

MEMORANDUM FOR: A. C. Graves

5 January 1951

FROM: Hal Flank

411382

SUBJECT: EFFECTS OF LANDING ROCKETS ON CENTERS OF  
ENGEBI AND ACOMON ISLANDS

REFERENCE: SD-4934

1. Tests of the modified HVAR Rocket (18,500 ft altitude) as a cloud sampling device requires that these rockets land on the centers of Engebi and Acomon Islands. Data on the characteristics of these rockets and the firing schedule for them are given in Appendix I. MARJ
2. Considerations based on probabilities defined in Appendix II and calculated from the data given in Appendix IIIA and IIIB lead to the conclusion that no experiment on either Engebi or Acomon has a very high probability of being rendered completely worthless. While several of the structures (the 300 series stations) have a fairly high total cross-section, the probability that these structures would suffer multiple hits and be completely destroyed or that all of the numerous instruments contained within them would be so destroyed by one hit is low.
3. On the other hand, the probability of one hit on any of the recording stations (2a,b; 23a,b; 26; 55; 132a,b) is  $\sim 2 \times 10^{-5}$  on Engebi and  $< 7 \times 10^{-6}$  on Acomon. The probability of multiple hits on one of these stations or of single hits on several of them is, of course, much lower. Assuming that the complete loss of one of these buildings cannot be tolerated and that a single hit would lead to such a loss, Fred Hines feels that these probabilities are a little too high for comfort.
4. If it were possible to have Holmes and Harver make the roofs of these buildings "rocket-proof", the sampling rockets could be landed on Engebi and Acomon with little risk.
5. Since you informed me last week that HW could not do this, it is proposed that:
  - (a) Sampling rockets not be fired on Engebi unless Inyehern can provide a parachute-type with a low penetration.
  - (b) Sampling rockets be fired from Acomon to Najera Island (because of shock wave drones and flight times this is possible only if maximum altitude is less than 10,100 feet).

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DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
1ST REVIEW DATE: 07-10-91	DETERMINATION (CIRCLE NUMBER(S))
AUTHORITY: OAC OADC OADD	1. CLASSIFICATION RETAINED
NAME: <i>Phimus</i>	2. CLASSIFICATION CHANGED TO:
2ND REVIEW DATE: 10-24-97	3. CONTAINS NO DOE CLASSIFIED INFO
AUTHORITY: ADD	4. COORDINATE WITH
NAME: <i>Alan...</i>	5. CLASSIFICATION CANCELLED
	6. CLASSIFIED INFO BRACKETED
	7. OTHER (SPECIFY):

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Memo for A.C. Graves from Hal Plank, ~~Subject~~ of Landing Rockets  
on Centers of Engebi and Aomoa Islands, dated 3 Jan 51

6. Inyokern representatives will be here January 4 and 5 to discuss proposals 5(a) and 5(b).

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Hal Plank

HP:mps

cc: F. Reines (J-7 File)  
H. Smith  
R. Spence  
H. Plank  
JDO Sequence

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