

BOOK18R

10144 on bottom edge

Notes:

- “DFC” on masking tape, bottom right corner on front.
- pages 7-14 taped together; retaped after scanning.

Blank pages: inside cover sheet opposite page 1, 4, 6, 8, 21, 24-49, 51-89, 91-151, inside back covers.

- page 17 has one 8.5x11 sheet taped to it
- page 20 has 8.5x17 sheet taped to it
- page 23 has portion of page torn off of it
- page 49 has “dosimeters” label taped to it.

Scanned by:

Sheila Finch

RSICC /Oak Ridge National Lab.

August 2, 1999

No. 19

10144

SECRET



"This document consists of _____ pages.
No. _____ of _____ copies, Series _____"

SECRET

14-222

No. 19

Radiation Log.

Started Sept. 24, 1946

SECRET



Standard
Blank
Book

No. 21

| | | | | |
|---------|----|----------------|----------|------------------|
| Journal | 2 | Cols. to Right | Units | Single Page Form |
| " | 3 | " | " | " |
| " | 4 | " | " | " |
| " | 5 | " | " | " |
| " | 6 | " | " | " |
| " | 6 | Divided | " | " |
| " | 8 | to Right | " | Double Page Form |
| " | 10 | " | " | " |
| " | 12 | " | " | " |
| " | 12 | " | No Units | " |

Single Ledger. Units
Double Ledger. Units
Record
Quadrille

In 150 and 300 Pages

Made in U. S. A.

Inv. 59



CLASSIFICATION CANCELLED
DATE 5/27/60
For the Atomic Energy Commission
Jack H. Kober for the
Chief, Declassification Branch

RESTRICTED DATA

TO REORDER THIS BOOK, SPECIFY NUMBER, RULING AND THICKNESS AS INDICATED ON BACKBONE OF BOOK

This document contains restricted data as defined in the Atomic Energy Act of 1946.

A BOORUM & PEASE PRODUCT

SECRET

"This document consists of 152 pages.
No. 1 of 1 copies, Series A"

Incredible feats on Des Moines — 19 90

Film badge numbers

week of:

Pederson 181 }
McDonald 16 ✓ } 10/24/66

name 9/22

Beck 136

Callihan 137

Hull 138

Leland 139

Likens 140

Murray 141

Schmidt 142

Smith 143

Visner 144

Williams 145

146

147

148

149

150

151

152

153

154

155

156

Dosimeter numbers

| | |
|----------|----|
| Beck | 2 |
| Callihan | 3 |
| Hull | 7 |
| Leland | 13 |
| Likens | 18 |
| Murray | 20 |
| Schmidt | 21 |
| Smith | 22 |
| Visner | 26 |
| Williams | 29 |
| | 17 |
| | 28 |

Operation of Minometer.

To charge:

1. Turn minometer on (wait 2 min. before using)
2. Press charge button and turn Knob clockwise as far as it will go
3. If fiber not at "Z", adjust screw above knob.
4. Unscrew cap of dosimeter, ~~turn knob~~.
5. Insert dosimeter, press charge button, ^{turn knob} to bring fiber to zero.

(Note: fiber must be at zero after button is released, otherwise readjust)
 Note: When making adjustments be sure no part of the hands touch any part of the metal frame.
 to read:

1. Repeat steps 1, 2, 3 above
2. While pressing charge button, turn knob to bring fiber to zero.
3. Release button, insert dosimeter and read.

Note: while charging, do not touch dosimeter barrel.

DAILY DOSAGE

9

| Name | Date | | | | | | | | | | |
|----------|------|-------|------|------|------|------|------|--------|------|------|----|
| | 9-24 | 25 | 26 | 27 | 28 | 30 | 10-1 | 2 | 3 | 4 | 7 |
| Beck | | 20 MR | | | 5 | 50 | 5 | | 10 | | 5 |
| Callihan | | ZERO | - | 0 | | 5 | 200 | ? | -2 | | |
| Hull | | | | | | | | | | | |
| Leland | | | | | | | | | | | |
| Likens | ZERO | ZERO | 30 | | | | 15 | ZERO | | | 20 |
| Murray | | | | | | 5-10 | | | | | 15 |
| Schmidt | | | ZERO | | | | | | | | |
| Smith | | | 20 | ZERO | | ZERO | | ZERO | ZERO | | |
| Visner | | | | 18- | | 200 | | | | | |
| Williams | | ZERO | ZERO | ZERO | ZERO | 5 | ZERO | 60- mg | 10 | ZERO | |

