

Office Memorandum • UNITED STATES GOVERNMENT

TO : *Mr. Friedman*DATE: *24/9/52*FROM : *0372*SUBJECT: *attached reports*

*1) See with "Planning for Atlas II",
to which I alluded in this F.M. and
report on the TPM whose marked
portions seem pertinent (para 4 a).
W. H. L.*

C O P Y

DISPOSITION FORM

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SUBJECT: Planning for ATLAS II

TO 35

FROM 351

DATE 14 Jul 52

COMMENT NO. 2
S.S. Snyder/329

1. There is a real possibility that we will be in a worse position of preparedness regarding ATLAS II than we were at the time of delivery of ATLAS I. Our past experience indicates that starting with entirely inexperienced programming trainees, up to a full year may be required in many cases before real contributions can be expected from new people.

2. It is pointed out that a potential source of qualified programmers (and trainees) is available among personnel in 34. While we in 35 have the assigned responsibility for operation of newly developed computers, 34 has gone ahead with development of a number of people in programming for both ATLAS I and ABNER. This activity would not be subject to the same criticism if adequate help were available in 35; however, if these people can be subject to assignment by 35, at least until relief can be had, a crisis may be avoided. Also, such an arrangement would probably eliminate some unnecessary duplication in training activities.

SAMUEL S. SNYDER
Acting Head,
Design and Procedures Branch

Incllosures: n/c

351B/62

Planning for ATLAS II

351
35

351

27 June 1952

Mr. Willard/60383

In Turn

1. The delivery date of ATLAS II will be approximately one year hence. In order to adequately prepare for the use of this machine a great deal of planning, programming and training needs to be done.

2. Test Routines: In order to help with the testing of the machine, test routines should be written by experienced programmers who are familiar with the details of the machine. Sufficient information is available here to devise tests to cover every order and sub-command in the machine. More detailed information can be obtained on visits to ERA. Tests of the electrostatic storage are especially important since these tests will determine the limits set on the repetitive reading ratio. Tests of the magnetic tape storage can test magnetic tapes as well as the MT storage system. Tests similar to those used on ATLAS I will be needed for the magnetic drum storage. Planning and writing these test programs should take approximately 160 man hours.

3. Programmer Training: The training of a number of programmers is a project which should be initiated soon. Programmers with training on both ATLAS I and ABNER should be able to learn ATLAS II rapidly. Programmers with experience on only one machine will have to learn the different techniques "borrowed" from the other. Since all available programmers are at present quite busy on machines in use or nearing completion, it will be necessary to train new programmers for ATLAS II. This process of training will take three months and should be initiated as soon as possible, since many of the new people will have to be hired. Time for training experienced personnel has been found to be about 2 months or about 100 man hours of instruction and assistance. Inexperienced programmers require at least another month of training or a total of about 150 man hours of instruction and assistance.

4. Training Aids: Certain training aids are helpful in training programmers and in instructing people who have a casual interest in the machine. A detailed instruction code of orders will be necessary in order to explain the operation of the orders and the special features. A training manual will lessen the time which is required to explain details to students. It has been found that sample routines are a help in training programmers. These training aids will take a great deal of time to prepare and should be available at least as soon as training of new programmers is initiated.

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5. Operator Training: Operators familiar with ATLAS I should have little trouble with ATLAS II. There is one big difference from the operator's point of view, however. This is in the care and use of magnetic tape. Training in this phase should be started as soon as tape machines are checked out and ready for use.

6. Maintenance Training: No experience is available at present on the maintenance of electrostatic storage systems. For this reason personnel should be assigned to study the experimental equipment available at ERA. It is suggested that the tube test (5 digit) units could be used to train maintenance personnel until the pilot model has been tested. Later additional personnel could be assigned to gain experience on the pilot model. This training should be initiated in November 1952 if possible in order to allow time for new personnel to become thoroughly familiar with the equipment.

7. Operational Programs: A few large scale programs have been written for ATLAS II. These programs were written to determine the characteristics of the machine and to compare against other machines. They are mostly of academic value at the present time. Operational programs may be initiated as personnel are trained and suitable problems are determined. At the projected rate of training it will require at least 6 new full time programmer-trainees to have six large scale programs ready to run on ATLAS II when it is delivered.

8. Programming Studies: Programming Studies are used to determine the optimum programming techniques and to gain experience in determining the types of problems which are suitable for the machine. Studies of the machine characteristics are necessary to determine the times of operations, especially the inter-relationship between electrostatic and magnetic drum storage. These studies also bring out "tricks" which can be performed with the orders.

