

1956

ELMER A. SPERRY AWARD
TO
DONALD W. DOUGLAS

LOS ANGELES, CALIFORNIA
OCTOBER 6, 1956

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LOS ANGELES COUNTY
OFFICE OF THE
ASSASSIN

PRESENTATION OF

1956

ELMER A. SPERRY AWARD

TO

DONALD W. DOUGLAS

AT THE SAE NATIONAL AERONAUTIC MEETING

LOS ANGELES, CALIFORNIA, OCTOBER 5, 1956

Presentation Sponsors and Board of Award:

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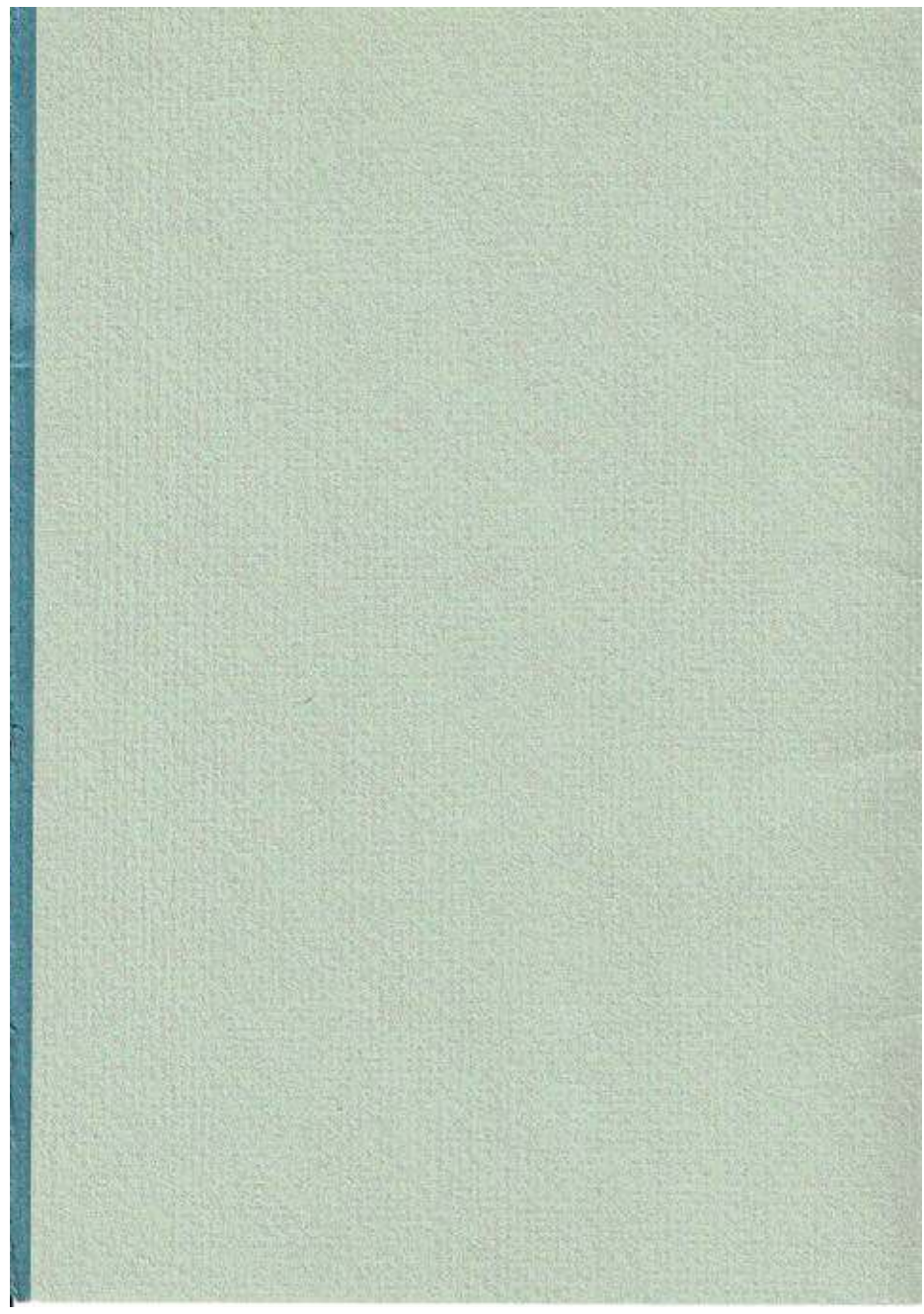
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"In recognition of his distinguished engineering contribution which has advanced the art of transportation through the development and production of the DC series of airplanes."

