

Copy placed in  
CAPT Harry H HAIGHT's file

410438

2 January 1980

MEMORANDUM FOR THE RECORD

R

Subj: Receipt of a Diary of Harry H. Haight while he was with the AEC

1. previous wife of Harry H. Haight  
CAPT MC USN, forwarded to this office on 27 December 1979  
a diary kept by CAPT Haight while he was involved with  
atmospheric nuclear tests. Having worked with the AEC  
for a portion of this period (approximately 1951-1954)  
he was apparently aware of weapon design information and  
some environmental and shipboard radiation monitoring  
surveys.

2. Due to the possible classified nature of some of this  
data, the diary has been placed in an envelop which has  
a classified identifier and has been placed in the  
classified safe in the CASTLE section.

*R. T. Bell*  
R. T. BELL

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DECLASSIFIED BY ACTING CHIEF ISCA  
SIGNATURE *John E. Bilye S.*

847  
3/24/89



DEPARTMENT OF THE NAVY PRIVACY ACT MATERIAL REMOVED  
OFFICE OF THE CHIEF OF NAVAL OPERATIONS  
WASHINGTON, D.C. 20350

IN REPLY REFER TO  
Ser 981T1A/1002  
3 January 1980

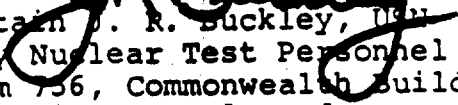
Dear

Your kindness in forwarding Captain Haight's diary regarding the atmospheric nuclear testing period is most appreciated. It includes some data that we did not have and may prove most helpful to us.

Personal data such as this has often been instrumental in providing new insight regarding specific details of these atmospheric nuclear tests. They are all the more important when provided by an individual as highly qualified and as involved as Captain Haight.

Thank you for sharing these records with us.

Sincerely,

  
Captain J. R. Buckley, USN  
Navy Nuclear Test Personnel Review  
Room 736, Commonwealth Building  
1300 Wilson Boulevard  
Arlington, VA 22209

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PRIVACY ACT MATERIAL REMOVED

MADE  
B&P NO. 3810½  
IN U.S.A.

PRIVACY ACT MATERIAL REMOVED

H. H. HAIGHT

A Diary diary  
kept while with  
the A & C.

Thanks for your  
kindness.

Cdr.

u

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PRIVACY ACT MATERIAL REMOVED

1 mile/hr = 1.4667 feet/sec.

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3 April 1952

BERYLLIUM CONFERENCE

Mr. Eisenbud -

Commission had over 50 deaths from Berylliosis by 1947. Oxide, sulfate, chloride, fluoride, etc. all involved but BeO seems to be bad active.

Above 1 milligram/cu meter, incidence was 100%. At 8  $\mu$ g/m<sup>3</sup>, there were no cases. At 100  $\mu$ g/m<sup>3</sup>, there were some. MPE was put arbitrarily at 2.5  $\mu$ g/m<sup>3</sup>/meter.

Only 1 case of acute pneumonitis in past 4 1/2 years.

Clifton oxide was more toxic than Brush oxide. Crystalline structure differed. Clifton oxide is no longer made.

Known cases in population of Ohio city were caused by 1  $\mu$ g/m<sup>3</sup> as calculated & measured at 1/4<sup>th</sup> mile.

0.01  $\mu$ g/m<sup>3</sup> is therefore set as MPE for working conditions & living. 2  $\mu$ g/m<sup>3</sup> is MPE in plants.

Inside the plant - 1700 employees  
only 6 cases in 10 years - No one  
employed longer than 4 months  
developed chronic disease. These  
cases were all exposed to BeO.

Disease can be reproduced in  
laboratory animals but with difficulty.  
Most fatal cases died on 25<sup>th</sup> day  
acute Recoveries occurred in 4 mos.

2713 workers  
90 acute - 10 deaths.  
5 chronic  
121 Tracheo bronchitis  
95 Dermatitis. (7.5%)

Chronic case - girl 5 breast carcinoma  
who later developed Be & was diagnosed  
metastasis in Milwaukee & Mayo.

2<sup>nd</sup> case apparently improved with  
later pneumonia

Chronic case in Sandy work  
looks exactly like disease. Dr. <sup>Sanderson</sup> <sup>Milwaukee</sup>  
Dr. Harriet Hardy - classification

- ① Asymptomatic
- ② Non-disabling
- ③ Disabling disease -  
lethal.

recission & exacerbations  
nonsistent & embolus T.P.

④ Recovery - (Spontaneous)

Kidney stone  
in 20% of  
cases

Pneumonia

Nature of -

Auth. Act of Congress  
9 April 1943

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Wednesday - 30 July.  
 Fall-out studies for Ivy.  
 50 Stations in US + 50 Sta. elsewhere.  
 Mobile teams to follow cloud at  
 2-500 miles to determine max  
 fall-out as a base line.

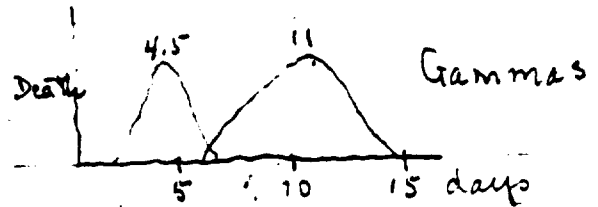
(3) single individual at Hawaii,  
 Kwaj., + Guam. Each of these  
 should be supported by 5-6  
 enlisted monitors.

Dr. Palmer is under contract =  
 AF to furnish 70 hr forecast  
 of trajectory of cloud.

Guess.

Max - 4 r/hr. at 150 mi. in 10 hrs.

Air Transport - VRI  
 Patuxant, Md. - Capt. Campbell  
 Cdr. Marcus - Exec.



$$1.37 \times 10^{10} \text{ n/cu}^2/\text{sec} = 1 \text{ Rem.}$$

Biological effectiveness of thermal  
 neutrons by 5 methods = 1.7

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Proposed to U.K.C.

1. Hazard of flying thru clouds
2. Air blast studies
3. Biological materials - corn, etc.
4. Survival studies - mice
5. Flash blindness
6. Noise problems
7. Effects on field hospital
8. QM uniform experiments
9. Chem. Corps - residual radiation
10. Bu. Standards - X-ray spectrum

Dr. Shipman:

- 200,000 r - all dead in 1 hour
- 150,000 r - dead in 600 r
- 100,000 r - 1/2 to 2 hr.
- 25,000 r - 2 to 3 days
- Blood K<sub>225</sub> to 10x normal
- no other pathology

	RWL
Natural decay - fission products	300
1 hr = 300 r/day	296.8
1 day = 60 r/day	278.4
1 week = 0.64 r/day	252.8
1 month = 0.04 r/day	150
1 year = 0.004 r/day	100

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Tolerance limits established for fall-out at 2x integrated over  $10^8$  yr. period. On basis of  $\frac{1}{T}$

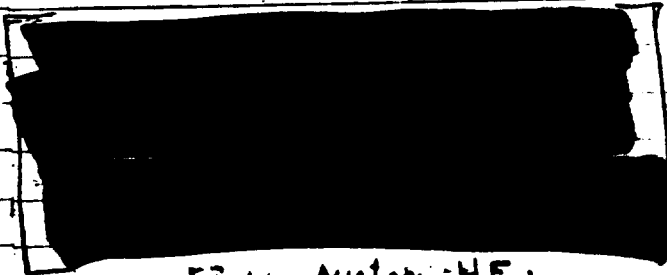
1 hr = 400 mr/hr.  
 1 da = 17 mr/hr.  
 1 wk = 2 mr/hr.  
 10 yrs = 0.025 mr/hr.

