

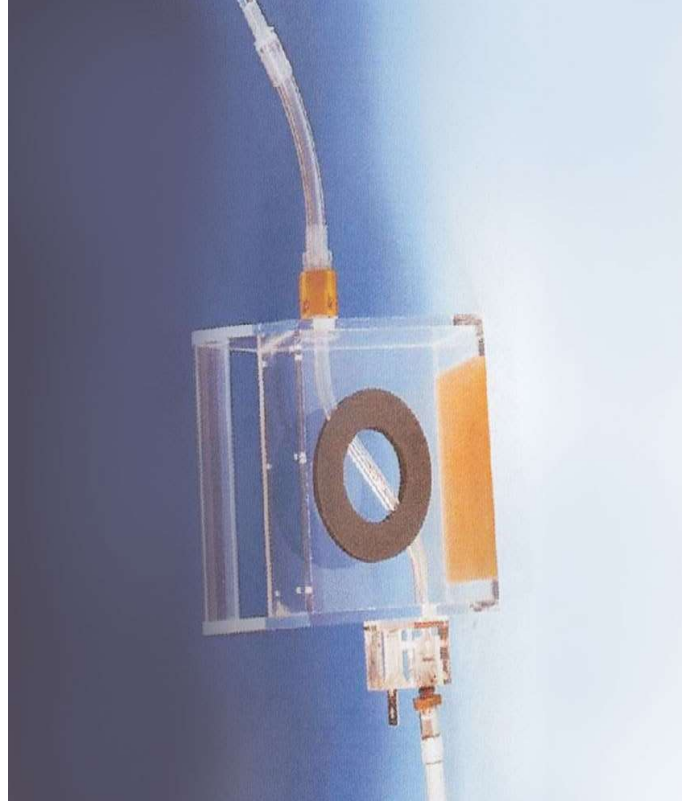


charles lowe

Chapter 7

How Do Radiography Cameras Work?

Chapter 7: How Do Radiography Cameras Work?



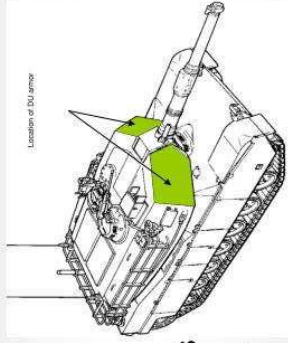
Preface

- Types of cameras.
- Depleted uranium.
- Maintenance.

Chapter 7: How Do Radiography Cameras Work?

DU – Effective for Defense

- High density DU is sandwiched between sheets of steel armor plate
- M1A1HA & M1A2 Abrams tanks built after 1998 have DU reinforcement in armor plating in the front of the hull and the turret.



Presented by the VA NJ War Related Illness and Injury Study Center (WRIISC)

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Chapter 7: How Do Radiography Cameras Work?



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- Calibrations = beam type camera.

Chapter 7: How Do Radiography Cameras Work?



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Chapter 7: How Do Radiography Cameras Work?



Types of Cameras

- Crank out cameras.
- Shielded position to unshielded position.
- S-tube.

