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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
Review Date: <u>7/21/98</u>	Determination (Circle Numbers): <input checked="" type="checkbox"/> Classification Retained <input type="checkbox"/> Classification Changed to: <u>U</u> <input type="checkbox"/> Contains No DOE Classified Information <input type="checkbox"/> Coordinate With: <input type="checkbox"/> Contains UCA17 <input type="checkbox"/> Comments: <u>OK for approval</u>
Authority: <input type="checkbox"/> ADC <input checked="" type="checkbox"/> RADD <u>W Payne</u>	
Review Date: <u>7/23/98</u>	
Authority: <u>R.B. Craner</u>	

HJ/CP-7-3-2
 Case No: 678.00
 Ref. Sym: 1611
 Project No. ET-2594
 Completed 10/12/55

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Re: Vibration Test of Demi John Pedestal (Telemetry Package);

Object of Test

The object of this test was to obtain a comparison between direct recorded and telemetered accelerometer information during vibration of a Demi John telemetering package.

Function of Test Component

The test component is used to transmit multipoint information to a remote receiver during the flight of a missile.

Authorization for Test

This test was requested by Mr. W. Walker, Division 1323, in a Work Order Authorization dated 1 April 1955. The test was coordinated with Mr. W. C. Myre, Division 5252.

The role of 1611 in this test was to provide the vibration equipment with the necessary jigs for mounting the pedestal on the vibration generator; also, to supply the necessary power supplies and accessories for the test component and recording devices.

Six crystal accelerometers with their associated amplifiers and indicating oscilloscopes were provided for visual monitoring of the pedestal behavior during the vibration test.

The direct wire and telemetered information recordings were accomplished by the personnel of Division 5252 and the analysis of these recordings was done by Mr. Walker, Division 1323.

Test Activities

The Demi John telemetering section was mounted by means of a special adapter jig on the MB Model C25H vibration generator. The adapter jig was necessary to match the difference in the diameter of the generator table top and the diameter of the telemetering section. Recent tests on this adapter with a higher than design loading at its maximum radius showed that the output at this radius compared to center of the table input does not exceed a factor of two at higher acceleration levels than those used for the Demi John test.

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: <u>U</u>	AUTHORITY: <u>R. B. Craner</u>
PERSON CHANGING MARKING & DATE: <u>Emelda Sep 7/29/98</u>	RECORD ID: <u>98SN3086</u>
PERSON VERIFYING MARKING & DATE: <u>WC Payne 7/30/98</u>	DATED: <u>7/23/98</u>

CDL No.	
ACCOUNTABILITY CARD	
FILE No. <u>XW-7/24/98</u>	
<u>3/4</u>	

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It is therefore deduced that the actual vibration amplitude input to the telemetering section during its test was within normal limits expected from the vibration generator table top itself.

Two Statham A5A and two Gulton A501 accelerometers were mounted in a cluster on the top of the adapter jig just inside the mounting radius of the telemetering section. A third Statham was mounted on the telemetering component support plate and a fourth Statham was attached to the transmitter mounting plate.

The outputs of the Gulton accelerometers were recorded by telemetry at a nearby receiving station equipped with an Ampex 307 tape recorder. The outputs of the four Statham accelerometers were recorded directly by means of a Consolidated oscillograph.

The test records were processed by Division 5252 and forwarded to Division 1323 for analysis. The information derived from this analysis will be contained in a future report by Division 1323. At such time an addendum by Division 1611 will provide a cross reference for complete access to all information regarding this test.

The tests performed on this telemetering package were a series of constant input acceleration runs while the input frequency was varied between 50 and 500 cycles per second. The minimum acceleration amplitude used was 5 g and the maximum 15 g while several runs were made between these limits. The input frequency was varied as rapidly as the generator could follow and the operator maintain the constant acceleration level for each run. To cover the frequency range, a changeover of power supply alternators was required at 125 and 250 cycles per second. However, the total time for each run was minimized at 120 seconds, the total recording time available with the direct wire apparatus.

Observation of the six monitor oscilloscopes during the tests indicated that the point of maximum acceleration was on the transmitter mounting plate. Rough computations from the dynamic outputs showed that accelerations on this plate were between 4 and 5 times the input to the section when passing through the two major resonant frequencies found of about 70 and 250 cycles per second.