DAILY DOSAGE

11

1946

| 10/21 | 10/22 | 10/23 | 10/24 | 10/25 | 10/26 | 10/27 | 10/28 | 10/31 | 11/1 | 11/2 |
|-----------|-------|-------|-------|-------|----------|-----------|-------|-------|------|------|
| discharge | | 0 | | | Recharge | 6! | | 75 | 0 | |
| | 30 | | | 30 | | 25 | | 30 | 50 | |
| 0 | 0 | | zero | 40 | | 0 | 20 | — | 10 | |
| 30 | 20 | 40 | zero | zero | | Discharge | 25 | 30 | zero | zero |
| | | | | | | | 20 | | | |
| 10 | 15 | 10 | 20 | | | | | | | 0 |

Discharged

6

1m

12

DAILY DOSAGE

$\frac{1}{6}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{4}$
 10 neutrons

90. 50.

30.

0
 10

20
 40

60

Schmitt

?

$\frac{1}{12}$

Recte 162

Felbeck 179

DAILY DOSAGE

13



14

DAILY DOSAGE 1947

| Name | 10/9/47 | | Dates | | 10/23/47 | | 10/23/47 | | 10/24/47 | | 10/27 |
|----------|---------|---------|----------|----------|-------------|---------|----------|------|----------|------|-------|
| | No. | Reading | 10/13/47 | 10/23/47 | Posimeter # | Reading | # | Read | # | Read | |
| Beck | | | | | 448 | 5mv | | | | | 0 |
| Callihan | 702 | 0 | | | | | | | 439 | | |
| Murray | | | | | | | 448 | 0 | | | |
| Morphy | 320 | 0 | | | 321 | 2mv | 361 | 2 | 380 | | |
| Likens | | | | | | | | | | | |
| Macklin | | | 361 | 1 | | | | | 320 | | 5 |
| McLendon | 439 | 0 | | | | | | | | | 0 |
| Visney | 497 | 0 | | | | | | | | | 0 |
| Williams | | | | | | | | | | | |
| Olson | | | | | 702 | 0 | | | | | |
| Quinn | | | | | 497 | 0 | | | | | |
| Fox | | | 448 | 2 | 320 | 0 | 320 | 0 | | | 0 |
| CYONIN | 321 | 0 | | | 361 | 8mv | 474 | 1 | 474 | | 0 |

Results also appear p 18 15

| 10/29 | 10/30 | 11/3 | 11/6 | 11/17/49 | 11/19 | 11/25 | 12/1 | 12/2 |
|-------|-------|--------|------|----------|-------|--------|------|------|
| A | MR | Drs. # | READ | # | READ | | | |
| 497 | | 439 | | 474 | 2 | 2.5kw. | 2 | 5 |
| | 321 | 0 | | 474 | | | | |
| 320 | 474 | 0 | | 467 | 4 | | | 8 |
| | | 330 | | | | | | |
| | | 497 | | 396 | 2 | | | 0 |
| | | 702 | | 380 | 0 | | | 0 |
| | 330 | | | | | 0 | | |
| | 497 | 0 | 474 | 448 | 3 | 1 | 0 | |
| 474 | 702 | 0 | | | | 3 | 0 | 0 |

