

Electronic Computer Division
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Mechanics Laboratory
Massachusetts Institute of Technology
Cambridge, Massachusetts
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SUBJECT: B. WEEKLY REPORT, PROJECT 5782, AUGUST 18, 1950
To: J. W. Forrester
1. GENERAL
(R. A. Nelson)

CLASSIFICATION CHANGED TO:
Auth: DD 254
By: RK E...
Date: 12/2/57

M-1089

The reports requested from the Armament Branch of ONR have not yet been received, so that coding of the fire control problem as solved by the Mk 47 director and associated equipment (tentatively considered a "representative system" by the Armament Branch and BuOrd) has not been started.

2. THE FIRE CONTROL PROBLEM
(R. A. Nelson)

I have concentrated on studying the three chapters of the book Naval Ordnance and Gunnery (NavPers 16116) that describe the AA problem from the Navy's point of view and with Navy notation. This has been especially helpful in understanding how some of the coordinate-system problems are handled, and also somewhat helpful in disclosing what approximations are made. In connection with this, I examined Everett's work of November 1948 (24RRE 14-53) on coding for Whirlwind I the solution performed by the Mk 37 director, Mk 6 stable element, and Mk 1 computer; his program is apparently transformed directly from the schematic of the analog apparatus included in NavPers 16116. Other reading includes a little on both the Mk 56 and the Mk 63 systems and a comparison by Draper of various AA FC systems.

I have started to express exactly the relation between director train measured in a slant plane (due to deck tilt) and bearing measured in a horizontal plane.

2.2 BALLISTIC CONSIDERATIONS
(J. M. Dodd)

Further work has been done on the kinematics of the idealized prediction problem. At present, the solution has been generalized to include targets and projectiles subject only to constant acceleration in a constant direction. I have read most of Hayes, Exterior Ballistics, with the hope of being able to use material in it to modify the present formulation of the problem to include atmospheric effects.

3. CODING

UNCLASSIFIED

(J. M. Dodd)

Programs were written for arctangent and for square root, but neither proved superior to previously existing programs.

cc: J. M. Dodd
R. R. Everett
H. Fahnestock
W. G. Welchman
C. R. Wieser