



Survey Meter Reading Primer –



Introduction

(1 of 2)

- During the spring 2007 outage season there were several locations where a timed “meter reading” exercise was given.
- The following exercise is designed to allow you to “practice” your meter reading & interpretation skills before you report to a site & potentially encounter a “timed” exam.

- *Our thanks go to Ray Hock and the Training Staff at Susquehanna for providing the meter face images*



Introduction

(2 of 2)

- As you work through the examples remember that the objective is just to read the meter (not subtract background, etc.)

- If you have any questions please contact Jerry Hiatt (x1286) or Fred Campbell (x1287) in the Bartlett Home office



The following Instruments are Count Rate Meters

Example 1

Ludlum Model 177
count rate meter





ANSWER Example 1

- 3,200 cpm

- SCALE = x10

- Needle is on the 320 marking (320 x10 = 3200)

Example #2

Ludlum Model 177
count rate meter





ANSWER Example 2

- 10,000 cpm

- SCALE = 100x

- Needle is on the 100 marking ($100 \times 100 = 10,000$ cpm)

Example #3

Eberline RM-14 count rate meter





ANSWER Example 3

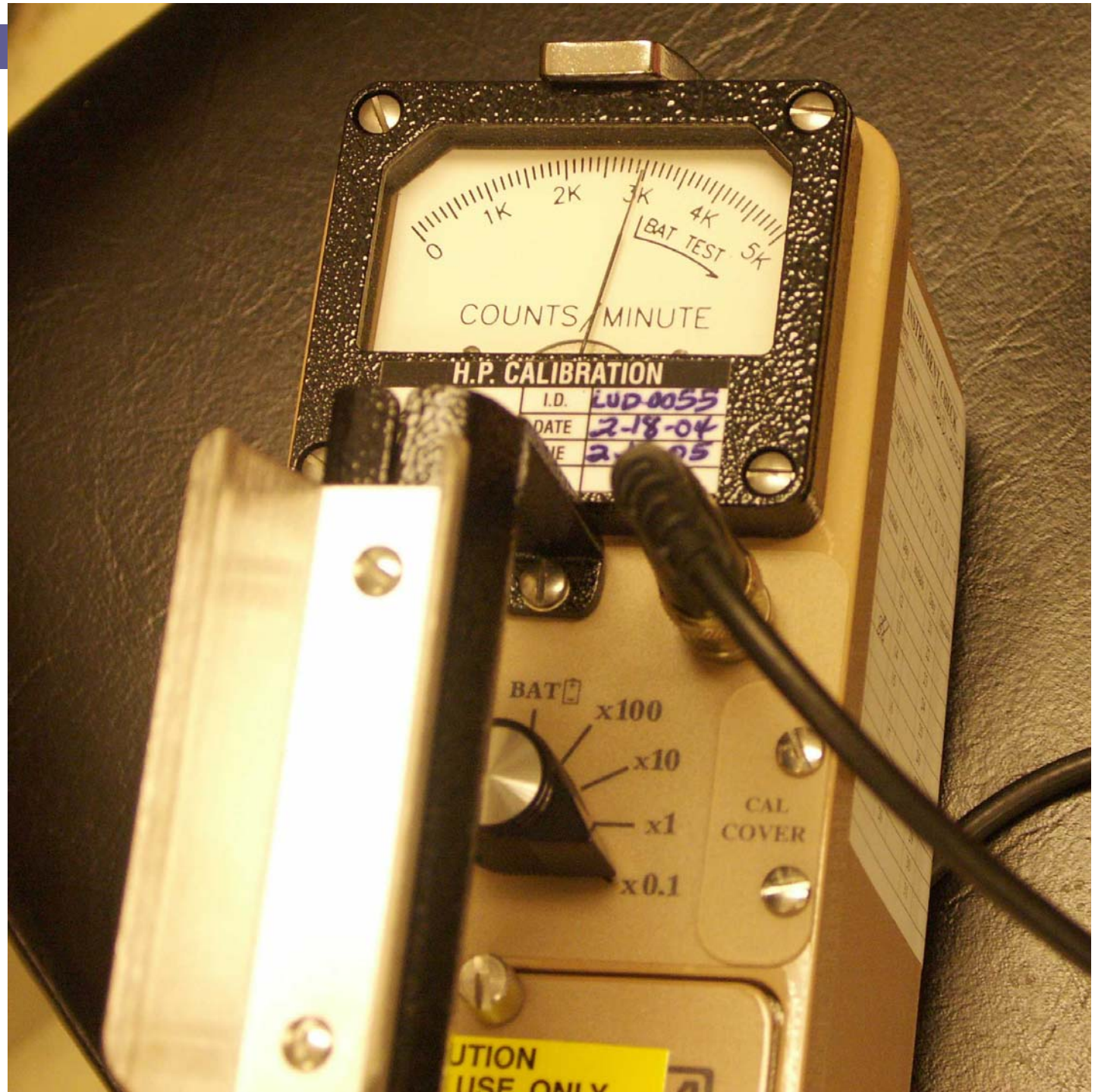
- 22,000 cpm

- SCALE = 100x

- Needle is on the 220 marking ($220 \times 100 = 22,000$ cpm)