9-2-47

Solution Experiments at F-05
 Film and Catastrophe Badge
 Locations

Catastrophe Badges

Film Changed

| Location | Date | 195 | 196 | 197 | 198 | 199 | 200 | 7/8/48 | |
|-------------------------------|------|----------------|-----|-----|-----|-----|-----|--------|-----|
| Bummed Shack | 260 | | | | | | | ✓ | |
| W. Wall Exp. Rm | 261 | | | | | | | ✓ | |
| S. Wall Control Rm | 262 | | | | | | | ✓ | |
| W. Wall Front office | 263 | | | | | | | ✓ | |
| W. Wall Pump Rm | 270 | | | | | | | ✓ | |
| W. Wall Supply Rm | 271 | | | | | | | ✓ | |
| W. Wall Vestibule | 272 | | | | | | | ✓ | |
| E. Wall Exp. Rm | 273 | | | | | | | ✓ | |
| W. Wall Control Rm | 274 | | | | | | | ✓ | |
| W. Wall Furnace Rm | 275 | | | | | | | ✓ | |
| MacPherson Film Badges | | | | | 198 | | | | |
| Cronin | | 195 | 172 | | 186 | 179 | 186 | 179 | 186 |
| Experimental Rm | | | | | | | | | |
| Underwood | 173 | 42 | 177 | | 20 | 180 | 20 | 180 | 20 |
| Cabinet E. Wall | 174 | 190 | 182 | | 21 | 181 | 21 | 181 | 21 |
| West Wall | 185 | 186 | 184 | | 187 | 182 | 41 | 182 | 41 |
| Underwood Beck | 178 | 187 | | | 171 | 187 | | | |
| Callahan | 176 | 192 | 180 | | 172 | 188 | 172 | 188 | |
| Fox | 181 | 41 | 176 | | 191 | 173 | 190 | 173 | 190 |
| Morfitt | 184 | 198 | 173 | | 193 | 174 | 191 | 174 | 191 |
| Lykens | 177 | 187 | | | 194 | 175 | 192 | 175 | 192 |
| Murray | 180 | 188 | 171 | | 42 | 176 | 193 | | 193 |
| Macklin | 171 | 21 | 183 | | 188 | 177 | 194 | 177 | 194 |
| McLendon | 172 | 191 | 175 | | 195 | 178 | 195 | | |
| Visner | 170 | 20 | 185 | | 200 | 183 | 190 | 183 | 196 |
| Williams | 183 | 194 | | | 41 | 184 | 200 | 184 | 196 |
| Olsen | 182 | 185 | | 181 | 190 | 185 | | 185 | |
| Quinn | 179 | 200 | | | 198 | | | | 198 |
| | | | | | 192 | | | | 200 |

Badge Assignments
 Cont. on p. 22
 after 10/22/47

Dr. Callahan
F-05.

F-05 BADGES

| <u>Date of Exposure</u> | <u>Badge Number</u> | <u>Open Window (mrep)</u> | <u>Sensitive Film Shield (mrep)</u> |
|-------------------------|--|---------------------------|-------------------------------------|
| Aug. 22 - 29 | 154 | 70 (Evidence of fogging) | 30 |
| Aug. 29 - Sept. 5 | No report received | | |
| Sept. 5 - 12 | 42 | 270 | 180 |
| Sept. 12 - 19 | 173 | 240 | 150 |
| Sept. 19 - 26 | All badges recorded a relative density of zero | | |
| Sept. 26 - Oct. 3 | 180 | 110 | 80 |

October 17, 1947

SV/jr

9/29/47

Catastrophe Badges # 260, 261, 262, 263, 272, 273 removed
Marfitt for development [redacted] no measurable exposure.

10/8/47

Catastrophe Badges # 260, 261, 262, 263, 272, 273
replaced in locations as designated, pg. 16.

F-05 BADGES

to stat

| Badge Number | Exposure (mrem) | Relative Error | Statistical Error |
|--------------|-----------------|----------------|-------------------|
|--------------|-----------------|----------------|-------------------|

| | | | |
|-----|----------------------------|--|----|
| 264 | 70 (Evidence of Signature) | | 30 |
|-----|----------------------------|--|----|

| | | | |
|-----|--|--|--|
| 272 | | | |
|-----|--|--|--|

| | | | |
|-----|--|--|--|
| 273 | | | |
|-----|--|--|--|

| | | | |
|-----|--|--|--|
| 274 | | | |
|-----|--|--|--|

| | | | |
|-----|--|--|--|
| 275 | | | |
|-----|--|--|--|

Sept. 2
Sept. 13
Sept. 18
Sept. 25

All badges described & relative errors are as shown.