The enclosed pictures (Figs. 1 through 7) of the test setup and components adequately describe the assemblies and the location of the monitoring devices.

A. F. Lawrence

Test Conducted by A. F. LAWRENCE - 1611-2

M. A. Richter

Approved by M. A. RICHTER - 1611-2

AFL:1611-2:dr

Enc: Figs 1 through 7

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Copy to:

R. H. Schultz, 1323

T. B. Morse, 1610

G. C. McDonald, 1630

D. Williams, Jr., 1611

R. E. Fisher, 1621

G. P. Stobie, 5252

C. L. Gomel, 5523

R. K. Smeltzer, 1922-2 ←

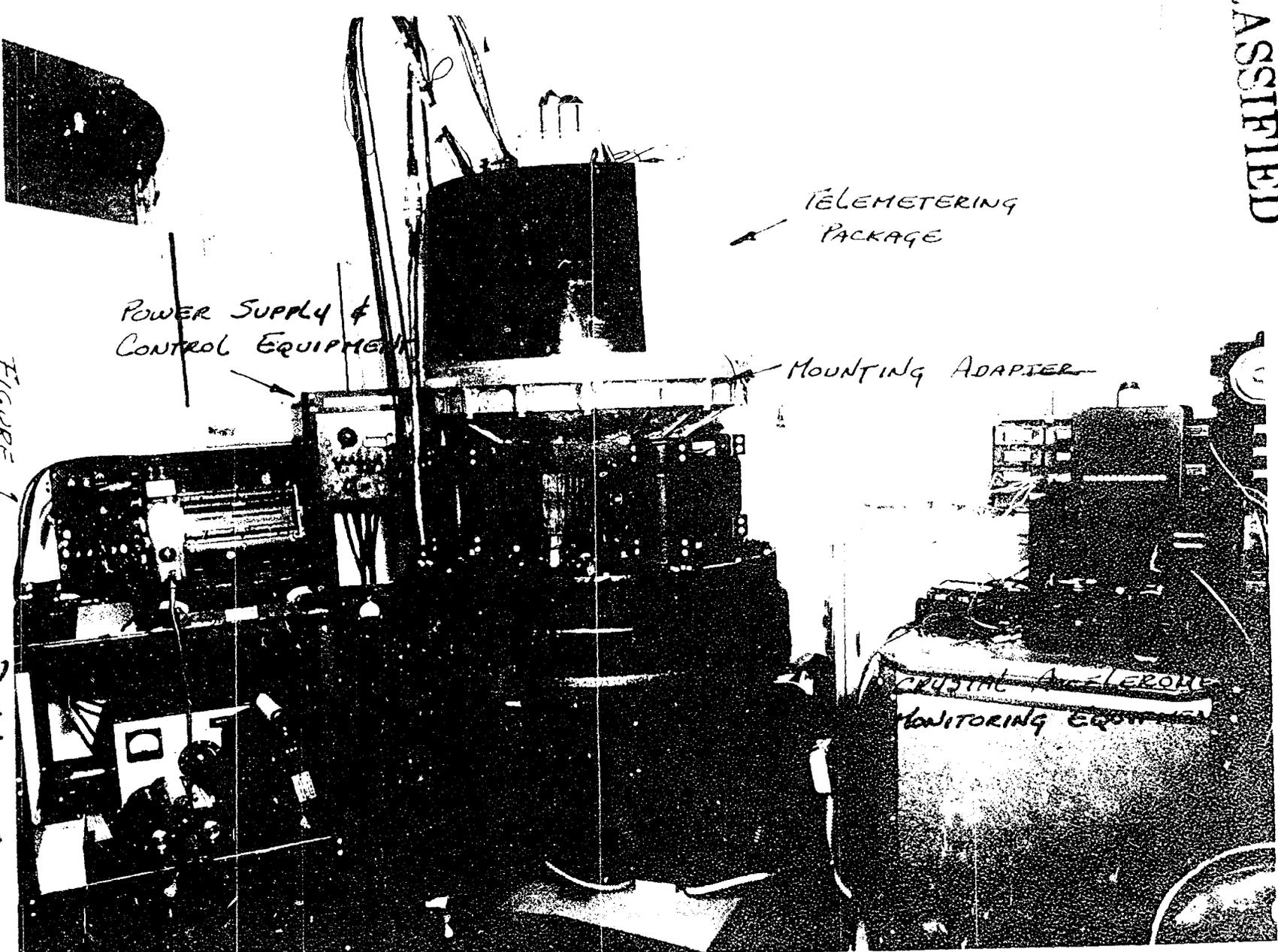
F. C. Hale, 1922-3

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TELEMETERING
PACKAGE

POWER SUPPLY &
CONTROL EQUIPMENT

MOUNTING ADAPTER

CRYSTAL ACCELEROMETER
MONITORING EQUIPMENT

Figure 1
Overall Test Setup
D# 63470
Demi John Telemetering Package Mounted
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FIGURE 2
LOCATION OF REFERENCE ANGLEOMETERS
ON MOUNTING ADAPTER.

D#63473

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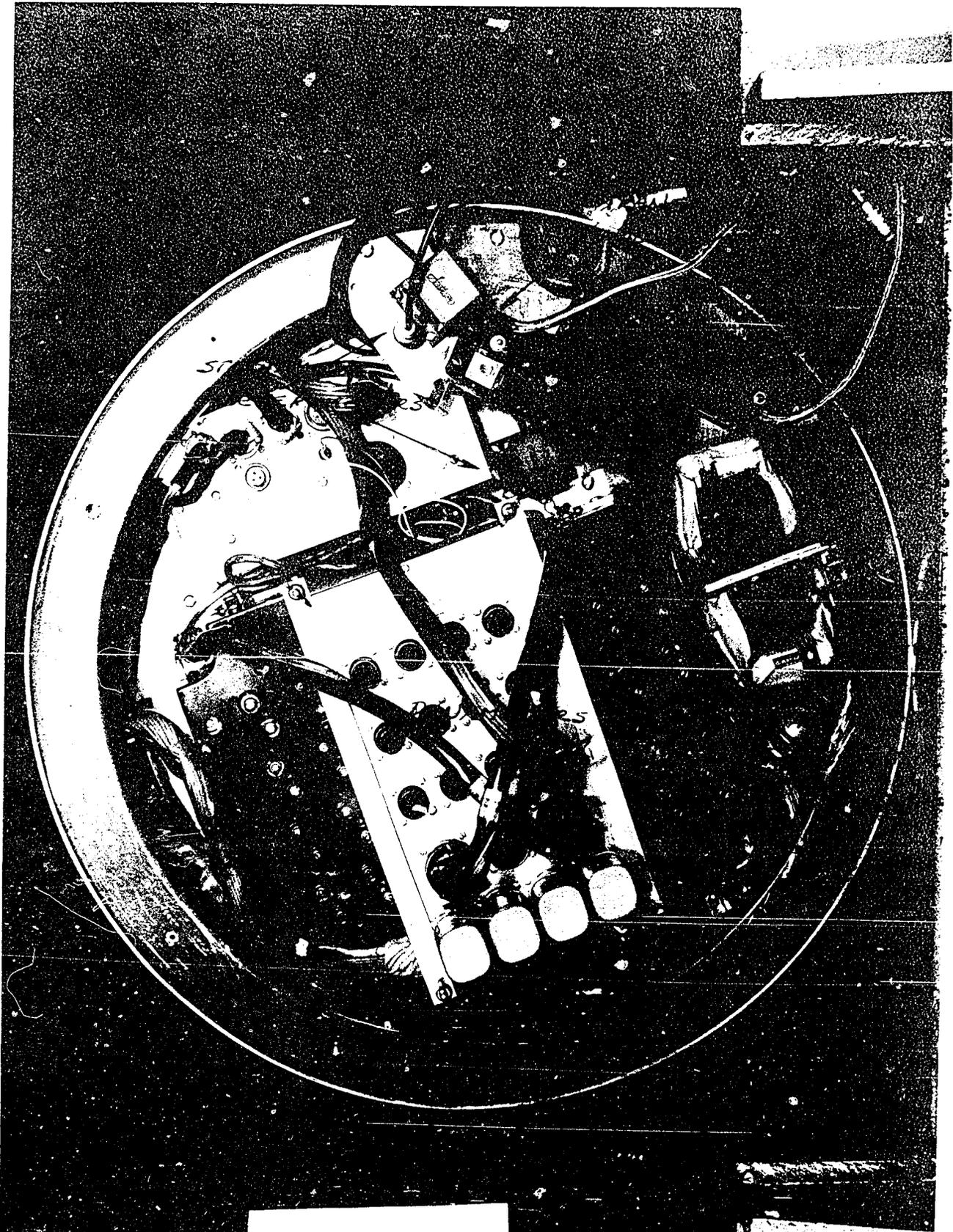


