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KNOTT BUILDING, DAYTON, 2, OHIO

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7-19-51
LAW PRESSURE RESEARCH
College Avenue Pool

March 11, 1952

AD No. 1985
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Director
Office of Naval Research
Branch Office
1000 Geary Street
San Francisco 9, California

MONTHLY STATUS REPORT - FEBRUARY 1952

Contract N7-onr-295-Task 3
Project Number NR 061-003

Dear Sir:

Progress on the contract for the month of February has been as follows:

1. The vacuum chamber of the molecular beam equipment has been leak detected and minor changes made to improve the base pressure of the system. Gage and source tubulations have been designed, fabricated and assembled.
2. A series of runs were made in the No. 3 Wind Tunnel in February to determine shock wave location, using small pressure probes. This work, under a Wright-Patterson Air Development Command contract, is concerned with the effect of air or nitrogen glow upon stream properties as indicated by shock wave locations.
3. An investigation of base pressure, using a cone-cylinder model, is the next program scheduled for the No. 3 Wind Tunnel. The basic model to be studied is geometrically similar to the model used by S. M. Bogdonoff of Princeton University as reported in Aeronautical Engineering Laboratory report 182, June 12, 1950. A preliminary investigation of mounting techniques is being carried out to determine the influence of a sting support upon the base pressure. The model for the preliminary tests will be supported by fine wires (0.003 inch diameter).
4. The semi-adjustable diffuser has been completed. A test program for this equipment has been scheduled for the No. 3 Wind Tunnel.
5. A two-dimensional adjustable nozzle with divergent side walls is being designed for the No. 3 Wind Tunnel based upon the results of a test program in the No. 2 Wind Tunnel, (see item 5 of the October 1951 status report). A similar range of Mach number will be covered with a larger test area.
6. Preliminary tests of the force sensitive element purchased for use on the three component balance have been made. Further tests of both the force sensitive element and the flexure pivots will be made in March.

7. No additional shop work has been devoted to the $M = 4.0$ (ideal) axisymmetric nozzle due to the press of other urgent programs.
8. Dr. R. G. Folsom presented two lectures at U.C.L.A. on February 28th and 29th, entitled "The Field of Rarefied Gas Dynamics" and "Experimental Aspects of the Dynamics of Rarefied Gases."
9. Visitors:

Lieut. Norman Fishman	-	ONR - San Francisco
Naval Officers (30)	-	Naval War College, Monterey, California
Kenneth Basak	-	Univ. of Wichita, Wichita, Kansas
William Besler	-	Besler Corp., Emeryville 8, California
Arthur Denning	-	Director & Vice Chancellor, New South Wales, Univ. of Technology, Sidney Australia.

Very truly yours,


R. G. Folsom,
Faculty Investigator

RGF:BP

cc - ONR SF (1), ONR WASH. (5)
Colonel F. Seiler, AMC WASH. (2)
Lieut-Col. J.E. Clayton, Hdqts. USAFWASH. (1)
Capt. E.S. Nelson, Los Angeles Eng. Field Stn. (1)
Dr. Morton Alperin, Western Regional Office,
Hdqts. ARDC, 55 S. Grand Ave., Pasadena, Calif. (1)
Fluid Mechanics Branch, Office of Scientific Research
Research & Development Command, P.O. Box 1395,
5 West Baltimore St., Baltimore, Maryland (2)

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