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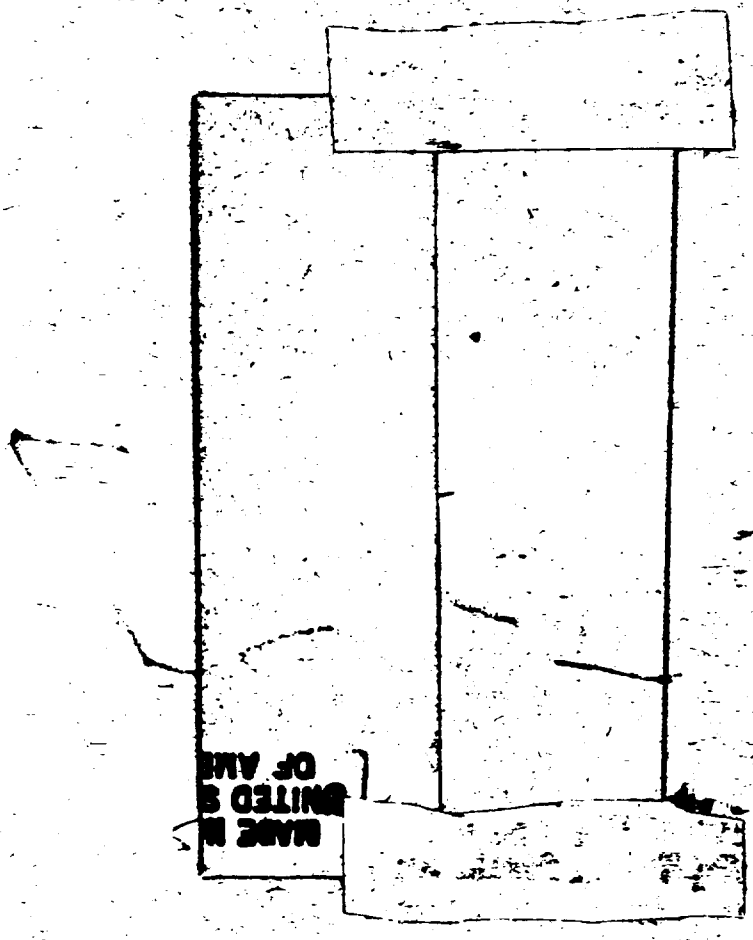
CLASSIFIED NOTEBOOK NO. 541 -L

ISSUED BY: Info. Div. UCRL Liv.

ISSUED TO: DeWitt Allen
L-Division Operations
Livermore

CLASSIFICATION: [redacted]



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RG 326 US ATOMIC ENERGY COMMISSION

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CLASSIFICATION CANCELLED
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BY AUTHORITY OF DOE/OC
J. Dorn 8/29/88
REVIEWED BY Carl Wilson DATE 9/20/88

LC035 0170

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CIL-10764 Received Feb 21, 1955

PAGE ONE OF TWO PARTS
FM JAMES E REEVES TEST MGR USAEC MERCURY NEV

TO /ZEN/USAEC DIVISION OF MILITARY APPLICATION WASH DC

BRIG GEN KE FIELDS

[redacted]

INFO/ZEN/USAEC SFOO ALBQ NMEX - ATTN D J LEEHEY

INFO/ZEN/DR N E BRADBURY LASL LOS ALAMOS NMEX

INFO DIR UCRL LIVERMORE CALIF - ATTN DR HERBERT YORK

INFO / ZEN/ CHIEF AFSWP WASH DC

INFO /ZEN/ USAEC SAN OAKLAND CALIF - ATTN H A FIDLER MGR

INFO /ZEN/ CG FC AFSWP SANDIA BASE ALBQ NMEX

C-158 FEB 551922347 GRNC

[redacted]

THIS IS THE SECOND AND H PLUS TWENTY FOUR HOURS REPORT ON WASP PD PRELIMINARY ANALYSIS INDICATES ACTUAL BURST HEIGHT WAS SEVEN FIVE FIVE FEET ABOVE TARGET AT FOUR THREE ONE FEET WEST AND FORTY FEET NORTH PARA RADIOLOGICAL PATTERN CLN A PHYSICIAN IN YUMA CMA ARIZONA REPORTED READINGS OF ONE TO TWO MILLIROENTGEN

END OF PAGE ONE

PAGE TWO OF TWO PARTS

PER HOUR AT H PLUS TEN HOURS PD AEC AND PHS REPRESENTATIVES PRESENTLY IN ROUTE TO YUMA AREA TO CHECK LEVELS AND DISCUSS WITH LOCAL OFFICIALS PARA PARKER CMA ARIZONA REPORTED OFFSCALE READINGS ON THE TWO TENTHS MILLIROENTGEN PER HOUR SCALE AT H PLUS FIVE HOURS PD PARKER LEVELS CHECKED THIS MORNING BY AEC AND PHS REPRESENTATIVES SHOW MAXIMUM READINGS TO TWO ONE HUNDREDTHS PER HOUR AT H PLUS EIGHTEEN HOURS TO H PLUS TWENTY HOURS PD LOCAL OFFICIALS REPORTING CONDITIONS ARE CONVINCED LEVELS DO NOT REPEAT NOT CREATE ANY CAUSE FOR ALARM PARA AEC AND PHS REPRESENTATIVES WILL DISCUSS PROGRAM AND RADIATION LEVELS WITH ARIZONA PUBLIC HEALTH AND STATE CIVIL DEFENSE OFFICIALS WHILE IN THE AREA PARA THIS IS THE LAST PERIODIC REPORT ON WASP UNLESS FURTHER PRELIMINARY ANALYSIS INDICATES DIFFERENT OR ADDITIONAL RESULTS PD
REF TM-GHC
END OF MESSAGE

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[redacted]

[redacted]

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[redacted]

CIL-10763 Received Feb 21, 1955 [redacted]

PRIORITY
FROM JAMES REEVES TEST MGR CONTL TEST OPNS USAEC MERCURY NEVADA
TO ZEN/USAEC DIVISION OF MIL APPL WASHDC/ATTN BRIG GEN K E FIELDS/
INFO ZEN/USAEC SANTA FE OPNS ALBUQ NMEX/ATTN D J LEEHEY/
ZEN/LOS ALAMOS SCIENTIFIC LAB LOS ALAMOS NMEX/ATTN DR N E BRADBURY/
DIR UCRL LIVERMORE CALIF/ATTN DR HERBERT YORK/
ZEN/CHIEF ARMED FORCES SPECIAL WEAPONS PROJECT WASHDC
ZEN/USAEC SAN FRAN OPNS OFF OAKLAND CALIF/ATTN H A FIDLER/
ZEN/CG FC ARMED FORCES SPECIAL WEAPONS PROJECT SANDIA BASE NMEX

NR S-134 DTG 1903017 FEB AEC GR340

[redacted]/WASP DEVICE [redacted] DETONATED AT ELEVEN CLN FIVE NINE CLN FIVE NINE POINT TWO PST IN TEST AREA SEVEN FOUR PD DEVICE DROPPED FROM BAKER THIRTY SIX AIRCRAFT FLYING AT TWENTY THOUSAND TWO HUNDRED FEET MSL PD BURST HEIGHT SET AT EIGHT HUNDRED FEET ABOVE TARGET PD NOT YET VERIFIED BUT ACTUAL BURST APPROXIMATELY THIS POSITION PD ESTIMATED TIME OF FALL THREE ONE POINT FOUR SIX SECONDS PD ACTUAL TIME THREE ONE POINT SIX NINE SECONDS PD PLANNED DROP TIME ZERO SEVEN THREE ZERO PST BUT FIRE WHICH OCCURRED IN DROP AIRCRAFT ENGINE JUST PRIOR TO TAKEOFF REQUIRED TRANSFER OF DEVICE TO STANDBY BAKER THIRTY SIX
(PAGE TWO)
RESULTING ESTIMATED RELEASE TIME ELEVEN THIRTY PST PD DURING THIS OPERATIONAL DELAY SPOTTY CLOUD CONDITIONS DEVELOPED NECESSITATING TWO NEGATIVE RUNS PRIOR TO DROP TIME PD DROP MADE ON THIRD PASS OVER TARGET PD ESTIMATED YIELD ONE OR TWO KT PD TOTAL OF TWENTY EIGHT EXPERIMENTAL PROJECTS PARTICIPATED IN MILITARY EFFECTS CMM CIVIL EFFECTS CMM AND LASL DEVELOPMENT PROGRAMS PD NO UCRL PARTICIPATION PD PRELIMINARY REPORTS INDICATE GOOD DATE OBTAINED ON CIVIL EFFECTS AND MILITARY EFFECTS TESTS PD VERY PRELIMINARY RESULTS OF LASL DEVELOPMENT TESTS ALSO INDICATE SATISFACTORY RESULTS PD DUE TO FACT THAT POSSIBILITY EXISTS TO DETONATE TURK AT ZERO FIVE FOUR FIVE PST FEBRUARY NINETEEN NO FURTHER ANALYSIS MADE AND ALL EFFORT DIRECTED TOWARD PREPARATION FOR TURK PARA FOR REASONS OF SAFETY DESERT ROCK DID NOT PUT TROOPS IN TRENCHES PD APPROXIMATELY ELEVEN HUNDRED TROOPS OBSERVED DETONATION FROM NEWS KNOB PARA METEOROLOGICAL CONDITIONS CLN

A. WINDS CLN SURFACE NORTHWEST AT SIXTEEN KNOTS CLN TEN THOUSAND FEET NORTH NORTHWEST AT THIRTY SIX KNOTS CMM TWENTY THOUSAND FEET NORTHWEST AT NINETY TWO KNOTS PD
B. CLOUDS CLN SEVEN TENTHS STROTOCUMULUS AT FIVE THOUSAND FEET LEVEL PD
C. PRECIPITATION CLN NONE

RADIOLOGICAL PATTERN CLN NO SIGNIFICANT OFFSITE FALLOUT PD HIGHEST
(PAGE THREE)
READINGS FIVE POINT FIVE MILLIROENTGEN AT AZIMUTH ONE HUNDRED SIXTH DEGREES CMM DISTANCE EIGHTY MILES FROM YUCCA FLAT AT THREE AND ONE HALF HOURS PARA OFFSITE MICROBAROGRAPH READINGS INDICATE NO DAMAGING EFFECTS PD REF TM/WWA

LLNL

END MESSAGE

RESTRICTED DATA
This document contains restricted data as defined in the Atomic Energy Act of 1946. Its transmission or the disclosure of its contents in any manner to an unauthorized person is prohibited.

[redacted]

[redacted]

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[redacted] THIS DOCUMENT CONSISTS OF 1 PAGES
NO 1 OF 1 COPIES, SERIES A

WEATHER - PPG

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

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-northeast 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 ab about 26,000 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.

Occasionally during this period, the wind throughout the entire Marshall Islands will show speeds of less than 10 knots from the northeast or east-northeast. 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 occasional thunderstorms. There will be an extensive sheet of alto-stratus and alto-cumulus 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 year, the easterly winds will vary in height, becoming very strong westerlies above 38,000 feet and reaching as high as 100 knots at 45,000 feet on occasions. 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 most wary of during this period of operations.

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Eniwetok -
Climate - Tropical - Mean Temp. 81°F. Highest - 1300 - 1400 hours. Lowest 0500 - 0600 hours, Deviation only about 1° many months - Variation between high & low daily temp. - 10° - to - 12°F. Humidity - Very high - mean about 85%

Wind - Strongest - 0600 hours - most moderate - early evening.
- North-east TRADE Wind.

[redacted]

10

PPG Weather — 1pg. — Rough Draft

Rec'd from John Flynn. 7/8/54

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[redacted]

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[redacted]

[redacted]

PRIORITY

FM JAMES E. REEVES, TEST MGR USAEC MERCURY NEV.
TEN/TO USAEC DIV OF MIL APL WASHDC - ATTN COMDR G J ANDERSON
TEN/INFO - USAEC SFOO ALBQ NMEX - ATTN DONALD J LEEHEY
TEN/INFO - CH AFSWP WASHDC
TEN/INFO - LASL LOS ALAMOS NMEX - ATTN N E BRADBURY
TEN/INFO - USAEC SAN OAKLAND CALIF - ATTN H A FIDLER
INFO - UCRL LIVERMORE CALIF - ATTN E O LAWRENCE
TEN/INFO - CG FC AFSWP ALBQ NMEX
MSG NR S-348 MAR 550719552 GRNC

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RESTRICTED DATA
This document contains restricted data as defined in the Atomic Energy Act of 1954. Its transmission or the disclosure of its contents in any manner to an unauthorized person is prohibited.

This is the First and H/5 Hours report on Turk. Turk was detonated at 0520 Hours PST, March 7, in Test Area 2 from a 500 foot tower. Preliminary estimates of yield by Bhangmeter 42 KT. Indications are that successful results were obtained from diagnostic experiments. Desert Rock participation of 550 armed forces personnel in trenches at 5500 yards from ground zero, however, initial entrenchment area was moved to alternate position due to anticipated fallout. O and T projects participated.

Cloud height at top was 42500 feet moving at about 35 knots along 105° azimuth; cloud at 31000 feet moving at about 45 knots along 75° azimuth; cloud at 28000 feet moving about 40 knots along the 275° azimuth; cloud at 23000 feet moving about 22 knots along 315° azimuth and cloud at 10000 to 12000' moving about 20 knots along 340° azimuth. Above winds indicate very favorable shear. No ground readings of fallout reported from off site at this time.

No observed reading at Sarcobatus.

Meterological Conditions:

a. Winds; surface, west northwest 5 knots, ten thousand feet north NE at 15 knots; 30000 feet east NE at 12 knots; 40000 feet west at 60 knots; 50000 feet west at 40 knots.

b. Clouds; clear.

LLNL

c. Precipitation; none.

Microbarograph; report received from Salt Lake City area that foundation had been damaged, however, distance from Yucca appears to make this impossible. Investigation will be made. Ref TM-GHC

End of message

[redacted]

[redacted]

CIL-11042
CIL-N-1955

OFFICE OF THE TEST DIRECTOR
NEVADA TEST SITE
P.O. BOX "O"
Mercury, Nevada

12 March 1955

TEST DIRECTOR'S INFORMATION LETTER NO. 25

TO : Distribution

SUBJECT: TEAPOT SCHEDULE

SYMBOL : J3C-191

1. Reference is made to Test Director's Information Letter No. 24 dated 26 February 1955, subject: "TEAPOT SCHEDULE".

2. The following revised schedule is announced for planning purposes. The dates shown are the ready dates and those shots marked with an asterisk are Group A. When the weather is acceptable, the Group A shots will be given priority.

The ready dates listed below are based on APPLE. If APPLE is fired on 14 March, then BEE will be ready 20 March and ESS 22 March, etc. If APPLE is fired on 15 March then BEE will be ready 21 March and ESS 22 March, etc.

SHOT	READY DATES	SHOT POINT
*APPLE	14 15 16 March	4a
*BEE	20 21 22 March	7-1a
ESS	22 22 22 March	10a
HADR	23 24 25 March	5
WASP' (800' Airdrop)	25 26 27 March	7-4
HA	1 2 3 April	5
*MET	2 2 2 April	F
POST	8 8 8 April	9c
*ZUCCHINI	15 15 15 April	1

LLNL

FOR THE TEST DIRECTOR:

/s/ W. T. Kerwin
Plans & Operations

WTK:hck

[redacted]

This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sections 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

14

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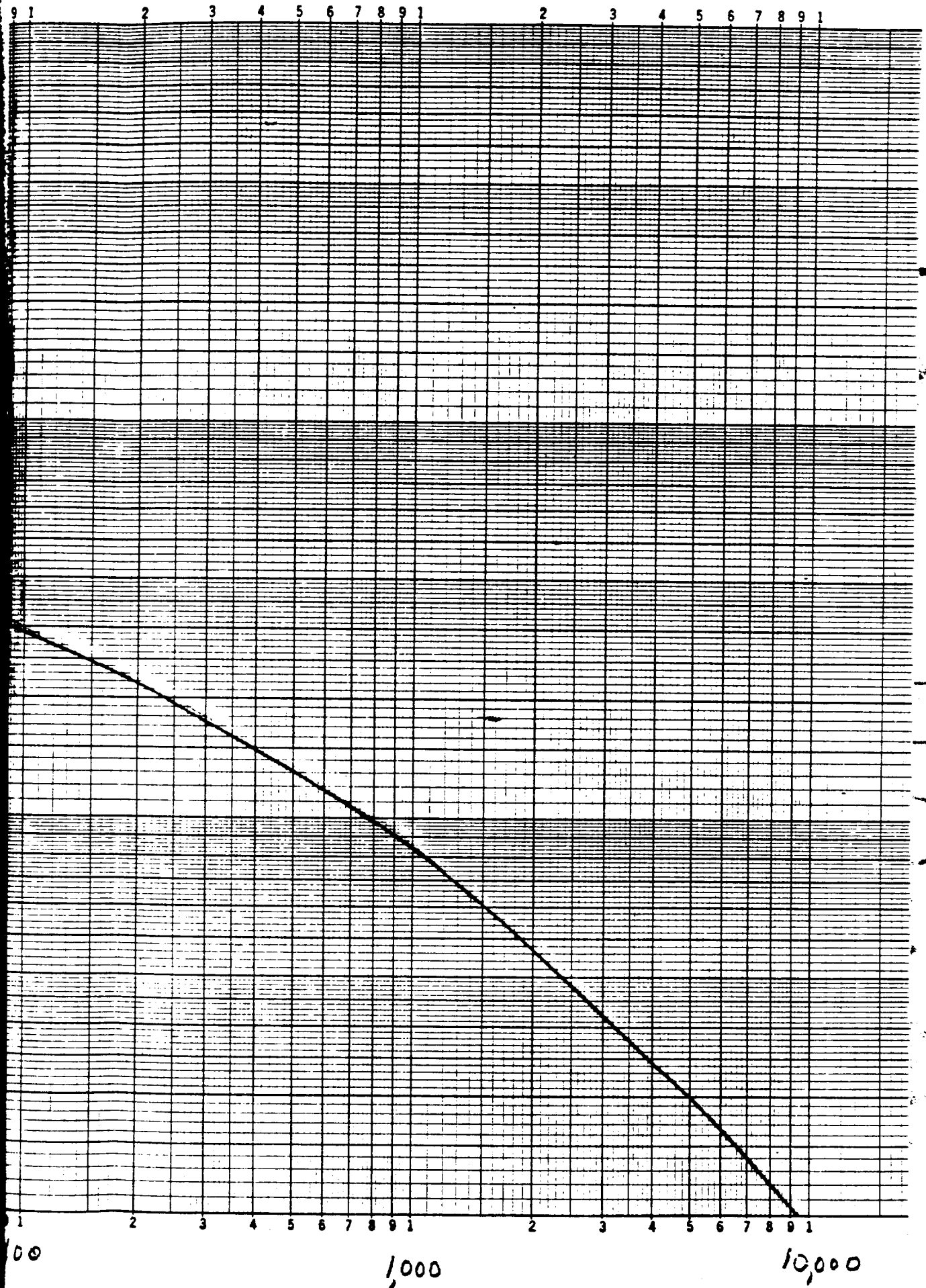