FIGURE 3
DEMI-JOHN TELEMETERING PACKAGE
TOP VIEW

D# 63476

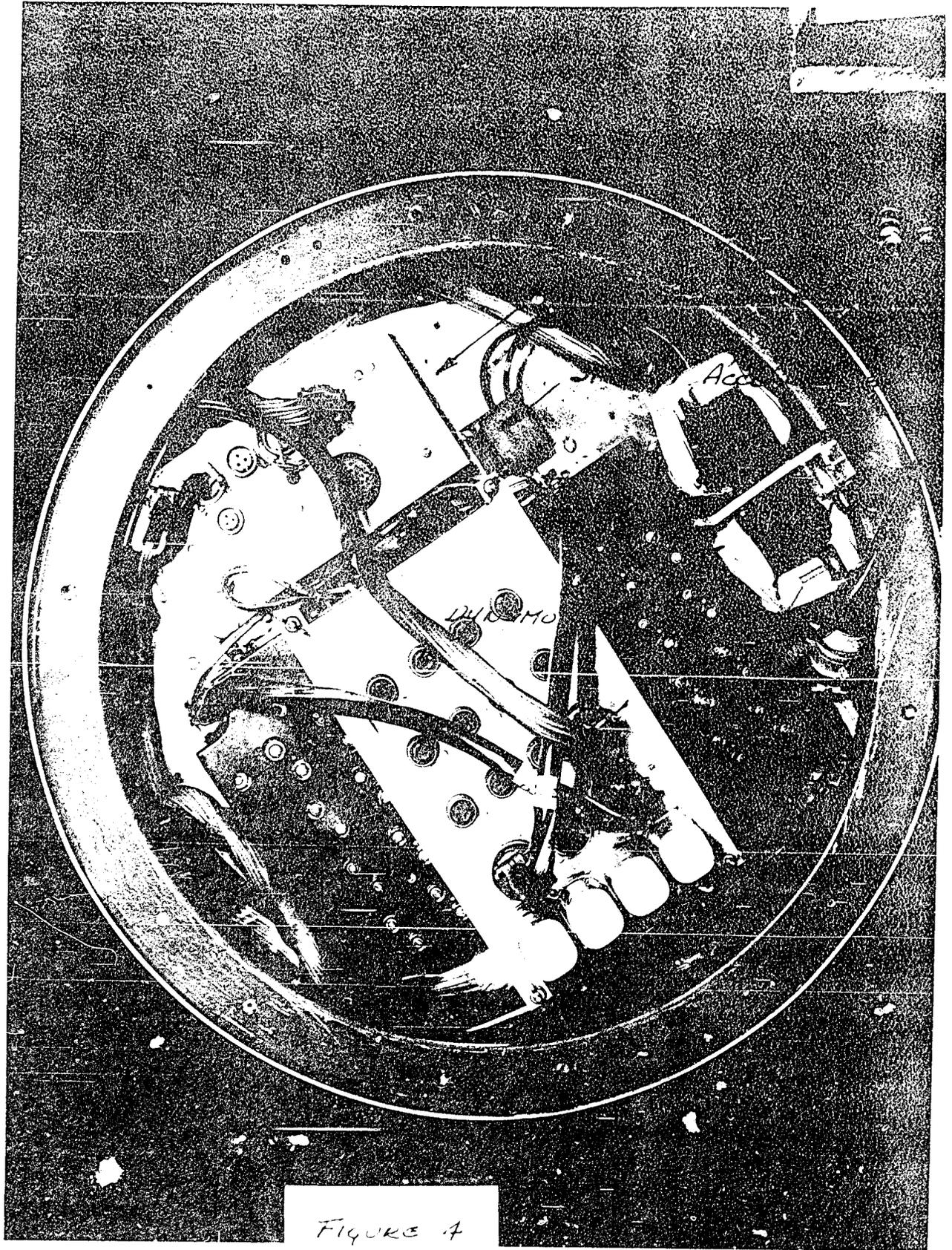


FIGURE 4

DEMI JOHN TELEMETERING PACKAGE