9. Two planning diagrams are enclosed to show the time scale of this work over the next year and a half.

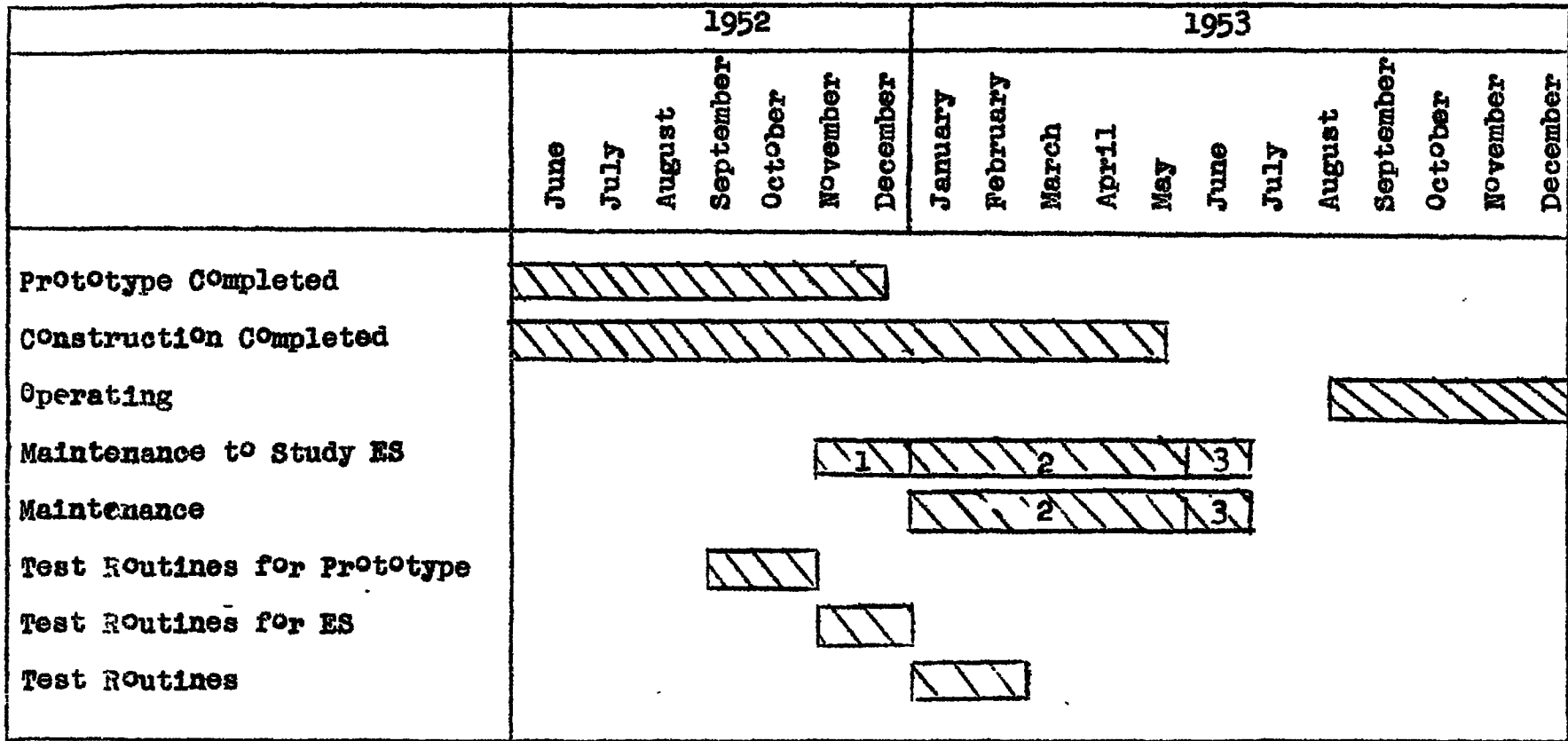
10. At the present time one man is working part time on ATLAS II. Since this machine and a Serial 2 of the machine are ordered, it is necessary that adequate personnel be available in time to make the best possible use of ATLAS II.

Enclosures:
ATLAS II Planning
ATLAS II Programmer Training Program

James M. Willard
JAMES M. WILLARD
Electronics Engineer
Analytic Procedures Section

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ATLAS II --- PLANNING



- 1. Study ES Tube Test Rack
- 2. Study Prototype
- 3. Study ATLAS II

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ATLAS II --- PROGRAMMER TRAINING PROGRAM

	1952							1953											
	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Operating																			
Introductory Lectures-2 Hrs.	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Programming Instruction For Experienced Personnel			▨	▨	▨	▨	▨												
Training Aids			▨	▨	▨	▨	▨												
Programming Instruction For Beginners							▨		▨	▨	▨			▨	▨	▨			
Operational Programs					▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Programming Studies	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨

Enclosure 2/with 351B/62 27 June 1952

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