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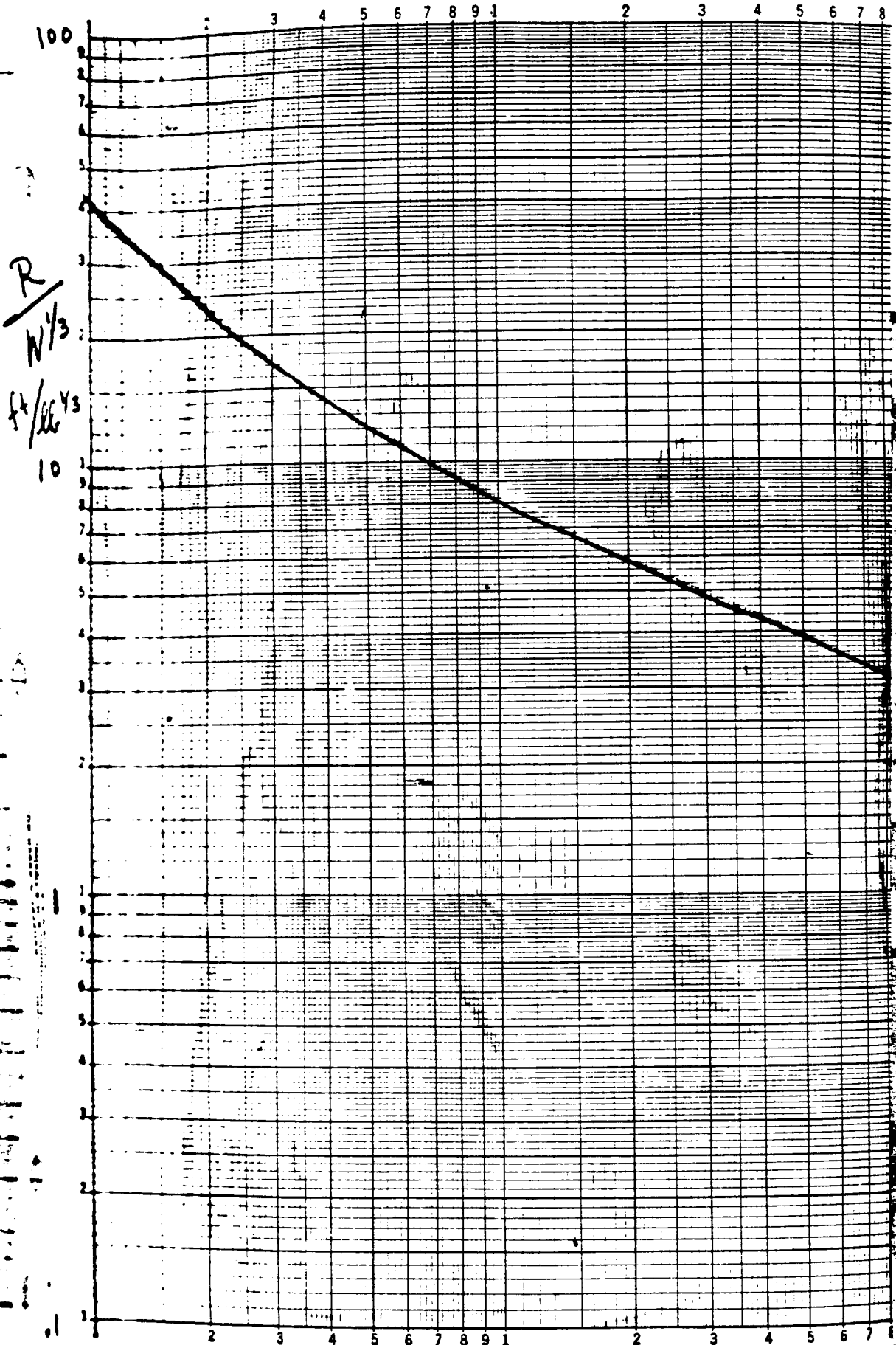
CAST TNT



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[redacted]

Climatic Data for Amchitka AFB, Alaska CIL 07225 ~~10~~ 19
prepared by HQ Air Weather Service May 1951
requested by Naval Gun Factory.

Assume a favorable hour has 4 or less cloud cover & any cloudiness above 20,000 not considered.

Operation One: Wind from N. thru W. (45° either side of NW)

Operation Two: Wind from NW thru SW. (45° either side of W)

165th Meridian Time used. GCT = 11 hrs. later.

Data period = 8 years. Amt Cloudiness = tenths. cloud height = hundreds feet.

0/0 = absence of clouds.

Table 1. Climatic Data for Amchitka AFB, Alaska (6 yrs. record)

	August	Sep	oct
Temperature (°F)			
Mean	48	46	41
" Max.	51	49	45
" Min.	45	43	38
Highest	58	57	50
Lowest	38	37	29
Ceiling - Visibility (% of time)			
<100' and/or < 1 mile	55.9	22.6	5.7
<500' " < 2 "	66.6	30.1	10.0
<1,000' " < 3 "	78.2	43.0	19.3
< 3,000' " < 6"	89.6	70.6	73.7
≥ 0 and ≥ 6 miles	10.4	29.4	26.3
Sky Condition (% of Time)			
Clear	0.8	2.6	3.2
scattered	4.8	12.2	24.3
broken	8.1	17.9	27.6
overcast	37.4	47.5	39.0
obscured	48.9	19.8	5.9

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20

(Continued

*=Less than 0.1%

T=Trace

[redacted]

	Aug	Sep	Oct	
Precipitation (% occurrence)				
Rain	11.7	11.2	10.1	
Drizzle	29.7	14.6	10.0	
Rain Showers	0.1	0.3	2.1	
Snow	0.0	0.0	0.4	
Snow showers	0.0	0.0	0.3	
Snow pellets	0.0	0.0	0.1	
Hail	0.0	0.0	0.1	
Snow Squalls	0.0	0.0	*	
Precipitation (inches)				
Snowfall	0.0	0.0	T	
Precipitation	4.32	3.04	3.51	
Obstructions to Vision (≤6mi) (% occurrence)				
Fog	73.9	46.1	23.4	
Ground Fog	0.8	0.8	0.2	
Blowing Snow	0.0	0.0	*	
Haze	0.0	0.3	0.2	
Wind (mph)				
Extreme speed	62	80	78	

Subsequent to the tabulation of data, the desired Conditions were chang
The new Criteria common to both operations were clouds not to excee
.3 & no-clouds below 3,000'. In operation One the wind had to
from the west. Those observations which met these requirements
LLNL
marked with a red "x".

[redacted]

Surface Wind Roses

Amchitka Island

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23

35

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36 Range ~ 2.2 – 4.5 g./kg Dry Air.

This corresponds to 10% R.H. on [illegible]

Convert to lbs. H_2O / ft^3 Air @ 850 mb

10°C

45
69
114
57°F.

Pg 116 Handbook of Meteo. B.B.

"Density of Air"

Press. mb	Virt. Temp °C				Kg/m³
	−10	0	10	20	
800	1.059	1.020	0.986	0.952	
900	1.192	1.148	1.108	1.071	
1000	1.325	1.276	1.230	1.190	

$1\ m^3 = 35.315\ ft^3$

$1\ Kg = 2.205\ lbs.$

0.986
1.108
2.094
1.047 for 850 mb, 10°C

$$Kg/m^3 = \frac{1.047}{35.3} = .0297\ Kg./ft^3$$

LLNL

$2.2 \times .0297 = .065\ g./ft^3$
$4.5 \times .0297 = .134\ g./ft^3$
} Air @ 850 mb [redacted] 10°C

24

Shared To Bob Vetterlein 3/14/57

For Robert J. Vetterlein [redacted] 3/12/57 #3
Bldg. 141 Room 270 Ext. 7014

Design Air Drier for Nevada such that will be saturated after 4 hrs. Work 80% of time year Round.

What amt H_2O per 16. #air or ft^3 air?

15 May 0515 PDT R.H.

Zucchini Burst @ 4,745' MSL 851 mb.

Ht.	press	Temp	D.P.	R.H.	g. H_2O / kg. a
Sfc	878	3.5	-8.2	41%	—
4000	874	3.4	-8.3	41	2.3
4783	850	2.0	-9.0	43	—
5000	842	1.7	-9.3	43	2.2
5840	818	0.3	-10.0	44	

12 March 55 0530 PST

Sfc	884	-1.8	-8.4	60	
4000	881	-1.0	-7.6	60	2.5
4593	864	5.7	-0.8	60	
4790	856	7.4	0.3	59	
4970	850	7.7	0.1	59	
5000	849	7.7	6.1	59	4.3

15 April 1955 1130 PST [redacted]

4000	877	18.2	-4.2	21	3.1

[redacted]

LLNL

[redacted]

From RR 1.6 "Tower & Weather" [redacted] 7/12/54 ~~20~~

Wind & Temp. Summary NPG furnished by R.H. Campbell J-6 Los Alamos Letter 10 Dec 53 by George J. Newgarden III. Basis of Summary = 11,796 obs taken during 1951, 52, 53. Less representative during Summer due few obs avail. Greatest % Northerly winds Winter, Southerly winds Summer. Strongest winds Southerly. Greatest % Calm during night. Mod or Strong Winds during PM. When winds light <5 mph during night, winds predominate Northerly = Air Drainage.

TEMPS °F — FEBRUARY 1952-1953

MONTH	MEAN	MEAN MAX	MEAN MIN	ABS MAX	ABS MIN	WIND DIR.	MPH 1-10	11-22	22-33	34-45	46-56	Calm	TOTAL OBS	%
JAN	40	50	29	67	13	N	260	149	53	9			471	37
FEB	41	55	29	67	15	NE	109	35	4				148	12
MAR	45	56	33	74	11	E	43	8					51	4
APR	56	68	44	84	23	SE	31	18	1				50	4
MAY	62	75	49	91	43	S	49	42	8				99	8
JUN*	66	80	52	89	42	SW	52	42	6	8			37	3
JUL	82	93	72	98	62	W	19	7					26	2
AUG	80	92	69	102	60	NW	55	82	21	3	1		162	13
SEP	71	88	57	100	45	Calm						162	162	13
OCT	57	69	46	81	33									
NOV	44	55	32	73	17	Totals	618	383	93	20	1	162	1277	
DEC	39	47	30	64	19									
ANNUAL	57	69	45	102	11	%	48	29	7	2		13		

18 14

* Only a few obs available for June.

LLNL

Also see file USWB "Local Climatological Data" for 1953 & 1952 Gives Daily "Average Wind" plus "fastest mile" daily for the 2 yrs. of Data

[redacted]

[redacted]

40

[redacted]

CIL 05355

NPG Surface Wind Summary bound in RR 1.6

NPG AUGUST 1951

WIND DIR	MPH 1-10	11-22	23-33	34-45	46-56		TOTAL OBS	%
N	13	18					31	4
NE	9	6					15	2
E	6						6	
SE	3						3	
S	1						1	
SW	169	92	13	5			279	38
W	21	10	7				38	5
NW	20	2					22	3
Calm						344	344	47
Totals	242	128	20	5		Calm 344	739	
%	33	17	3			Calm 47		

NPG ANNUAL COMPOSITE

WIND DIR	MPH 1-10	11-22	23-33	34-45	46-56	57-68		TOTAL OBS	%
N	1459	697	141	16				2313	20
NE	723	276	36	4				1039	9
E	254	35						289	2
SE	337	121	18	2				478	4
S	717	531	193	75	5			1521	13
SW	924	704	132	44	9	1		1814	15
W	236	114	23	2				375	3
NW	735	603	71	6	1			1416	12
Calm							2551	2551	22
TOTALS	5385	3081	614	149	15	1	Calm 2551	11,796	
%	46	26	5	1			Calm 22		

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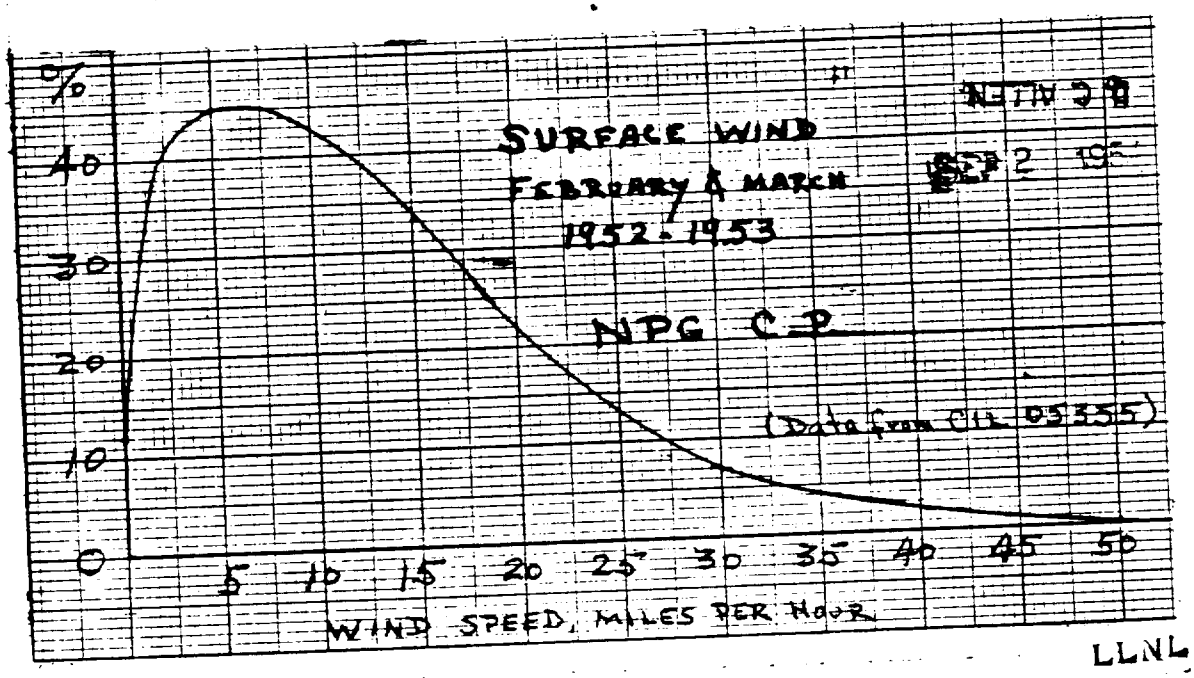
[redacted]

[redacted]

NPG March 1952-1953

Wind Dir	MPH 1-10	11-22	23-33	34-45	46-56		Total Obs	%
N	229	179	42	3			453	29
NE	70	36	11	1			118	8
E	58	7					65	4
SE	34	11	2				47	3
S	87	105	27	31	1		251	16
SW	93	119	22	7			241	15
W	57	51	14	2			124	8
NW	43	49	6				98	6
Calm						162	162	10
Totals	671	557	124	44	1	calm 162	1559	
%	43	36	8	3		calm 10		

SEP 2 10=



Note: Data shown is a Compilation of Surface observations at the Command Post each hour of the day for the months of Feb & Mar 1952-3. It is not representative of Shot time Conditions at Ground

See: NPG Sfc Wind analysis — Letter to Dick Werner 9-2-54 29

[redacted]

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[redacted]

C
O
P
Y

SEP 2 1954

December 10, 1953

GL: 5354

TO: R. W. Newman or R. H. Campbell, J-6

FROM: G. J. Newgarden, 3rd, H-6

SUBJECT: NPG Climate Summary

SYMBOL: H-6

1. Per request of Mr. Newman, J-6, there is attached hereto a climatic summary of surface winds and temperatures for the Nevada Proving Grounds. The summary is based on 11,796 observations which were taken at the CP during 1951, 1952, and 1953. The summary is believed to be more representative for the fall, spring, and winter months, and least representative for the summer months as only a few observations were available for the summer months. Wind directions used in the summary represent the directions from which the wind w was blowing.

2. In summary, it was noted that the greatest percentage of winds with a northerly component occurred during the winter months, while southerly winds were predominate during the summer months. Regardless of season, however, the strongest winds were predominately southerly. It was also noted that the greatest percentage of the calm winds occurred during the night and the moderate or strong winds occurred during the afternoon. Also of interest is the fact that when the winds were light; i.e., less than 5MPH, during the night, the winds were predominately northerly. This gives evidence to air drainage from the higher elevations over the dry lake beds which probably slope slightly in a north-south direction. It is believed that the enclosed temperature study is self-explanatory.

/s/G.J.N.

LLNL

GEORGE J. NEWGARDEN, 3rd
Phone 2-2983

Encs: NPG Wind Summary (3)
NPG Temp. Summary (3)

LLNL

[redacted]

31

[redacted]

41

[redacted]

September 8, 1954

CITE: COL 4462

MEMORANDUM

TO: DISTRIBUTION:

FROM: Devitt Allen

SUBJECT: Gustiness of Wind at 500' above open terrain

1. Gustiness is short period variation in wind speed and exist at all levels from the surface to extreme altitudes. Its value at 500' above open terrain for winds of 10-30 mph is close to 30 percent, where , $\text{percent gustiness} = \frac{\text{highest-lowest}}{\text{average wind speed}} \times 100$

2. The period of variation increases with altitude and decreases with stability of the air (i.e. gustiness will be greatest in mid-afternoon close to the surface) At 500' the period varies between 15 seconds and 2 minutes.

Devitt Allen, Effects
Operations Division

Distribution:

Dick Werner 1
Herb Weidner 1
Devitt Allen 1
L- Division 2

LLNL

Unclassified

[redacted]

[redacted]

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[redacted]

46

E.F.C. p.53

The inner boundary of the first abnormal audibility zone immediately beyond which the highest concentration of blast energy is most likely to occur seems to be a regular function of the season or month of the year. As shown in fig 24 the inner boundary is farthest from the source in July and August (about 120 mi.) and nearest to the source in January and February (about 65 miles). Outer boundaries of abnormal audibility zones are much less easily determined; in fact Cox shows that t the acoustic energy in abnormal audibility zones may simply decrease with distance fro from the source; the real outer boundary for each abnormal zone occurs at infinity.

Some of the damage in Las Vegas during Operation Ranger on Feb 2 and 6, 1951, may have been caused by ozonosphere signals. No accurate transit-time observations were mad, so there is now no way to decide whether ozonosphere signals made any contribution to the damaging blast energy supply which struck Las Vegas.

EFC p.95

Weather predictions, then RAOB soundings, and finally the 1.2 ton TNT shot fired 1/2 hour prior to the scheduled firing time of the Buster Dog Shot gave real cause for for concern. Figures 40c,e, and f show that very little energy would be transmitted toward Beatty, and that no toposphere signal need be expected northwest and northeast from the firing site. On the other hand, focusing conditions existed toward the south, toward the east and especially toward the southeast. The advance shot produced very strong troposphere signals at all our stations to the southeast and quite strong o onosphere signals at both Caliente and St. George. Figure 21d shows the magnitudes of the signals, where they remained on scale; the Test Director was warned that damage would likely occur southeast from the blast point.

Fig 40j shows some of the sound ray tracks toward the southeast. The distribution of energy bounded by rays having incidence angles between 0 deg amd 13 deg 32' is similar to that shown in Fig. 7a. An extremely heavy concentration of energy would therefore occur about 35 kilofeet southeast of ground zero. The dip in the V vs h curve between 8 and 18 kilofeet would produce a second, more distant focus. Its heavy concentration of energy would land very near the half-way point to Las Vegas and one bounce would send it smashing into that city. LLNL

In spite of the fact that we predicted that damage would be done on this date if the fission weapon were fired, the Test Director felt compelled to go ahead with the o operation since thaousands of visitors were present for Exercise Desert Rock. Unfortunately all results were as predicted. Measured signal strengths are shown in Fig. 21d. The noise was heard at all our stations except Beatty and Goldfield, and in Prescott, Arizona. It is believed that in Las Vegas the signal strength was about 5 pounds per square foot. Sinc the other inhabited areas reported no significant damage, their signal strengths must have been somewhat less.