According to Gabor felt calculations, 1 kT has an activity of 300 mega curies -

1 kT = 200 Curies of  $^{90}\text{Sr}$   
 = 300 mega " of total fission product  
 Saturated fission product activity is about 7 curies per watt of reactor power.  
 These are  $3 \times 10^{12}$  curies of  $^{90}\text{Sr}$  within an area enclosed by an infinitely thin line of R reactions.

Time table of events - 20 kt -

T (sec)	Event
0.4	Fire ball's max. radius
0.4	Shock wave @ 500 yds.
1.29	" " " 1000 "
6.44	" " " 3000 "
12.0	" " " 5100 "
12.0	Fire ball reaches 2000 ft.



Surface: HE





Kang - will augment transport -  
AFOTE classified - B.M. note  
U Station envelope State Dept.  
Station are "confidential"

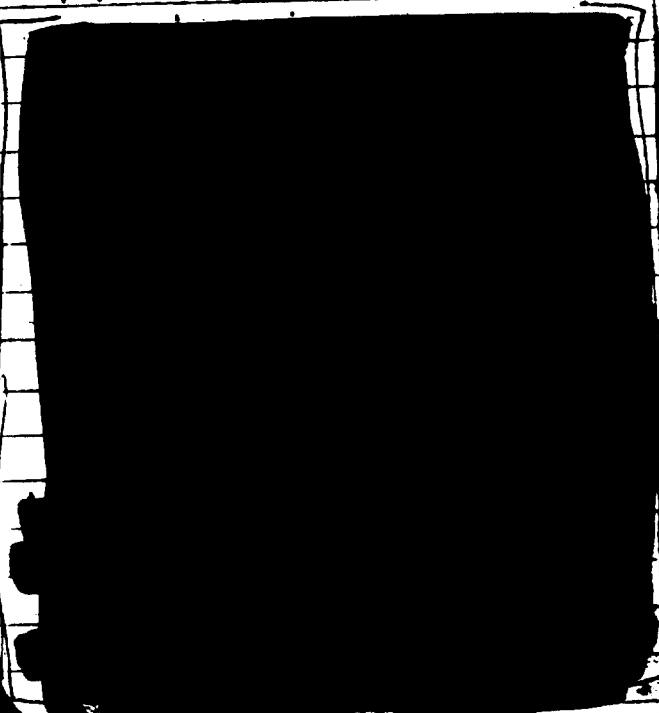
legality of flying over  
Malaysia -

$X^{\circ} F = \frac{9}{5} T^{\circ} C + 32$   
 $X^{\circ} C = \frac{5}{9} (T^{\circ} F - 32)$   
 $X^{\circ} K = T^{\circ} C + 273.15$

Station no. at dawn - tenative

July - Fall '53  
LASL - King, ...  
Mike ...  
3. Possibly 2 smaller

Uphole Spring '53  
LASL - ...



Demons - Spring '54

LASL - 6 Towers + 3 d... [redacted]

WRL - 2 Towers

Return - Fall '54

LASL - About the same

WRL - 2 Towers

- AEC-43/591 - Subject Matter for Mutual discussion of British & C
1. Declassifiable Subject Matter
  2. Health & Safety
  3. Radioactive & stable isotopes
  4. Nuclear & extra nuclear properties of all the Elements
  5. Detection of Distal Explos
  6. Fundamental properties of Reactor Materials
  7. Extraction Chemistry
  8. Design of nat. U. from react
  9. Research & low power react

? End result of Col.  
Walter Hill - USMC -  
captured on Guam  
for Mrs. Shipman -

Los Blancos - Sept 1952 -

1. tracing says to see Smal  
or blood agglutination.
2. Wright Langham says relation  
of military + Shipman are all  
ironed out and very satisfactory  
No further action needed. Bradley  
has A-5500 letter to be used in  
future if needed.
3. ? name of Navy (pilot).  
now studying cataracts @ base

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Conference Biol + Med. - 10-8-52

? Maynard's plans for 600 mi  
? Use of helicopters for some  
of this

Eisenbud may have to take  
over. Has 12 air triggering  
devices in 5 gal. paint can  
available. All work.

20<sup>th</sup> air born sampler - 12  
are made of ICI crystals +  
(4) have recorders. - double  
tape. These had to be flown  
at 2000' in Nevada because  
of sensitivity. Reddily  
adapted to Copter use.

9-17-52 - JTF-132 - 61010

Capt. Batiste Lt Wise -  
Stan Burris - J-Div. Los Alamos  
132.1

Cul. Sacketon is Rus. Maynard's 1303

Forwarding address: -  
Cdr JTF 132 Feb. - Eniwetok

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Atomic Defense Officer Pea:  
Lt. Morton - 24205

Dr. Krugz - Defense School  
Hessler - instructor  
Krugz to be on LST  
@ Ujaling.

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Handwritten notes on the left page, including names and dates, though they are mostly illegible due to the high contrast of the scan.

COPY

Handwritten notes on the right page, including names and dates, though they are mostly illegible due to the high contrast of the scan.

Mike SHOT - 1 Nov 52

30 Min	Base 52000
	Peak 76000
45 min	Peak 116000
1 hr	140000

2 hrs. - Navon - Lenti + 2 dops OK

Sampler glass got 70 r/hr  
 in wing tanks. Peak  
 intensity 500 r/hr. at 42,000  
 300 seconds from 1r to 1r  
 Pilot dose 3.4 r  
 Crater almost 1/2 mi. x 50-60'  
 Patms snapped off at 5 mi.

King - 16 Nov 52

Bomb + ship back in Laguna 1430  
 Red life recovery mission  
 complete 1530 Atoll readings  
 barely above + miles except  
 No. End Zero -  
 Estimate 425  
 Max  $5.4 \times 10^5 = 3.4$  low readings  
 cloud deny may exposure -

NEPA - on dump

10 min	1 hr	1 day	10 da
$8.6 \times 10^5$	$5 \times 10^5$	$1.1 \times 10^5$	$1.9 \times 10^4$

Inside shield 0.25 r/hr -  
 (Assume 50:50 mixture Y + n.  
 $LD_{50}^{30}$  - Ages appears to be 550  
 Crew shield =  $25000 \frac{r}{hr} = 10''$  Boron  
 impregnated rubber + 1/2" Lead.

