

**CONFIDENTIAL**

UNCLASSIFIED

Memorandum 6M-4371

COPY NO. 2 OF 100 COPIES  
Page 1 of 6

Division 6 - Lincoln Laboratory  
Massachusetts Institute of Technology  
Lexington 73, Massachusetts

SUBJECT: EPSCOM BIWEEKLY REPORT FOR 15 JUNE 1956

To: Distribution List

From: R. P. Mayer

Date: 20 June 1956

Approved: K. E. McVicar  
K. E. McVicar

LIN. LAB. DIV. 6  
DOCUMENT ROOM  
DO NOT REMOVE  
FROM  
THIS ROOM

Abstract: The EPSCOM force still stands at 40 people. A summary chart and schedule is included along with reports from programmers.

CLASSIFICATION CHANGED TO:  
Auth: DDJY  
By: RRE  
Date: 3-22-60

THIS PAGE IS UNCLASSIFIED WHEN SEPARATED FROM COMPLETE MEMO.

This document is issued for internal distribution and use only by and for Lincoln Laboratory personnel. It should not be given or shown to any other individuals or groups without express authorization. It may not be reproduced in whole or in part without permission in writing from Lincoln Laboratory.

The research reported in this document was supported jointly by the Department of the Army, the Department of the Navy, and the Department of the Air Force under Air Force Contract No. AF 33(616)-458.

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, (Title 18 U.S.C. Sections 793 and 794). Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

**CONFIDENTIAL**

UNCLASSIFIED

~~CONFIDENTIAL~~  
UNCLASSIFIED

GM-4371

Page 2

A new Biweekly Report form for EPSCOM programmers has been distributed. This form includes spaces for reporting percent of progress on various phases of a program, as well as for discussing the problems encountered and progress made.

Further details on the EPSCOM programs can be found below.

(R. P. Mayer)

Single Track Tracking Program: 8500

The new version of the tracking program has been run with data. There is a major bug in the program in that all of the data is concentrated at about 5 points on the scope and at this time I am trying to determine what causes the error in the radar display. It appears to be in the conversion routine. Another bug is the inability to initiate on any of the radar data.

(W. M. Gramling)

Height-Finder Flight and Equipment Test Program: 8209 & 8102

The Height-Finder Flight program is considered to be complete to the point where it should be combined with the tracking program. A deck of octal corrections was used to simulate, as far as possible, the input to the Flight Test program. All print-outs have been checked and all variations in program logic have been tested as far as possible.

The Height-Finder Equipment Test program has been operating to the requirements of the test team. A few changes have been made and some trouble has been localized to card processing errors.

The documentation is in process for both programs, being in total about 40% complete.

(J. J. Maroney and  
F. J. Sweeney)

Quick Radar Recapitulation Program: 8905

About 70% of the coding has been done and about 2/3 of that will be sent to the card room this week.

(Helen E. Quirk)

LRI-GFI Pattern Check Program: 8201

This program is complete except for the conversion to SAGE and to the FST-1 pattern. A new assembly will be made and checked out before attempting to convert the program for the FST-1 pattern. This assembly contains all known modifications requested for this program.

(W. J. Marston)

~~CONFIDENTIAL~~  
UNCLASSIFIED

~~CONFIDENTIAL~~  
UNCLASSIFIED

6M-4371

Page 3

Pattern Punch Generator: 802501

The pattern punch program has been checked out and is operating correctly. A few minor corrections will be necessary before it can be combined with another completed program. The combination will provide the means to punch radar data cards and make insertions by using the A and B toggle switch registers. Because of conflicting tags in the two programs, more changes will be necessary before a combined compilation of the two programs can be made. For checking out purposes, we are using the program to be integrated as a subroutine.

(Joseph A. Palermo and  
Glenn F. Paulsen Jr.)

Pattern Card Conversion Program: 801702

The routine to convert the LRI data has been successfully completed. The routine to convert the GFI data needs more refining.

(C. Toohig and  
B. Awad)

Pattern Check Tape Printout: 8024, 8510, 8560

An error was found in the Pattern Check Program which made this program inoperative. The error has been fixed and this program has been modified to handle any similar situations. Three subroutines have been added, bringing the program from its original form of 158 cards to its present (mod. 09) form of 239 cards. These extensive modifications and additions have necessitated revision of all flow diagrams previously drawn.

(David L. Greenhalgh)

LRI Single Message Test: 8903

The cards will be finished (from the card room) this Wednesday (20 June) and I expect to run the program on the computer for the first time this Friday. All research for the program has been completed. Conversion to the SAGE version of this program has been considered throughout the coding and could easily be facilitated by octal correction cards for changing a few minor instructions. This program should be completely finished by 9 July 1956.

