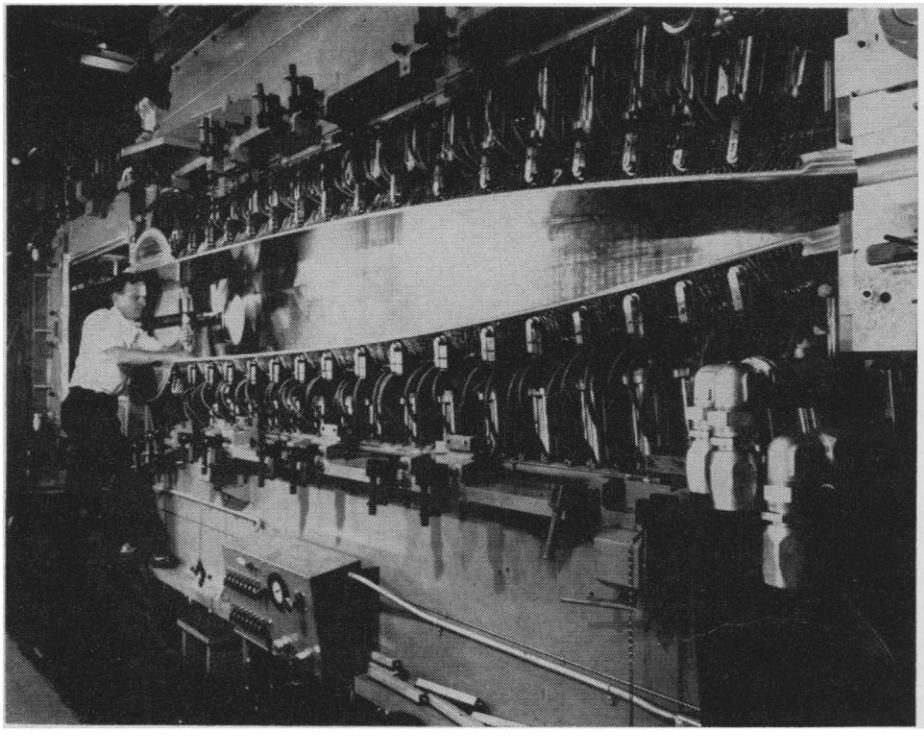
Wind Tunnel Announced

A new $3.5 million continuous-flow hypersonic wind tunnel that can generate air speeds 9 times the speed of sound is operating at the California Institute of Technology's Jet Propulsion Laboratory in Pasadena, a research unit of the National Aeronautics and Space Administration. Supported by the U.S. Army Ordnance Corps, JPL's new aerodynamic facility is one of the first hypersonic wind tunnels in the United States that can engage in missile-development testing on a high-production basis.

The tunnel, the third installed at JPL since 1947, took about 3½ years to build. The preliminary design and fabrication specifications were developed by JPL engineers, and detailed design, fabrication, and erection were carried out by the Westinghouse Corporation. Use of the facility is divided equally among NASA research programs, Army weapon development, and Air Force weapon development.

The outstanding feature of the new tunnel is its flexible, two-dimensional nozzle, the design of which was based on the experience gained by JPL from its earlier tunnels. The two tapering stainless steel plates, which can be seen in the accompanying picture at the top and bottom of the nozzle, can be adjusted to the contour of test forms by a system of 16 hydraulic jacks.

A characteristic that distinguishes this tunnel from a conventional supersonic tunnel is that the air must be heated before it is introduced into the nozzle in order to prevent the formation of droplets of liquid air. Therefore, a 4200-kilowatt-electric heater was placed between the compressors and the supply section, so designed that it would be able to boost the temperature of the air coming in from the compressor from 150° to as high as 1350° F.



A downstream view of the nozzle of the C.I.T. Jet Propulsion Laboratory's new hypersonic wind tunnel shows a JPL technician checking the position of the calibration probe used to measure the aerodynamic characteristics of the tunnel.

Materials Study To Be Expanded

Government-supported research on materials for the space age will be expanded in coming years. Plans for the expansion are currently being prepared by a number of government agencies. The action follows recommendations by both the President's Science Advisory Committee and a committee of the National Academy of Sciences.

Behind the new effort is the conviction of many scientists that the need for high-strength, heat-and corrosion-resistant materials, particularly metals, must be met before advances in the use of atomic power and in space exploration can be made. In the view of some authorities, technological needs in the last decade have expanded faster than research activities on materials, and existing materials are being pushed to the limits of their capabilities.

The need and the problems it poses were examined recently by A. J. Hertzig, president of the Climax Molybdenum Co. and chairman of the materials advisory board of the National Research Council: "From the point of view of the materials worker it is difficult to understand why so much support is forthcoming toward the design of equipment for which no suitable materials are yet known, whereas support for materials research and development comes in similar intensity only when end-item pressure is upon us."

Hertzig's statement reflects a concern shared by government scientists. Recently, both the President's Advisory Committee and the Federal Council on Science and Technology have given increased attention to the problem of materials research. Last spring an interdepartmental committee, headed by John H. Williams of the Atomic Energy Commission, was set up to study the materials problem and give periodic reports to the Council.

The deliberations of these two committees, together with the work of the NAS committee, have resulted in a governmental move toward expanded materials research as well as a program for carrying out this research by the many federal agencies directly interested in materials development. Both the National Bureau of Standards and the Department of Defense have recently increased research activities in the field. Last June, the Department of Defense, noting that materials represented a "serious limiting factor" in the development of new weapons, allocated $15 millions for university research on materials. Similarly, the National Bureau of Standards has intensified its work on the properties of metals and other substances.

News Briefs

Columbia University has concluded an agreement for an exchange of professors with Moscow University. The agreement, for 1 year on an experimental basis, is one of the first arrangements for a professorial exchange between Soviet and United States universities. An exchange of graduate students between the two countries is now in its second year.

Last May Harvard University an-