1153 Advisory Panel ?

Shifman  
Holtzman  
Bugher  
Andrews  
Haight

Claus - Health Physics -

Dunham - Indust. Medicine -

SFOO - 14 Jan 1953. Albuquerque

Tyler - Elliott - Graves - Mastik  
Houston - Campbell - Cole - Hayward.  
Cox - Eisenbud - Bugher - Salisbury  
Clark

Short range hazard. - Airborne dust  
5/7 Ogden  $45,000 \text{ d/m}^3 \text{ air, met}$   
(100 mf)

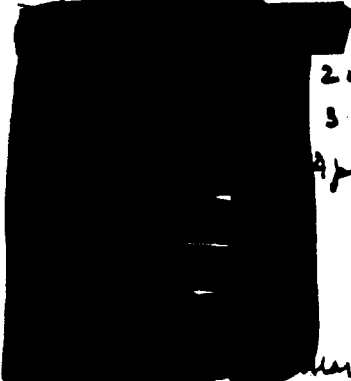
This is equivalent to 5 days of  
inhalation of natural radon in air.

Similarly, the total fall out to date,  
is much less than the total radium  
in the earth crust.

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Upshot

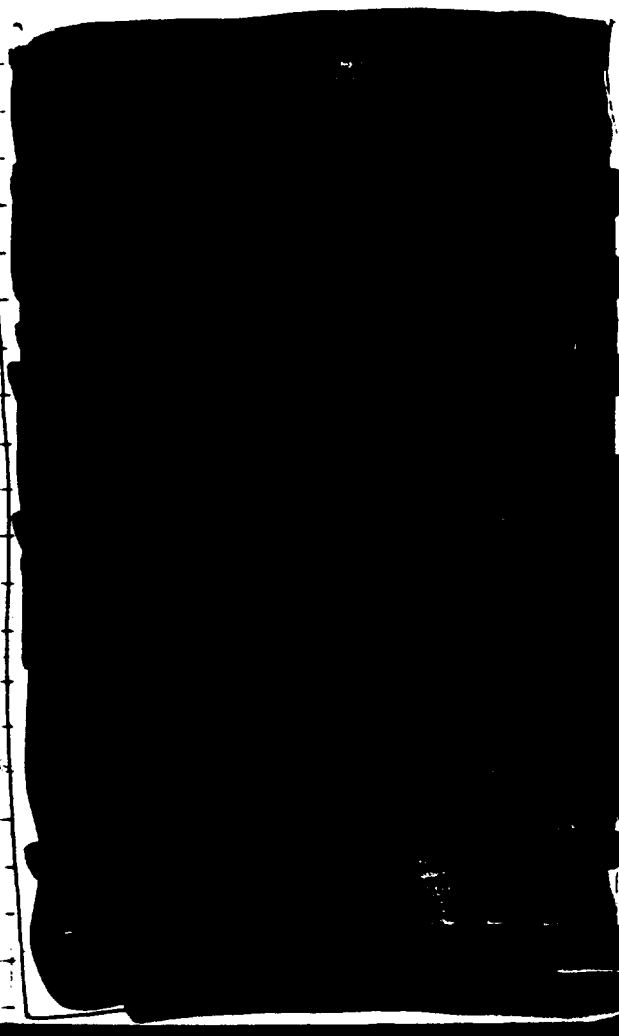


165  
15 800' Tower  
24 35-40' Tower  
31 2-3 Tower  
Apr 6 6 ft - 20' Air Drift  
11 5-10' Tower  
18 1/2 50' Tower  
25 35-4' 2nd "  
May 23 7 3rd "