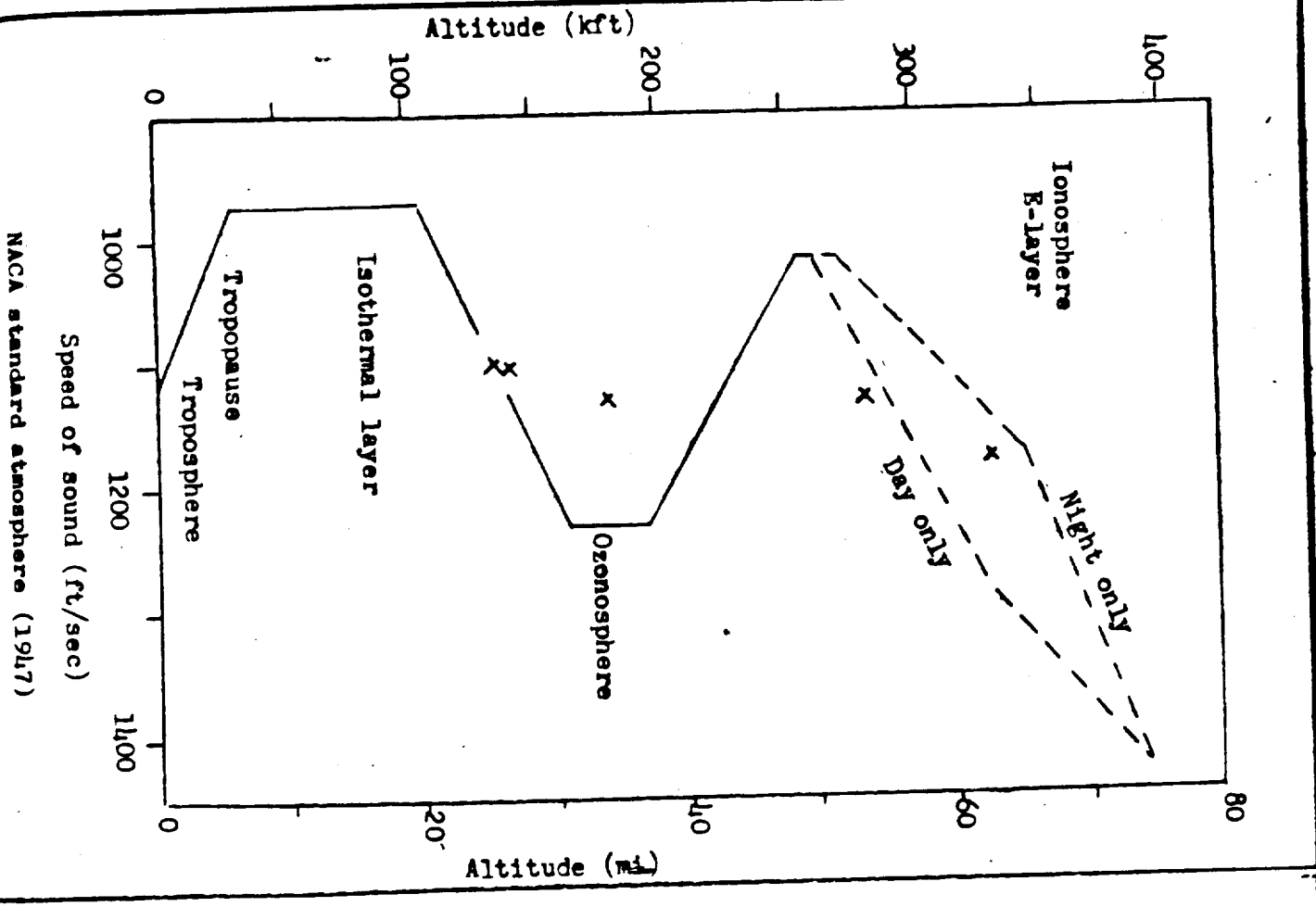
RADIATION LABORATORY - UNIVERSITY OF CALIFORNIA - BERKELEY

ENGINEERING NOTE

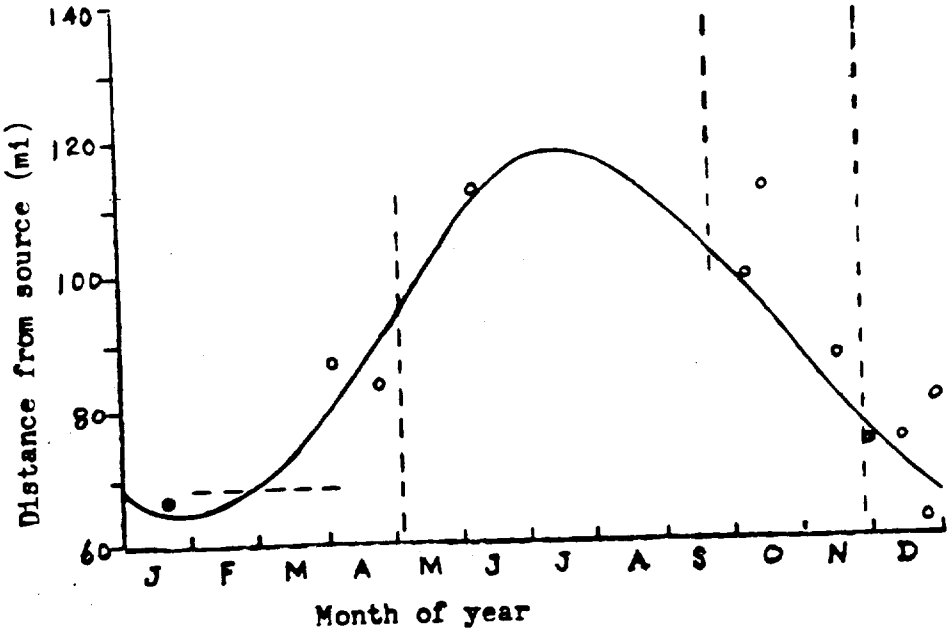
JOB NUMBER | FILE NO | PAGE

NAME

DATE



OZONOSPHERE SIGNALS (E.F.C. p.53)



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Distance from explosion to inner boundary of first abnormal audibility zone.

(after A. Wegener, 1925)

MERCURY WEATHER STATION
MERCURY, NEVADA

28 April 1955

FORECAST FOR YUCCA FLATS

VALID: 29 0515 PDT

PREPARED: 28 0730 PDT

SYNOPTIC SITUATION: Cold front approaching Mercury from NW expected to pass area prior to noon.

CLOUDS: Layered cirrus base 22000 ft MSL tops 29000 ft MSL, 6/10 AC base 13000 ft MSL tops 16000 ft MSL.

WEATHER: Scattered snow showers in higher elevations after frontal passage. Few light scattered rain showers over lower terrain, after frontal passage.

TROPOPAUSE: 35000 ft MSL.

CONTRAILS: persistent 29000 to 35000 ft MSL, nonpersistent above.

SURFACE WINDS: SW 10-15, gusts to 30.

WINDS AND TEMPERATURES ALOFT:

ALTITUDE (MSL)	WIND	TEMP
SFC	200/10	5
5000	210/20	12
10000	220/30	2
15000	230/40	-8
20000	230/55	-21
25000	230/65	-31
30000	240/75	-44
35000	240/85	-57
40000	240/80	-58
45000	250/60	-60
50000	250/50	-63

LLNL

RALPH J. STEELE
LT. COL., USAF
Chief Forecaster

CIL-11163 - 29 MARCH 1955

CONFIDENTIAL//Following revised schedule for remainder of Teapot is established for planning purposes. When weather is acceptable, the Group A shots will be given priority:

GROUP A	GROUP B	READY DATE
Apple	Wasp'	Now
	HA	April 3
Met		April 6
	Post	April 8
Zucchini		April 26

Preparations are continuing to fire both, repeat both, Apple and Wasp' March 29. The following comments apply to scheduling: HA to be Wasp' plus 5 days. Met to be HA plus 3 days.

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[redacted]

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[redacted]

CIL-11169 - 29 March 1955

SECRET/RESTRICTED DATA//This is supplemental to the H + 6 hours report on Apple. Preliminary estimate of yield by bhangmeter was about 15KT. Gamma Ray data consistent with a 15KT yield. Thermal data consistent with a 15KT yield. [redacted] Two Bowen cameras showed no indication of a secondary reaction. Watts measurements, which should be as sensitive as any, showed no secondary reaction. From his null reading, he gives a maximum temperature of 350 volts. Watts sensitivity on secondary such that he should have seen one percent of predicted yield; he saw nothing. As seen at this early date, above data is consistent with a malfunction [redacted] End Ref. TM-GHC

[redacted]

SECRET

RESTRICTED DATA

This document contains restricted data as defined in the Atomic Energy Act of 1946. Its transmittal and disclosure of its contents in any manner to an unauthorized person is prohibited.

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[redacted]

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CIL-11170 - 29 March 1955

SECRET/RESTRICTED DATA//This is the first and H + 6 hours report on Apple. Apple was detonated at 0455 hours. pst March 29 in Teast Area 4 form a 500' tower. Preliminary estimate of yield by Bhangemeter was about 15KT. Desert Rock participation included 6004 armed forces personnel in trenches at 3500 yards, O&T project 40.18 field artillery participated.

Meteorological conditions:

A. Winds: Surface calm, 10,000' south at 19 knots.
20,000' west at 35 knots.
30,000' west at 46 knots.
40,000' west at 50 knots.

B. Clouds: Clear

C. Precipitation: None

Cloud Trajectory: Cloud height at top was 31,000' and moved along the 90° Azimuth at about 40 knots per hour.

Fallout pattern was along the 70° Azimuth with following values given in calculated infinite dosage: Alamo - 2.2R, Caliente - 200 Mr, Panaca 80 Mr.

These infinite dosages enumerated in populated areas only. No reports received as to any off-site blast damage. End Ref TM:GMC

[redacted]

LLNL

[redacted]

CIL-11273 - 7 April 1955

SECRET RESTRICTED DATA//This is the first and h ♦ 3 hours report on HA. HA was detonated at 1000 hours PST April 6 in test Area 5 (Southeasterly from Test Area 1). Delivery aircraft was B-36 flying at 46,000' MSL. Blast height set for 36,000' above target, which is not yet verified. Preliminary estimate of yield by Bhangmeter was 3.2 KT. Indications are that successful results were obtained from experiments. Cloud height not presently determined and cloud moved off in southeasterly direction dispersing rapidly. Visual observation indicated that smoke trails laid by jet aircraft were successfully performed. Visual observation indicates cannister drop was successfully performed.

Meteorological conditions:

A. Winds, Surface, North at 9 Knots; 10,000', NNE at 13 Knots; 20,000', N at 18 Knots; 30,000', NW at 27 Knots; 40,000', WNW at 43 Knots; 50,000', WNW at 29 Knots; and 60,000', NW at 11 Knots.

b. Clouds: Clear.
c. Precipitation: None

No off-site fallout detected nor is there any predicted. End. Ref TM/CHC

56

[redacted]

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CIL-11175 - 30 March 1955

SECRET RESTRICTED DATA//This is the first and H + 5 hours report on Wasp'. Wasp' was detonated at 1000 hours pst March 29 in Test Area 7as an air drop. Preliminary estimate of yield by Bhangmeter was 3.2KT. Indications are that successful results were obtained from diagnostic experiments. Desert Rock participation included Project 40.18 Field Artillery O & T.

Meteorological Conditions:

A. Winds: Surface SSW at 15 Knots, 10,000' SW at 23 Knots, 20,000' west at 40 knots, 30,000' WSW at 63 Knots at 40,000' WSW at 59 knots.

B. Clouds: At 28,000' thin, broken.

C. Precipitation: None

Cloud trajectory, cloud rose to a height of 34,200' and settled back to 31,500', moving along the 55° Azimuth at about 22 knots per hour.

Fallout Pattern: At the time of this report, no off-site ground monitoring reports have been received for the fallout from Wasp'. It appears that it will be difficult to distinguish between the fallout occurring from the detonation of Apple and the fallout of Wasp'. End Ref TM:GHC

[redacted]

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[redacted]

Draft of USWB Technical Report CITR 12121 [redacted] 30 57
on Teapot Fallout Prediction [redacted] June 13, 1955

Table 1 Distribution of [redacted] from a Cloud from a 20 Kiloton Bomb on a [redacted] according to Range of Initial Height and Particle size. Units are [redacted] which give mill inches per hour 12 hrs. after burst time for a cloud initially 5 miles in diameter.

			8	221	162	120	100	87	78	71.5	66.6	62.2	58.3
	40,000		A	B	C	D	E	F	G	H	I	J	
	37,500	1	40	50	40	30	30	25	20	15	10	10	
	35,000	2	100	100	80	60	50	40	30	25	20	20	
	32,500	3	150	170	120	100	80	60	40	35	30	30	
ϵ=905 →	30,000	4	.220 200	.220 200	.144 130	.110 100	.088 80	.066 60	.044 40	.039 35	.033 30	.033 30	
	27,500	5	250	170	100	60	50	40	30	25	20	20	
	25,000	6	300	170	70	50	40	30	20	15	10	10	
	22,500	7	400	170	50	30	20	15	10	5	5	5	
	20,000	8	500	170	50	40	20	15	10	5	5	5	
	17,500	9	550	200	60	40	25	20	15	10	10	10	
	15,000	10	600	240	70	45	30	20	15	10	10	10	
	12,500	11	650	280	80	50	40	30	20	15	15	15	
	10,000	12	650	280	80	50	40	30	30	15	15	15	

G.Z. = 5,000 MSL

[redacted]

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[redacted] 48

60 [redacted] 10-18-82

H_2O content of Air at Burst Point

[redacted]

LLNL

[redacted]

[redacted]

LC(C)5 0330

[redacted] 0900 14.2°
0, Breezy
63/53

Howard

Tewes x 368 Chem

Temp. Atmos. pressure
#13 Surface & 300 ft.
Relaying

1010 mb

s.	27°	1,010	mb
300'	26°	999	

from Castle data

Write to [struck out]?

(mb) Pressure	(°C) Temp/Dew Pt.	(g/kg) Mix Ratio	(dry Air) g. H_2O/cc Air ×10^{-6}
857	2.1 / -9.1	2.3	2.4
1007	26.8 / 24.4	19	22
1012	26.7 / 22.2	17	20
1006	25.9 / 24.7	20	24
1011	27.1 / 23.9	19	22
866	7.9 / -5.4	2.9	3.1
860	13.3 / [illegible]	3.5	3.7
852	7.2 / -4.1	3.3	3.5
860	15.3 / -4.7	3.1	3.3
864	18.3 / 4.5	6.1	6.5

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B 162
R 222 on

@ 10°C & 76.0 cm Hg. Density Air (g/cc) = .001247 × $\frac{860}{1013}$ × 10^3 =

Density Air (Kg/M^3) @ 860 mb, 10°C = 1.060

1cc Air ~ .001060 g.

(Nevada) g. H_2O/cc Air = Mix Ratio × 1.06 × 10^{-6}

(Pacific) [illegible] = [illegible] 1.17 × 10^{-6}

$\frac{2.3 g.}{x} = \frac{1000 g.}{.001060 g}$

x = 2.3 × 1.060 × 10^{-6}

LEE PARKER
343/386

10-18-56

50

Shot Time
Temp. Sounding

	31	
X	12	9
	21	
	17	1
	17	1
	12	6
	11	7
	17	1
	10	8
	17	1
	134	
	18	
	18	
	18	
	18	
	18	
	142	

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Redwing	FIRED M---M Day	Time	Stream Line charts = H+3 Hrs 10 20 30 40 50 80	= 21 H+[illegible] Hrs 10 20 30 40 50 80	SHOT TIME RAWINS Weak	Poor
LACROSSE	5/5	0626				
CHEROKEE	5/21	0551				
ZUNI	5/28	0556				
YUMA	5/28	0756				
ERIE	5/31	0615				
SEMINOLE	6/6	1255				
FLATHEAD	6/12	0626				
BLACKFOOT	6/12	0626				
KICKAPOO	6/14	1126				
OSAGE	6/16	1314				
INCA	6/22	0956				
DAKOTA E.	6/26	0606				
NAVAJO E (3)	7/10	0556				
APACHE E (2)	7/9	0606				
MOHAWK E (1)	7/2	0606				
TEWA-B	7/21	2[illegible]				
HURON E	7/27	0616				

[redacted]

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[redacted]

62

[redacted]

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[redacted]

Project Eureka Ag. 46

Mo	No.	Oper.	Shot	-	H. Burst	W		H(msl)	-	H(msl)
Jul	1	Trinity	—	T	100'	23.8		40.0		
Aug	2	Hiroshima	—	A	1800'	18.5		—		
Aug	3	Nagasaki	—	A	1700	23		—		
Jun	4	P Crossroads	Able	A	518	22	1	30.0		
Jul	5	"	Baker	UW	-90	20	2	8.0		
Apr	6	P Sandstone	X-Ray	T	200	36.5	1	45-56		
Apr	7	"	Yoke	T	200	48.7	2	43-56		
May	8	"	Zebra	T	200	18.2	3	28-33		
Jan	9	N Ranger	Able	A	1045	1.27	1	17.0		
Jan	10	"	Baker-1	A	1105	7.83	2	35.0		
Feb	11	"	Easy	A	1080	1.00	3	12.0		
"	12	"	Baker-2	A	1100	7.95	4	36.0		
"	13	"	Freddy	A	1435	22.2	5	42.0		
Apr	14	P Greenhouse	Dog		300	[redacted]	1	56.0		
"	15	"	Easy		300	46.7	2	40.0		
May	16	"	George		200	[redacted]	3	57.0		
"	17	"	Item		200	[redacted]	4	40.0		
Oct	18	N Buster	Able		100	>2x10⁴	1	8.0		
"	19	"	Baker		1118	3.49	2	31.7		
"	20	"	Charlie		1132	14.0	3	41.0		
Nov	21	"	Dog		1417	21.0	4	46.0		
"	22	"	Easy		1314	31.4	5	50.0		
"	23	N Jangle	Sugar		3.5	1.2	6	15.0		
"	24	"	Underground		-17	1.2	7	10.3		
Apr	25	N Tumbler Snapper	Able		793	1.05	1	15.6		
"	26	"	Baker		1109	1.15	2	15.2		
"	27	"	Charlie		3447	30.0	3	42.5		
May	28	"	Dog		1040	19.6	4	39.0		
"	29	"	Easy		300	11.7	5	31.4		
"	30	"	Fox		300	11.4	6	39.5		
Jun	31	"	George		300	13.8	7	41.5		
"	32	"	How		300	14.0	8	37.0		
Oct	33	P Ivy	Mike		0	10,500	1	136.0		67.2
Nov	34	"	King		1480	52.1	2	76.0		40.0
Mar	35	N Upshot-Knothole	Annie	Y	300	16.3	1	41.0		27.8
"	36	"	Nancy	Y	300	24.5	2	42.5		26.2
"	37	"	Ruth	Y	300	0.21	3	13.5		14.0
Apr	38	"	Dixie	Y	6022	10.8	4	38.0		32.0