TOP VIEW, TRANSMITTERS REMOVED D#634.74

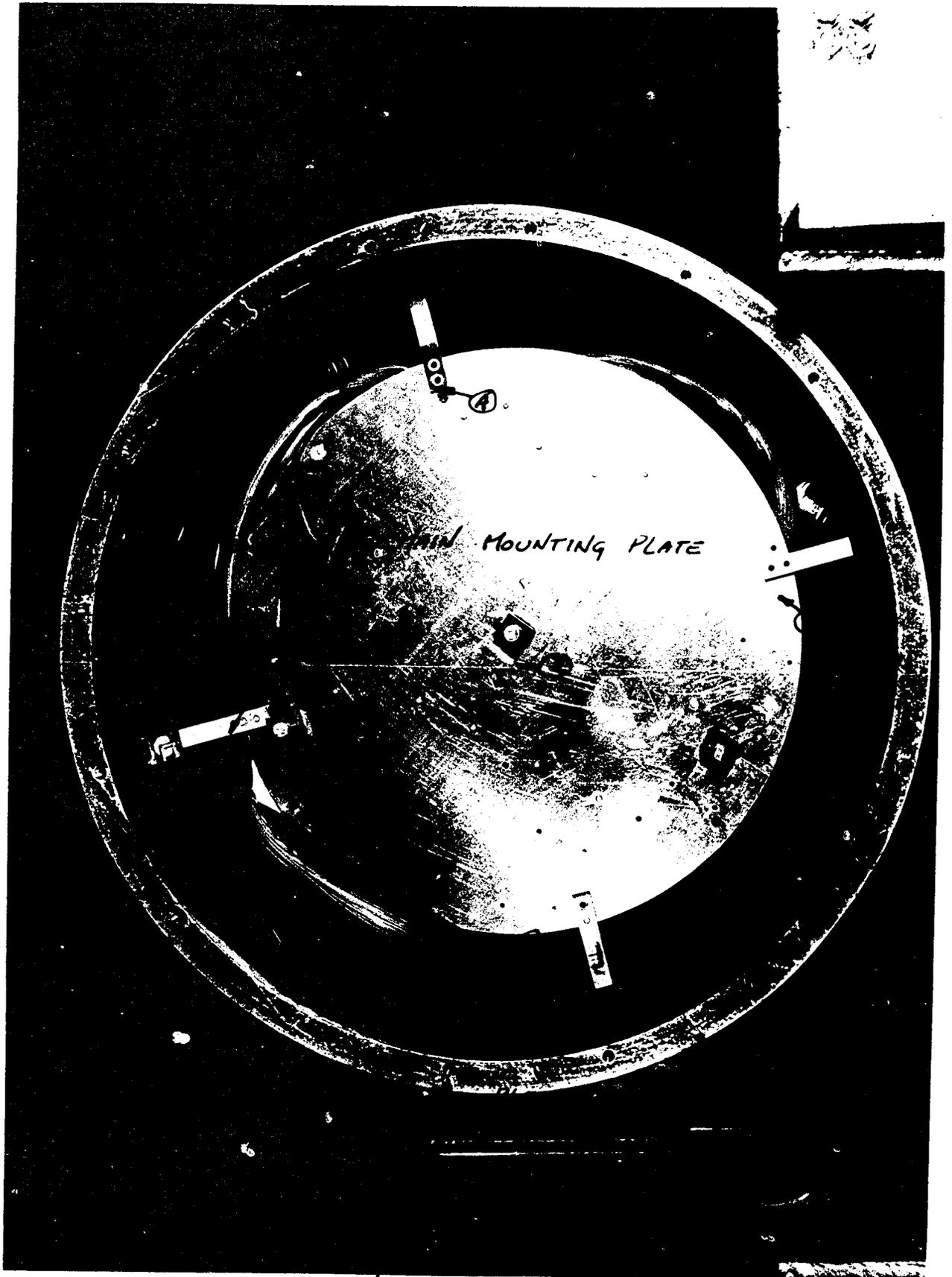


FIGURE 5

DEMI JOHN

TELEMETERING PACKAGE

BOTTOM VIEW

