Digital Computer Laboratory
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

SUBJECT: BIWEEKLY REPORT, MAY 26, 1957

To: Frank M. Verzuh

From: Scientific and Engineering Computations Group

1. MATHEMATICS, CODING AND APPLICATIONS

1.1 Introduction

During the past two weeks 498 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 42 of the problems that have been accepted by the S and EC Group.

1.2 Programs and Computer Operation

Problem No.	Title	Minutes
100	Comprehensive System of Service Routines	66.7
126 D.	Data Reduction	120.2
131	Special Problems (Staff Training, etc.)	58.5
193 L.	E.V. Problem for Propagation of E.M. Waves	260.2
194 B.N.	Augmented Plane Wave Method (Sodium)	18.0
199 N.	Compressible Flow in a Tube	6.8
203 D.N.	Response of a Building Under Dynamic Loading	341.1
245 N.	Theory of Neutron Reactions	231.1
253 N.	APW as Applied to Face-and Body-Centered Iron	80.9
256 C.	WWI-1103 Translation Program	22.2
257 C.	Horizontal Stabilizer Analysis	247.4
260 N.	Energy Levels of Diatomic Hydrides	10.6
261 C.	Fourier Synthesis for Crystal Structures	45.2
262 N.	Evaluation of Two-center Molecular Integrals	85.6
273 N.	Cosmic Ray Air Shower	284.5
278 N.	Energy Levels of Diatomic Hydrides LiH	870.9
285 N.	APW as Applied to Chromium Crystal	426.2
288 N.	Atomic Wave Functions	695.5
290 N.	Polarizability Effects in Atoms and Molecules	234.2
300 L.	Tropospheric Propagation	.8
312 L.	Error Analysis	54.5
317 C.	Stability Derivatives from Flight Test Data	25.6
327 L.	Prediction Analysis	114.1
337 N.	Nonlinear 2nd Order Diff. Eqs.	2.8
341 C.	Statistical and Dynamic Methods in Forecasting	163.6

360	B.	Dynamic Response of Shear Walls	134.3
364	C.	Blast Response of Rotor Blades	16.0
377	L.	Coverage Analysis	74.3
380	B.	Switching Circuits	5.3
386	C.	Free Convection	52.1
387	C.	Determination of Velocity Potential	43.9
388	D.	Temperature Distribution Aircraft Generators	17.7
389	D.	Supersonic Flow of Air in a Tube	26.8
394	C.	Automatic Programming for Machine Tools	8.1
400	C.	Temperature and Stress Response	14.9
402	N.	Monte Carlo Inventory Control Study	5.5
403	B.	Transient Heat Transfer	69.1
406	B.	Numerical Method of Maximizing or Minimizing An N Dimension	57.9
407	C.	Diffusion Boundary Layer	4.2
408	C.	Frequency Spectrum of Magnesium	10.9
410	B.	S_2 Approximation for Flux Flattening	121.5
411	B.N.	Lever Cavity Klystron	6.9

1.3 Computer Time Statistics

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

S and EC Programs	76 hrs.	14.2 min.
Lincoln Programs	8 hrs.	23.9 min.
Magnetic Tape Test		51.3 min.
Scope Calibration		17.6 min.
PETR Test		28.2 min.
Test Storage Check		6.3 min.
Demonstrations (No. 131)		58.5 min.
Total Time Logged	87 hrs.	20.0 min.
Div. 6 Conversions, Inter-run Operations, etc.	9 hrs.	45.7 min.
Total Time Assigned	98 hrs.	50.7 min.
Usable Time, Percentage	98.23%	
Number of Programs	498	