[redacted]

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55

ICCTF 0235

[redacted]

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[redacted]

[redacted] T-3-3

								10^5 ft.	10^3 ft.
Mo.	No.	Opn	Shot		Ht Burst	W	Shot	H (MSL)	H (MSL)
Apr	40	N Upshot Knothole	Badger	Y	300	27.7	6	35.0	23.4
"	41	"	Simon	Y	300	51.5	7	45.0	31.2
May	42	"	Encore	F	2423	26.4	8	42.0	28.9
"	43	"	Harry	Y	300	32.4	9	42.5	27.3
"	44	"	Grable GB	F	524	15.4	10	~~36.0~~ 37.5	23.5
Jun	45	"	Climax AD	Y	1350	65	11	42.7	35.0
Mar 1/54	46	P Castle	[redacted] DELETED		Z	15,000	1	114.0	56.0
" 27	47	"	[redacted] DELETED		14	11,000	2	115.0	54.0
Apr 7	48	"	[redacted]		14	110	3	—	—
" 26	49	"	[redacted]		13	7,000	4	94.0	51.2
May 5	50	"	[redacted] TED		14	13,500	5	110.0	66.0
" 14	51	"	[redacted]		14	1,700	6	91.3	43.0
Feb 18/55	52	N Teapot	Wasp	Y	762	1.2	1	24.5	14.9
" 22	53	"	Moth	Y	300	2.5	2	24.2	16.5
Mar 1	54	"	Tesla	Y	300	7	3	30.3	18.0
" 7	55	"	Turk	Y	500	43	4	45.0	34.5
" 12	56	"	Hornet	Y	300	3.6	5	35.0	27.0
" 22	57	"	Bee	Y	500	8.1	6	40.0	29.0
" 23	58	"	Ess	Y	-67	1.2	7	11.6	—
" 29	59	"	Apple	Y	500	15	8	32.1	21.5
" 29	60	"	Wasp'	Y	739	3.1	9	31.7	—
Apr 6	61	"	HA	Y	32,582	3.1	10	55.0	55.0
" 9	62	"	Post	Y	300	1.53	11	15.2	12.5
" 15	63	"	Met	F	400	24	12	46.2	34.2
May 5	64	"	Apple II	Y	500	30	13	43.0	31.6
" 15	65	"	Zucchini	Y	500	30	14	35.8	25.5
May 5/56	66	P Redwing	L S Lacrosse			(40)	1	(40.0)	
21	67	"	AD Cherokee		5,000' AD	[redacted] DELETED	2	(87.0)	
28	68	"	L S Zuni			3.5 MT	3	(89.0)	
28	69	"	300' Yuma			[redacted] DELETED	4	(7.0)	
31	70	"	300' Erie				5	(32.0)	
Jun 6	71	"	L S Seminole			(15.4)	6	(16.0)	
12	72	"	S Flathead			DELETED	7	—	
12	73	"	300' Blackfoot				8	(31.0)	
14	74	"	300' Kickapoo				9	(15.0)	
16	75	"	AD Osage		AD?		10	—	
22	76	"	300' Inca				11	(42.0)	
26	77	"	W S Dakota				12	(81.0)	

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57 [redacted]

[redacted]

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[redacted]

Mo		No	Opn		Shot	Ht-Burst	W		10^3 ft H (msl)
Jul	9	79	P	Redwing	Apache			14	(80.0)
"	10	80	"		Navajo	DELETED		15	
"	21	81	"		Tewa	(5.9 mi)		16	
"	27	82	"		Huron	DELETED		17	(60.0)
		83							
		84							
		85							
		86							
		87							
		88							
		89							
		90							

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[redacted]

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[redacted]

Cloud Heights as per W.W. Kellogg [redacted] 10-2-56

Wasp T-1 W = 1.2, Ht. Burst = 762' = 860 mb. 5th Atmos, W' = 1.2 × 1013/860 = 1.

Per machte OA COPG 56-1, H_T = 21.0 MSL H_B = 14.9

Assume Aft. Burst = 762 + 4000 = 4762' MSL

Rise of Top = 21000 − 4762 = 16,238'

" " Base = 14900 − 4762 = 10,138'

Moth T-2 W = 2.5 Ht Burst = 300' = 868 mb. W' = 2.5 × 1013/868 = 2.9

H_T = 24.2 H_B = 16.5

Rise of Top = 24,200 − 4300 = 19,900'

" " Base = 16,500 − 4300 = 12,200'

Tesla T-3 W = 7.0 Ht Burst = 300' = 868 mb. W' = 8.2

H_T = 30.3 H_B = 18.0

R_T = 30,300 − 4300 = 26,000' R_B = 18.0 − 4.3 = 13.7

Turk T-4 W = 43.0 Ht. Burst = 500' = 860 mb W' = 51.0

H_T = 45.0 H_B = 34.5

R_T = 45.0 − 4.5 = 40.5 R_B = 34.5 − 4.5 = 30.0

Hornet T-5 W = 3.6 Ht. Burst = 300' = 868 mb W' = 4.2

H_T = 37.0 H_B = 27.0

R_T = 37.0 − 4.3 = 32.7 R_B = 27.0 − 4.3 = 22.7

Bee T-6 W = 8.1 Ht. Burst = 500' = 860 mb W' = 9.5

H_T = 40.0 H_B = 29.0 R_T = 35.5 R_B = 24.5

LLNL [redacted]

61

[redacted]

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[redacted]

Ess
T-7 W = 1.2 Ht Burst = -67' W' = ? .3 kT? exempt W fraction = .25 due underground.

H_T = 11.6 H_B = ?

R_T = 7.6 R_B = ?

[redacted]

Apple
T-8 W = 15 Ht. Burst = 500' W' = 17.7

H_T = 32.1 H_B = 21.5

R_T = 27.6 R_B = 17.0

Wasp
T-9 W = 3.1 Ht. Burst = 739' = 862 mb W' = 3.65

H_T = 31.7 H_B = ?

R_T = 27.0 R_B =

HA
T-10 W = 3.1 Ht. Burst = 32,582' = 222 mb W' = 14.0

H_T = 55.0 H_B = 55.0

R_T = 18.4 R_B = 18.4

Post
T-11 W = 1.53 Ht. Burst = 300' = 868 mb W' = 1.8

H_T = 15.2 H_B = 12.5

R_T = -10.9 R_B = 8.2

Met
T-12 W = 24.0 Ht. Burst = 400' = 862 mb W' = 28.2

H_T = 40.2 H_B = 34.2

R_T = 35.8 R_B = 29.8

Apple II
T-13 W = 30.0 Ht. Burst = 500' = 860 mb W' = 35.4

H_T = 43.0 H_B = 31.6

[redacted]

R_T = 38.5 R_B = 27.1

LLNL

[redacted]

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[redacted]

Zucchini T-14 W = 30.0 Ht Burst = 500' = 860mb w' = 35.8

H_T = 35.8 H_B = 25.5

R_T = 31.3 R_B = 21.0

[redacted]

DELETED C-3 W = 110 w' = 110

H_T = 53.0 H_B = ?

R_T = 53.0

King IL W = 541 Ht. Burst = 1480' = 962 mb w' = 570

H_T = 76.0 H_B = 45.0

Dog G-1 W = DELETED Ht. Burst = 500' w' = DELETED

H_T = 55.0 H_B = ?

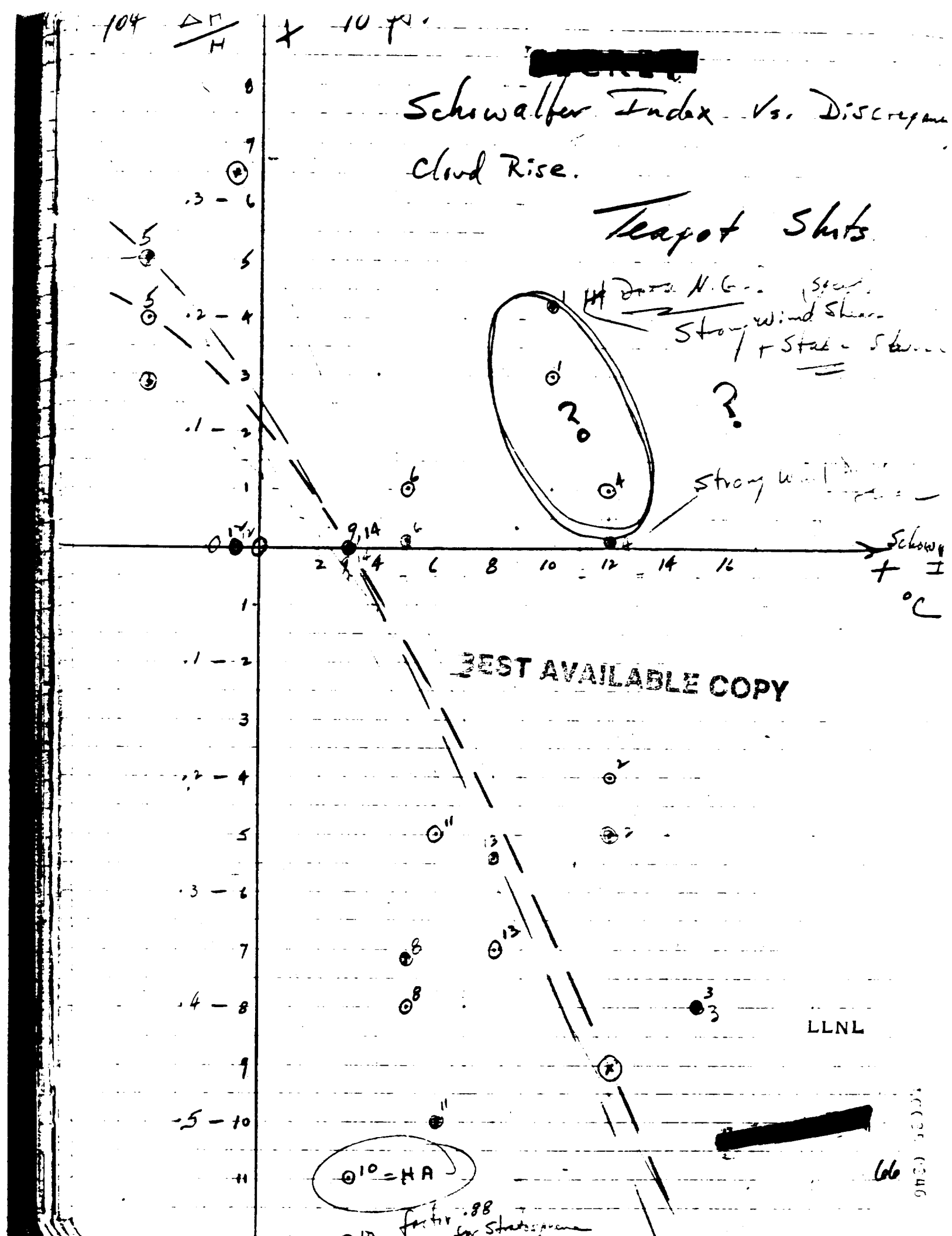
R_T = 54.5 R_B =

George G-3 W = DELETED Ht Burst = 200' = 1005 mb w' = DELETED

H_T = 56.0 H_B = 42.0

LLNL

[redacted]

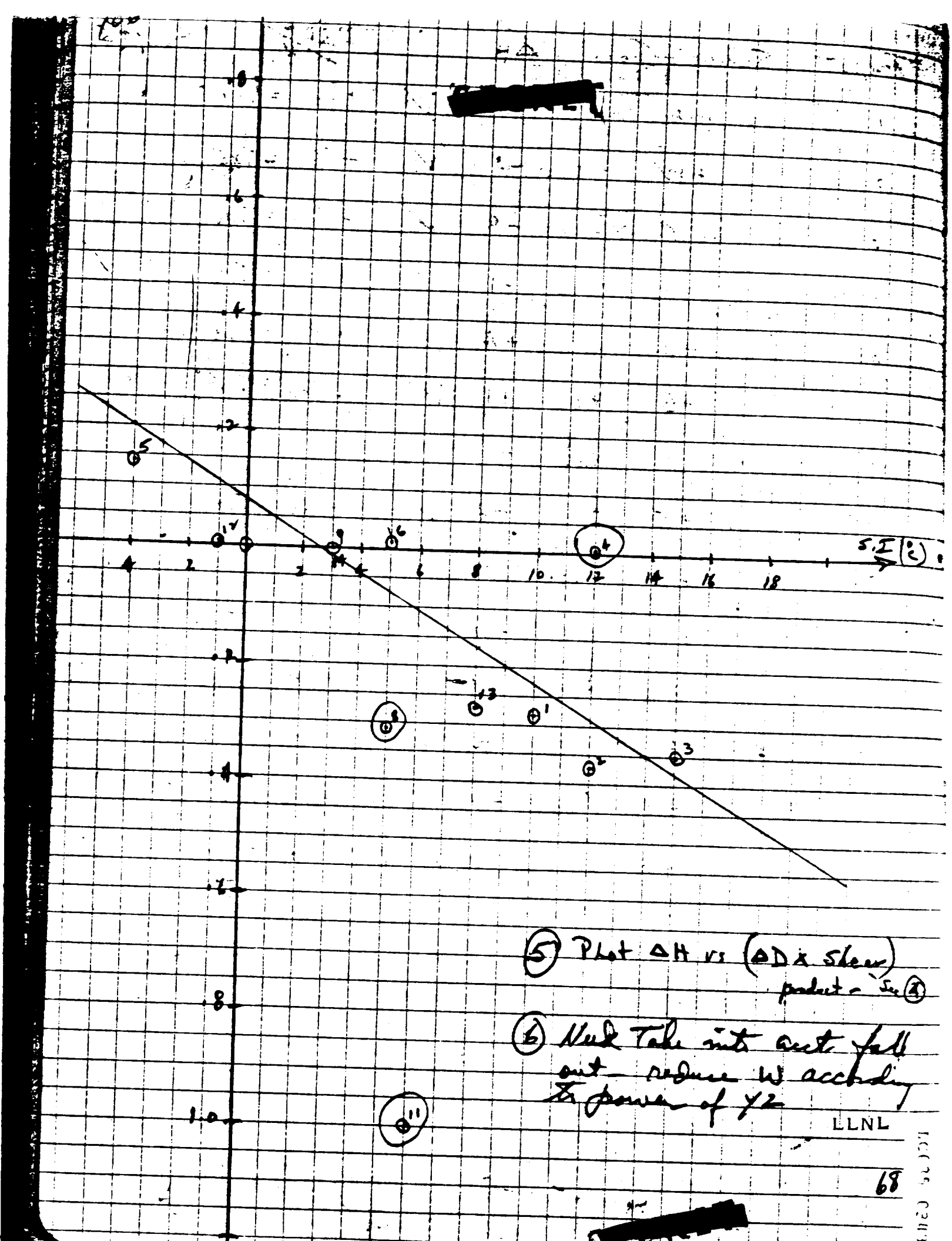

104 Δr/H + 10⁴
Schwalfer Index Vs. Discrepancy
Cloud Rise.
Teapot Shots
Strong Wind Shear
+ Strat - Shear
?
Strong Wind
Schwalfer Index
+ I
°C
BEST AVAILABLE COPY
LLNL
10 = HA
Factor .88 for Stratosphere
66

Teapot Schowalter I. [redacted]

		ΔH			ΔH/H
1	+10	WASP	+3	✓	+3/14 = +.21
2	+12 ✓	MOTH	-4	✓	-4/16 = -.25
3	+15	TESLA	-8	✓	-8/20 = -.40
4	+17	TURK	+1	✓	+1/35 = +.03
5	-4	HORNET	+4	✓	+4/28 = ~~+.25~~ .14
6	+5	BEE	+1	✓	+1/30 = +.03
7	—	ESS	—		=
8	+5	Apple	-8	✓	-8/22 = -.36
9	+3	WASP'	0	✓	0 = 0
10 ?	+3	H.A.	-11	✓	-11/18 = -.61
11	+6	POST	-5	✓	-5/10 = -.50
12	-1	MET	0	✓	0 = 0
13	+8	AppleII	-7	✓	-7/26 = -.27
14	+3	Zocchini	0	✓	0 = 0

LLNL

[redacted]



(5) Plot ΔH vs (ΘD & skew) product - See (4)

(6) Need Table into cost fall out - reduce W accordingly to power of ½

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Teapot [redacted] Schwalbe [redacted]

		W		Δh				
2/18	1	1.4	+10 +13	+4	−4/14 = −.29	16.2	10.1	13.2
2/24	2	2.9	+12 +13	−6	−6/16 = −.37	19.9	12.2	16.0
3/1	3	8.2	+15 +12	−7	−7/20 = −.35	26.0	13.7	19.9
	(4)	51.0	+12	+1	+1/35 = +.03	40.5	30.0	35.3
3/12	5	4.2	−4 +03	+4	+4/28 = +.14	32.7	22.7	27.7
3/22	6	9.5	+5 +07	+3 +5	+3/30 = +.10	29.0	24.5	26.8
3/29	8	17.7	+5 +05	−7	−7/22 = −.32	27.6	17.0	22.3
3/31	9	3.65	+3 +04	+.5 0	0/22.5 = 0	27.0	2.	
	10	14.0	+3	—	— = —	—		
4/9	11	1.8	+6 +05	−10 −9	−9/9.1 = −1.0	10.9	8.2	9.6
	(12)	28.2	−1	+1	+1/33 = +.03	35.8	29.8	32.8
	(13)	35.4	+8	−7	−7/26 = −.27	38.5	27.1	32.8
	14	35.8	+3	0	0 = 0	31.3	21.0	26.2