Example 4

Ludlum Model 3
count rate meter





ANSWER Example 4

- 300 cpm

- SCALE = 0.1x

- Needle is on the 3K (3000) marking ($3000 \times 0.1 = 300$ cpm)

Example #5

Ludlum Model 3
count rate meter



Bartle

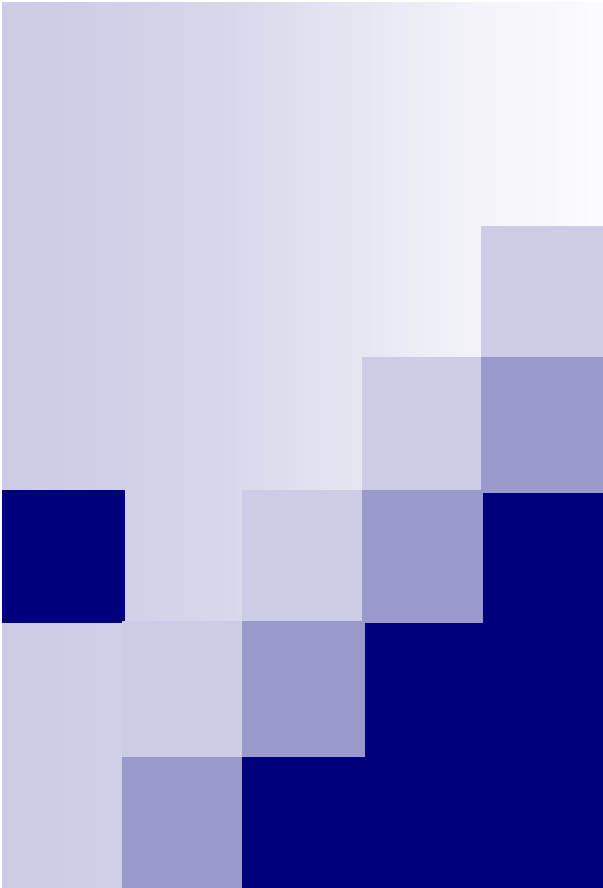


ANSWER Example 5

- 20,000 cpm

- SCALE = 10x

- Needle is on the 2K (2000) marking ($2000 \times 10 = 20,000$ cpm)



The following
Instruments are
RO-2, RO-2A, or
RO-20's



Example 6

Eberline RO-2A



B



ANSWER Example 6

- 400 mR/h

- Scale setting = 500 mR/h

- Needle is on the 4 indicating 400 mR/h

Example 7

Eberline RO-2



Bartlett N



ANSWER Example 7

- 3.6 mR/hr

- Scale setting = 5 mR/hr

- Needle is on the 3.6 marker

Example #8

Eberline RO-2



Bartle



ANSWER Example 8

- 2500 mR/hr

- SCALE = 5000 mR/hr

- Needle is midway between the 2000 mR/hr and 3000 mR/hr scale

Example #9

Eberline/Thermo RO-20





ANSWER Example 9

- 8.5 R/hr

- SCALE = 50 R/hr

- The 1 represents 10 R/h. The needle is between the 8 R/hr and 9 R/hr markings

The following Instrument
is a BC-4

Record only the **counts**,
ignore the count time.

Example #10 Eberline BC-4





ANSWER Example 10

- 502 counts

- The instrument read-out is directly in counts

- **Note:** As an added bit of information -- the count time is set for 20 minutes. This would equate to ~25 cpm.



