

# TROPICAL WIND, ENERGY CONVERSION, REFERENCE LEVEL EXPERIMENT (TWERLE)

## Status Report

(For Period Ending 15 July 1972)

The major activity for this period has been the flight program from Ascension Island. A summary of the balloon launches and associated activities for NCAR and the University of Wisconsin during this period follows:

### Meeting with RF Sources at NCAR (Early June)

Mr. Darwin Throne and Mr. Hank Falleck of RF Sources were at NCAR and displayed their prototype model of a TWERLE RF transmitter unit. Mr. Len Kleinburg of Goddard Space Flight Center was also present at this meeting. Our overall impression was that the unit was well designed and fabricated and meets the performance specifications.

Procurement of additional transmitter units: A purchase order has been placed with RF Sources to procure five additional stable oscillator oven assemblies and two additional transmitters. These units will be used for additional testing, i.e., to determine the effect of day-night temperature cycling on the long term stability. Another purchase order is being processed for ten complete RF systems. These units will be packaged in metal enclosures for RF shielding and to provide a more rugged package. These units are being acquired as back-up units for the University of Wisconsin effort, and will be available for the October interface testing with the spacecraft, if needed. They can also be used in flight test experiments.

### Solar Cell Reassembly

The solar panels were fabricated for the Ascension flights using a new fabrication technique. During thermal testing of the panels several of the cells broke. This thermal testing plus the failure of one test flight persuaded us to curtail fabrication with the new technique and build new panels with the old fabrication technique.

LIST OF FLIGHT PACKAGES FABRICATED IN SUPPORT OF THE JULY FLIGHTS - ASCENSION

## Telemetry System:

GHOST

1 coder - 14  
2 coder - 6  
4 coder - 3

DIGI-GHOST

4 channel - 8

Sensors:     Air Temperature - 6 NCAR design and 2 EOLE design  
              Pressure - 7  
              Radio Altimeter - 8  
              Thermal Experiments for Package Temperatures - 4  
              Strain Gage - 2  
              Gas Temperature of Balloon - 2

## Balloons:

Capped - 18  
Clear - 6

ASCENSION ISLAND TWERLE III - JULY 1972

|         |                 |                |     |                      |                 |     |     |             |             |               |
|---------|-----------------|----------------|-----|----------------------|-----------------|-----|-----|-------------|-------------|---------------|
| 3 July  | 89154 B/D       | 72-18<br>Cap.  | SUN | TEMP<br>PKG. (DIGI)  |                 |     |     |             |             |               |
| 3 July  | 90152 B/L       | 72-19<br>Clear | SUN | TEMP<br>PKG. (U/WIS) |                 |     |     |             |             |               |
| 5 July  | 91153/6 NABL/SD | 72-02<br>Cap.  | SUN | TEMP<br>GAS          | STRAIN          | REF | ALT | AIR<br>TEMP | PRESS       | TEMP<br>PRESS |
| 5 July  | 92158 AN        | 72-22<br>Clear | SUN |                      |                 |     |     |             |             |               |
| 7 July  | 93155 RDPC      | 72-17<br>Cap.  | SUN | OVEN<br>TEMP         | OVEN<br>CURRENT | REF |     |             |             |               |
| 7 July  | 94157 B/J       | 72-23<br>Clear | SUN | TEMP<br>PKG.         |                 |     |     |             |             |               |
| 10 July | 95152/4 AC/SG   | 72-08<br>Cap.  | SUN |                      |                 |     | ALT | PRESS       | AIR<br>TEMP | TEMP<br>PRESS |
| 10 July | 96156 AK        | 72-21<br>Clear | SUN |                      |                 |     |     |             |             |               |
| 13 July | 97152/5 BLCP/UK | 72-03<br>Cap.  | SUN | TEMP                 | STRAIN          | REF | ALT | PRESS       | AIR<br>TEMP | TEMP<br>PRESS |
| 13 July | 98157 AL        | 72-20<br>Clear | SUN |                      |                 |     |     |             |             |               |