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Central File

EXCERPTS

CLIMATOLOGY OF THE ENIWETOK - BIKINI AREA FOR THE MONTHS OF JANUARY, FEBRUARY, MARCH AND APRIL

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1. This period of the year is generally known as the "dry" season in the Marshall Island area, particularly in the Eniwetok - Bikini area. It is better known as the "trade" season. Over this area east-noth-east to northeast winds prevail in the lower levels, the wind speeds ranging between 10 to 20 knots. Small amounts of cumulus clouds, usually not exceeding 4/8 coverage, are found in this current, and the cloud tops do not usually extend above 8,000 feet. Rain sometimes falls from these clouds, usually as showers. No extensive upper middle cloud decks are found. Although the lower winds are northeast and quite fresh, as one goes aloft, one finds that the winds turn more westerly with elevation until at about 20,000 feet they lie between northwest and southwest. The westerlies then extend upwards to the tropopause increasing in speed to about 35 knots at 45,000 feet. If the upper winds are mainly southwesterly, rain from the trade cumulus is likely and the amount of cloud may increase to 6/8 or 7/8. If the upper winds are, however, chiefly northwesterly, the cumulus clouds will decrease to as little as 1/8 or 2/8 and showers are less likely.

2. Occasionally during this period, the winds throughout the entire Marshall Islands will show speeds of less than 10 knots from the northeast or east-north-east. Cloud cover will, however, be only 2/8 or 3/8 with tops below 4,000 feet, interspersed with stationary lines of cumulonimbus and heavy showers and an occasional thunderstorm. There will be an extensive

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sheet of altostratus and altocumulus which will make aircraft operations above 20,000 feet difficult and occasionally hazardous. This situation is more particularly true in late March and April. Again, as during the normal trade flow which is found during this time of the year, the easterly winds will vary in direction with height, becoming very strong westerlies above 30,000 feet and reaching as high as 100 knots at 45,000 feet on occasion. These winds are associated with a weather system aloft which can become quite intense and which can persist for periods in excess of a week. This situation is the one to be the most wary of during this period of operations.

3. In summary, normal trade flow weather is to be expected during the greater part of the period of CASTLE operation. Day to day fluctuations from the normal will be those elements of digression which have to be forecast.

CASTLE PREDICTIONS

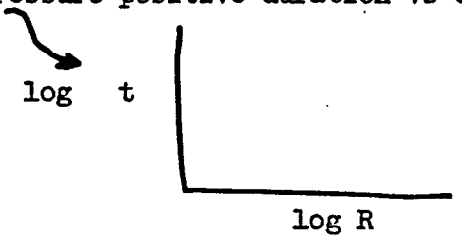
PETE: I want you to stay with the Castle Predictions, but T-Division is revising its estimates on the basis that our numbers are correct for Ivy. Check with Bill Ogle (or T-Division) for these numbers as they come out, before labelling up the graphs for specific bombs.

However, it is a dead cinch that on one bomb or another you'll require predictions for: 1, 2 , 4, 6, 8, 10, 15 MT

50, 100, 500 KT

This is straight copy when needed

You have Ideal, Thermal peak pressure vs distance	1 KT
Plot peak material velocity vs distance	1 KT
Plot density vs distance	1 KT
Plot pressure positive duration vs distance	1 KT



Plot time variations from J-17837 -- 30, 10, 3 psi

from IBM -- 1000, 100 psi

All these are then straight scaling jobs when yields come in.

Predictions for Castle

1) (Peak shock pressure / Peak Dynamic Pressure) vs Distance — Upper and Lower Yield Limits
   Log - Log , 2 x 2 cycle - down to 0.5 psi - Thermal and Ideal
   Pertinent islands on Base Line

2) Positive Duration of Pressure — Upper and Lower Yield Limits

3) Time of Arrival

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CASTLE PREDICTIONS (Cont'd)

	Wave Forms, 30 and 5 psi levels	Average Yield
4), 5)	Pressure - time	
6), 7)	u vs t	
8), 9)	ρ vs t	

Total Thermal

Use attenuation

Use empirical curve

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