailplane to show satisfactory performance as a soaring plane with auxiliary power adequate to free it from the encumbrances of external launching means, retrieving equipment and assisting personnel.

Mr. Perl's paper was followed by the showing of a 25 minute color motion picture of the "Hummingbird" in flight, by Mr. Ted Nelson, President of the Nelson Speciality Corporation. This sound film, prepared and narrated by Mr. Nelson is the finest aviation film it has been my pleasure to witness in many a day.

Operation of the Hummingbird from the opening of its own specially designed glove-fitting hangar, to the closing of the same are shown. Most of the shots were taken during soaring flights around the peaks of the high Sierras and White Mountain range in the vicinity of Bishop, California and are of incomparable beauty. Cameras were mounted on the top of the vertical tail looking forward and on a short boom out near the right wing-tip aimed athwartship to show the nose and cockpit portion of the glider and the scenery beyond. As one spectator remarked, the only way it could have been improved would have been to have it in Cinerama!

The second part of the session was a panel discussion on the subject, "Contributions of Soaring to Aviation Progress, Past, Present, and Future." Since 1955 is the 25th anniversary of the first National Soaring Contest and the glider movement in this country

as we know it today, it seemed like a good idea to summarize the past, look at the present, and the attempt to look ahead into the future.

The panel was made up of Lieutenant Colonel Floyd J. Sweet, USAF, President of the Soaring Society of America and Secretary of the Scientific Advisory Board, Ernest Schweizer, President and Chief Engineer, Schweizer Aircraft Corporation, Ernest G. Stout, Staff Engineer, Consolidated Vultee Aircraft Corporation, Dr. Paul B. MacCready, Jr., President and Consultant, Meteorology Research, Inc., and 1st Lieutenant Fred Obarr, USAF, Plane Captain and Engineering Officer in the Trans-Atlantic division of MATS.

Captain Ralph S. Barnaby, U. S. Navy, Retired, Head of the Aeronautics Section, the Franklin Institute Laboratories for Research and Development, acted as moderator.

Colonel Sweet, pinch-hitting for Dr. Wolfgang B. Klemperer, Research Engineer, Douglas Aircraft Company, and Honorary Vice President of the Soaring Society of America, who was unable to attend, reviewed briefly the early history of gliding which were man's first successful attempts at heavier-than-air flight, culminating in the Wright brothers' successful solution of the problem of coordinated control about the three axes of flight, which made fully controlled flight possible. He listed some fifty or more items taken for granted in modern aviation which have their inception and first demonstration in gliders. To cite just a few: the higher lift characteristic of the cambered wing as opposed to the flat wing; wash-out for improved stability; slotted ailerons; closure of control surface gaps for improved control and reduced drag; spoilers and air brakes; bene-



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fits of high aspect ratios; towing of aircraft; jato take-off.

Colonel Sweet cited the glider's important discoveries and contributions to the knowledge and science of meteorology. He mentioned the part gliding had played in the development of aeronautical personnel, both in the field of engineering and in operation, calling attention to the number of famous and successful pilots and aeronautical engineers whose interest started with gliders.

Mr. Ernest Schweizer spoke on gliding's current contributions, — those since the end of the Second World War 1945. He listed three major fields; aerodynamics and design; meteorology, and training of aviation personnel. In the first field he cited the lead soaring plane designers and builders have taken in drag reduction, and the gliding technique of studying aerodynamic parameters. In meteorology the sailplane is proving itself an excellent means of studying the detailed movements of the air at low altitudes, in gusts and turbulence, and in exploring the standing and jet stream phenomena. One of gliding's most important contributions is in the field of aviation education and training. Mr. Schweizer brought out the large numbers of leading figures in aviation today whose interest started with gliders. This included engineers and other technical men as well as pilots. He mentioned the current use of gliding in the training of commercial and military pilots in many European countries.

The possible future contributions were broken down into the three fields previously cited by Ernie Schweizer and discussed by separate speakers. Mr. Ernest G. Stout talked on "Con-

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