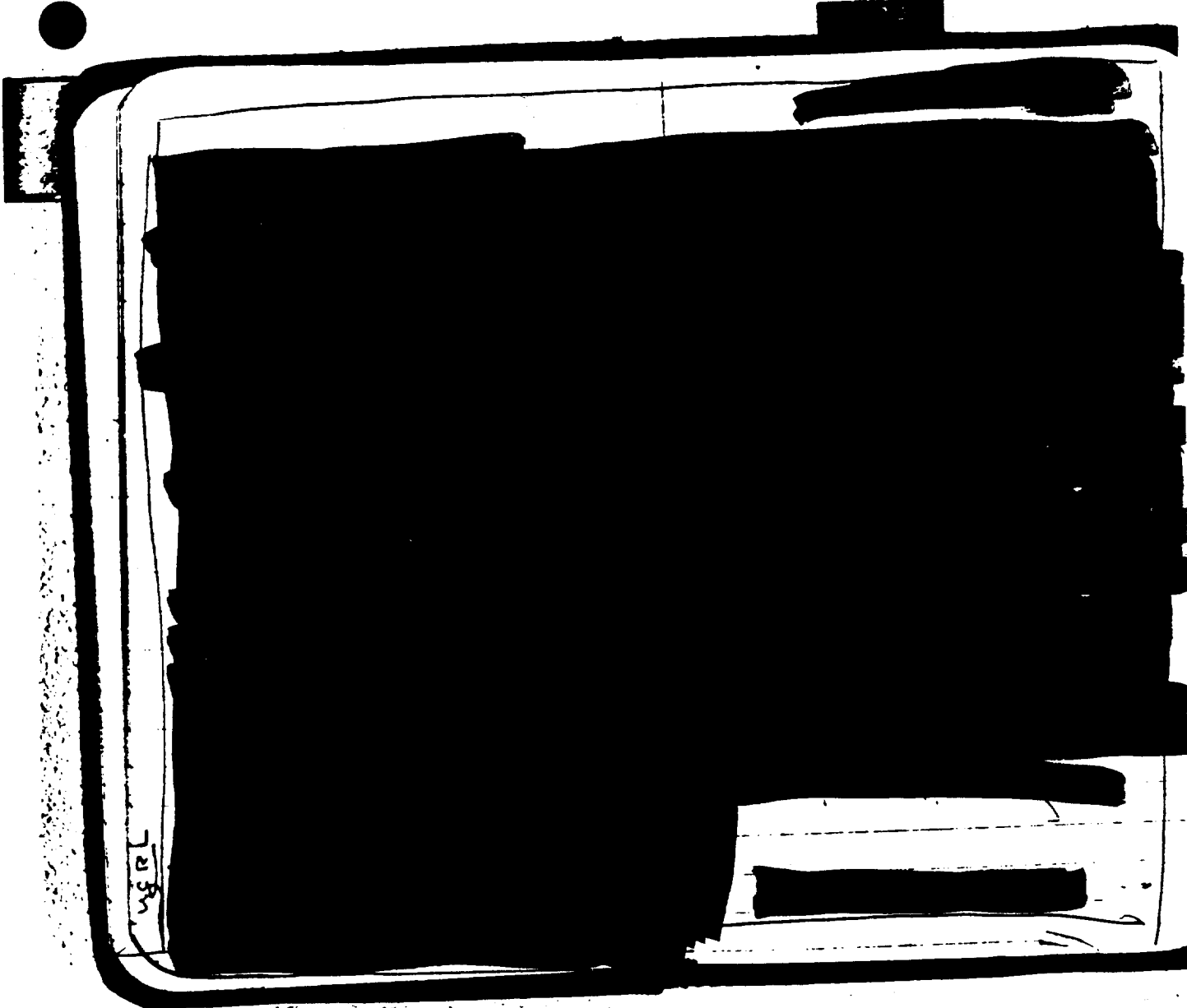
Knothole



May 4 Air Drift  
May 7 30 2420 Drift  
May 21 4 500' Burst







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UCLA  
243  
Feb 53

Larson's Report on Snappers

Based on Sta 25 (Typical Station) on Snapper #6 where fall-out occurred early (1.45 hrs), the air corrected to mid point of total operational period was calculated to be  $0.0385 \mu\text{c}/\text{m}^3$  of air. A normal individual breathing  $20 \times/\text{min}$ , and out down 24 hrs/day and assuming 5% of inhaled activity retained in the body, would retain  $0.009312 \mu\text{c}/24 \text{ hrs}$ . An individual could therefore exist for 100 days (assuming no decay) in this atmosphere before obtaining a MPE of the most serious (Strontium) of the fission products.

Approximately  $3.7 \mu\text{c}/\text{ft}^2$  of principally  $\beta$  will give a reading of 1 mr/hr gamma! (Same report)

	Elevation
Dispensary rd.	3760'
Pass	4100'
Frenchman	3075' Lake
Yucca pass	4050'
Yucca lake	3914'

To Change from Kelvin to F  
Subtract 273  
multiply by  $9/5$   
add 32

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$100 \mu\text{c}/\text{m}^3$  is the max. permissible as set by the Jangle Feasibility Committee

HAIL STORM - WASHINGTON

26 May 1953.

NRL + NBS. -

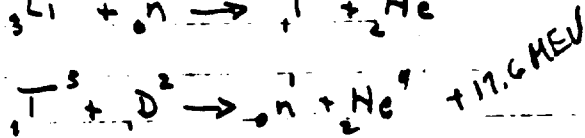
Water  
 from  $5 \times 10^{-4} \mu\text{e/cc} - (3\text{X})$   
 Hail  
 Stones (Tolerance  $\text{H}_2\text{O} = 10^{-7}$ )

Air  $10^{-14} - 10^{-15} \text{ curie/cc} = 10^{-8} \mu\text{e/cc}$   
 (Tolerance air =  $10^{-9}$ )

Spring 1953 - upshot - Knot hole.

	13 wk	00	Backlog -
St. George -	5.1	6.1	0.6
Rockville -	2.8	4	2.8
Santa Clara -	1.9	2.7	2.6
Bunkerville -	1	180 mi	8.
Hurricane -	9.8	5.2	2.5
Springdale -	4.	5.	1.0

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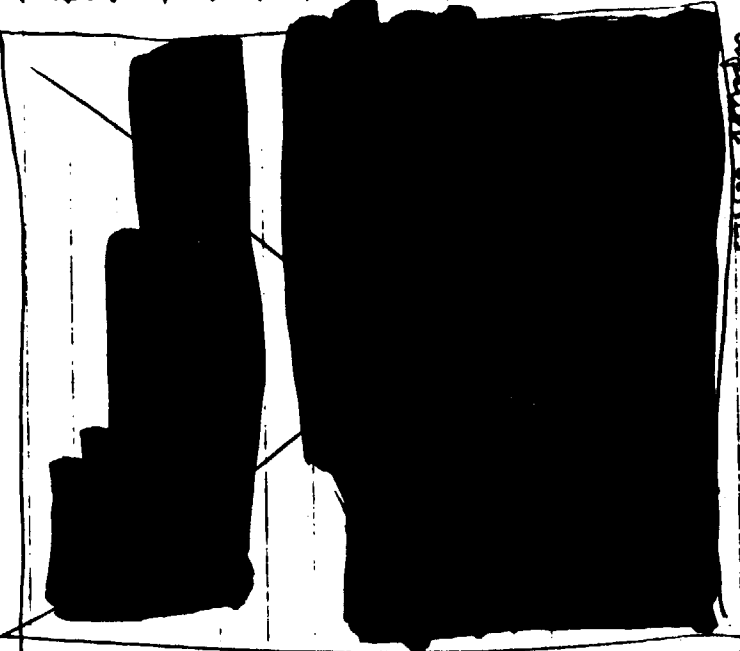


83% Heat, 6% gamma -

11% of Total Energy is  
 in potential fall-out.

1 fission  $\text{U}^{235} \rightarrow 180-200 \text{ MEV}$

updater series -



1 KeV = hybrid  $^7K^0$

Neutrino detection  $H^1 + \nu^0 \rightarrow n^0 + \beta^+$

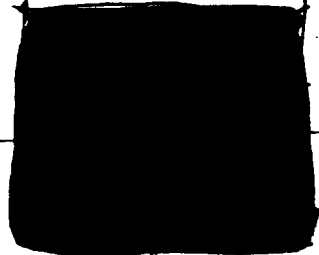
Sheep Problems:  
Send 10-12 sheep to WRNL.  
? some to Hanford.

1 firm Environmental USPTs.  
1 Rocky Mnt. Lab.  
Veerstra - NRDL.  
Thompson - Los Alamos.  
1 PHS - Utah - Div of Disease Control.  
Dr. S. J. Wilson.

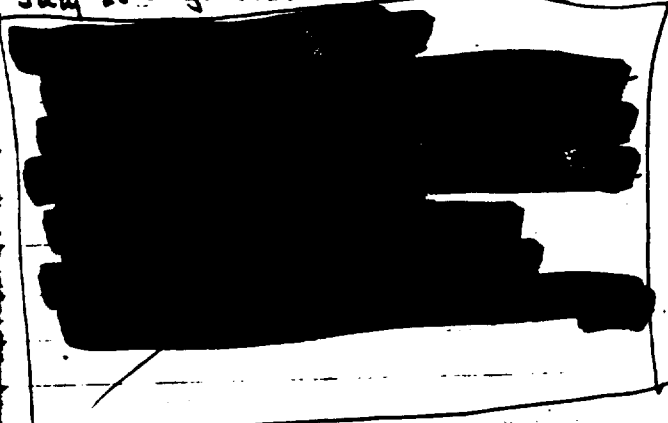
Did all dead sheep from  $\beta^+$ ?  
" any from " ?

