December 1966

Brief 66-10565

NASA TECH BRIEF

NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Mixer Conditions Temperature of Liquified Gas Streams

The problem:

To deliver a two-phase liquid hydrogen stream with the average temperature controlled at various levels between 100° and 200° R.

The solution:

A mixing venturi installed in the delivery line and supplied with a controlled amount of hydrogen gas at room temperature.

How it's done:

Liquified hydrogen flows into the axial entrance to the venturi and the room temperature gaseous hydrogen is introduced through the four radial ports in the throat area. Mixing takes place in the recovery (diverging) section and a consistent two-phase mixture at a stable temperature is discharged.

Notes:

- 1. This technique should be useful in laboratory testing where presently, temperature control is maintained by a calibrated heat leak that results in considerable expenditure of cryogenic refrigerants.
- Inquiries concerning this invention may be made to:

Technology Utilization Officer Marshall Space Flight Center Huntsville, Alabama 35812 Reference: B66-10565

(continued overleaf)

This document was prepared under the sponsorship of the National Aeronautics and Space Administration. Neither the United States Government nor any person acting on behalf of the United States Government assumes any liability resulting from the use of the information contained in this document, or warrants that such use will be free from privately owned rights.

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: E. Talmor of North American Aviation, Inc. under contract to Marshall Space Flight Center (M-FS-1784)

Category 02