D#63475

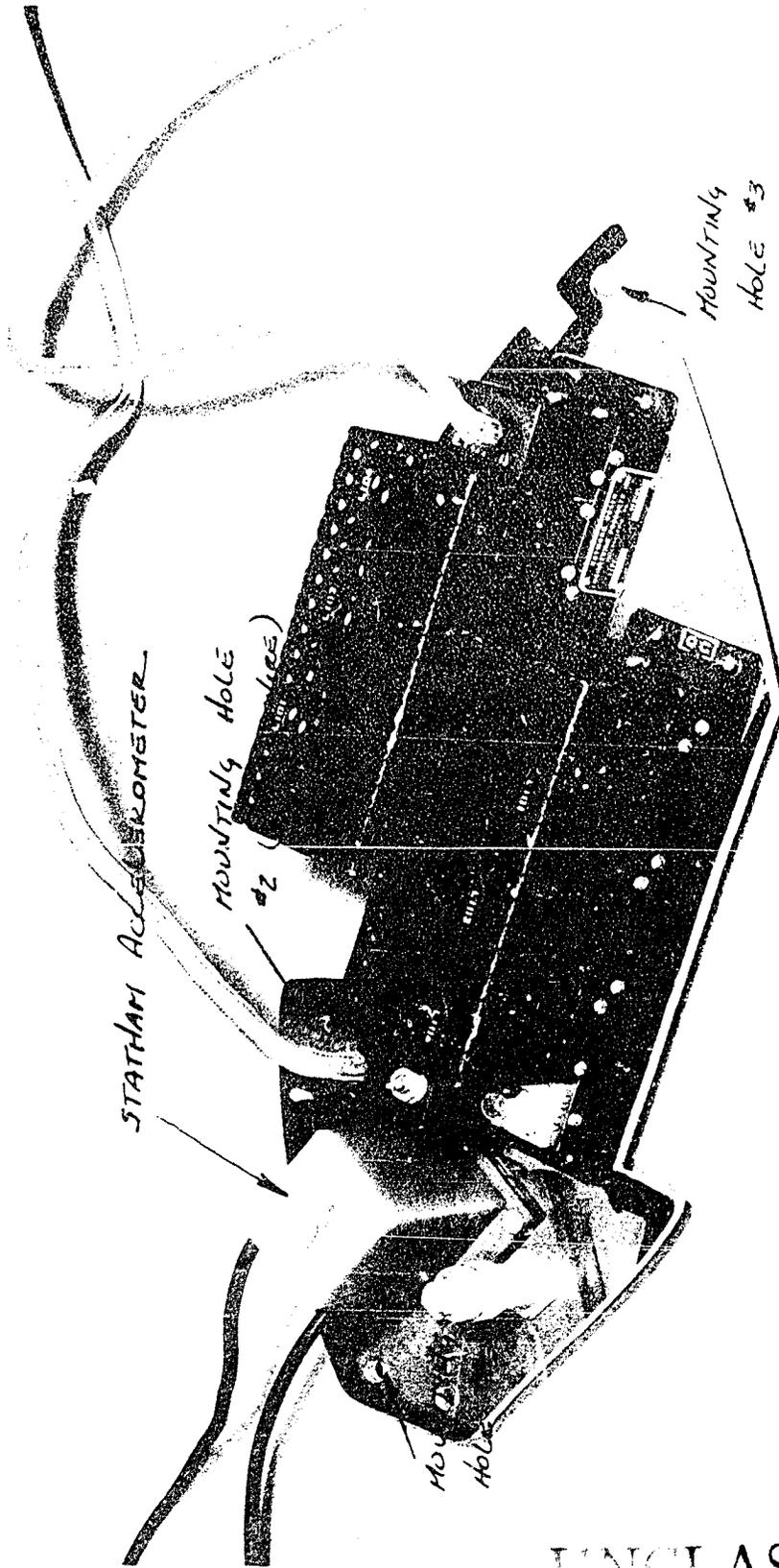


FIGURE 6
DEMI JAW TRANSMITTERS ON MOUNTING PLATE

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