Daily Dosage During
Solution Experiments

| NAME | 9-9 | 9-24 | 10/2 | DATE | | 10/29 | 11/3 | 11/4 | 11/7 | 11/11 | 11/14 |
|----------|------|------|---------|--------------|-------|-------|------|------|------|-------|-------|
| | | | | 10/24 | 10/29 | | | | | | |
| BECK | | | | 0 | 0 | 0 | | | | | |
| William | | Zero | | 0 | | X | 0 | 6 | 1 | 2 | 0 |
| Murdy | | | (115-8) | | | | | | | | |
| Williams | Zero | 4mm | | | | | | 0 | | 3 | |
| Visner | | | | | | 0 | | | | | |
| Moxitt | | Zero | 114-2 | 1 | | | | | | | |
| Fox | | | 114-3 | | | 2 | | 3 | | | 6 |
| Olsen | | | | | | | | | | | |
| Quinn | | | | | | | | | | | |
| Larson | | | | | | | | | | | |
| Macklin | | | | 2 | | 2 | | | 0 | | |
| McLendon | | | | | | 0 | | | | | |
| Likens | | | | | | | | | | | |
| Cromi | | | | 2 | | | 1 | | | 0 | 10 |

~~4/~~
12/3/47
12/4/47
12-12-47
12/73

12/29
12/22
11/2/41
1/3/48
1/9/48
1/26/48

| | | | | | | | | | |
|-----|---|---|---|---|----|--|--|--|--|
| 1/2 | | | | | | | | | |
| | 0 | 3 | 0 | 2 | 00 | | | | |
| | 5 | | | | | | | | |
| | | | 0 | | 00 | | | | |
| 4 | 2 | | | | | | | | |
| | 0 | | | | 00 | | | | |

*001

See page 50-51

10000

10/6/47

8400 X 5 = 42000 m/hr at 1 cm

$$\frac{42000}{d^2} = 100$$

$$d^2 = 210 \quad d = 14.5 \text{ cm}$$

= 5.7 in
too small,

$$\frac{42000}{d^2} = 100$$

$$d^2 = 420 \quad d = 20.5$$

= 8.1 in

for 50 m/hr or 100 m/2 hr.
d = 11.4 in

380 120.

361 125 Exposure started. 1:13 PM.

439 120 ended. 4:23

396 130

448. 120.

321 125

497. 130

320. 125

#330 120

702 - 125 m

474 - 120

Should read

~ 155

Dixon -

These appear satisfactory

A. U.

Calibration of Diameters

1111 - 150

1110 - 150

1100 - 152

1101 - 150

1102 - 152

1103 - 150

1104 - 150

1105 - 150

1106 - 150

1107 - 150

1108 - 150

1109 - 150

1110 - 150

Solution Experiments at F-05

Film and Catastrophe Badge Locations

Catastrophe Badges

| Location | Dates/Badge No | | | | | | | | | | (Date issued) | | | |
|---|----------------|-------|------|-------|----------|-------|------|-------|-------|-------|---------------|------|------|------|
| | 10/24 | 10/31 | 11/7 | 11/14 | 11/21/17 | 11/29 | 12/1 | 12/12 | 12/19 | 12/29 | 1/2 | 1/13 | 1/16 | 1/26 |
| Guard Shack | | | | | | | | | | | | | | |
| W. Wall Exp. Rm | | | | | | | | | | | | | | |
| S " Control " | | | | | | | | | | | | | | |
| W " Front office | | | | | | | | | | | | | | |
| W " Pump Rm | | | | | | | | | | | | | | |
| W " Supply " | | | | | | | | | | | | | | |
| W " Vestibule | | | | | | | | | | | | | | |
| E " Exp. Rm | | | | | | | | | | | | | | |
| S " Control Rm | | | | | | | | | | | | | | |
| W " Furnace Rm | | | | | | | | | | | | | | |
| #182 exposed to 5mg Pa Source for 8 hrs. - Contact | | | | | | | | | | | | | | |
| Film Badges | | | | | | | | | | | | | | |
| Date Assigned | | | | | | | | | | | | | | |
| Overflow on Reactor | 180 | 20 | 180 | 20 | 180 | 20 | 180 | 198 | 173 | 20 | 173 | 20 | 150N | 54N |
| E. Wall Exp. Rm | 181 | 21 | 181 | 21 | 181 | 21 | 181 | 200 | 192 | 21 | 182 | 21 | 173 | 20 |
| W. " " " | 182 | 41 | 182 | 41 | 171 | 41 | 170 | 41 | 191 | 41 | 181 | 41 | 182 | 21 |
| N side inside wall - in | control | norm | | | | | | | | | | | 167H | 610N |
| Beck | 172 | 188 | 172 | 187 | 172 | 187 | 172 | 187 | 174 | 187 | 172 | 187 | 172 | 187 |
| Callihan | 173 | 190 | 173 | 190 | 173 | 190 | 173 | 190 | 175 | 190 | 175 | 190 | 175 | |
| Fox | 174 | 191 | 174 | 191 | 170 | 191 | 176 | 191 | 180 | 200 | 176 | 200 | 176 | 200 |
| Merfitt | 175 | 192 | 175 | 192 | 175 | 192 | 175 | 192 | 178 | 192 | 178 | 192 | 178 | 192 |
| Lykens | | 193 | | 193 | | 193 | | 193 | | | | | | |
| Murray | 177 | 189 | 177 | 188 | 177 | 188 | 177 | 188 | | 188 | 177 | 188 | 177 | 188 |
| McLendon | 183 | 195 | 183 | 195 | 183 | 195 | 183 | 195 | 185 | 195 | 185 | 195 | 185 | 195 |
| Cronin | 179 | 186 | 179 | 186 | 179 | 186 | 179 | 186 | 183 | 186 | 183 | 186 | 183 | 186 |
| Olson | 171 | 198 | | 198 | | 198 | | 198 | | | | | | |
| Quinn | | | | | | | | | | | | | | |
| Visner | 184 | 194 | 184 | 194 | 184 | 194 | 184 | 194 | 171 | 194 | 171 | 194 | 171 | 194 |
| Williams | 185 | 42 | 185 | 42 | 185 | 42 | 185 | 42 | 174 | 42 | 174 | 42 | 174 | 42 |
| Smag Ra @ lan | 177 | | 171 | 193 | 177 | 200 | | | 177 | | | | | |
| O'ly hr. | 176 | | 176 | 199 | 176 | | | | 182 | | | | | |
| Baughman | 178 | | 178 | | 178 | | | | 176 | | | | | |
| MacKinn | | | | 200 | | | | 193 | 177 | | | | | |
| | | | | | | | | 174 | | 198 | 179 | | | |

