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MONTHLY PROGRESS REPORT

FOR March 1963

CONTRACT NO. DA-19-029-501-ORD-2631



**Kaman
Nuclear**

COLORADO SPRINGS, COLORADO

A DIVISION OF KAMAN AIRCRAFT CORPORATION

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Report No. 58/92/PR/55

21-AD-161 550

(F) DEVELOPMENT AND FABRICATION OF
NON-DESTRUCTIVE SPECIFIC GRAVITY MEASURING
EQUIPMENT EMPLOYING RADIATION TECHNIQUE. (11)-(8) 6/14

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MONTHLY PROGRESS REPORT.

(11) For March 1963,
KAMAN NUCLEAR

A Division of The Kaman Aircraft Corporation

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ORD, Project No. TA218051

Period: (1) 1 March 1963 to 31 March 1963,

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I. SUMMARY:

New pulleys and belts for the tape vacuum system were received and installed, and tested prior to re-assembly of the vacuum system. High accuracy tests were continued with recurrence of the previously mentioned data transfer problems. This required changes in circuit constants in the counter control circuit. Tests were resumed and trouble encountered in the "Stop" sequence in the calculator, carriage and block control circuits. Corrective action was in progress at the end of the reporting period.

II. PROGRESS DURING THE PERIOD:

The toothed belts and pulleys for the tape vacuum system were received and installed, the drive motor being reversed end-for-end in the process to allow use of the other shaft end of the motor to provide a better seating surface for the quick-detach hub assembly. The unit was tested under normal blower load and under maximum load conditions to check on the operation of belts, pulleys and bearings, and to allow the initial stretch of the belt to take place, thus allowing a final adjustment of belt tension prior to installation.

Following installation, tape wear occurred rapidly, and it was necessary to remove the vacuum magazine, check for rough spots, and grind and polish the tape entry throat.

High accuracy tests were resumed, at which time difficulty was encountered with data transfer between the tape data counter and the Dynac data storage matrix. It was found that the counter control system was malfunctioning in producing a data transfer and calculator start signal when the tape servo ran into a high or low

limit position. Normally this should have stopped the counter without producing a read-out operation. The counter control binary circuit was redesigned to eliminate the spurious output, and to provide a safe margin of negative bias at the Dynac control thyatron.

An interaction also developed between calculator control and block control circuits when the block controls operated during the calculator cycle. Corrective action was being started at the end of the operating period.

III PROGRESS FOR THE NEXT PERIOD.

It is planned to check through the control sequence in the Manual-Low Accuracy mode to check out the calculator, attenuation measurement, and carriage control systems. Since low accuracy mode eliminates the 100 second integration period at each measurement point, it is appreciably faster to make control sequence checks in that mode.
