Mr. Arthur M. Debus, Jr.
48 East Iven
University of Virginia
Charlottesville, Virginia

Dear Mr. Debus:

Your letter dated February 29, 1964, inquires concerning the possibility of a wind tunnel test program in the Langley 8-foot transonic tunnel in support of your proposed thesis entitled "Investigation of Buffet Pressures on Various Cone-Cylinder Configurations in the Transonic Flow Region".

The objectives of your proposed investigation have been completely achieved by an investigation performed by Mr. Jack B. Renart of ARS, Inc. at the Arnold Engineering Development Center. A summary of this work was given at the Aerospace Sciences Meeting of the AIAA in New York on January 20-22, 1964. A copy of the preprint of this paper is enclosed for your information. Further investigations of the buffet pressures on various modified cone-cylinders, with Reynolds numbers higher than those you have proposed, have been carried out by the NASA Ames Research Center, as evidenced by the following reports:

NACA TN 2-179 - "The Effects of Rear Bluntness on the Pressure Fluctuations Measured on 15" and 20" Cone-Cylinders at Transonic Speeds" by Charles F. Gee, 1963 (Confidential.)

NACA TN 2-265 - "The Effects of Cone Variations in Launch-Vehicle Nose Shapes on Steady and Fluctuating Pressures at Transonic Speeds" by Charles F. Gee, 1963 (Confidential.)

NACA TN 2-325 - "Steady and Fluctuating Pressures at Transonic Speeds on Two Space-Vehicle Payload Shapes" by Charles F. Gee, 1963 (Confidential.)

Research as the proposal would not substantially advance the state-of-the-art, and research as the 8-foot tunnel is completely committed to important research during the next 6 months, Langley will be unable to conduct tests such as you have proposed.

Sincerely yours,

G. Mercer: 3-17-64

Emphasis

Proposed Research

cc: FSHD - Stop 405
Langley Research Center

March 5, 1964

Associate Director

Head, 6-Foot Tunnels Branch, F590

Request of Mr. Arthur M. Debon, Jr., University of Virginia, for wind-tunnel tests

References:
(b) Cee, Charles F.: The Effects of Rose Huntress on the Pressure Fluctuations Measured on 15° and 20° Cone-Cylinders at Transonic Speeds. NASA TM X-779, 1963 (Conf.).
(c) Cee, Charles F.: The Effects of Rose Variations in Launch-Vehicle Nose Shape on Steady and Fluctuating Pressures at Transonic Speeds. NASA TM X-446, 1962 (Conf.).
(d) Cee, Charles F.: Steady and Fluctuating Pressures at Transonic Speeds on Two Space-Vehicle Payload Shapes. NASA TM X-203, 1961 (Conf.).

In reference (a), Mr. Arthur M. Debon, Jr., an undergraduate at the University of Virginia, has inquired into the possibility of a wind-tunnel test program in the 3-foot transonic tunnel in support of his proposed thesis subject, "Investigation of Buffet Pressures on Various Cone-Cylinder Configurations in the Transonic Flow Regime."

The objectives of the investigation proposed by Mr. Debon have been completely achieved by an investigation performed by Jack E. Robertson, of AID, Incorporated, at the Arnold Engineering Development Center. A summary of this work was given at the Aerospace Sciences Meeting of the AIAA in New York on January 20-22, 1964. A copy of the preprint of this paper is enclosed. Further investigations of the buffet pressures on various modified cone-cylinders have been carried out at the Ames Research Center. (See refs. (b), (c), and (d).) These tests have been performed at substantially higher Reynolds numbers than those of Mr. Robertson.

In view of the fact that the investigation proposed by Mr. Debon would not substantially advance the state of the art, and the fact that the 6-foot tunnel is completely committed to important research during the next six months, it would appear that the research proposed by Mr. Debon should not be performed in the 6-foot tunnel.

Dr. John Daberg has expressed strong interest in this proposal because of its relationship to the FABC agreement with the University and should be made cognizant of this memorandum.

Richard T. Whitcomb

Enclosure

RTWhitcomb@mbb

Proposals - Research