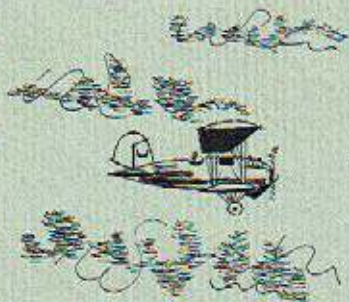


DONALD W. DOUGLAS

In selecting Donald W. Douglas, founder and president of the Douglas Aircraft Company, for the Elmer A. Sperry Award, the Board is honoring a man recognized throughout the world for his outstanding contributions to commercial air transportation.

Recorded history cannot remember the first ship bottoms or rudimentary wheels that carried people and goods over water and over land, but many of us have witnessed the entire growth of air transportation from its very beginnings, through its early days when it was used for novelty, emergency or adventure, until today it has earned acceptance as an indispensable mode of transportation.

The development and application of the Douglas "DC" series of com-





mercial aircraft is a vivid part of this remarkable story. The specific contributions of this family of transports speak for themselves in their large share of design leadership, and by the fact that at this moment over half the total of all aircraft operated by airlines throughout the world are Douglas-built, and are members of the DC series.

Filled with a compelling interest in aeronautics, Donald Douglas left Annapolis after three years to enter mechanical engineering at the Massachusetts Institute of Technology, where there was great interest in aeronautical theory and design, but as yet no curriculum leading to a degree of Aeronautical Engineering. After graduation, young Douglas remained one year as an instructor before working several years as a designer for East Coast companies. He then took the brave step of striking out for

himself. His successful design and manufacture of several types of airplanes brought him a significant proposal in August 1932.

Written by Jack Frye, then vice-president in charge of operations of Transcontinental and Western Airlines, a letter of two short paragraphs, accompanied by a statement of requirements, expressed the airline's desire for a new tri-motored transport whose specifications would provide modest improvement over aircraft then in service.

After eleven months of intensive study, development and negotiation, Douglas answered this letter with the maiden flight of a new transport plane whose characteristics far surpassed Frye's original specifications. Its cruising speed had been advanced from the required 146 to 180 mph; its gross weight was up twenty per-





cent; and it had two engines, not three. This prodigy was the DC-1.

Almost immediately the DC-1 began to establish a new set of performance records for commercial aircraft. One, to justify the two-engine decision, was the then spectacular feat of taking off from Winslow, Arizona, and proceeding to Albuquerque, New Mexico, on one engine. By the middle of 1935, the DC-1 had established 19 world and U. S. records for speed, payload and range achievements.

An improved Wright engine made possible an increase in the capabilities of the DC-1, and the improved version became known as the DC-2. It carried 14 passengers instead of 12, had an increased fuel and cargo capacity, and was soundproofed. The boom in air transportation was well on its way, and by 1938 the number of DC-2's produced had reached 138.

A great tribute to this airplane came during the Robertson Trophy Race from London to Melbourne in October 1934, when a KLM-flown DC-2 won the transport division of the race and finished second in all classes to the first DeHavilland Comet, a modified pursuit aircraft. The DC-2 carried both mail and passengers on the flight.

All of this was prologue to the manufacture of what has certainly become the best-known and most widely used transport airplane in the world, the almost legendary DC-3. Sponsored by American Airlines in 1935, this enlarged version of the DC-2 carried 21 passengers at a cruising speed of 195 mph for a maximum range of 1380 miles. The 803 DC-3's built for commercial use and powered by P&W or Wright engines carried at one time 95% of all the then civilian air traffic. Over 10,000 military



counterparts, known as C-47's, R4D's and Dakotas journeyed throughout the world, earning affection and appreciation, and the exceptional tribute of General Eisenhower, who described the C-47 as one of the four weapons which did most to win the war.

These aircraft, the DC-1, -2 and -3 contributed most strongly to the early

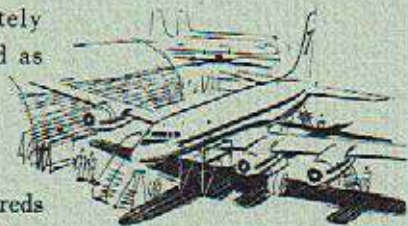


development of air transportation, and in no small measure to the growth and engineering prestige of Donald W. Douglas and the group he had gathered to form his company.

Next chronologically, though not numerically, came the DC-5, a high-wing airplane similar in many re-

spects to the DC-3. A few of this type were sold but it was abandoned with the advent of World War II. A three-tailed plane known as the DC-4E was tested but gave way to the design that became known as the DC-4 in the commercial version and the C-54 as a military transport.

The C-54 with four P&W engines was test flown in March 1942. By V-J Day, 1000 of these airplanes had been built for military use. Immediately after the war, 74 were finished as



commercial transports and hundreds of others were converted to civilian use. The C-54, like the C-47, established a memorable war-time record. It set a new standard in transport operations by making possible the more than 80,000 trans-ocean flights which contributed to the winning of the war. Later, this rugged plane was



the backbone of the Berlin Airlift through which America scored a notable victory in the cold war.