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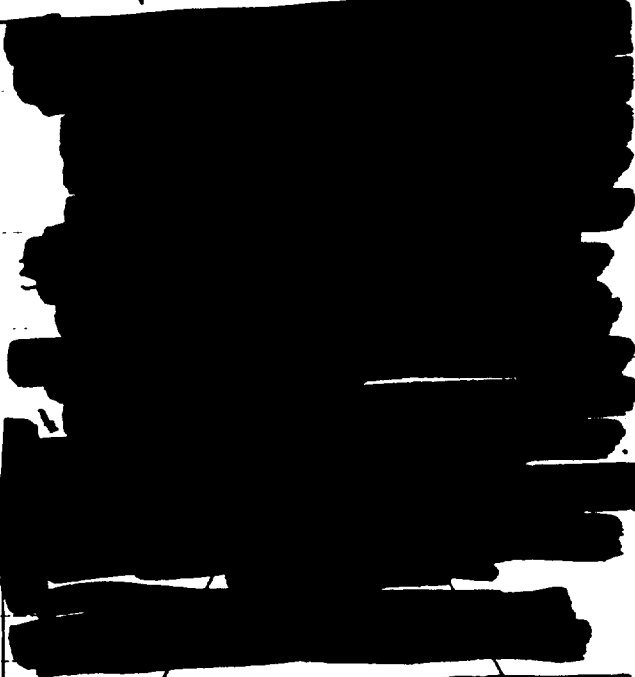
16 June 1953 - Castle 3  
2 Shots at Eniwetok + 4 at Bikini



July 20<sup>th</sup> forecast -



23 July - A1 Graves at AEC - Castle -



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U. K. - 1 Mar - 9 June

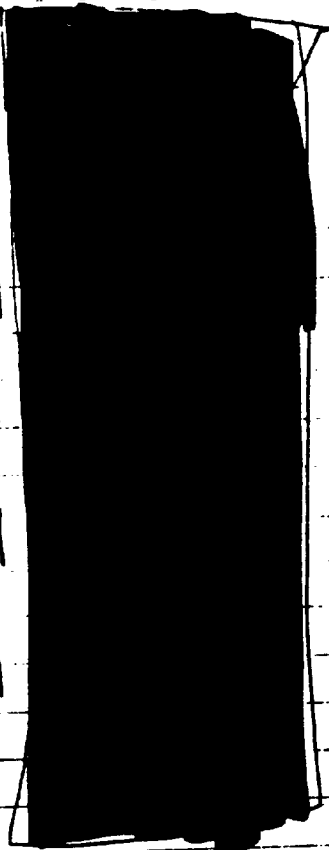
Probable  
Yield

Estimated  
Yield

WT

Diam

Length

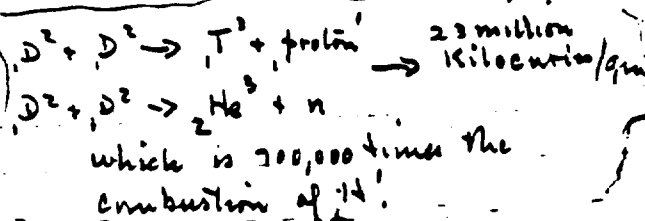


	Population	Reading of
Alamo, Nev		0
Bunkerville Nev.	202	5-8
Cabeente Nev.	1000	0.15
Cedar City Utah		0.5
Crystal Nev.	7	7.
Crystal Spring Nev.	1200	0
Dry Lake Nev	35+	0.6
Glendale Nev.	15	0
Groton Mine Nev.	3	0.6
Hiko Nev.	6	0
Hurricane Utah	1500	7.7
Lincoln Mine Nev.	270	3.5
Littlefield, Ariz	50	1.8
Longdale Nev.	350	0
Mesquite Nev.	600	1.9
Moapa Res. Nev.	250	0
Overton Nev.	600	0
Overton Landing	150	0.01
Panaca Nev.	300	0.25
Pioche Nev.	2000	0
Riveride Cabins Nev.	14	12-15
Rockville Utah	300	6.
St. George Utah	5000	4.75

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$D^2$  is part to 3350 parts of  $H^1$  in water. One gal of water contains  $\frac{1}{8}$  gm of  $D^2$ . If consumed in thermo-nuclear reactor, this would yield seven million kilocuries or 220 times the energy from 1 gal. gas.



Stelator - Perhapsatron -

SHOT EASY

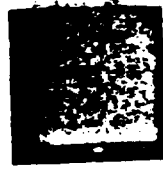
- 22 hemisphere sta - 675 - 1650
- 105 double + 23 Single Cyl. - 1075 - 1440 - <sup>238 lines</sup>
- 7 Phantom 900 to 2267
- 6 Thermal - 62 animals 1350 to 5564
- 6 High dose - 300-800

174

- 140 dogs -
- 167 swine
- 6000 mice

62 anaesthetized for thermal.

Range - 675 yds to 5564 yds.



[REDACTED]

[REDACTED]

[REDACTED]

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Operation Castle - Mar 1954  
Kwai - Adm Green - Druc (H)  
Warrant Spangler - Capt (Exec)  
Iave Sooy -

Utirik - 154  
Reading at 32 hrs 160 mr  
total exposure for 5 days  
max = 175

Rongelap 66 + 16 = 82  
first positive known reading  
at 14 + 51 hrs = 1,400 to 1,500 mr/hr  
Total exposure - 48 hrs =  
min 140 - av = 170, max 190

Rongerik - 28 weather men  
film badges average ~ 40r

Recheck on Rongelap by  
personnel of PBM with

four instruments - readings  
taken at 36 hrs = 1400 mr/  
max dose ~ 130r.

Bairoko	0830	236 mr
Ester	"	100 "
Curtis	0840	10-30
Phillips	0945	0-1
Renshaw	1330	3-4
PC 1546	1300	3-4
Sioux	1402	8-12
Cuerpa	1330	5-14
Apache	1400	5-15
Gypsy	1303	10-13
Belle Gritz	1645	100

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Weather Group -

3 Army -

25 Air Force -

AV.	Neut	Lymphs	Neut	Lymphs
8000	57	39	2 Nov 8916-62-34	
6600	64	34	8 " 6664-64-33	
5800	68	28	10 " 5976-61-32	
5966			11 " 6300	

Basophil - fall out start 0704  
 lasted 12 min. - looked like  
 "Tide" Reading top side = 5r nr  
 below deck = 300 nr/hr -  
 Total top side = 5r  
 " below = 1.2 r.

Scupper debris readings  
 on d-day = 25 r/hr

KWAJ Friday - 19 Nov? date Kwaj.

- 1 - 73 yr old man ± deceased is sick -
- 2 adults + 8 children exhibiting WBC av. 6270 - range 2400 - 13450.
- 19 below 5000
- 6 below 4000

Questionable oral lesions de w... follow lowered WBC.  
 Some smears seem to show early regeneration - Peculiar type of cells.  
 Mothers unhappy about taking blood from children.  
 Refuse to have anything done on Isndr.

? Rectal lesions.

Opinion - max possible host. necessary = 30; max time needed = 2-4 weeks.

uterik sick call over Rongelap because of lack of atten? over

Average urine output for  
natives 400-500 cc/day. Probably  
due to habit of water saving -  
99% literacy -

Weather despite parallel Ruyda,  
to some extent but none  
over.