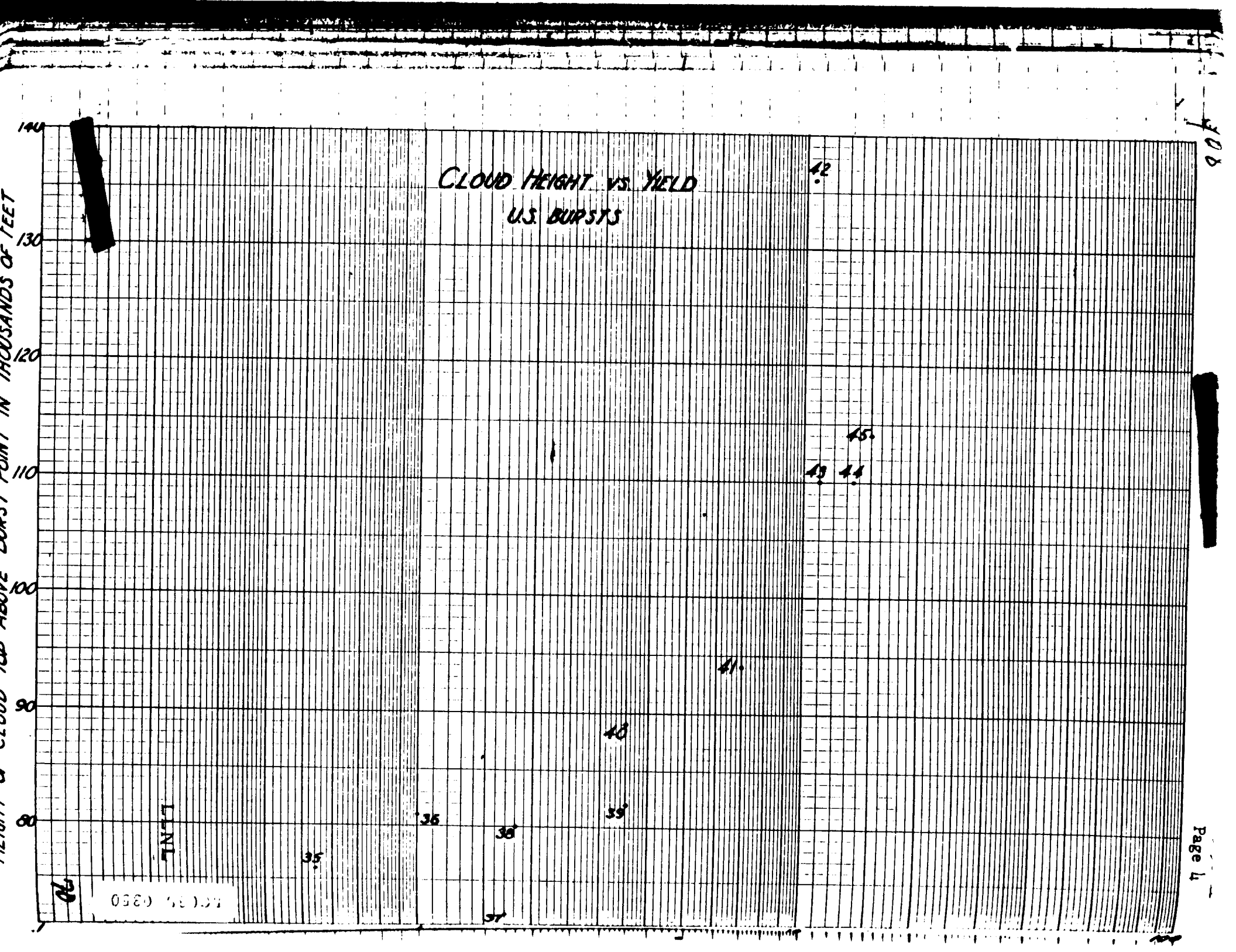
(4) Effect of Wind ~ diagonal Travel upwards = Pedal [redacted]
New Curve with Shots #5 @ 12 High (26.6)

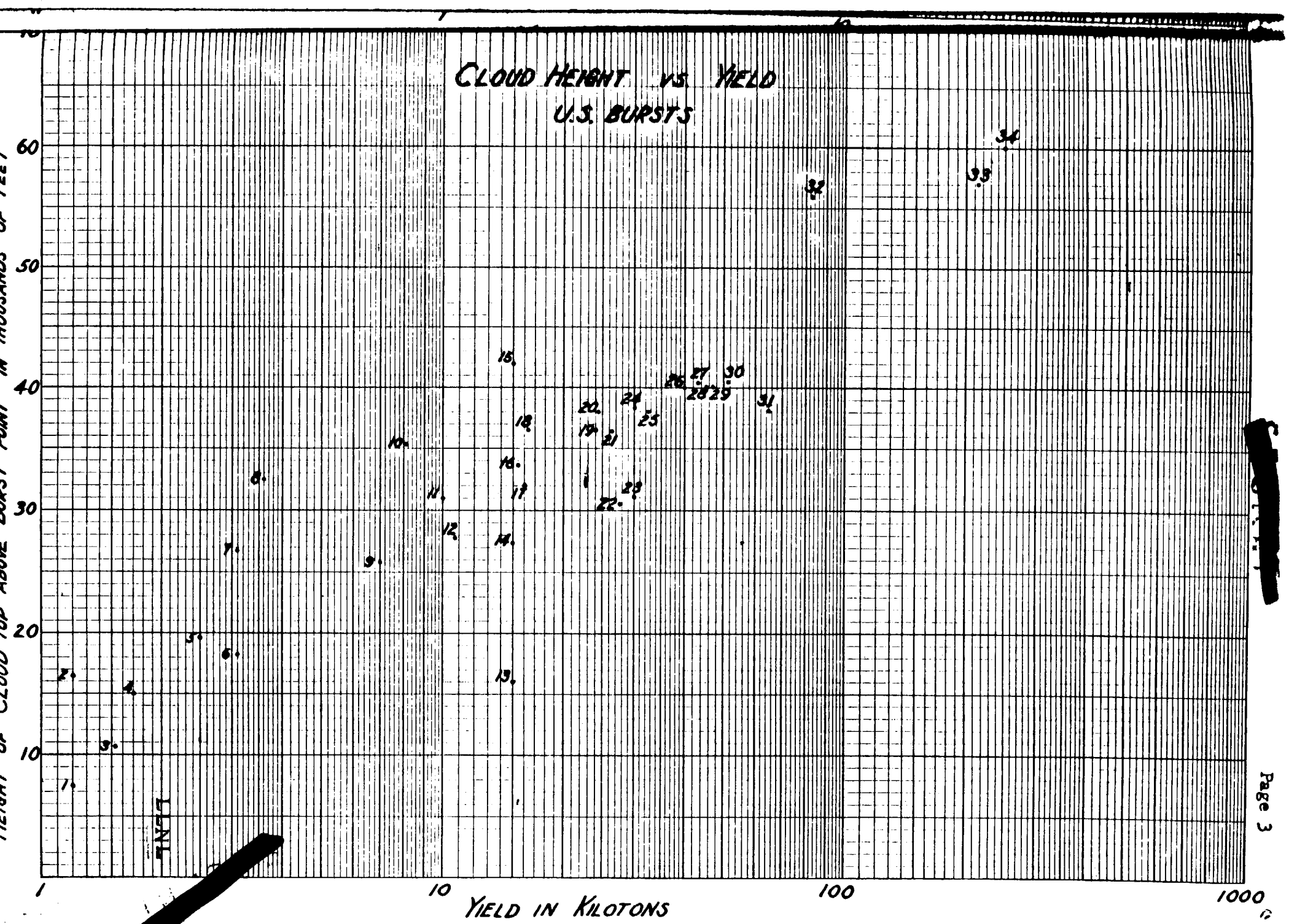
11-28-56

(1) Try "D" value at H = Cloud Top msl instead of Schwalbe = function of Temp dist. - Shift

(2) Effect of Tropopause, Discontinuity or inflection?

(3) [redacted] Small Shifts in temps


CLOUD HEIGHT VS. YIELD
U.S. BURSTS
HEIGHT OF CLOUD TOP ABOVE BURST POINT IN THOUSANDS OF FEET
140
130
120
110
100
90
80
42
45
43
44
41
40
39
36
38
35
37


CLOUD HEIGHT VS. YIELD
U.S. BURSTS
HEIGHT OF CLOUD TOP ABOVE BURST POINT IN THOUSANDS OF FEET
60
50
40
30
20
10
1
10
100
1000
YIELD IN KILOTONS
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
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26
27
28
29
30
31
32
33
34

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

LLNL

[redacted]

[redacted]

4/6/67

$$\Delta H' = H' \frac{\Delta H}{H}$$

$$\frac{\Delta H}{H} = A + K_1 \cdot Stb.$$

$$H' = A' + K_2 \left(\frac{W}{3} \right)^{1/3}$$

Check this.

DIXIE

Encore

GRABCE

CLIMAX

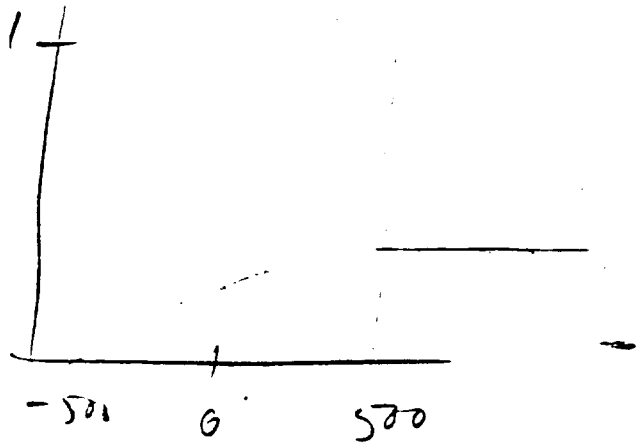
WASP

WASP'

RANGER 1-4

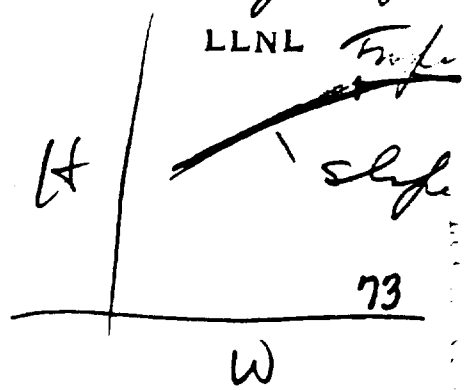
Boost. Jan 2, 3

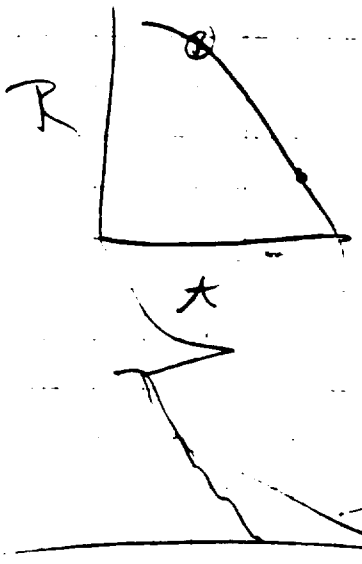
T. S. 1, 2, 4-7, 8



find an H / t curve f.b. to 3,000 C

determine (W^x) by plotting circumstance log x log.





rate of Rise Vs time Where in this Curve Cloud encounters inversion

due thermal absorbed by air, unstable layer thru which cloud passes in the might explain why big ones rise faster than small ones.

Thermal Energy, (5%) attenuation for mile 1/3 of W = thermal - decrease by R^2 - no loss in air

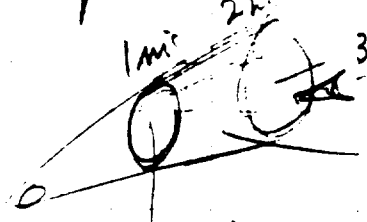


figure heat absorbed in Cone

3 - Cal in

specific ht air = .237 Cal./gm.

An inversion in temp. Sounding is accompanied by Wind Shear / through a shallow layer & should have the effect of meat slicing a piece of baloney - depending on the thickness of the cloud & the speed with which it moves through the shear. for instance shear the cloud is completely spread into a layer. If small shear & cloud moves through fast may leave a "seam" of slice of baloney representing a portion of thermal energy.

LLNL 4/2/57

[redacted]

4/9/57 Work backward from the ½ puff curve & the $\frac{\Delta H}{H}$ vs Schmidt Curve to get pts for the H vs log W Curve.

$$H = \frac{M}{1+B}$$

Shot #	½ puff	Mean Top	$\frac{\Delta H}{H}$	W	B Schmidt	M. Rec Center Mean	H
1	2.3	21.0	-.16	1.2	+13	13.74	16.36
2	3.4	24.2	-.16	2.5	+13	16.48	19.62
3	4.7	30.3	+.12	7.0	+12	21.10	23.98
5	3.9	37.0	+.26	3.6	+3.	28.79	22.85
6	4.85	40.0	+.091	8.1	+7	30.41	27.87
8	5.1	32.1	+.175	15	+5	22.19	18.89
9	3.7	31.7	+.215	3.1	+4	23.01	18.93
11	2.6	15.2	+.175	1.5	+5	8.06	6.86

(1) plot new curve H vs W

(2) Now plot new curve B vs Schmidt

[redacted]

? How about making ½ puff a function of Tons wt.? take Ca. of all?

"Fest"

3/11/57

(1)

Shot #	Ht. Peak Center for Curve	ΔH/H	H'()	½ puff	fest Top	meas Top	Error
1	15.6	-.16	-2.5	2.5	15.6	16.2	-.6
2	19.0	-.16	-3.0	4.0	20.0	19.9	+.1
3	23.9	-.12	-2.9	5.5	26.5	26.0	+.5
5	20.8	+.26	+5.4	4.5	30.7	32.7	-2.0
6	24.6	+.09	+2.2	5.5	32.3	29.0	+3.3
8	27.5	+.17	+4.7	6.0	28.8	27.6	+1.2
9	20.1	+.22	+4.4	4.3	28.8	27.0	+1.8
11	16.8	+.17	-2.9	3.0	16.9	10.9	+6.0

Change ½ puff Curve

(2)

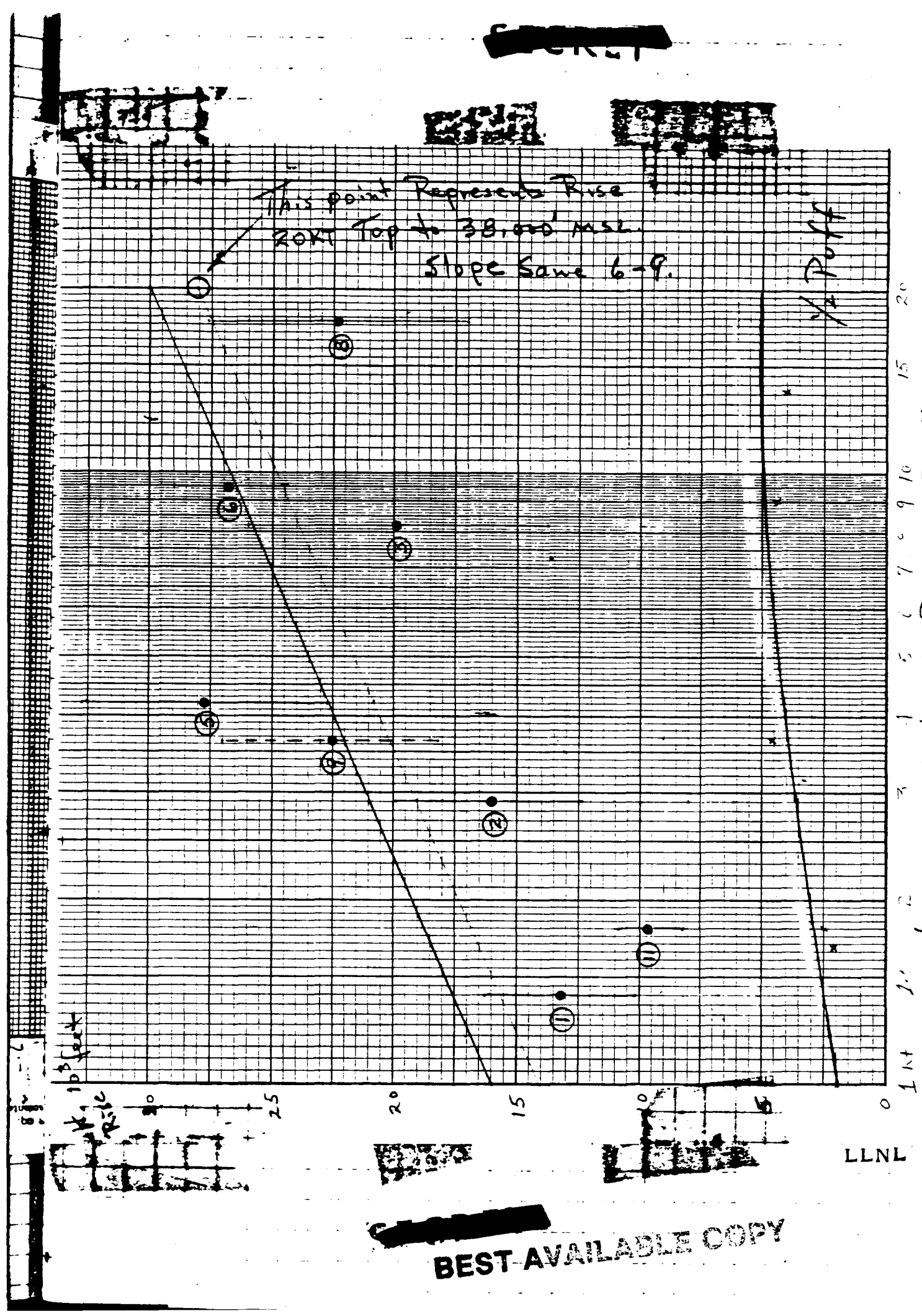
½ puff	Fest	Error
2.5	15.6	-.6
3.6	19.6	-.3
4.8	25.8	-.2
4.1	30.3	-2.4
5.0	31.8	+2.8
5.0	27.8	+.2
4.0	28.5	+1.5
2.9	16.8	+5.9

Data

Shot #	W'	Schmoltz	H Curve	ΔH	ΔH/H
1	1.4	+13	15.6	-2.4	-.154
2	2.9	+13	19.0	-3.1	-.163
3	8.2	+12	23.9	-4.0	-.167
5	4.2	+3	20.8	+7.0	+.337
6	9.5	+7	24.6	+2.3	+.094
8	17.7	+5	27.5	-5.1	-.185
9	3.65	+4	20.1	+2.4	+.119
11	1.8	+5	16.8	-7.2	-.429

(1')

3/11/57



[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

2.05

Cloud rise. Stefan Curve

for 300' towers Vs 500' towers

for low W. Initial rise —

entrainment — up to 10,000'

under influence of "Chimney effect"

Energy absorbed

by tower

Shot	W	Date	Time	Scheme	[redacted]
T-1	1.2	2-18-55		+13	
T-9	3.1	3-29-55		+4	
UK-4	10.8				
UK-10	15.4				
R-1	1.3				
R-2	7.8				
R-3	1.0				
R-4	8.0				
BJ-2	3.5				
BJ-3	14.0				
TS-1	1.1				
TS-2	1.2				
TS-4	19.6				

[redacted]

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81

[redacted]

[redacted]

[redacted]

REDWING SHOTS

NAME	DATE	TIME
Lacrosse	5/5	0626
Cherokee	5/21	0551
Zuni	5/28	0556
Yuma	5/28	0756
Erie	5/31	0615
Seminole	6/6	1255
Flathead	6/12	0626
Blackfoot	6/12	0626
Kickapoo	6/14	1126
Osage	6/16	1314
Inca	6/22	0956
Dakota	6/26	0606
Navajo	7/10	0556
Apache	7/9	0606
Mohawk	7/3	0606
Tewa	7/21	0546
Huron	7/22	0616

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[redacted]

[redacted]

LLNL

[redacted]

85

LCC35 (365

121 — 125

[redacted]

LLNL

[redacted]

86

[redacted]

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[redacted]

10% Na ~ 10.[illegible] x.01 = .17
30% Mn ~ 6.9 x.004 = .03
5.9

50% Na ~ 11.5 x.37 = 4.26
50% Mn ~ 11.4 x.004 = .05
4.31

50% Na ~ 3.27 x.37 = 1.20
50% Mn ~ 3.27 x.004 = .01
1.21

4 Feb 56
Smith-Emery Co.
Chemists - Engineers
Los Angeles

Soil Analyses, Bill Cowan 7-2-57

Site	Total Mn	Total Na	Total K
T-1	.158%	1.25%	2.32%
T-2	.027	.43	1.39
T-3	.024	1.60	2.92
T-4	.032	.95	2.16
FF	.023	.62	2.06
T-7	.045	1.84	2.69
T-7	.047	1.81	2.62
T-7	.030	1.33	2.19
	.386	9.83	18.35
	Av = .048	Av = 1.23	Av = 2.29

Nevada

14 July 56
S. E. Co.

"Yuma Coral" % Na = 0.15 { "Sally"

Reversed?

