

Digital Computer Laboratory
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

SUBJECT: BIWEEKLY REPORT, September 1, 1957

To: Frank M. Verzuh

From: Scientific and Engineering Computation Group

1. MATHEMATICS, CODING AND APPLICATIONS

1.1 Introduction

During the past two weeks 356 coded programs were run on the time allocated to the Scientific and Engineering (S and EC) Group. These programs represent part of the work that has been done on 26 of the problems that have been accepted by the S and EC Group.

1.2 Programs and Computer Operation

<u>Problem No.</u>	<u>Title</u>	<u>Minutes</u>
100	Comprehensive System of Service Routines	90.8
126 D.	Data Reduction	90.3
131	Special Problems (Staff Training, etc.)	20.2
193 L.	E.V. Problem for Propagation of E.M. Waves	258.1
203 D,N.	Response of a Building Under Dynamic Loading	38.4
204 N.	Exchange Integrals Between Real Slater Orbitals	28.3
253 N.	APW as Applied to Face- and Body-Centered Iron	1687.1
257 C.	Horizontal Stabilizer Analysis	789.0
273 N.	Cosmic Ray Air Shower	192.6
278 N.	Energy Levels of Diatomic Hydrides LiH	2366.7
285 N.	APW as Applied to Chromium Crystal	1290.3
288 N.	Atomic Wave Functions	335.3
290 N.	Polarizability Effects in Atoms and Molecules	899.7
300 L.	Tropospheric Propagation	47.9
310 C.	Rocket Trajectory Calculations	174.6

312 L.	Error Analysis	8.9
317 C.	Stability Derivatives from Flight Test Data	93.4
327 L.	Prediction Analysis	62.8
341 C.	Statistical and Dynamic Methods in Forecasting	71.6
364 C.	Blast Response of Rotor Blades	180.7
377 L.	Coverage Analysis	51.7
389 D.	Supersonic Flow of Air in a Tube	34.8
394 C.	Automatic Programming for Machine Tools	91.9
400 C.	Temperature and Stress Response	24.7
412 N.	Energy Bands for Potassium	28.6

1.3 Computer Time Statistics

The following indicates the distribution of WWI time allocated to the S and EC Group.

S and EC Programs	141 hrs.	48.8 min.
Lincoln Programs	7 hrs.	9.4 min.
Magnetic Tape Test		33.1 min.
Scope Calibration		12.0 min.
PETR Test		20.1 min.
Test Storage Check		3.7 min.
Demonstrations (No. 131)		20.2 min.
Total Time Logged	150 hrs.	37.0 min.
Div. 6 Conversions, Inter-run Operations, etc.	19 hrs.	24.4 min.
Total Time Assigned	170 hrs.	16.4 min.
Usable Time, Percentage	99.85%	
Number of Programs	356	