(D. F. O'Neill)

I am now coding the print out procedure.

(Marilyn R. Lynch)

Manual Input Keyboard Test: 8501

Coding for the operational part of the program is about 25% complete, and should be finished around the 20th of June. Console E-21 was tested on 12 June and the results indicated the program was operating satisfactorily. As each row of the console was tested, an indication of "good"

~~CONFIDENTIAL~~  
UNCLASSIFIED

~~CONFIDENTIAL~~  
UNCLASSIFIED

6M-4371

Page 4

or "bad" was shown on the DD together with the row number and console being tested.

Consoles presently installed in ESS are not in their finalized form. The program will be written to test ESS keyboards as they will be and not as they are at present, to avoid constant modifications as the consoles are brought up to date.

(John T. Tadler)

The computer test proved that the program methods generated will work satisfactorily. There now remains the job of modifying this program to include not only one console and its associated DD & SD, but 105 consoles and as many DD's. This modification has progressed satisfactorily and it is expected to be ready for compilation by Wednesday 20 June.

(Wilmot H. Hansell)

Crosstell Test Program: 810400

The test team is currently satisfied with 810400, as modified by a large number of octal correction cards.

The program will be documented in its present form; octal corrections will not be incorporated into a re-assembly. (810400 makes use of the old assembly program)

The deadline for documentation is mid-July. The requirement for extensive detailed flow charts could seriously upset meeting the deadline.

(L. J. Rose)

Teletype Message Test: 8011

Continued operation of this program through use of the checker has revealed errors both in this program and in the checker. Considerable progress has been made, however. Conversion of the card data from Hollerith to teletype code stored on the A.M. drums is now successful.

(George C. Cox)

Ground/Ground Message Display: 830306

Documentation of this program is the last major thing to do. During the last week, pictures were taken for this document on the SD camera console. A few flow diagrams have been typed. These flow diagrams are based on Wes Marston's method. A rough draft has been written, which Chris Sherrerd has looked over. This document does not describe the flow diagrams, so it must be modified or an addition must be added to describe the flow diagram.

(L. E. McHenry)

~~CONFIDENTIAL~~  
UNCLASSIFIED

~~CONFIDENTIAL~~  
UNCLASSIFIED

6M-4371

Page 5

Square Root Subroutine: 801204

An overflow has been detected. Correction of the program will involve the changing of some constants.

(Marcia J. Tobin)

Dual Precision Arithmetic: 8027, 8014, 8020, 8021, 8022  
Conversion to Azimuths:

The dual precision subroutines (except for division) are completed and checked out. The memo is written but may require changes in the division appendix. Division is almost done except for a few details. We ran the conversion program and expect to start debugging.

(Elaine Colleran and  
Paula Titiev)

RPM/br

Signed: R. P. Mayer  
R. P. Mayer

Attached:  
G-533204 (BTL) = SB-66595 (Lincoln)

~~CONFIDENTIAL~~  
UNCLASSIFIED

~~CONFIDENTIAL~~  
UNCLASSIFIED

6M-4371

Page 6

DISTRIBUTION LISTLincoln

I. Aronson  
P. R. Bagley  
H. P. Bridge  
W. J. Canty  
P. J. Harris  
W. E. Holden  
E. D. Lundberg  
J. V. Mazza  
R. P. Mayer  
K. E. McVicar  
B. E. Morriss  
R. Newhall  
J. A. O'Brien  
R. B. Paddock  
T. J. Sandy

S. L. Thompson  
A. M. Werlin  
H. L. Ziegler  
A. J. Roberts

Western Electric

G. L. Baker  
R. M. Bernards  
D. A. Dalin  
J. P. Flanagan  
W. M. Gramling  
D. L. Greenhalgh  
W. H. Hansell  
J. M. Kitchens  
J. J. Maroney  
L. E. McHenry  
D. F. O'Neill  
J. A. Palermo  
G. F. Paulsen  
J. T. Tadler  
A. G. Thomas

RAND

G. C. Cox  
T. N. Hibbard  
W. S. Melahn  
F. J. Sweeney  
J. P. Wong

BTL

B. Awad  
M. Burger  
G. F. Clement  
P. J. Coakley  
E. Colleran  
M. E. Dolan  
N. Mardirosian  
W. J. Marston  
G. McNeil  
J. E. Ouellette  
H. E. Quirk  
L. J. Rose  
C. S. Sherrerd  
A. B. Tebbetts  
M. M. Tefft  
P. T. Titiev  
M. J. Tobin  
C. Toohig  
IBM  
J. Groce  
R. W. Shur

~~CONFIDENTIAL~~  
UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE. CASE 06-1104.