23 Jan 56
S. E. Co.

Sample A % Na = 0.16 { Center of Island
Sample B % Na = 0.11 { Edge of Island

Name

LLNL

[redacted]

88

... on ... @ H+22, ∴ Range 1110'

$I = 1\ R/hr \times$

$$I_{H+1} = \frac{8.7 \times 10^7 \left[e^{-\left(\frac{1110}{475}\right)} = -2.377 \right] = .0926}{1110^2} = \frac{8.7 \times 10^7 \times 9.3 \times 10^{-2}}{1.2 \times 10^6}$$

$$= 7.232 \times 10^6$$

$I_{H+1} = 6.54\ R/hr$

$I_{H+22} = .37 \times 6.54 = 2.4\ R/hr$ @ H+22

@ H+22, Slant Range = 820', ∴ $I = 4\ R/hr$

$$I_{H+1} = \frac{8.7 \times 10^7 \ e^{-\frac{820}{475}} = .177}{820^2} = 22.9\ R/hr.$$

$$= 6.72 \times 10^5$$

$I_{H+22} = .37 \times 22.9 = 8.5\ R/hr.$

Decay By Orange Curve of 3/13/57

$22.9 \times .29 = 6.6$

$\frac{2.4}{1} = 2.4$

$\frac{8.5}{4} = 2.1$

} Due decay Constant ? or mixture Na & Mn.

[redacted] LLNL

Say 70% Na ~ $4.58 \times .37 = 1.69$

30% Mn. ~ $1.96 \times .004 = .008$

1.70

89

[redacted]

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$t_{1/2}$ = 15 Hrs [redacted]

$\lambda = \frac{15}{.693} = 2.6$ ~~$\lambda = \frac{.693}{15} = .046$~~

~~$I = I_0 e^{2.6(t_0 - t)}$~~ $I = I_0 e^{.046(t_0 - t)}$

I_0	t (hours)						
	1	10	100	200	300	30	140
1	0 / 1	-9 / -.414	-99 / -4.55	-199 / -9.15	-299 / -13.75	-1.33	-6.44
$e^{\lambda} =$	1	.660	.0105	.000106	.00000107	.264	.0015

$\log_{10} e = .43429$

$e^{-9.15}$ = $.43429 \times -9.15 = -3.97375$ → $6.02625 - 10$ → .0001062

$e^{-13.75}$ = $.43429 \times -13.75 = -5.97149$ → $4.02851 -$ → .00001068

140 hr -2.79683 → $7.20317 - 8$

For Mn $T_{1/2}$ = 2.6 Hrs.

$\lambda = \frac{.693}{2.6} = .267$

$e^{-.267t} = .001$

$6.92 = .267t$

$t = \frac{6.92}{.267} = 26$ hrs.

I_0	t hours					
	1	2	4	10	15	20
1	0	1 / -.267	3 / .801	9 / 2.403	14 / 3.738	19 / 5.073
$e^{\lambda} =$	1	.767	.449	.091	.024	.0065

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[redacted]

Per Bill Lowan, Sandia — [redacted]

Measurement for Wasp 30 R/hr. @ H+1 G.Z.

formula from SC ——— document

$$I_{H+1} = \frac{K e^{-\frac{R}{475}}}{R^2}$$ Where R = Slant Range (feet?)

decay -

$I = I_1 e^{-\lambda t}$ where ~~$\lambda = \frac{T_{1/2}}{.693}$~~ $\lambda = \frac{.693}{T_{1/2}}$

λ depends on proportion Na $T_{1/2}$ = 15 Hrs & Mn $T_{1/2}$ = 2.6 " in Soil

factor 475 depends on Neutron emission of fractional Bomb.

use measured Value 30 R/hr. for Wasp to obtain K.

[redacted]

$$I_{H+1} = 30 = \frac{K e^{-\frac{762}{475}}}{762^2} = \frac{.202\,K}{580,644}$$

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$K = 8.7 \times 10^7$ for 1.2 KT = 7.2×10^7 for 1 KT

92

13?

WASP H+5 S.R. = 920' I = 10 R/hr.

$$I_{H+1} = \frac{8.7 \times 10^7 \times e^{-\frac{920}{475}}}{920^2} = \frac{8.7 \times 10^7 \times .144}{8.46 \times 10^5} = 14.8$$

$I_{H+5} = 14.8 \times .85 = 12.6$ R/hr. by orange curve of 3/13

10.8

Say 80% Na ~ 10.1 x .85 = 8.59

20% Mn ~ 2.5 x .34 = .85

9.44

* Wasp H+5 S.R. = 1260', I = 1 R/hr.

$$I_{H+1} = \frac{8.7 \times 10^7 \times e^{-\frac{1260}{475}}}{1260^2} = \frac{8.7 \times 10^7 \times .0707}{1.59 \times 10^6} = 3.87 \text{ R/hr.}$$

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by orange curve of 3/18

Say 80% Na ~ 3.1 x .85 = 2.64 = 2.8

20% Mn ~ .8 x .34 = .27 = 2.9

2.91

†Rθ as incident ∠? $\frac{1260}{.602} = 2093$ X need use cosθ not cos²θ

$$I_{H+1} = \frac{8.7 \times 10^7 \times e^{-\frac{1260}{475}}}{2093^2} = \frac{8.7 \times 10 \times .0707}{4.38 \times 10^6}$$ LLNL 93

1.12 x .85 = .95

For Radio Chem [redacted] 3/13/57 91/23

Yucca Soil Composition from tunnels they have dug & O.K. for Shot painter

By Weight

70% SiO_2 11-12% Al_2O_3

1% Fe_2O_3 1% Ca_2O_3

1.5% Na_2O $\sigma = 13.3$ 5% K_2O

.15% TiO_2 .05% MnO $\sigma = .53$

Ratio of Atoms & σ's.

Bill Cowan 7-2-57

inversely proportional to 1/2 lives

Na_2O		MnO	
23	16	55	16
62		71	

energy for disintegration Na 4.14 MEV Mn 1.17

$$\frac{Na}{Mn} = \frac{\frac{46}{62} \times 1.5}{\frac{55}{71} \times .05} \times \frac{55}{23} \times \frac{.53}{13.3} = \frac{2.7}{1}$$

Document SC 3466 SRD Contamination from Nuclear Weapons

$$\frac{2.7}{3.7} = 73\% \; Na, \; 27\% \; Mn$$

BEST AVAILABLE COPY [redacted]

134

* Try Again. Na 78% Mn 27%

Cos 53° = .602 d.S.R. = 1260'

3.87 x .602 = 2.33 H+1

Na ~ 1.70 x .85 = 1.45

Mn ~ .63 x .34 = .21 } H+5

1.66 Calc.

1 R/hr meas.

Bell Cowan's formula

$$I_{HH} = \frac{\Sigma W \cdot K \, e^{-\frac{R}{475}} \cdot \cos\theta}{R^2}$$

Where Σ varies from 1-6 as bank goes from low yield to high yield.

Wasp 3/29/1000 PST 740 [redacted] 3/14/57 55 135

1st Reentry 30/0700 ≈ H+21 $\theta = .43$

Measured 10R/hr @ HR 690', SR 1015' $\cos\theta = .7314$

$\alpha = 1$, $W = 3.1$, $K = 7.2 \times 10^7$ $\frac{N_a}{N_m} = \frac{.75}{.25}$

$$I_{H+1} = 1 \times 3.1 \times 7.2 \times 10^7 \times \frac{e^{-\frac{1015}{475}}}{1015^2} \times 0.7314$$

$= 18.7$ R/hr

$N_a \sim 14.0 \times .4 = 5.6$ by orange curve of 3/16

$N_m \sim 4.7 \times .006 = .03$

5.6 R/hr @ H+21

10 R/hr. Measured

Wk. A.B. 8 11

∴ use $\alpha = 2$ for Wasp like devices.

Wasp 2nd Reentry 2R/hr at G.Z.

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$$I_{H+1} = 2 \times 3.1 \times 7.2 \times 10^7 \, e^{-\frac{740}{475}} \times \frac{1}{740^2} \quad \frac{1-1.56}{=-.210} \quad \frac{5.1 \times 10^5}{=1.92 \times 10^5}$$

4/1 1000 PST H+72

$= .171$ R/hr @ H+72

$N_a = .36 \times .04 = .014$ R/hr @ H+72

$M_a = 122 \times \frac{}{} = 0$

$\alpha = 1.5$ [redacted]

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96

letter

1st Way [redacted] 1 R/hr @ H.R. = 950'

S.R. = 925'

θ = 37° C_{os} = .799

$$I_{H+1} = 2 \times 3.1 \times 7.2 \times 10^7 \times \frac{e^{-\frac{925}{475} = .142}}{925^2} \times .799$$

$\approx 8.54 \times 10^5$

$$= 48.8 \text{ R/hr}$$

$$I_{H+72} = 48.8 \times .75 \times .04 \quad \text{by average Curve of 3/18}$$

$$= 1.5 \text{ R/hr}$$

1.2

U.-K.-11 CLIMAX 65KT A.D. 1350'

T-7-3 0415 PDT 4 JUN 53 } H+28

Yucca Runway 0800 " 5 " " }

H.R. = 1050' S.R. = 1715' θ = 38°

C_{os} = .788

BEST AVAILABLE COPY

$$I_{H+1} = 2 \times 65 \times 7.2 \times 10^7 \frac{e^{-\frac{1715}{475} = 3.61 = .0273}}{1715^2} \times .788 = \frac{2.01 \times 10}{2.94 \times 10}$$

$\approx 2.94 \times 10^6$

$$= 68.4 \text{ R/hr}$$

$$N_a = 68.4 \times .75 \times .29 = 14.9$$

$$M_u = 68.4 \times .25 \times \frac{\quad}{\quad} = \frac{0}{14.9} \text{ R/hr @ H+28}$$

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97

$I = 1.5$? $.75 \times 14.9 = 11.2$

[redacted]

U.K. 8 ENCORE 26.4 KT A.B. 2423'

FRENCHMAN 0830 PDT 8 MAY 53

INITIAL SURVEY 0900 8 MAY H+½

G.Z. .3 R/hr

.1 R/hr H.R. 1800' S.R. = 3100' θ = 37° Cos = .799

$$I_{H+1} = 2 \times 26.4 \times 7.2 \times 10^7 \frac{e^{-\frac{3100}{475} = 6.5}}{3100^2} \times .799 = \frac{4.56 \times 10^2}{9.61 \times 10^6}$$

$$= .47 \text{ R/hr @ H+1}$$

Convert to H+½ ⟶

$$I = I_0 e^{.046(t_0 - t)} = .47 e^{.46(1-\frac{1}{2})}$$

$$= .47 e^{.23} = .47 \times 1.26 = .6 \text{ R/hr. @ H+½}$$

WASP Resurvey #1 H+5 I = 1 R/hr @ HR = 1400', SR = 1600', θ = 61°, Cos = .485

$$I_{H+1} = 1.5 \times 1.2 \times 7.2 \times 10^7 \frac{e^{-\frac{1400}{475} = 3.37 = .0342} \times .485}{1600^2 = 2.56 \times 10^6}$$

$$= \frac{2.15 \times 10^6}{2.56 \times 10^6} = .84 \text{ R/hr}$$

$I_{H+5} = .84 \times .73 = .61$ R/hr.

for $t = 2.0$, $I_{H+5} = .81$

Feb 21, 1957 Devices Spherical Diameter 3/18/57 [redacted]

Shot	Device	Yield	Kind of Gadget	Boosted	Ht. Burst
WILSON	DELETED	12+ 14	DELETED	Yes	500' B
EVEREST		2-10 11		Yes	500' B
SATURN		<0.001		No	—
VENUS		<0.001 ≈.001		No	—
MORGAN		2-10 10		Yes	500' B
LASSEN		.4-.8 6		No	300' B
OWENS		2-5 9		Yes	400' B
DIABLO		8-10 12		Yes	500' T
HOOD		8-10 60			1500' B
SHASTA		8-10 12			500' T
WHITNEY		12-14 12			500' T

DELETED

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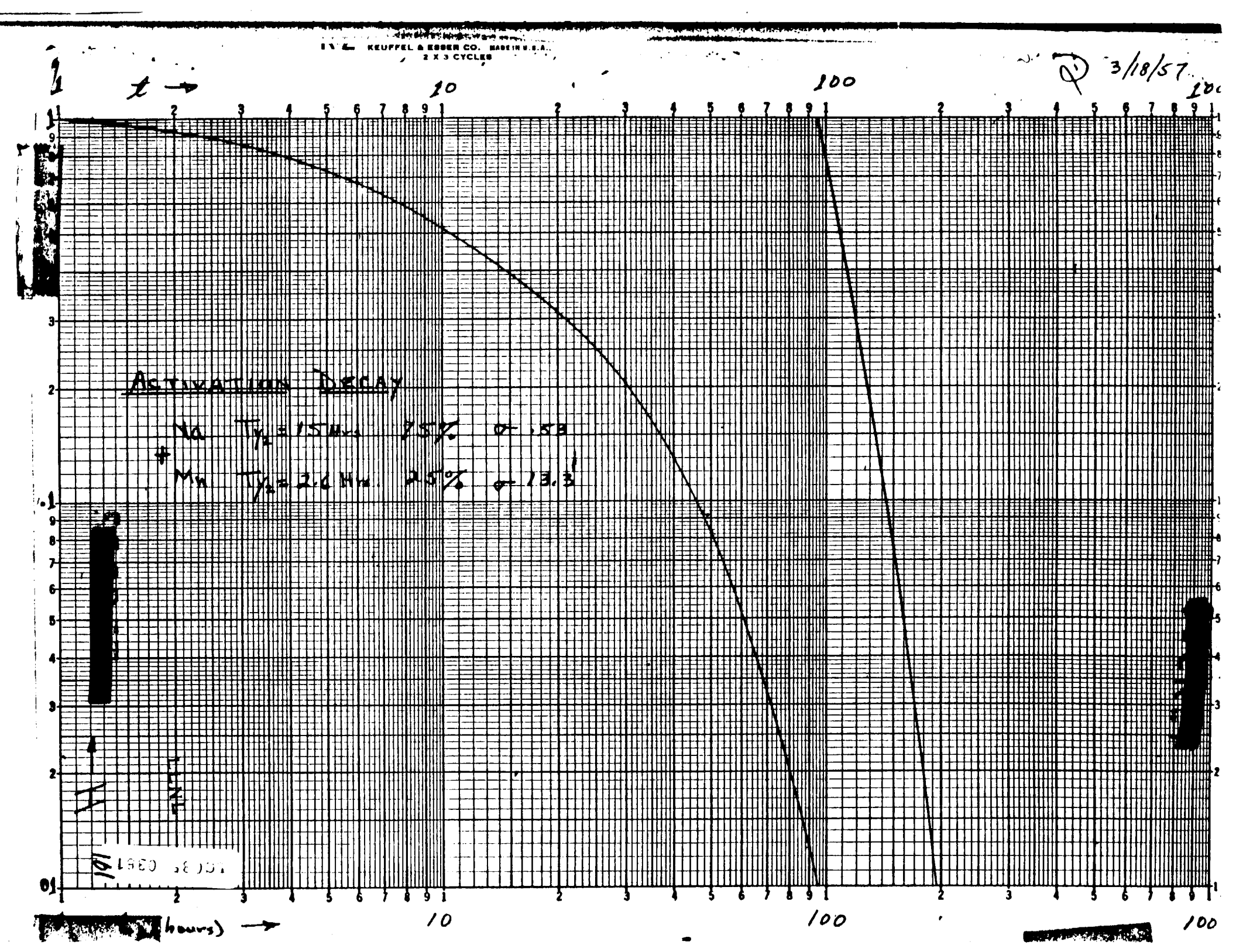
Based on Spherical Calc. + Estimates by Mo Scharff
2 Dim. Calc. Ready 30 days hence

LLNL

Walt Arnold will know orientation of Device at Detonation

[redacted]


KEUFFEL & ESSER CO. MADE IN U.S.A.
2 X 3 CYCLES
t →
10
100
3/18/57
ACTIVATION DECAY
Na $T_{\frac{1}{2}}$ = 15 Hrs. 75% σ = .58
+
Mn $T_{\frac{1}{2}}$ = 2.6 Hrs. 25% σ = 13.3
A
TIME
(hours) →
10
100

140

[redacted]

[redacted]

LLNL

[redacted]

102

3/18/57

WILSON — BOOSTED

$$I_{H+1} = \frac{2.0}{\text{[illegible]}} \times 14 \times 7.2 \times 10^7 \; \frac{e^{\frac{500}{475}}}{500^2} \times 1 = \frac{1.05}{2.5 \times 10^5} = 345 \text{ [illegible] } 2,090 \text{ R/hr}$$

EVEREST — BOOSTED

$$I_{H+1} = \frac{11}{14} \times 2090 = \frac{2,180}{1,640} \text{ R/hr}$$

MORGAN — BOOSTED

$$I_{H+1} = \frac{10}{14} \times 2090 = \frac{1,980}{1,490} \text{ R/hr}$$

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LASSEN — NOT BOOSTED

$$I_{H+1} = 1.5 \times .6 \times 7.2 \times 10^7 \; \frac{e^{\frac{300}{475}}}{300^2} \times 1 = \frac{3.44 \times 10^7}{9 \times 10^4} = 380 \text{ R/hr}$$

$\frac{300}{475} = .631$; $e^{.631} = 1.88$; $\frac{1.88}{9 \times 10^4}$

OWENS — BOOSTED

$$I_{H+1} = 2.0 \times 8 \times 7.2 \times 10^7 \; \frac{e^{\frac{400}{475}}}{400^2} \times 1 = \frac{49.5 \times 10^7}{16 \times 10^4} = 3,090 \text{ R/hr}$$

$\frac{400}{475} = .841$; $e^{.841} = 2.32$; $\frac{2.32}{16 \times 10^4}$

d = 1.5, I = 2,320

Decay	5t	10	LLN
.0099	H+	96	
.0080		100	

Alloy (H.	Shot	W	I_{H+1} R/hr d = 1.5	I_{H+1} R/hr d = 2.0	I_{H+100} d = 1.5	3/21/57 Surf. 73½ hrs	I_{H+1} (R/hr)	I_{H+100} R/hr
500'	WILSON	14	2090	2790	17		2,470	203 20
500'	EVEREST	11	1640	2190	13		1,940	154 16
500'	MORGAN	10	1490	1990	12		1,760	144 14
300'	LASSEN	.6	280	510	3		290	23.6 2
400'	OWENS	8	3090	4120	25		2,690	221 22
								103
500'	[illegible]	14	[illegible]	[illegible]	[illegible]	H+10	80	6.6 .64

14 Re-evaluate K, based on Waf [redacted]

$\alpha = 2$, 10R/hr. @ H+21 = e-fold $\therefore x_t = 600'$

H.R. = 690', S.R. = 1015', W = 3.1, $\theta = 43°$ Coθ = .731

$I_{H+1} = 10 = 2 \times 3.1 \times K \frac{e^{-\frac{1015}{600}}}{1015^2} \times .731$ $\quad -\frac{1015}{600} = 1.69$, $e^{-1.69} = .185$

$K = \frac{10 \times 1015^2 \times [redacted]}{2 \times 3.1 \times .731 \times .185} = \frac{10.3 \times 10^6}{8.41 \times 10^{-1}} = 1.22 \times 10^7$ $\quad 1.03 \times 10^6$

$\therefore K = 1.2 \times 10^7$

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Try out for Waf $\alpha = 1$

$I_{H+1} = 1 \times 1.2 \times 1.2 \times 10^7 \frac{e^{-\frac{762}{600}}}{762^2} \times 1 = \frac{40 \times 10^5}{5.8 \times 10^5} = 6.9$ H.G

$-\frac{762}{600} = 1.27$, $e^{-1.27} = .279$

Try out for Climax H+28 $\alpha = 1$

$I_{H+1} = 1 \times 65 \times 1.2 \times 10^7 \frac{e^{-\frac{1715}{600}}}{1715^2} \times .788 = \frac{3.55 \times 10^7}{2.94 \times 10^6} = 12.1$

$-\frac{1715}{600} = 2.85$, $e^{-2.85} = .0578$ N.

