

Memorandum M-2246

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Digital Computer Laboratory
Massachusetts Institute of Technology
Cambridge, Massachusetts

SUBJECT: JOINT MEETING ON PACKAGING OF WWII

To: N.H. Taylor

From: W.H. Ayer

Date: June 17, 1953

PRESENT

IBM

M.M. Astrahan
P.A. Beeby
P.P. Crago
D.J. Crawford
N.P. Edwards
W.F. Hughes
J. Montgomery
H. Ross
B.L. Sarahan
D.B. Thompson

MIT

Irving Aronson
W.H. Ayer
S. Best
S.H. Dodd
R.R. Everett
J.F. Jacobs
A.P. Kromer
K. Olson
R.J. Pfaff
N. Taylor
C.W. Watt

The meeting was opened by Harold Ross of IBM who presented the latest recommendation for the number of types of pluggable units and the types of tubes in each. A combination of six and nine tube units was broken down into five different types as follows:

<u>Type</u>	<u>No. of Circuit Types</u>				<u>Estimated No. used in central machine</u>
A	1-FF	2-GT	1-CF	1 Spare	160
B	1-FF	1-GT	2-CF	1 Spare	80
C	1-FF	3-GT	3-CF	1 Spare	80
D		6-GT			
E		9-GT			

These five units are used to make up all the registers except those that count such as the adder, program counter, address register and I/O control counter. The requirement of a spare gate tube and a spare socket in each digit of each register is satisfied and the redundancy of components made necessary by the use of only five pluggable units is held to 15%. The meeting voted to accept this proposal and to allow the mechanical design group to proceed with the design of a six and a nine tube pluggable unit.

J. Montgomery presented sketches of a new pluggable unit design, and demonstrated a sample frame containing two pluggable units. A discussion of the redesigned 701 plug that will be used touched on the following features: sequencing, locking, contact life and contact spacing. A comparison with the Amphenol Blue Ribbon connector showed that both plugs can be made to do the job with equally good results, providing the time and money are available for tooling. It was decided that a new 701 type design would be used on the pluggable units since it meets all the requirements and will probably be available much sooner. It also has the advantage of a self contained locking scheme.

A discussion of the method of component mounting to be used in the pluggable units resulted in the following voluntary assignments. H. Ross and D. Crawford will inform J. Montgomery of their decision regarding the inclusion of the 2 watt 1% resistor in the high speed flip flop circuit or its replacement by two 1 watt 1% resistors. D. Thompson will make up as many sample pluggable units as necessary to establish standard physical layouts for the basic circuits.

J. Montgomery followed up his discussion of the pluggable units with a brief description of the proposed bay design, including the location of air ducts, pluggable units, and power distribution equipment. It was agreed that each vertical stack of pluggable units would contain units of only one size, either 6 tube or 9 tube. Agreement was also reached on the bay size, which will be one pluggable unit wide. Two bay sizes will be produced, for six and nine tube units. These will be permanently assembled in any order desired, on a base or skid that will be approximately six feet long.

H. Ross presented the current thinking on the physical breakdown of the central machine. Seven main cabinets will be used as follows:

1. Left arithmetic element
2. Right " "
3. Control
4. Program Control
5. Maintenance and control console
6. Memory #1
7. Memory #2 (IF DESIRED)

He also presented diagrams showing a suggested arrangement of the registers within the frames and the number of connecting cables.

Signed: W.H. Ayer
W.H. Ayer

Approved: A.P. Kramer
A.P. Kramer