

## **DYNAMIC PRESSURE MEASUREMENT IN THE AMES ELECTRIC ARC SHOCK TUBE**

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An experimental study has been made of the dynamic pressure field between the incident shock and contact surface at test conditions characteristic of high-pressure, high-temperature, shock tube operation. The driven gas used in these experiments was air and the driver gas was arc-heated helium. The shock tube was operated at Mach number 7 with an initial driven tube pressure of 1 atm. The Mach cone around a needle probe in the test gas was photographically recorded and analyzed to determine variations in the stream velocity during the 100 microsec test period. Results of the test program showed that the shock tube produced uniform, good quality flow, conforming to all theoretical predictions, and was well suited for development and calibration of pitot or impact tubes, such as those used in airblast experiments. The performance of the arc-driven shock tube and application to areas of interest to DoD programs are outlined.