2.94×10^6

To ck e-fld = 475' on Waf. 1st Resurvey H+21

10R/hr. HR = 690' SR = 1015' } $I_{H+1} = \frac{10}{3} = 3.3$ R/hr. LLNL $\theta = 43°$ Co.7

1R/hr. HR = 1,350' SR = 1540' } $I_{H+1} = \frac{1}{3} = .33$ R/hr. $\theta = 61°$ [redacted]

$3.3 = 2 \times 3.1 \times 7.2 \times 10^7 \frac{e^{-\frac{1015}{R}}}{1015^2} \times .731$

$.33 = 2 \times 3.1 \times 7.2 \times 10^7 \frac{e^{-\frac{1540}{R}}}{1015^2} \times .485$

Solve for R

104

R = 491'

Assume μ for Wasp = 1.5

e-fold Distance = 575'

[redacted]

W = 1.2, R = 762'

Re-Calculate K

$$I_{HH1} = 30 = 1.5 \times 1.2\ K\ \frac{e^{\frac{762}{575}=1.33}}{762^2=5.81\times10^5} \times 1$$

$$K = \frac{30 \times 5.81\times10^5}{1.5\times1.2\times.264} = 3.7\times10^7$$

(743, .475)

Tryout on Climax (UK-11) measured 10 R/hr. @ H+28

H.R. = 1050', S.R. = 1715', θ = 38°, Cos θ = .788

$$I_{HH1} = 2 \times 65 \times 3.7\times10^7 \times \frac{e^{\frac{1715}{575}=2.98}}{1715^2=2.94\times10^6} \times .788 = 66\ R/hr$$

(14.25, .508)

$I_{H+28} = 66 \times .22 = 15\ R/hr$

Tryout on Wasp' H+72 measured 1 R/hr H.R. = 550', S.R. = 925'

θ = 37°, Cos θ = .799

$$I_{HH1} = 2 \times 3.1 \times 3.7\times10^7 \frac{e^{\frac{925}{675}=1.61}}{925^2=8.52\times10^5} \times .799 = 43\ R/hr$$

(3.67, 1.2000)

$I_{H+72} = 43 \times .03 = 1.3\ R/hr$

LLNL

(575) With New e-fold

If μ = 1.5, Climax I_{H+28} = 11 R/hr

Wasp' I_{H+72} = 1.8 R/hr

(475) Old e-fold

1 at 105

[redacted]

... use a good distance ... say out on Wasp

(G.Z)

$$I_{H+1} = 30\ R/hr = 2 \times 1.2 \times K \times \frac{e^{-\frac{762}{500}} (.218)}{762^2 \; (5.81\times10^5)} \times 1$$ [redacted]

$$K = \frac{30 \times 5.81\times10^5}{2\times1.2\times.218} = \frac{1.74\times10^7}{.523} = 3.33\times10^7$$

Now try on Wasp' H+21

(1) $$I_{H+1} = 2\times3.1\times3.33\times10^7 \frac{e^{-\frac{1015}{500}} (.131)}{1015^2 \; (1.03\times10^6)} \times .731 = \frac{1.98\times10^7}{1.03\times10^6} = 19.2\ R/hr$$

$I_{H+21} = 19.2 \times .300 = 5.8\ R/hr.$ N.G.?

(2) $$I_{H+1} = 2\times3.1\times3.33\times10^7 \frac{e^{-\frac{1540}{500}} (0.462)}{1540^2 = 2.37\times10^6} \times .485 = \frac{4.64\times10^6}{2.37\times10^6} = 1.96\ R/hr$$

$I_{H+21} = 1.96 \times .300 = .59\ R/hr$

If $\alpha = 4$ instead of 2, $I_{H+21} = 11.6\ \&\ 1.2\ R/hr.$

$\frac{10}{11.6} = .862$ $\frac{1}{1.2} = .833$

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avg = .8475

So, use for Wasp devices $\alpha = 4$ unboosted
= 6 boosted

and adjust K to $.8475 \times 3.333\times10^7 = 2.825$ [2.7?]

[redacted]

Now try H+1 Wasp G.Z. [redacted]

$$I_{H+1} = 4 \times 1.2 \times 2.8 \times 10^7 \frac{e^{-\frac{762}{500}(.218)}}{762^2} \times 1 = \frac{2.93 \times 10^7}{5.81 \times 10^5} = 50.4$$

Too high

Try Wasp' 2nd Resurvey, H+72 Measured 2R/hr @ G.Z.

$$I_{H+1} = 4 \times 3.1 \times 2.8 \times 10^7 \frac{e^{-\frac{740}{500}(.228)}}{740^2} \times 1 = \frac{7.92 \times 10^7}{5.48 \times 10^5} = 144.5$$

$I_{H+72} = 144.5 \times .10300 = 43$ R/hr. Too high

Now change e-fold distance to 450'

$$I_{H+1} = 30 = 4 \times 1.2 \times K \frac{e^{-\frac{762}{450}(.183)}}{762^2} \times 1 = \frac{.878}{5.81 \times 10^5}$$

$$K = \frac{30 \times 5.81 \times 10^5}{.878} = 1.99 \times 10^7 = 2 \times 10^7$$

Try Wasp' 2nd Resurvey H+72

$$I_{H+1} = 4 \times 3.1 \times 2 \times 10^7 \frac{e^{-\frac{740}{500}}}{740^2} =$$

$$I_{H+72} = \frac{2}{2.8} \times 4.3 = 3.1$$ R/hr

[redacted]

Wasp H+72 measured 1 R/hr (1.37)

S [redacted]

$$I_{H+1} = 4 \times 3.1 \times 2 \times 10^7 \frac{e^{-\frac{925}{500}}}{925^2} \times .799 =$$

$$= \frac{3.11 \times 10^7}{8.56 \times 10^5} = 36.3 \text{ R/hr}$$

$$I_{H+72} = 36.3 \times .03 = 1.1 \text{ R/hr.}$$

Chimney H+28 measured 10 R/hr (.0324)

$$I_{H+1} = 4 \times 65 \times 2 \times 10^7 \times \frac{e^{-\frac{1715}{500}}}{1715^2} \times .788$$

(52₀ written above 65)

$$= \frac{13.3 \times 10^7}{2.94 \times 10^6} = 45.2 \text{ R/hr.}$$

$$I_{H+28} = 45.2 \times .22 = 9.94 \text{ R/hr}$$

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Wasp H+1 measured 30 R/hr

$$I_{H+1} = \frac{2}{2.8} \times 50.4 = 36 \text{ R/hr}$$

[redacted]

3/29/57 ⟹

$d = 4$ unboosted, Small (1 U.B. Large Tower) DELETED } $K = 2 \times 10^7$

$= 6$ boosted " " } E-fold = 500

$= 4$ U.B. " Tower

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108

Wilson: I vs. Horizontal Range

I_{H+1} for G.Z. $= 6 \times 14 \times 2 \times 10^7 \; e^{-\frac{500}{600}} = \frac{41.2 \times 10^7}{25 \times 10^4} = 2,490$

I_{H+1} for H.R. $= 500' = \frac{168 \times 10^7}{707^2} e^{-\frac{707}{500}} \times .707 = \frac{28.98 \times 10^7}{5 \times 10^5} = 580$

$\approx 5.0 \times 10^5$

I_{H+1} for H.R. $= 300' = \frac{168 \times 10^7}{585^2} e^{-\frac{585}{500}} \times .866 = \frac{45.1 \times 10^7}{3.42 \times 10^5} = 1320$

$\approx 3.42 \times 10^5$

I_{H+1} for H.R. $= 800' = \frac{168 \times 10^7}{945^2} e^{-\frac{945}{500}} \times .530 = \frac{13.4 \times 10^7}{8.93 \times 10^5} = 150$

$\approx 8.93 \times 10^5$

I_{H+1} for H.R. $= 1100' = \frac{168 \times 10^7}{1210^2} e^{-\frac{1210}{500}} \times .423 = \frac{6.32 \times 10^7}{1.46 \times 10^6} = 43$

I_{H+1} for H.R. $= 150' = \frac{168 \times 10^7}{522^2} e^{-\frac{522}{500}} \times .961 = \frac{56.7 \times 10^7}{2.72 \times 10^5} = 2080$

UNBOOSTED

LASSEN: I vs. Horizontal Range

I_{H+1} for G.Z. $= 4 \times .6 \times 2 \times 10^7 \; \frac{e^{-\frac{300}{500}}}{300^2} \times 1 = \frac{2.64 \times 10^7}{9 \times 10^4} = 290$ ft

I_{H+1} for H.R. $= 700' = 48 \times 10^6 \; \frac{e^{-\frac{320}{500}}}{320^2} \times .948 = \frac{23.98 \times 10^6}{1.024 \times 10^5} = 234$

I_{H+1} for H.R. $= 200' = 48 \times 10^6 \; \frac{e^{-\frac{365}{500}}}{365^2} \times .839 = \frac{19.41 \times 10^6}{1.33 \times 10^5} = 146$

[redacted]

I_{H+1} for H.R. = 400' = 48x10 [illegible] $\times$ .60[illegible] = $\frac{10.6\times10}{25\times10^4}$ = .43
                                                                                    500²

.259   63.5°

I_{H+1} for H.R. = 600' = $48\times10^6 \dfrac{e^{-\frac{675}{500}}}{675^2} \times .446 = \dfrac{5.54\times10^6}{4.56\times10^5} = 12$

OWENS I vs. Horizontal Range

.449

I_{H+1} for G.Z. = $6 \times 8 \times 2 \times 10^7 \dfrac{e^{-\frac{400}{500}}}{400^2} \times 1 = \dfrac{43.1\times10^7}{16\times10^4} = 2{,}690$

.436   14°

I_{H+1} for H.R. = 100' = $96\times10^7 \dfrac{e^{-\frac{415}{500}}}{415^2} \times .970 = \dfrac{40.6\times10^7}{1.72\times10^5} = 2{,}360$

.407   26.5°

I_{H+1} for H.R. = 200' = $96\times10^7 \dfrac{e^{-\frac{450}{500}}}{450^2} \times .895 = \dfrac{34.97\times10^7}{2.025\times10^5} = 1{,}730$

.278   51°

I_{H+1} for H.R. = 500' = $96\times10^7 \dfrac{e^{-\frac{640}{500}}}{640^2} \times .629 = \dfrac{16.79\times10^7}{4.096\times10^5} = 410$

.165   63.5

I_{H+1} for H.R. = 800' = $96\times10^7 \dfrac{e^{-\frac{900}{500}}}{900^2} \times .446 = \dfrac{7.06\times10^7}{8.1\times10^5} = 87$

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Hood DELETED $\alpha = 3$, $W = 60$, Ht. Burst = 1500'

.0498

I_{H+1} for G.Z. = $3 \times 60 \times 2 \times 10^7 \dfrac{e^{-\frac{1500}{500}}}{1500^2} \times 1 = \dfrac{17.93\times10^7}{225\times10^6} = 80$ R/hr

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.048   7½°

I_{H+1} for H.R. = 200' = $360\times10^7 \dfrac{e^{-\frac{1515}{500}}}{1515^2} \times .9914 = \dfrac{17.1\times10^7}{2.30\times10^6} = 74.5$ 110 [redacted]

1555^2 [redacted] 2.42×10^6

$$\text{For H.R.} = 800' = 360 \times 10^7 \; \frac{e^{\frac{1700}{500}(.033)}}{1700^2} \times .883 = \frac{10.49 \times 10^7}{2.89 \times 10^6} = 3.63$$

$$\text{H.R.} = 1200' = 360 \times 10^7 \; \frac{e^{\frac{1925}{500}(.023)}}{1925^2} \times .777 = \frac{5.958 \times 10^7}{3.706 \times 10^6} = 16.1$$

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[redacted]

Rec 4/4/57 for Vern Denton DELETED 1025' Area 1 of 4

Titti: 500' Tower Shots 11 KT. [redacted] Scale from Bee DELETED

Bee 500' tower 8.1 Kt 3/22/55 0505 PST

Small spherical, Boosted, A = 5

.102 64°

$$\text{Activation } I_{H+1} = 5 \times 8.1 \times 2 \times 10^{6} \frac{e^{-\frac{1140}{500}}}{1140^2} \times .438$$

$$= \frac{3.62 \times 10^{7}}{1.30 \times 10^{6}} = 28 \text{ R/hr}$$

1st Recovery 1100 3/24 H+54

Activation @ H+54 = 28 × .07 = 1.96 = 2 R/hr

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Dis.	HR	I
10 R/hr = 1400'	700'	10
" 1 R/hr = 2900	1450	1

→ { 1025 1450 700 ; 53 8-190 }

31 / 26 / 57 / 24

→ 4.7 R/hr @ 1025' H.R. [redacted]

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i.e. 4.7 − 2.0 = 2.7 R/hr @ H+54 due fallout.

normalize to 11 KT: 1.375 A = 2.8 F.O. = 3.7 (neglecting increased Z. large W

Work back to H+1: (A = 40) ~~F.O. = 117~~ N.G. due atomic 112

$I_{H+1} = 3.7 \times 53^{1.2}$ ... R/hr

900 yds

1150

2 | 2050

1025 yds

$\frac{3^{0.75}}{1\,5^{3}} = 15^{40}$ yds

×7 = FOR @ H.R. = 1025'

for W = 15 500' Tower

Scale to 11 KT ~ 50 R/hr

Bee Initial Survey H+1 $\frac{48}{17}$

850 yds = $\frac{2550'}{2}$ = 1275' 28 R/hr

Scale to 11 KT ~ 38.5 R/hr

So ~ Fcst for H+1 ~ (45) R/hr

for shots in Areas 1 & 4.

EXT 8345 MERCURY 1. G. Van Denton (phone) 4/4/5? 3^45 PM

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Test New Set of Ht. forecasting Curves

	E fcst	Top = H	Meas.	W	Sdy	β	H'	Y/2 P	Ht. Bust	H''
T – 1	–.2	20.8	21.0	1.2	13	–.175	16.4	2.3	5.0	13.5
2	–.2	24.0	24.2	2.5	13	–.175	19.6	3.5	4.3	16.2
3	+.7	31.0	30.3	7.0	12	–.115	24.6	4.7	4.6	21.8
5	+1.0	38.0	37.0	3.6	3	+.400	21.2	4.0	4.3	29.7
6	–.7	39.3	40.0	8.1	7	+.170	25.4	4.9	4.7	29.7
2. X 8	2.0 ~~+15.6~~	34.5 ~~47.7~~	32.1	15	5 12	–.110 ~~+.285~~	27.5 ~~29.3~~	5.2	4.8	[illegible] ~~37.7~~
X 9	3.2 ~~+4.5~~	34.0 ~~36.2~~	31.7	3.1	4 5	+.2[illegible] ~~+.341~~	20.5	3.7	5.0	24.2 ~~27.5~~
[illegible] 11	+[illegible]	29.6	35.2	1.5	5	+.285	17.4	2.7	4.5	22.4
12			40.2	24	+3	–.	28.0	5.3	3.5	14
8	+1.6	33.7	32.1	15	12	–.110	26.6	5.2	4.8	23.7

8, 9 & 11 Bust

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113

NRDL Dr. Tompkins (Schwerdt) 4/10/57 114

Mission 8-6900, XT 400

House decontamination problem for Cowboy Civil Effects Test

Task 1st Recovery H+9

Must call Crosby AM 4/11

patt with wind 1 R/hr downwind @ 2 mile

14 R/hr @ H+1

Fizeau 8/500 100 mr/hr H+1 possible

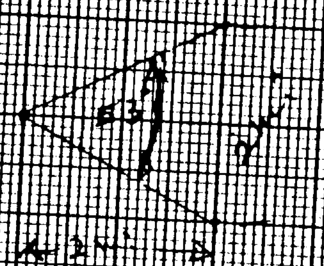
< 1 psi

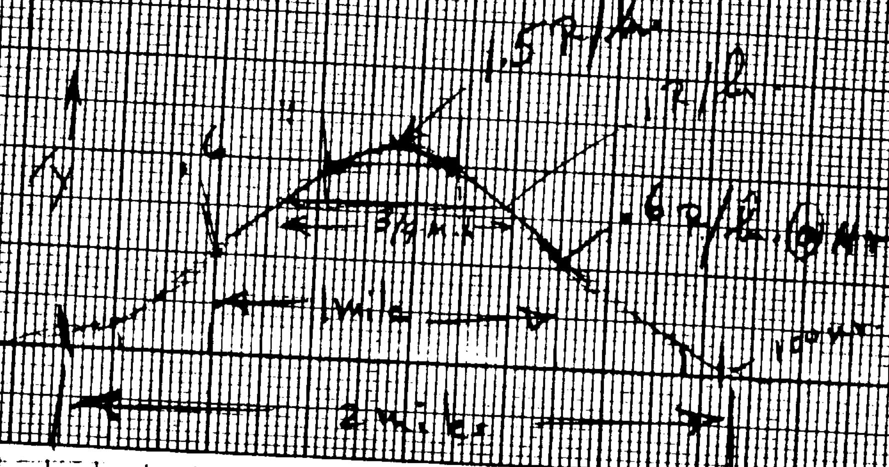
Winds correct direction

10 R/hr H+1 (No) Shot will be delayed for the purpose.

Fizeau H+1 .6 R/hr

$\frac{6.5 \text{ mc}}{15.0 \text{ mc}} \times 14 = 6.1$





$H = a + b \log x + h(\log x)^2$

$\beta = c + ds$

$H = H'(1 + \beta)$

$\phi_2 = e + f \log x + g(\log x)^2$

$H + \phi_2 + B_H = H_T$

$H = (a + b \log x)(1 + c + ds)$

$(a + b \log x)(1 + c + ds) + \phi_2 + B_H = H_T$

$(a + b \log x + h(\log x)^2)(1 + c + ds) + e + f \log x + g(\log x)^2 + B_H = H_T$

H_T not > 40.0

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Correct s for T-11:

RADB 9 Apr 1 (0430) (0450) AEC-1 13069 85501

10591 00000 70023 50658 00000 50875

69990 03314 40411 79998 03622 55555

00885 52652 11870 08594

22833 11598 33640 56674

44618 56726 05 10171 37313

X3636

LLNL

54 9 APRIL 0450 Second Transmission

30062 95999 03521 25451

05993 03636 20909 12999

03636 15496 08999 03121

10334 08999 02625 66666*

19113 17409 09709 10158

* 21413

Apple 29 Mar 55 0455 PST (Raob 0510)

AEC-1 13050 85486 09503 02009 70006 01626

01918 50871 66994 02730 40407 81991 02734

5— 00880 00575 11865 22840 09502 33746

03561 44677 00667 55660 02660 6— 59755

12 10171 38717 X2749

Wasp 29 Mar 55 1000 PST (Raob 1015)