23-Mar

Tree climbing episode + coconut.

5 Ruy 4 Wink wear team

7 Bopnis of skin loss  
taken yesterday -

See page after next -

Gabriel - assume  
Distribution

Gabriel: 20-90,000 M.T.

Sunshine I - > 1000 M.T.

Sunshine II > 25,000 M.T.

1 gm Sr<sup>90</sup> RT of bone-

K1-90 335 → RB 90 2.7M →

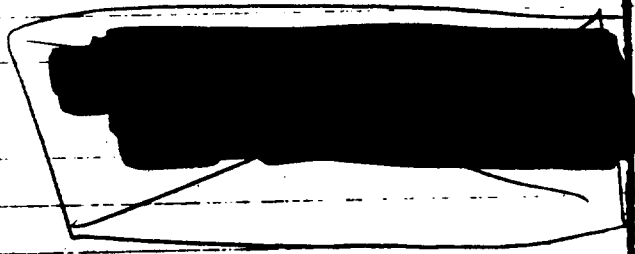
MPE = 1 µg Sr<sup>90</sup> fixed in bone

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FRANK E. GARRETT, MD  
APO # 187 (HOW)  
% PIMASTER S. F.

HOME

Dr. Garrett and Dr. Curtis  
at Pamy -  
Dr. W. Hall @ Kwaj - don  
not want to go to  
Hawthorne, Nevada.



Thurs - 25 Mar 1954 - Kwaj M.F.

Lesions appearing on dorsum of feet.

Neck lesions not advancing  
no ulcerations to date -

WBC on rise, platelets further  
depressed. No hemorrhage, no  
illness.

4.1 want calculator, slide rule,  
1000 haematocrit tubes,  
Majuro control studies, all  
animals (domestic & otherwise)  
on Rongelap

Friday - 26 Mar -

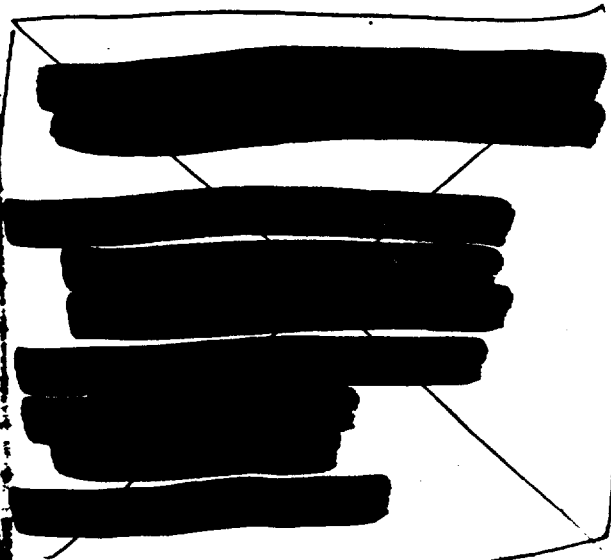
31 Epilating  
40 Skin lesions - neck - feet  
7 scalp.

CBC - same -

A  
24  
6  
5

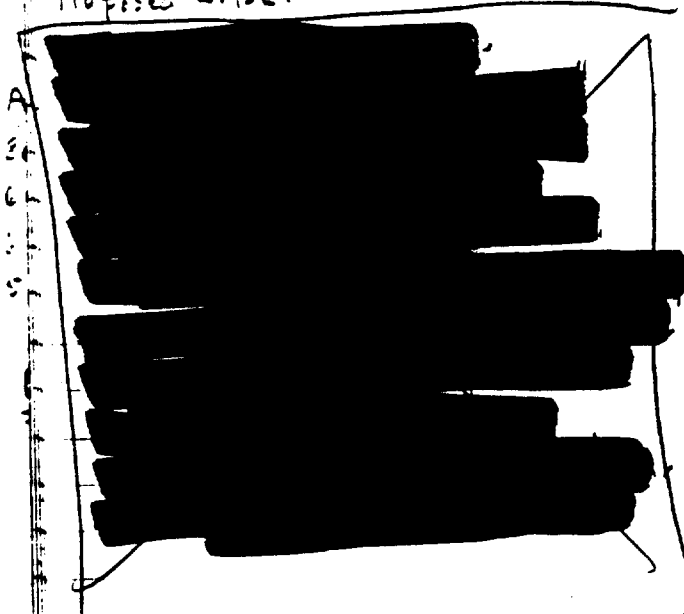
1 Megacurie / mi<sup>2</sup> on flat  
surface = 4 r/hr.  
300 megacuries / KT equiv.  
1 hr. after burst

Between 1 hr and 7 hrs, the  
activity falls 10 times. -  
Between ~~7 hrs~~ 2 wks +  
80 days - 10 times again.



Natural decay of Cesium-137  
1 hr. = 300 r/day  
1 da. = 60 r/day  
1 wk. = 0.64 r/day.  
1 mo. = 0.11 r/day.  
2 mo. = 0.04 r/day.

Proposed LASL.



Brennan - Prompt: delayed = 20:1  
Delayed have been detected as late as 10

<u>Andrews</u> - $\mu$	100%	1.5m
	80%	10 S
0.5-5 mev.	50%	1 S

400 f dose - $\mu$ only -		
<u>Air Burst</u>	1 Kt - 2600'	0.7 mi <sup>2</sup>
	100 kt - 5600'	3.5 mi <sup>2</sup>
	1 Mt - 7400'	7.4 mi <sup>2</sup>

<u>Surface</u>	1 Kt 2400'	0.6 mi <sup>2</sup>
	100 kt 5500'	3.4 mi <sup>2</sup>
	1 Mt 6500'	4.8 mi <sup>2</sup>

Dose in 1 hr. from Surface -

Surface	Underground
1000 f - 13 mi <sup>2</sup>	7 mi <sup>2</sup>
400 f - 21 mi <sup>2</sup>	11 mi <sup>2</sup>
100 f - 28 mi <sup>2</sup>	20 mi <sup>2</sup>

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HARRIS

Spleen thymus studies  
on female mice -

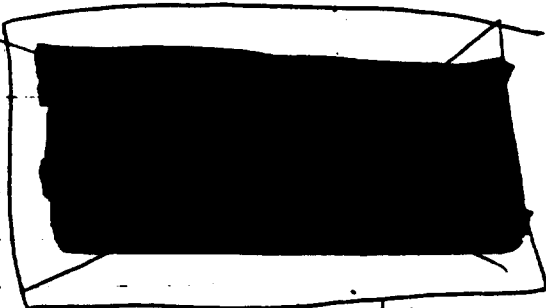
$$1.2 \times 10^8 \text{ n/cm}^2 = 1 \text{ r } 250 \text{ Kup/Ku}$$

$$\text{RBE } 14 \text{ mev } \bar{n} = 1.6$$

$$\text{RBE } 7 \text{ mev } \bar{n} = \text{"between"}$$

ORNL - Energy released  
for fission in U:  $190 \pm 5 \text{ MeV}$

A  
8  
6  
5



15 knot wind

Yield	Length	Width	Area -
1MT	52	12	470
10MT	150	84	3900
15MT	180	40	5400
60MT	340	70	18000

