

~~CONFIDENTIAL~~  
~~UNCLASSIFIED~~

LAB. DIV. 6  
Copy No. 32 of 80 Copies  
Page 1 of 3  
DOCUMENT ROOM  
DO NOT REMOVE  
FROM  
THIS ROOM

Memorandum M-2790

CLASSIFICATION CHANGED TO:  
Auth: *DD 254*  
By: *LR Courtt*  
Date: *2-15-60*

Division 6 - Lincoln Laboratory  
Massachusetts Institute of Technology  
Cambridge 39, Massachusetts

SUBJECT: Group 62 Section Leaders Meeting - April 20, 1954  
To: Division 6 Group Leaders; Group 62 Staff Members  
From: A. P. Kromer  
Date: April 21, 1954

Abstract: The Transition System inputs, duplex operation concepts, weapons control capabilities, phone line transmission reqmt's. were discussed at a recent conference with Air Force and ADES representatives. The display selection frame has been eliminated in favor of having the necessary hardware in each console. Consoles in the operations areas will be wired as a single group and therefore all will receive display information from the same computer. Construction of XD-1 has completed the initial module unit of the Instruction Control Frame.

1. Transition System Planning

At the meeting at ADC Headquarters last week several items regarding the Transition System were discussed by Lincoln, ADES and Air Force personnel. Briefly, the material covered was the following:

- a. For normal operation the AN/FSQ-7 will have a capability of accepting data simultaneously from six heavy radars and seven gap fillers. This assumes data transmission from each heavy radar will be with the Fine Grain Data System. This ratio of heavy to gap filler radars may be modified on the basis of five gap fillers being equivalent to one heavy.
- b. The latest thinking regarding the mode of operation of the two computers in the Duplex Central was outlined at the meeting. Also, discussion was held regarding the probable time to switch over by the computer and a review of latest estimates on equipment reliability based on data gathered from performance of WWI.
- c. The ability of the AN/FSQ-7 to control weapons was discussed. Data from simulation experiments and WWI experiments was reviewed and the ability of the FGD system to provide sufficient accuracy was outlined.

~~CONFIDENTIAL~~  
UNCLASSIFIED

1. Transition System Planning (Continued)

d. The communication transmission (telephone) requirements were discussed and the phone company advised that they saw no problem in supplying sufficient lines of the required performance level to meet the planned Transition System program. The telephone lines to be used for data transmission will be slightly higher in quality than standard voice lines.

e. The design and layout of equipment in the building for the Duplex Central was reviewed.

2. Display

Visits to Convair and Hughes indicate both companies are preparing production facilities and continuing engineering development for the tubes to be used in the FSQ-7. A Charactron is now connected into MTC with provisions for digital expansion. The addition of an RF pulse in connection with Typotron operation has resulted in improved contrast.

Review of the logic for display selection has resulted in a decision to eliminate the central display selection frame and to include the necessary hardware in each console. Specifications for the display system will be re-issued to reflect this and other minor changes which have been agreed upon.

Study of the question of testing consoles in connection with routine maintenance has led to the decision that this should be done by inserting suitable programs into the computer at times when the normal operating load is low. All of the consoles will be connected so that they will receive display information from the same computer and will be switched as an entire group from one computer to another.

Fallows' group will start work on layout and pluggable units for the display frames, having recently received a set of drawings on the block schematics of the various pluggable units which have been designed at IBM for other parts of the machine.

3. XD-1 Construction

The C Module of the instruction control frame (containing the clock and time pulse distributor) has been completed and operated at IBM. Some of the plug-in units in this Module were made from non-standard components and these will be replaced. All of the circuits were made operational in a very short time after the assembly and wiring were actually completed. Assembly work on the remaining nine Modules for the instruction control frame will be started immediately with expected completion of all of these in approximately two weeks.

CONFIDENTIAL  
UNCLASSIFIED

Memorandum M-2790

Page 3 of 3

4. Drums

Decision has been made to use diode switching for the read-write circuits associated with the drums. This will be used for XD-1 and 2 and the initial Duplex Centrals. Investigation of magnetic switching is continuing however with the view to possible application later in the production program.

5. Power

The power requirements in connection with the marginal checking of display consoles is under study and a proposal is to be prepared shortly.

The number of power supplies and the method of interconnecting various portions of the power system in a Duplex Central is presently being reviewed. Reliability, cost and space considerations are all being considered in connection with this study.

6. MTC


Additional personnel will join the MTC group, including; Earl Gates who will work on in-out equipment for the computer, Carl Schultz who will work on the drum and Alexander Vanderburgh who will work on maintenance and diagnostic programs.

7. Approvals

The proposed revision to the drum specifications has been agreed upon. This covers the specifications for miscellaneous radars, input field and to reduce the number of DID fields from two to one and other minor changes.

Modifications in the arrangement of equipment on the second floor of the XD-1 building have been concurred by EDO-SO.

Signed:   
A. P. Kromer

Approved:   
N. H. Taylor

APK:hpm

cc: J. W. Forrester  
R. R. Everett

UNCLASSIFIED  
CONFIDENTIAL