

Digital Computer Laboratory
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

SUBJECT: BIWEEKLY REPORT, JULY 7, 1957

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From: Scientific and Engineering Computation Group

1. MATHEMATICS, CODING AND APPLICATIONS

1.1 Introduction

During the past two weeks 470 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 31 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	93.6
126 D.	Data Reduction	37.7
131	Special Problems (Staff Training, etc.)	33.5
193 L.	E.V. Problem for Propagation of E.M. Waves	239.5
199 N.	Compressible Flow in a Tube	42.5
203 D,N.	Response of a Building Under Dynamic Loading	958.8
204 N.	Exchange Integrals Between Real Slater Orbitals	13.6
245 N.	Theory of Neutron Reactions	434.1
253 N.	APW as Applied to Face- and Body-Centered Iron	494.1
257 C.	Horizontal Stabilizer Analysis	215.2
260 N.	Energy Levels of Diatomic Hydrides	23.7
262 N.	Evaluation of Two-center Molecular Integrals	181.7
273 N.	Cosmic Ray Air Shower	98.6
274 N.	Multiple Scattering	8.2
278 N.	Energy Levels of Diatomic Hydrides LiH	3587.2
285 N.	APW as Applied to Chromium Crystal	421.9
288 N.	Atomic Wave Functions	416.9
300 L.	Tropospheric Propagation	15.1
310 C.	Rocket Trajectory Calculations	30.9
317 C.	Stability Derivatives from Flight Test	109.8
327 L.	Prediction Analysis	87.0

341 C.	Statistical and Dynamic Methods in Forecasting	56.8
361 B,N.	Growth of Fatigue Cracks	9.5
364 C.	Blast Response of Rotor Blades	5.0
387 C.	Determination of Velocity Potentials	42.8
388 D.	Temperature Distribution Aircraft Generators	15.3
389 D.	Supersonic Flow of Air in a Tube	29.7
394 C.	Automatic Programming for Machine Tools	58.1
395 L.	Phase Error Calculation	275.6
400 C.	Temperature and Stress Response	60.9
402 N.	Monte Carlo Inventory Control Study	13.2

1.3 Computer Time Statistics

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

S and EC Programs	124 Hrs.	19.8 min.
Lincoln Programs	10 hrs.	17.2 min.
Magnetic Tape Test		49.9 min.
Scope Calibration		19.4 min.
PETR Test		24.8 min.
Test Storage Check		4.9 min.
Demonstrations (No.131)		33.5 min.
Total Time Logged	136 hrs.	49.5 min.
Div. 6 Conversions, Inter-run Operations, etc.	14 hrs.	58.0 min.
Total Tims Assigned	162 Hrs.	33.5 min.
Usable Time, Percentage	93.38%	
Number of Programs	470	