As soon as practicable, after the war, the evolutionary development of the DC series continued in the form of the DC-6. Larger and more comfortable than the DC-4, and powered with four of the war-famous P&W R-2000 engines, it had a pressurized cabin, cruising speed was up from 240 to 300 mph, payload from 11,000 to 14,000 pounds and range at these payloads from 1750 to 2600 miles.

Less colorful perhaps than the widely known and beloved DC-3, the DC-6 and its improved successor, the DC-6B, have made tremendous contributions to the enormous increase in the world's airline traffic during the past decade. Their characteristics of payload and performance have allowed airlines to schedule lower cost services with the most advanced equipment.

Still another member of the DC family made its debut on November 29, 1953. This was the DC-7 which on that date flew non-stop from Los Angeles to New York. Two days later, coast to coast non-stop service in both directions was officially scheduled, opening a new era in domestic air transportation. Longer and of greater capacity than the DC-6 and utilizing the new Wright turbo-compound engine, the DC-7 cruises at 365 mph and carries a payload of nearly 16,000 pounds.

The domestic accomplishments of the DC-7 brought a demand for an overseas version that was answered by the DC-7C, which is now being delivered to many of the world's overseas airlines and already is in service on some of them. Increased wing span has permitted higher takeoff weights, allowing fuel capacity and an operating range at full payload of

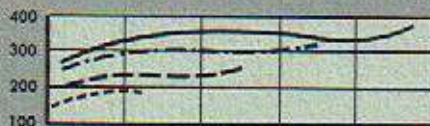
4000 miles. With such characteristics, the DC-7C is currently setting new performance records in this pre-jet era of international air transportation.

The total engineering achievement manifested in the "DC" series is partially that of continued refinement and improvement. But often there is evident the breaking of new and hard ground. Behind the appearance of evolution there has had to be the ability to take revolutionary steps when needed. The persistent effort and determination to push ahead the frequently stubborn frontiers of transport aircraft design, first exhibited by Donald Douglas in 1932, has given the world the DC series. The Board's selection of Donald W. Douglas to receive the 1956 Elmer A. Sperry Award recognizes this great contribution to the art of transportation.

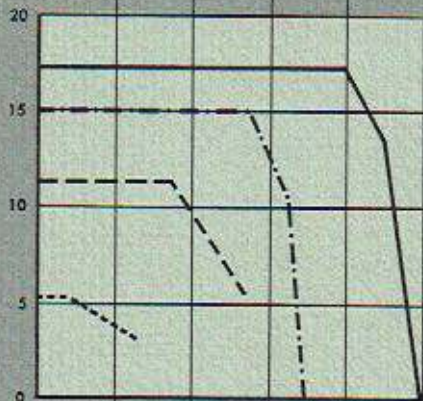
COMPARATIVE OPERATING DATA

DC-3 - - - - DC-4 - - - - - DC-68 - - - - - DC-7C - - - - -

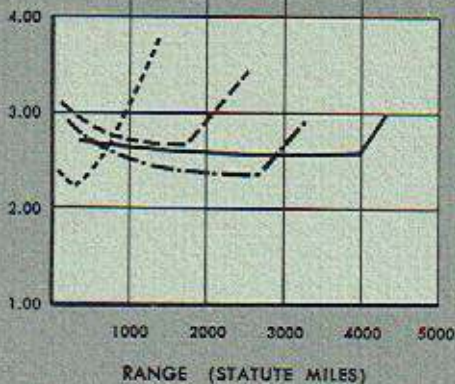
BLOCK
SPEED
(MPH)



PAYLOAD
(1000 LB.)



COST
(c/2.00 LB. MI.)



THE ELMER A. SPERRY AWARD



THIS AWARD seeks to encourage progress in the engineering of transportation. It commemorates the life and achievements of Dr. Elmer A. Sperry (1860-1930), whose versatile inventiveness encompassed virtually all science and industry, accelerated the progress of transportation by land, sea, and air, created basic industrial machinery and processes, and pioneered the organization and direction of group research.

Established by his daughter, Helen, now Mrs. Robert Brooke Lea, and his son, Elmer A., Jr., this new Award is to be available for presentation annually to that individual or group, of any nationality, adjudged, after nomination and thorough consideration, to have made "a distinguished engineering contribution which, through application, proved in actual service, has advanced the art of transportation whether by land, sea or air."

Recipients of the Award are selected by a Board of Award representing four technical societies of which Dr. Sperry was officer or member: The American Society of Mechanical Engineers, American Institute of Electrical Engineers, Society of Automotive Engineers, and The Society of Naval Architects and Marine Engineers.

Appropriately, this Award was first presented in 1955, 50th Anniversary of SAE, 75th Anniversary of ASME, and 95th Anniversary of Dr. Sperry's birth. The first recipient was William Francis Gibbs, engineer and naval architect.