Linear dimensions + contour values  
as "yield" and area as  $y^{2/3}$

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Energy Equiv. of Fission of  
1 Kg of  $U^{235}$

20,000 Tons TNT

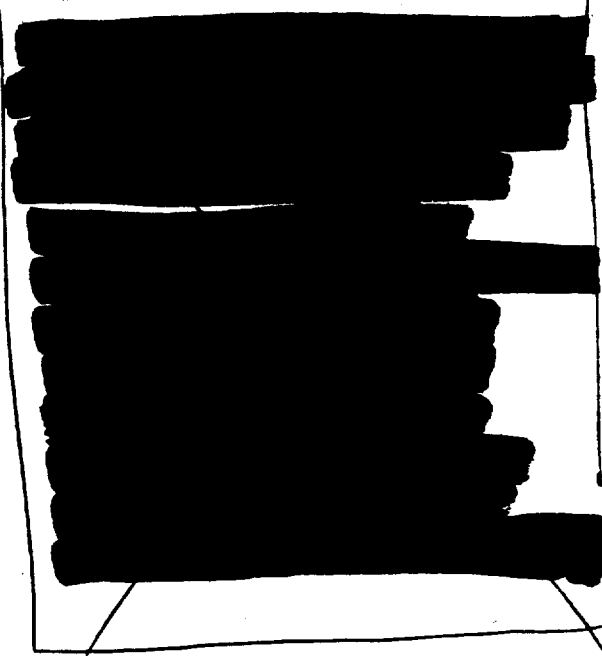
$2 \times 10^{13}$  Calories

$8.4 \times 10^{20}$  Ergs

$6.2 \times 10^{13}$  foot pounds -

$2.3 \times 10^7$  Kilowatt hrs.

TEAPOT





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301 Harrie - Sayles

Garage doors -  
Basement screen  
Basement floor  
Toilet in basement - ? Shower  
Redec. 2<sup>nd</sup> floor  
Hand rail - staircases -  
Rail - tub.

? Benefit Ins. -  
? Omaha -  
? Medicare? 9<sup>th</sup> Naval Dist. -

Randozzo Lass -  
Purdey (Dont),  
Lane  
Denny  
Bannock

sherrif Hild

22 Sept 1960 Start max 15

Newberry State Hospital  
Box #9 Newberry, Michigan.  
T.W. Thompson M.D. Sup't.  
W.R. Purmort M.D. Asst Sup't  
Angus J. Kault - Business Exec.  
Ext 600.

Lyon Movers - Mr. Hedman.  
Lyon Van Lines Inc  
2090 Dexter Ave. (9)  
AT-2-9000

U.S. Naval Supply Depot  
Bldg 57, Seattle 98 Wash  
Tel AT-3-5200 Ext 286-287  
Household Goods

Realtors - Dolores Edgerton  
North End Brokers Assn  
Bothell Way  
Tel - EM 2-4420 Mrs. Reese

Frisqno 5-4485

Bank - Seattle 1<sup>st</sup> National  
Lake City Branch -  
Power of Atty -

U.S. Navy Finance Center  
Cleveland 14 Ohio - 61034

Storage

Frost Moving Storage  
301 Ann St. Soo -

ME-2 - 6707

Veterans Adm. Regional office  
Tower Bldg  
Seattle, Wash

~~Friday P.M. Mad - Soo -~~

~~Ricetta ? 2 p.~~

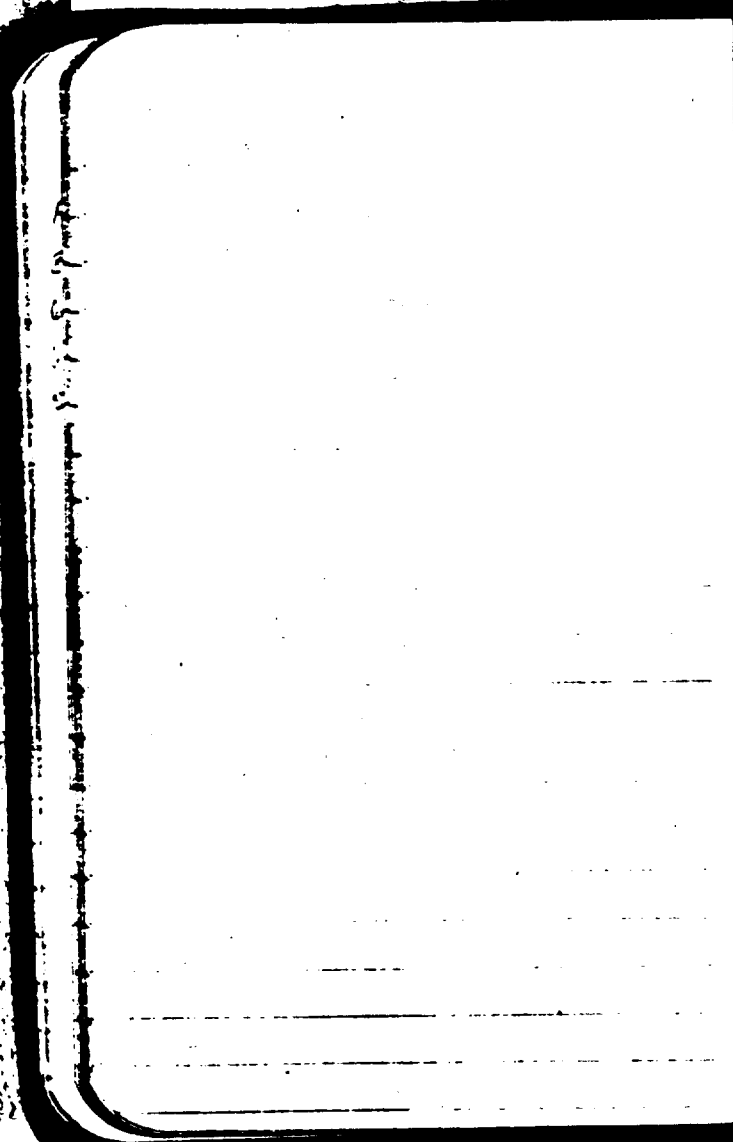
~~McKenzie.~~

~~Thompson - Drummond - 7 mi~~

~~St. Vincent - International?~~

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	WT	Vel	Eng -
40-70	- 330	- 1258	1100
2 1/2 Gal. x Sharp	40-90	- 370	125
	38-55	- 255	- 1320 - 985
	300 Sav.	180	- 2370 - 2240
	20 ga.	- 364	- 1073 - 1552

Sighting 22 - Hi - vel -  
1" high at 50 yds. x center 25 + 75 yds.  
2" Low at 100 yds. -



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Trinity	1
Hiroshima	1
Nagasaki	1
Cross roads	2
Sands tree	3
Ranger	5
Greenhouse	4
Baobab - Jungle	7
Tumbler - Snapper	8
Dog -	2
Up shore tentacles	11
Castle -	6



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> 1 March - 1 Apr 1954

Kirkland 14 hrs 15 min

Alameda " " ~~4000~~

Actually arr - 11 hrs.

