

STANDARD FORM NO. 64

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Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files - Contract RD-107, Task Order 11

DATE: 29 July 1960

FROM :

25X1

SUBJECT: (Trip Report - Development of the Water Activated Battery, *RD-107*)

1. On 12 July 1960 a visit was made to to monitor progress on the water activated battery being developed under Contract RD-107, Task Order 11. Present for discussions were:

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- OC-E/R+D-EP

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25X1

2. Development of the water activated battery has been completed and the first prototypes will be delivered early in August. This will be a partial delivery which will enable this office to evaluate the operation of the battery before completion of the remaining prototypes. One case along with 5 refills will be delivered in the first week of August. The remaining 5 cases and 25 refills will be delivered at a later date.

3. Tests conducted by simulating AS-3 load requirements proved to be satisfactory. The results from this experiment were rather surprising in that there was no change in the terminal voltage of the battery from a current drain of 5.3 amperes to 8 amperes. Normally, as a result of the internal resistance of the battery a lower voltage would have been experienced at the 8 ampere drain. These tests showed that the AS-3 could easily be operated continuously (50% duty cycle) for approximately 30 to 40 minutes.

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4. Attempts to reduce the rate of corrosion of the magnesium anode and the resultant heat evolution through additives to the electrolyte were unsuccessful. Although chromic acid appeared to reduce the corrosion rate it also adversely effected the silver chloride cathode. Magnesium perchlorate, which was optimistic about at one time, had no apparent effect. It will be necessary, therefore, to keep the battery cool after approximately 30 minutes of operation. This can be done in two ways:

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a. The battery case has been designed with grooves to permit wool padding to be inserted and saturated with water which will cool the battery during operation.

b. A battery can also be kept cool by periodic addition of electrolyte (water).

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SUBJECT: Trip Report - Development of the Water Activated Battery

Distribution:

- Orig. - R+D/Subject File ✓
- 1 - OC-TTT
- 1 - R+D/Laboratory
- 2 - Monthly Report
- 1 - EP/Chrono

OC-E/R+D/EP/CWS:ame (29 July 1960)

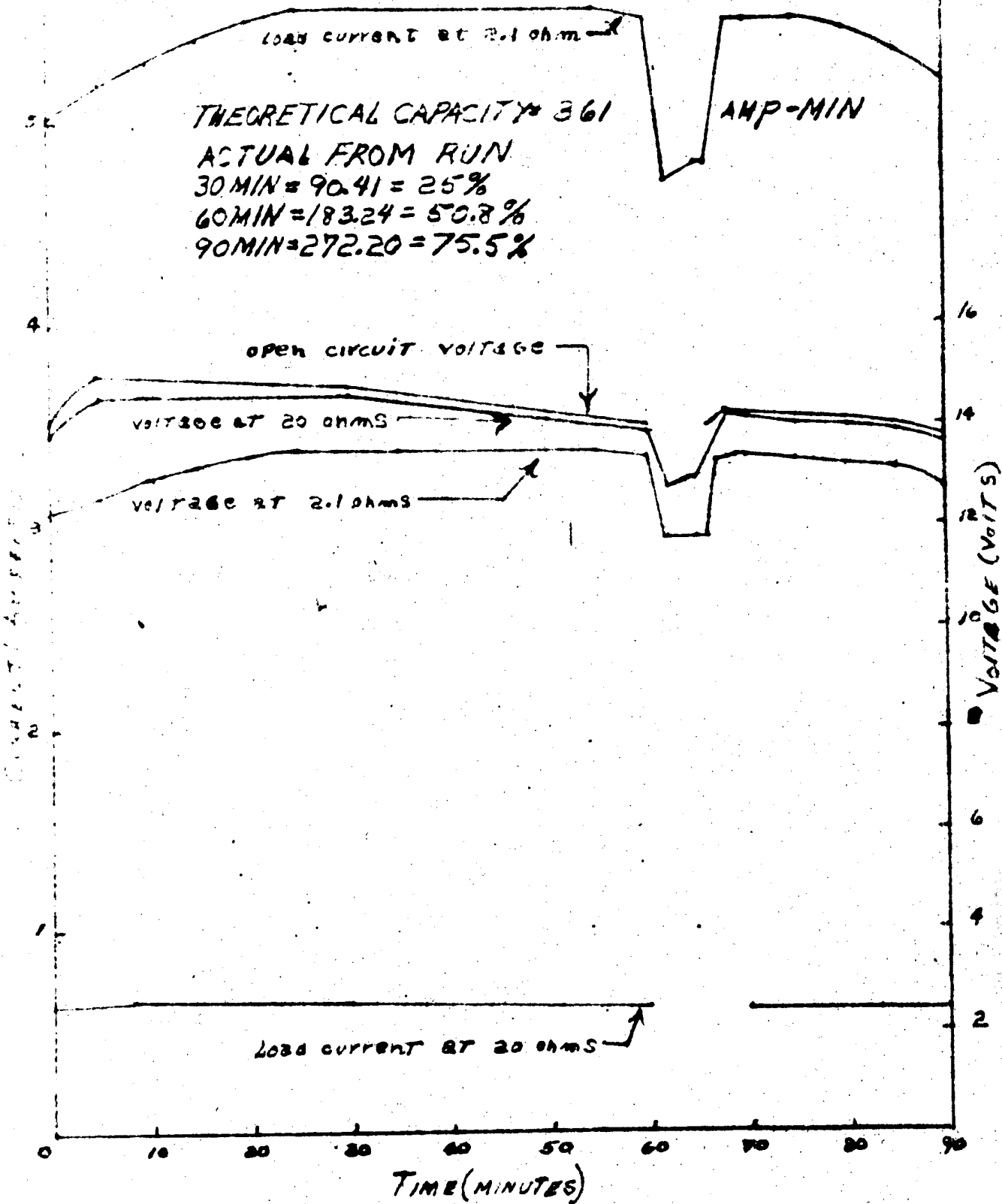
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RUN # 48

9 CELLS 9" X 2.68" = 24.12" ²

3% NaCl solution



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