| 1/30 | 2/4 | 2/13 | 2/20 | 2/27 |
|----------------|------|------|------|------|
| 171 | 4697 | 627 | 3860 | |
| 160 | 94 | 242 | 92 | |
| 172 | 92 | 243 | 93 | |
| 173 | 93 | 244 | 94 | |
| 167 | 3860 | 3282 | 4647 | |
| 174 | 83 | 233 | 83 | |
| 175 | 86 | 234 | 84 | |
| 176 | 84 | 235 | 85 | |
| 177 | 89 | 236 | 86 | |
| 178 | | | | |
| 178 | 88 | 237 | 87 | |
| 179 | 90 | 238 | 88 | |
| 180 | 87 | 239 | 89 | |
| 181 | 85 | 240 | 89 | |
| 182 | 91 | 241 | 90 | |



49

Dosimeter Readings

Started 1/20/48

| 1/20/48 | 1/21/48 | 1/22/48 | 1/28/48 | 1/29/48 | 3/9/48 |
|---------|---------|---------|---------|---------|--------|
|---------|---------|---------|---------|---------|--------|

Name

Beck

320

Callihan

380

Murray

3301

Morfit

702

McLendon

396

Macklin

Fox

725

Cronin

321

Visner

Williams

760

Visitors

0.0

0

3

1.0

-2

+

9 (9)

2

5

7

7

9/27/47. Inconclusive tests on dosimeters

Three of the B lined dosimeters ^(carrying own scale) received from Beck were tested: Placed near strong excitation source and separated from it by 4' paraffin for 1/2 hr

112 7 div. deflection

114 5 " "

118 6 " "

Separated from strong source by 4' paraffin + 2" air for 1 hr

115 10 div. deflection

114 9 " "

118 9 " "

These three dosimeters used above ~~to~~ carry their own scale - three of the other B lined type, which are read on a minometer, were given first of above exposures. Each gave ~~the~~ negative reading after exposure.

Two of this latter type were ~~the~~ changed + placed over hole in source basket - source below cylinder of paraffin in hole - 3:30 P 9/27/47.

21 104

30. below scale

} after the 1st exp.

2 128

40

152

| | |
|----------------|------|
| Dr. Morgan | 153. |
| H. Chas. Libby | 149 |
| Western | 150. |

~~SECRET~~

~~SECRET~~

~~SECRET~~

~~SECRET~~