AEC-1 18040 85491 12518 01917 70013 05991

02424 50880 65999 02541 40418 79993 02549

5— 00881 17510 11875 13515 22744 03623

33732 05634 6— 71306 67304 05 10177

39216 X2560 55016 12443

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116

AEC-1 30057 99996 02746 25438 07998

02748 20890 16999 02749 15477 08996

02653 10294 16999 0____ 6____ 18617

17909 10718 10147

[redacted]

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15 April 1115 (MST) (Roof 1130)

AEC-1 20031 05489 02108 70013 50621 02415

50868 69993 02429 40401 77994 02553 5____

00880 18544 11684 50665* 6____ 44977 41875

[03] 10171 36209 X2476

* 22618 55719

Second Transmission

AEC-1 30056 99990 02563 25448 04993

02477 20409 09995 02475 15505 06993

02468 19544 06999 02241 6____ 22509

21808 15800* 11810 10406 07513 06808

10190 05758 19158

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Take to Nevada: old Note Book, New N.B., WT-1157

[redacted]

	Shot	Date	Time	S	e (calculated)	H'	$\frac{1}{2}T$	$\frac{1}{2}P$	t_m
T	1	2-18	1200	13	-.17	16.4	21.0	2.3	5.0
	2	2-22	0545	12	-.16	19.6	24.2	3.5	4.3
	3	3-1	0530	12	-.14	24.6	30.3	4.7	4.5
	4	3-7	0520	12	+.27	27.2	45.0	5.4	5.0
	5	3-12	0520	3	+.35	21.2	37.0	4.0	4.3
13 Sh. 3.8 KM	6	3-22	0505	7	+.20	25.4	40.0	4.9	4.7
INV 3.55 KM	8	3-29	0455	12	-.14	25.7	32.1	5.2	4.8
IN V 2.65 KM	9	3-29	1000	5	+.12	20.5	31.7	3.7	5.0
INV 6.5 KM	12	4-15	1115	3	+.19	26.3	40.2	5.3	3.5
	13	5-5	0510	6	+.19	26.6	43.0	5.3	4.7
6.25 KM	14	5-15	0500	2	-.03	26.6	35.8	5.3	4.7

[redacted]

Shot e

T 1 -.5
2 -.5
3 +.5
5 -2.0
6 -1.1
8 +.5
9 +2.6
12 +1.7
13 -1.1
UK 1 +.7
2 -.2

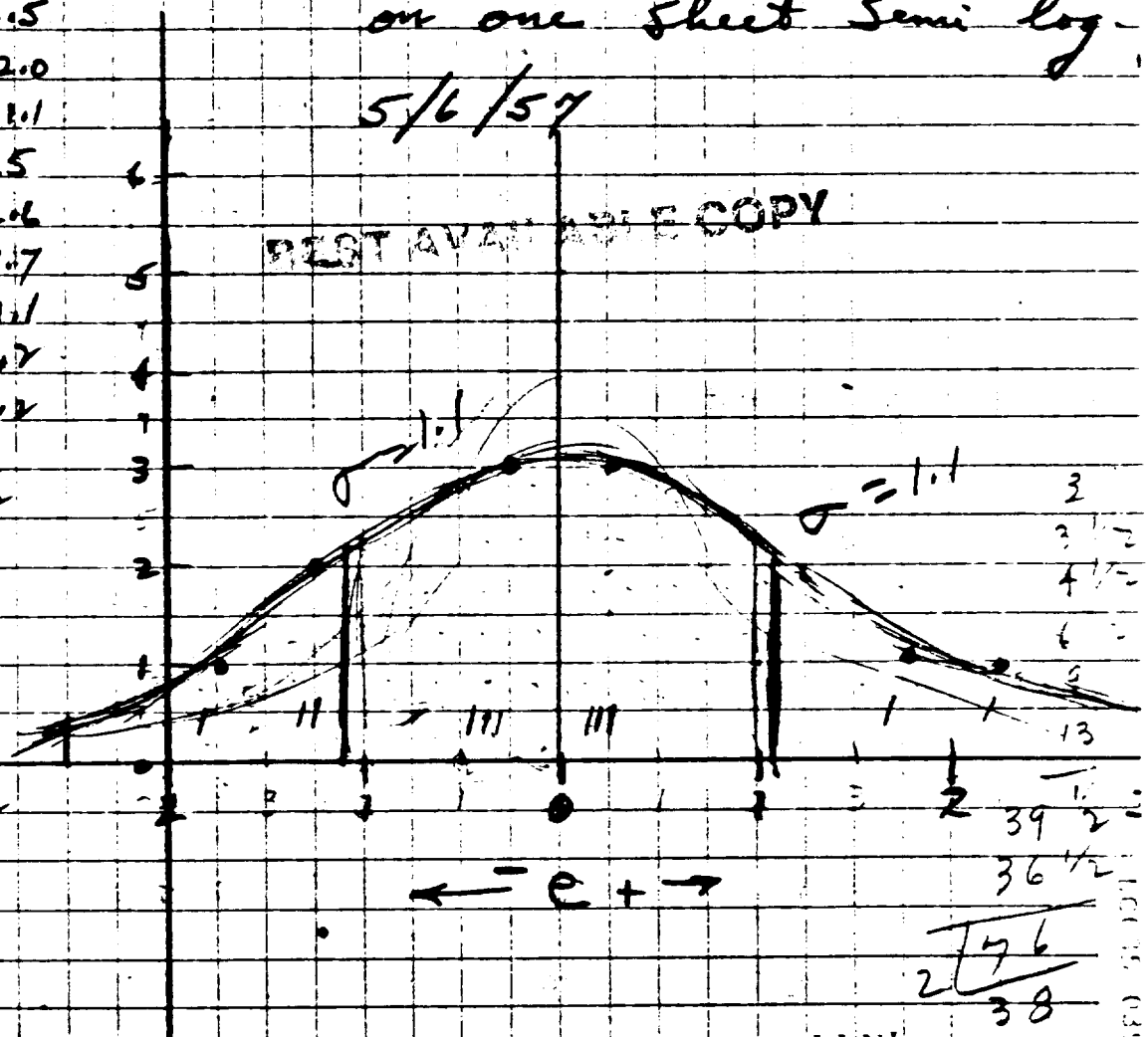
2½
4
- 5½ +
6½
8
10

36½

print on Calcomp for PLUMB

↓ to Set of 3 Curves on one Sheet Semi log.

5/6/57



$\frac{2}{3}(38) = 25.5$

[redacted]

[redacted]

158

SCALING for BOLTZMAN 12.5 KT

[redacted]

Cab 12 Tons
Sand 9 "
Para/Fuel 15 " } Cab

Tower Wts

Top	0-50'	88,900 Lbs
	0-100	115,280
	0-300	226,110
	0-500	356,740

$r = 184\ Y^{1/3} = 427'$

$\frac{427}{500} \times 356,740 = 304,656$

$+24,000$

$2 \overline{)328,656}$ lbs.

$164,328\# = 164$ Tons

164 tons
x .6
98.4 Mc (Steel)
55.0 " (Dust) (from Scaling Curve)
153.4 Mc (Veg)

WB = 340 Mc

Note: 0.6 x Tons (Wt of Structural Steel) = Mc F.O from Tow

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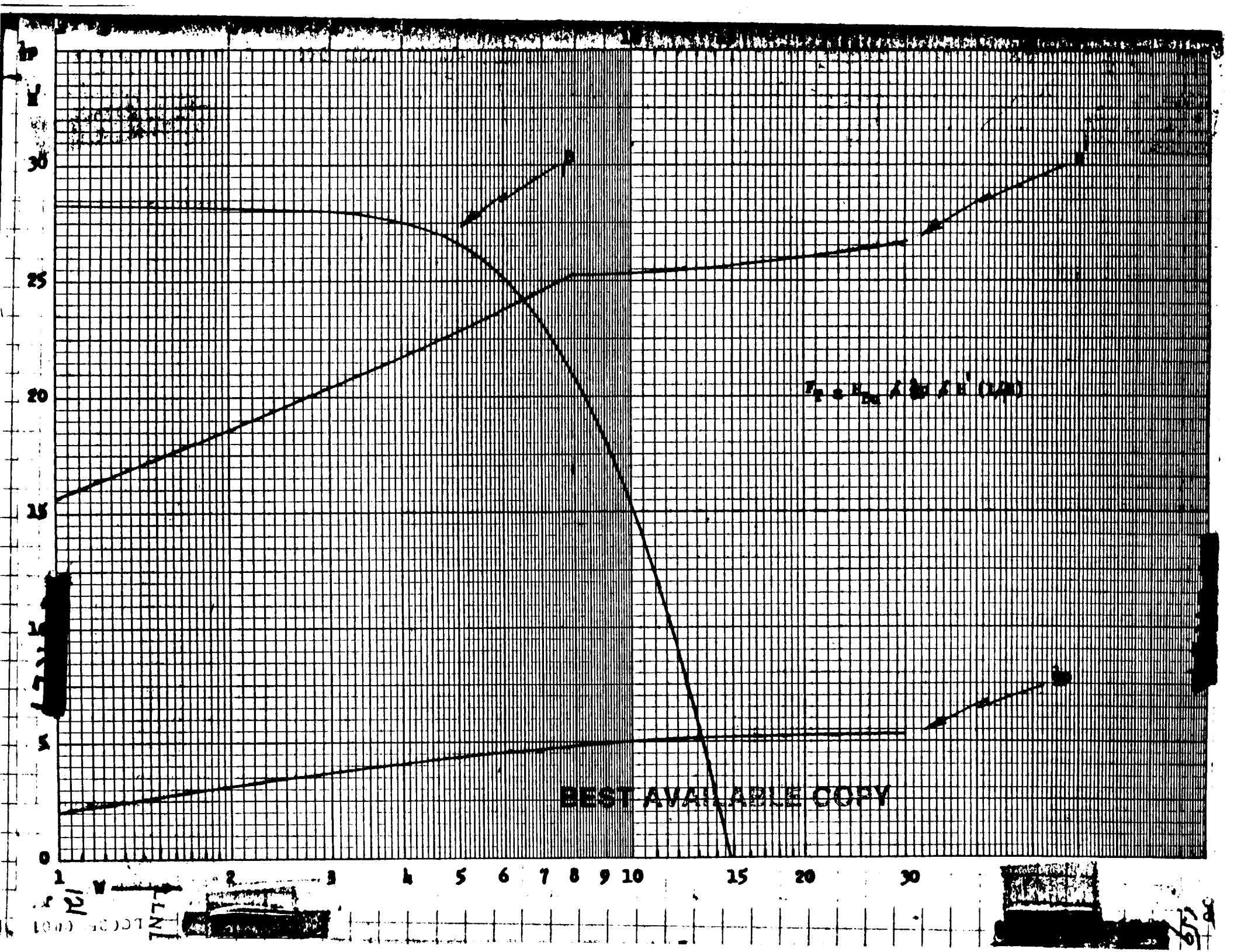
120

[redacted]


30
25
20
15
5
0
1
2
3
4
5
6
7
8
9
10
15
20
30
BEST AVAILABLE COPY

760

Area Elevations → Burst Hts.

[redacted]

T-1 - 4235.00 ft 5/24/57

T_2 - 4486.50

T_{2a} - 4382.35

T_{2b} - 4468.92

T_{2c} - 4479.12

T_3 - 4024.70 FRANKLIN

T_{3b} - 3997.40

S_{3f} - 4028.5

T_4 - 4307.50

T_{7c} - 4243.00 BOLTZMAN

B_{7b} - 4186.45

B_{9a} - 4214.5

B_{fa} - 3076.00

S_{3g} - ? ~ μ. Bendedix

S_{3k} - ? ~ μ. S-6

9/65

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[redacted]

[redacted]

[illegible] S[redacted] Pacific

Sir — English Author 2 Totem Pole Shots

Surge that follows initial rise of Cloud.

Weather Project

Make complete list of shot time winds operation by operation. For each shot draw hodographs & compute F.O. patterns. Draw up & classify Wx Charts. Bind together & analyze for similarity in situation i.e. what is a situation "such that in the past it was "fought by the panel".

[redacted]

[redacted]

8/1/57

162

193

Blank Pages

8-2-83

dr

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124

H. O. Pub. No. 165

"PACIFIC ISLANDS" Volume I

P. 579 -- "POKAAKKU (Taongi or Gaspar Rico) Atoll

South end, 14° 32' N. 168° 55' E. H. O. Chart 6024 - The lagoon is shallow, presents a greenish color, and has many shoal reefs. It is infested with sharks.

CLIMATE

POKAAKKU lies well within the northeast trades. There is an estimated 40" of rainfall annually, which is far less than that of the more southerly Marshalls.

The dry season corresponds to maximum development of the northeast trades from Nov-June, and is characterized by long periods of fair weather. 2 or 3" of rain may be expected during each of these months, falling mostly as brief showers. The trades below steadily with moderate to fresh velocities. The wet season, July-Nov., is relatively rainy, but fair weather often prevails for considerable periods. Since the mean position of the doldrums is south of Pokaakku, it does not experience the change from NE to SE winds that occur in the more southerly atoll. However, the fresh NE winds of the dry season may weaken and turn into easterly during this period.

Although rare, tropical storms have been known to occur in this vicinity. The most likely seasons are late summer and autumn.

[redacted]

[redacted]

TID-5252	Statistical Analysis of the Medical Effects of the Atomic Bombs from the Report of the Joint Commission for the Investigation effects of the Atomic Bomb in Japan		A. W. Oughterson G. V. LeRoy A. A. Liebow Army Inst. of Pathology	2-28-5
APEX-179	Cloud Dosage Calculations		R.L.Waterfield	4-5-55
AD-42468 (microcard)	Apparatus for Investigating Particle-Size Distribution of Aerosols. Progress Report for October '53		J.L.Hammond Jr. A.E.Williamson Jr. E.B.Dismukes,SRI	11-30-
AD-32611	Theoretical Investigation of the Growth of Aerosol Particles by Diffusion. Scientific Report #2	U	Poly. Inst. of Brooklyn	
NP-5485 (microcard)	Development of Radioactive Dust Collector: Progress Report #3	U	12-15-53 Batelle Memorial Institute	
"	Progress Report #4		Authors: Ellsworth,R.D. Spraker, W Yocom,	2-15-54
"	Progress Report #5			4-15-54
"	Progress Report #6			6-15-54
"	Final Report			9-23-54
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ARA-175	Three Dimensional Lethal Envelopes for the TU-4 (B-50D) at 35,000' and 6,000'. Atitudes Subjected to a 0.5 KT Atomic Burst	S	Allied Res. Fink,Athens	3-29-54
Item 54-54 #6	Detonation and Explosives Phenomena - Progress Report No. 6 - 10/1 to 12/31/54	U	U.S. Bureau	1954
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WADC-TR-54-59	Handbook for the computation of Dynamic Gust Loads Received by a B-29 Airplane Subjected to the Shock Wave of a Nuclear Explosion		Wright Air Development Center - Fink, Kane	S 1-54
MIT-RLE-	Information Flow in Task-Oriented Groups	U	MIT R. D. Luce J.Macy,Jr., Et.al	8-31-53
UCRL-2820	Arc Research. A Pulsed Beam Injection	S	UCRL-Berkeley L. Brown	9-2-54
UCRL-2821	Arc Research. A Pulsed Ion Source Gas Supply	S	UCRL-Berkeley L. Brown	12-3-54
UCRL-2865	A 36-Atmosphere Diffusion Cloud Chamber	U	UCRL-Berkeley J.B. Elliott G. Maenchen, et al	LLNL 2-18-

EG&G 1171	Coincidence of World Time Clock with WWV Standard	EG&G U E.F. Wilson	11-30-54
RM-1319	Analysis of Gust Loading of Aircraft by Atomic Bombs	Rand Corp. S Gore Elswick	7-1-54
UCRL-4453	Water Waves Produced by Surface Explosions	UCRL S Livermore S. Tamor	2-21-55

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WT-731	Operation Upshot-Knothole Project 3.19 Blast Damage to Coniferous Tree Stand by Atomic Explosions Report to Test Director	F. M. Sauer W. L. Fons T.G. Storey AFSWP	C	1-54
WT-737	Operation UK-Project 3.27 - Effects of Atomic Explosions on Field Medical Installations Equipment Report to the Test Director	E. S. Chapman AFSWP	C	2-54.
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CVAC-249T	A shadow Shield Experiment in the XB-36 Airplane Experiment 1.1E-CVAC-163	J.W.Harris W. P. Kunkel L. V. Woodruff Consolidated Vultee Aircraft Corp.	C	4-29-
WT-727	Operation UK-Project 3.8 - Air Blast Effects on Underground Structures · Report to the Test Director	N.M.Newmark G. K. Sinnamon AFSWP	C	1-54
WT-734	Operation UK-Project 3.22-Effects on Engineer Bridging Equipment Report to the Test Director	G. T. Moore AFSWP	C	2-54
WT-740	Operation UK-Project 3.28.3 — Pressure Measurements on Structures Report to the Test Director	L.M.Swift,AFSWP	C	3-54
WT-755	Operation UK-Project 6.8 Evaluation of Military Radiac Equip. Report to the TestDirector	J. M. Johnston George Poyet AFSWP	C	6-54
WT-814	Operation UK-March-June 1953-Project 29.4 Effective Energy of Residual Gamma Radiation	A.H.Dahl, et al Rochester U. School of Medicine	C	
WT-758	Operation UK-Project 6.10 Evaluation of Rapid Aerial Radiological Survey Techniques Report to TD	J. R. Price AFSWP	C	5-54
WT-768	Operation Knothole - Project 8.4-1 Protection Afforded by Operational Smoke Screens Against Thermal Radiation Report to TD	E.H.Engquist C. W. Forsthoff AFSWP	C	3-54
WT-772	Operation UK - Project 8.9 Effects of Thermal Radiation on Materials	T. I. Monahan AFSWP	S	5-54
WT-778	Operation UK - Project 8.13 A Study of Fire-Retardant Paints Report to TD	H. Miller AFSWP	C	12-53

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*NYO-4618 Radioactive debris from operation castle aerial survey of open sea following yankee-nectar. (US AEC New York Opera Operations Office) H.D. Levine, R. T. Graveson S 12-20-54

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MISC-1955-3 INFORMATION CONCERNING THE FORTHCOMING SHERWOOD CONFERENCE. (U.S.AEC Division of Research) A.S. Bishop S 2-7-55

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July through December, 1954

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UCRL-4359	PLATE MOTION STUDIES IN A [redacted] IMPLOSION TEST ASSEMBLY. (UCRL Livermore) Joseph A. Lovington	S	7-8-54
UCRL-4365	STUDY OF THE FEASIBILITY OF UTILIZING THE AEROBEE UPPER-ATMOSPHERE SOUNDING VEHICLE FOR SAMPLING RADIOACTIVE CLOUDS. (Aerojet Gen.Corp.) J. N. Brown, E. R. Bunker,Jr.	C	7-54
UCRL-4376	A PRELIMINARY REPORT ON THE PRINCIPLES OF THE BALLOON CASE. (UCRL Livermore) H. Brown	S	8-31-54
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UCRL-4403	A METHOD OF FORECASTING FALLOUT ISODOSE CONTOURS FOR NEVADA PROVING GROUND. (UCRL Livermore) A. Vay Shelton	S	9-28-54
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