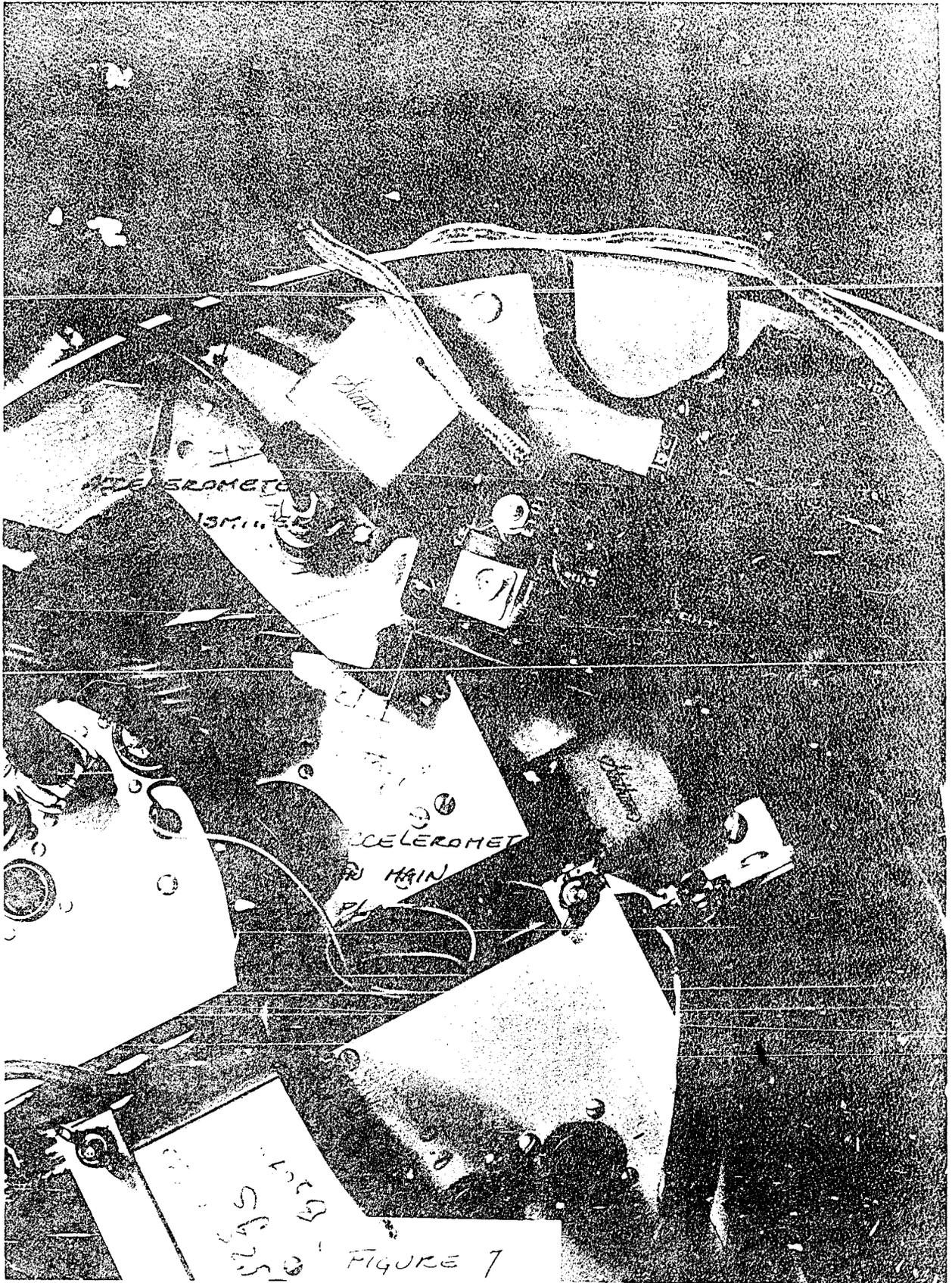


FIGURE 7

DEMI JOHN TELEMETERING PACKAGE, TOP VIEW
DETAIL OF ACCELEROMETER LOCATIONS

D#63491