The following
Instruments are
ASP-1's

Example 11

Eberline ASP-1



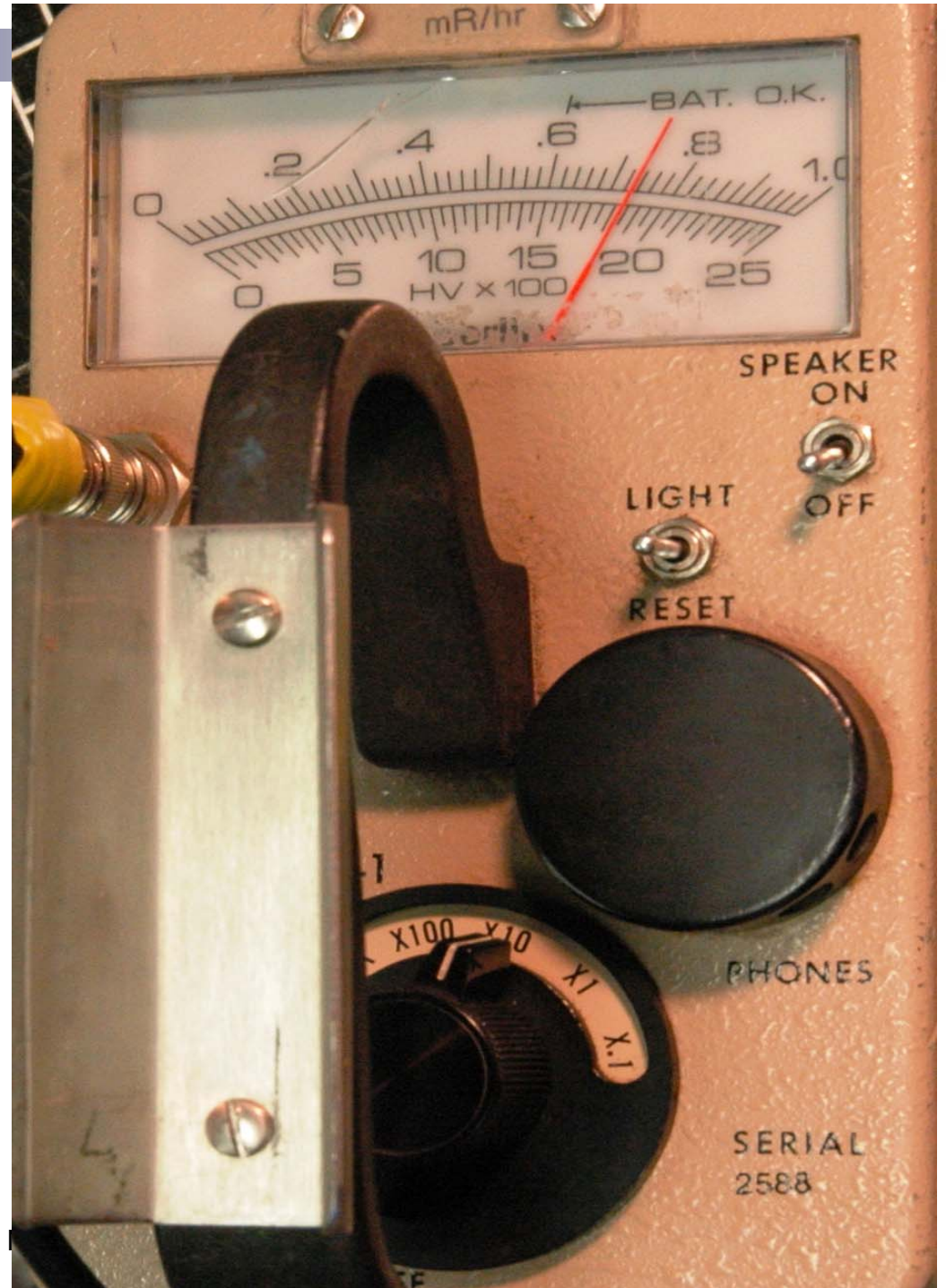


ANSWER Example 11

- 48 mR/hr
- SCALE = x100
- Needle is on the 0.48 marking ($0.48 \times 100 = 48$)

Example 12

Eberline ASP-1



Bartlett



ANSWER Example 12

- 7.3 mR/hr

- SCALE = x10

- Needle is on the 0.73 marking – clearly between the 0.72 and 0.74 markings

- $(0.73 \times 10 = 7.3)$



The following Instruments are Telepole's

Example 13 MGP Telepole





ANSWER Example 13

- 30.6 mR/h

- As configured, the instrument read-out is directly in mR/h
- Note: you can also “read” the response from the scale that circles the digits expressing the value

Example 14 MGP Telepole





ANSWER Example 14

- 35.7 R/h

- As configured, the instrument read-out is directly in R/h
- Note: you can also “read” the response from the scale that circles the digits expressing the value



The following
Instruments are EC-4's

(portable Area Radiation Monitors)

Example 15 Eberline EC-4





ANSWER Example 15

- 1.0 mR/h

- As configured, the instrument read-out is in mR/h
- The needle is pointing directly towards the “1”

Example 16

Eberline EC-4





ANSWER Example 16

- 300 mR/h

- As configured, the instrument read-out is in mR/h

- The needle is pointing at the “300” marking (between the 100 and 1000 markings)



The following
Instruments are
AMP's

Example 17

MGP AMP-100



Bartlett



ANSWER Example 17

- 1.169 R/h

- As configured, the instrument read-out is directly in R/h

Example 18

MGP AMP-50





ANSWER Example 18

- 89.7 mR/h

- As configured, the instrument read-out is directly in mR/h



The following Instruments
are RO-20's

Example 19

Eberline RO-20





ANSWER Example 19

- 0.9 R/h

- SCALE = 5 R/h

- The 1 represents 1 R/h. The needle is between the 0.8 R/hr and 1 R/hr markings

Slide #20





ANSWER Example 20

- 36 mR/h

- SCALE = 50 mR/h

- The “3” represents 30 mR/h and the “4” represents 40 mR/h. The needle is on the 36 marking.