SB-66595

PROGRAM NUMBER	PROGRAM TITLE	SAGE CHECKOUT PRIORITY	PROGRAMMER	SAGE SYSTEM	SCHEDULE - 1956					COMMENTS
					JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	
8902	LR FGF PATTERN CHECK	1	MARSTON TORLIN	XD-1	0			D		
8952	"	3		SAGE						
8902	LR FGF TRACKING	1	SHERREED	XD-1		D				COMPLETED 1 MAY
8900	"	1	GRAMLING	XD-1	C		C	D		FEEDS VERSION OF 8902
8950	"	5		SAGE						
8701	HF LOOP TEST	-	MARNEY SHERREED	XD-1		D				COMPLETED 1 APRIL
8751	"	8		SAGE						
8700	HF FLIGHT TEST TRACKING	-	GRAMLING	XD-1	0		C	D		ELIMINATION OF 8900 & PARTS OF 8701
8750	"	3		SAGE						
8600	CROSSTALK DATA LINKING	-	ROSE	XD-1	C	D				COMPLETED 12 JUNE
8601	"	-		XD-2						NOT YET SPECIFIED
8651	"	10		SAGE						
8801	TELETYPE TEST	-	COX	XD-2	0	C		D		
8851	"	11		SAGE						
8800	S/A DATA LINK TEST	-	BERNARDS	XD-1		D				COMPLETED 20 APRIL
8850	"	12		SAGE						
8906	RIDER B-STANDING	-	MAURICIAN	XD-2	C	C		I		
8956	"	1		SAGE						
8903	LRI SINGLE MESSAGE TEST	-	O'NEIL	XD-1		C		D		
8953	"	2		SAGE						
8956	RFI CONF. TEST	4		SAGE						NOT YET SPECIFIED
8904	QUICK SARGE STATUS REACTIVATION	-	QUIRK	XD-1	C	C		I		
8954	"	6		SAGE						
8400	S/G SIMULATOR (DISPLAY)	-	McHENRY	XD-1		D				COMPLETED 5 MAY
8450	"	7		SAGE						
8401	S/A SIMULATOR (DISPLAY)	-	VOLLMER	XD-1		D				COMPLETED 1 APRIL
8451	"	13		SAGE						
8557	LR FGF PATTERN CHECK	*	PAULSON	BOTH	0	C		D		
8560	PATTERN CHECK PRINT OUT	*	GREENHALGH	BOTH	0	C		D		
8945	KAYAN ORIENTATION CHECK	*	DOLAN	BOTH		C		D		
8553	SITE CONSTANTS COMPUTATION	*	SULLIVAN	BOTH		0		D		
8457	BINARY PRINT-OUT	*	SHERREED	BOTH		C		D		SINGLE CARD
8455	BINARY PRINT-OUT	*	SHERREED	BOTH		C		D		
8453	CARD COMP. & DUP.	*	MENEY	BOTH				C	D	
8454	OCTAL PRINT-OUT	*		BOTH						TO BE BORROWED FROM 67 WITH SLIGHT MOD.
8456	OCTAL BINARY LOADING	*		BOTH						
8455	LINCOLN COMPILER	*		BOTH						
8457	LINCOLN CHECKER	*		BOTH						
8460	CARD INPUT EDITOR	*		BOTH						
8461	PRINT-PROGRAM EDITOR	*		BOTH						
8462	TAPE COMP. & DUP.	*		BOTH						

LEGEND

- I IN A FORM INDEPENDENT OF U.C.P.
- \* TO BE COMPLETELY CHECKED OUT ON XD-1 PRIOR TO MCGUIRE.
- B BELL TELEPHONE LABS.
- W WESTERN ELECTRIC CO.
- K RAND CORP.
- BOTH PROGRAMS WHICH USE ONLY THOSE PORTIONS OF XD-1 AND FSQ-7 WHICH ARE IDENTICAL, AND HENCE WILL WORK ON BOTH COMPUTERS WITHOUT MODIFICATION.
- 0 SCHEDULED CHECKOUT DATE AS OF 5 MAY 1956
- C SCHEDULED CHECKOUT DATE REVISED AS OF 15 JUNE 1956
- D SCHEDULED DOCUMENTATION DATE AS OF 15 JUNE 1956

UNCLASSIFIED

ISSUED	CS	
DRAWN	CS	
ISSUE	6/20/56	8
RECAPITULATION OF SAGE EQUIPMENT SUBSYSTEM TEST PROGRAM STATUS CASE 27443		
WESTERN ELECTRIC COMPANY, INC. ENGINEER OF MANUFACTURE		
BELL TELEPHONE LABORATORIES, INC.		
G-533204 SB-66595		1
NO. OF SHEETS PER SET 1 SHEET		