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REVIEW DATE 12-24-92	LAST REVIEWED
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This document consists of 12 pages, 13 lines.

Symbol: TM-11

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Total 25 Pgs.

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Group Ref: TMG-M7

November 23, 1951

MINUTES OF THE SEVENTH MEETING OF THE THEORETICAL MEGATON GROUP

15 - 17 November 1951

1. The general sessions of the seventh meeting of the TMG were held at 9:00 AM and 2:00 PM on 15 November, at 2:00 PM on 16 November and at 2:00 PM on 17 November 1951 in the Rhines Raum. Those present at one or more of the sessions were:

W. Bouricius	C. L. Longmire
N. E. Bradbury	J. C. Mark, Chairman
A. A. Broyles	H. L. Mayer
B. G. Carlson	N. Metropolis
E. D. Cashwell	J. von Neumann
F. de Hoffmann	L. W. Nordheim
C. J. Everett	H. Osborn
K. W. Ford	L. G. Peck
B. E. Freeman	F. Reines
D. K. Froman	O. W. Richard
R. W. Goranson	R. D. Richtmyer
W. H. Grasburger	A. Rosenbluth
W. Heisenberg	M. Rosenbluth
L. G. Henney	P. R. Stein
F. C. Hoyt	J. L. Tuck
R. Landshoff	J. A. Wheeler
R. B. Lazarus	L. Willets

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1ST REVIEW-DATE:	7-22-57
AUTHORITY:	DOE/SEC/DOE/DOO
NAME:	David A. Garwin
2ND REVIEW-DATE:	2-11-57
AUTHORITY:	DOE/SEC/DOE/DOO
NAME:	David A. Garwin

2. The first item on the agenda was a report by Rosenbluth on status and plans for SEAC problems.

2.1 The following assumptions were made for the implosion calculations:

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A list of the SEAC radiation implosion calculations made to date is given in memorandum TM-5 (13 November 1951).

Rosenbluth and Garwin have devised an extrapolation formula for predicting final deuterium compressions, namely:

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General conclusions to be drawn are the following:

(1)

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(ii)

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(iii)

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2.2.

If this involves an appreciable time delay
one will have to take this into account during the implosion
phase.

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Richtmyer thought that a detailed SEAC calculation could be coded
for the middle and late stages.

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These calculations were based on the work of Bethe in LA-322, assuming a square radiation wave for the hydrodynamics. The results include only the case where the radiation head moves more slowly than sound behind it.

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General qualitative conclusions which can presently be drawn are:

- (a)
- (b)
- (c)
- (d)
- (e) Expectancy of reasonable efficiencies can be deduced from indirect evidence.

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Ford discussed the results which have been obtained to date.

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The results are shown graphically by the following figures:

Fig. 1 -

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Fig. 2 -

Fig. 3 -

Fig. 4 -

Fig. 5 -

Fig. 6 -

Fig. 7 -

Fig. 8 -

Fig. 9 -

Fig. 10 -

Fig. 11 -

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5.2

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Wheeler asked the question as to what drop in the deuterium density will make the problem uninteresting.

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It was agreed to use the SEAC and not try to use the SSEC at present. Peck also agreed to plan the flow diagram and discuss it with Matterhorn sometime after 23 November.

progress.

Calculations on this effect are in

6.

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7.

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Mark reviewed the present objective which has a well defined goal, namely to design for a gadget which will give a large-scale (<1 megaton) thermonuclear reaction and if this is possible to do it in time for a fall 1952 test.

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If this turns out to be the case, then either would be equally acceptable to the TM Group.

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Present considerations have been very preliminary and more detailed attention is awaiting completion of the CPC calculation now underway.

R.W. Goranson
R. W. Goranson

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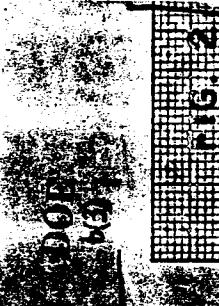
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