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PRIORITY

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PRITY [REDACTED]

REF A MSN 9051

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1. THERE IS NO DEVICE ON VEHICLE THAT PROVIDES DIRECT VEHICLE ATTITUDE TO THE GROUND OBSERVER. THERE ARE SEVERAL ITEMS THAT WILL NORMALLY INDICATE WHETHER THE VEHICLE IS IN AN ABNORMAL OR NORMAL ATTITUDE. THESE ITEMS WILL NOT INDICATE TO ANY DEGREE OF ACCURACY WHAT THE VEHICLE ATTITUDE IS IF IT IS ABNORMAL.

2. ABNORMAL OR NORMAL ATTITUDE CAN BE INDICATED BY THE FOLLOWING:

1. HORIZON SENSORS
2. GAS CONSUMPTION
3. GYROS
4. TEMP OF GAS JETS
5. TEMP OF VARIOUS PARTS OF VEHICLE
6. MAGNETOMETERS

3. IN REF MISSION THERE WAS AN INDICATION FROM A "PIGGY BACK" SENSOR (THIS ITEM HAD NO CONTROL FUNCTION AND WAS IN A R&D TEST STATUS) THAT VEHICLE ATTITUDE WAS NOT NORMAL. CONSIDERING THIS AN EVALUATION WAS MADE OF THE ITEMS PARA 2. THE WEIGHT OF OPINION WAS THAT THE "PIGGY BACK" ITEM WAS INCORRECT.

4. THE ITEMS (HORIZON SENSORS) THAT ARE NORMALLY USED TO INDICATE NORMAL OR ABNORMAL ATTITUDE FAILED IN SUCH A MANNER THAT ALL T/M INDICATIONS WERE THAT THE VEHICLE ATTITUDE WAS NORMAL. THE FAILURE WAS COMMON TO BOTH SENSORS SO NO ERROR SIGNALS WERE INTRODUCED. GAS CONSUMPTION WAS CERTAINLY NORMAL AS WERE THE TEMPERATURES. THE ONLY ITEM THAT INDICATED ABNORMALITY WERE THE MAGNETOMETERS AND THIS FACT WAS NOT KNOWN UNTIL AFTER RECOVERY. REDUCTION OF MAGNETOMETER DATA IS NOT ON A REAL TIME BASIS. ALSO MAGNETOMETER DATA IS SUBJECT TO MANY INTERPRETATIONS.

5. IT SHOULD BE UNDERSTOOD THAT NO GROUND ACTION CAN BE TAKEN TO CORRECT AN ABNORMAL ATTITUDE IN FLIGHT. HOWEVER UNDER MOST CONDITIONS LIFEBOAT SYSTEM CAN BE USED DURING RECOVERY PHASE TO COMPENSATE FOR AN ABNORMAL ATTITUDE.

6. IF YOU ARE INTERESTED IN THE TECHNICAL ASPECTS OF WHAT FAILED REF MISSION PLEASE ADVISE.

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Declassified and Released by the N R O

In Accordance with E. O. 12958

on NOV 26 1991