Fairly cold - Blankets on

take off - Blankets all the way -

Alameda to Kirkland, 4 hrs - 15 min

Kirkland to Washington

Retirement -  
Cdr - Robert S. Gray  
G - 827

Alice Pronger

Fort

904 Oakland.

Shipman - phone, Santa Fe 3-50  
if no answer, call hostlings 2-52  
collect. Told my secretary,  
Lynn Anderson, during office h.

Tom may leave mid  
next week - depends on  
weather. hopes to be  
home week end of 11<sup>th</sup>

Lv. Washington Wed  
Ar. Wash - 36 hrs -  
Lv. Wash 1900 - 31 Mar  
Ar. Wash - 0930 1 Apr

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There was a young girl fr. Madras  
Who had a remarkable ass  
Not rounded + pink as you might  
think

But gray, had long ears + ate  
grass

Long man fr Madras  
Whose balls were of musical glass  
When they tinkled together  
They played stormy weather  
A pink + parbo flew out of his ass

Everything you like to do is  
either immoral or fattening.

Wet hen and shyder lawyer  
Wet hen clucks de fiance

Kentucky Col's idea of heaven  
- fit full of Bourbon.  
Xs + Surplus.

Red Hill  
20 Tanks 100' x 250'  
= 6 million bbs.

Poison Ivy lotion

Liq. Alum Acetate	15.
Phenol	2.
Mercurochrome	1.
Zn O	20.
Starch	20.
lime water qt	240.

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Avoqadro key word ALL

A. (All equal volumes of gases have  
the same no. of molecules)

All The Same

Boyle key word Barometer

B. The volume of any gas  
varies inversely as the pressure

$$\frac{V_1}{V_2} \propto \frac{P_2}{P_1}$$

More Equals Less

Charles key word Centigrade + 273

C. The volume of a gas varies directly  
as the absolute Temp.  $\frac{V_1}{V_2} \propto \frac{T_1}{T_2}$

More Equals More

Dalton key word Different

D. The total pressure exerted by a  
mixture of confined gases is Equal to  
the sum of the Different pressures  
Each would exert if separately  
confined.

Gas  
Laws

Guy Lussac's Law: Like  
"Gases combine in the  
ratio of small whole numbers"

Don't you want to know  
how to do it?

No 2 story where house  
- Stop this f--- over here

Table of Conversion  
Factors for Engineers

The Dorr Co. - Engine  
570 Lexington Ave.  
New York City.

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October 1952

Lv Washington 2210 EST 12<sup>th</sup>  
 Ar. Frisco 0500 PST 15<sup>th</sup>  
 @ 12<sup>30</sup> Limousine to Federal Bldg  
 Lv. Frisco 2100 PST 13<sup>th</sup>  
 Ar Pearl 0915 HST 14<sup>th</sup>  
 Lv Pearl 1645 HST 17<sup>th</sup>  
 Ar. Kwaj. 0515 KST 19<sup>th</sup>  
 Lv. Kwaj 0830 KST 21<sup>st</sup>  
 Ar. Eniwetok 1100 EST 21<sup>st</sup>  
 Embark Estes 1330 " 30<sup>th</sup>  
 Dis " Estes 1500 " 3 Nov.  
 Lv. W. Fla 1201 " 18 Nov.  
 Ar. Hickham 1000 HST 18 Nov.  
 Lv. Oahu 0200 HST - 19 Nov  
 Ar. Travis 1600 20 Nov  
 Lv. Frisco 2125 20 Nov (x 3 baggage)  
 Ar. Wash. 1100 21 Nov.

300 Gaud - 150 p  
 30-06 - 180 p  
 30-06 - 150 p  
 300 Maximum 180 p  
 270 - 130 p  
 +3  
 +3  
 +3  
 +3  
 +4  
 -2  
 -14  
 236

Quarters Available  
 200  
 300  
 400  
 500

35 Revu - 200	- 2150	1870	2100	1555	1.0	5.0	13.0
9.0 - 170	- 2530	2210	2425	1545	0.8	3.9	9.0
L.S. - 1249	- 2370	2090	1610	1255	0.4	4.0	10.
1.5 - 1609	- 2160	1950	1660	1350	1.0	4.5	11.5
1.5 - 1609	- 2160	1950	1660	1350	1.0	4.5	11.5
Muzik - 100					100	200	300



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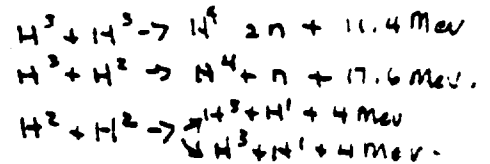
{ 5-10% PABA  
5% Titanium Oxide  
Oint base

Sunburn lotion

Na PABA 5.  
Tween 80 2.  
Aq. Alkalal ad 100.

Cream

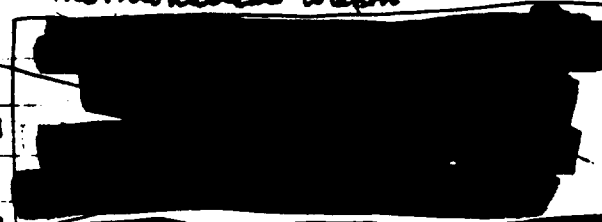
Na PABA - 5.  
Cetyl alcohol 15.  
Cera alba 1.  
Propylene glycol 10.  
Sodium lauryl Sulph 2.  
Water 72.



$T^3 \rightarrow \beta e^{max} .018 \text{ mev. } e^{av} 0.000$   
 $T_2 = 12.44 \text{ y}$

3 mg.  $T^{232}$  approaches 5-600 rads

Thermonuclear weapon



Dr. Herbert M. Clark - Prof of  
Physical & Nuclear Chem -  
Rensselaer, Troy N.Y. -  
Civil Defense Group -

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Cooney - AEC - 6265WA

Ser 0073 - 25 Aug. 52

Fr. Cinc Pac

To. Cinc US Pac Flt.

Subj: Security & Safety JTF 152  
during operations phase of ...

$$1 \text{ mi/hr} = 87' \text{ / min} \\ = 1.46' \text{ / sec}$$

$$1 \text{ Kt} = 3 \times 10^8 \text{ curies}$$

$$\text{Vol inspired air} = 0.834 \text{ m}^3$$

Sister Mister,

Extra Special -

A Sensitizing Discussion

Scylla Inc.