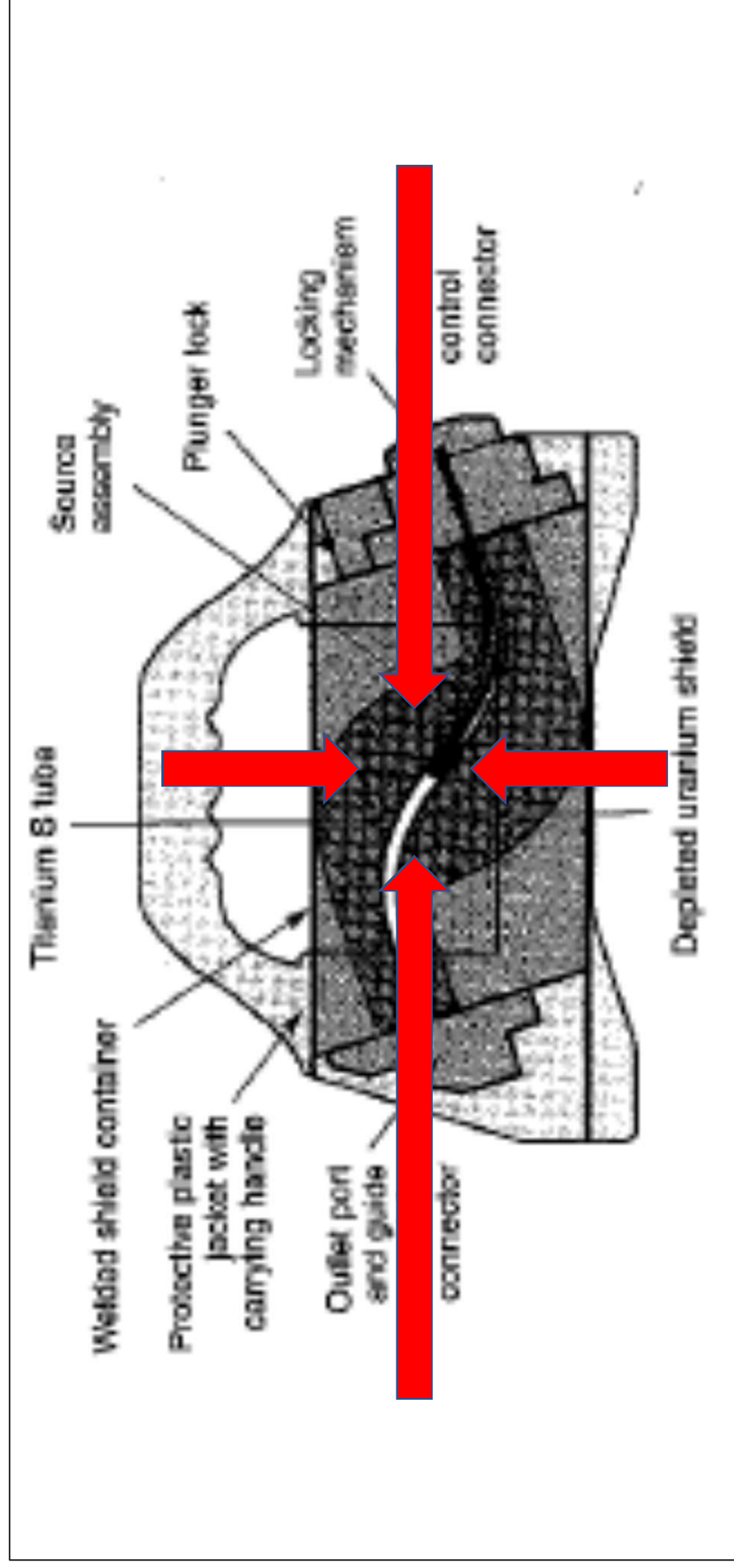
Chapter 7: How Do Radiography Cameras Work?



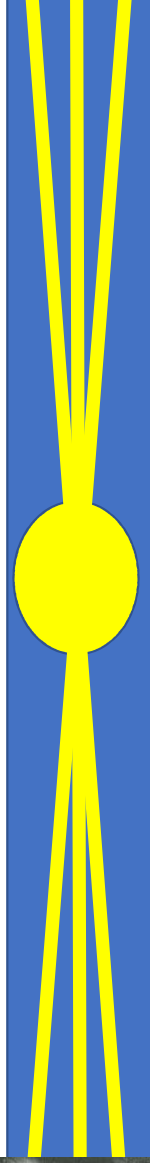
Types of Cameras

- Crank-out type camera.
- About 45-65 pounds (carrying Ir-192 sealed source).
- Mostly composed of Depleted Uranium.
- No electronics involved.

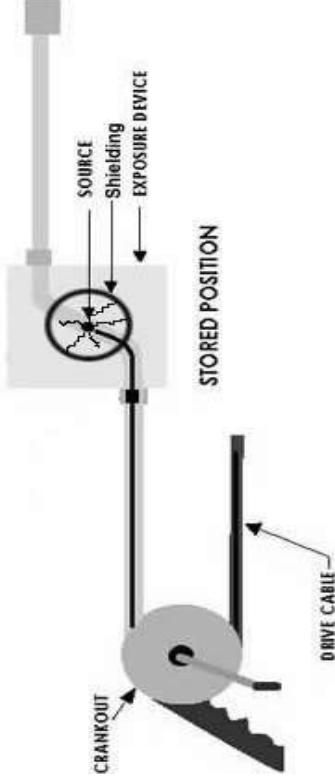
Chapter 7: How Do Radiography Cameras Work?



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Chapter 7: How Do Radiography Cameras Work?



S-Tube

- Made of titanium.
- S-tube prevents 100% radiation emitting from front and back of exposure device.

Chapter 7: How Do Radiography Cameras Work?



Types of Cameras

- SPEC 150.
- Source Production & Equipment Company.
- <http://www.spec150.com/>

Chapter 7: How Do Radiography Cameras Work?



Types of Cameras

- Delta 880.
- QSA Global.
- <http://www.qsa-global.com/>

Chapter 7: How Do Radiography Cameras Work?



Types of Cameras

- IR 100.
- Industrial Nuclear Company.
- <http://www.ir100.com/>

Chapter 7: How Do Radiography Cameras Work?



Types of Cameras

- Beam type camera.3
- Source is moved within the camera from a shielded position to a lesser shielded position.
- Calibrates survey meters and dose rate alarms.

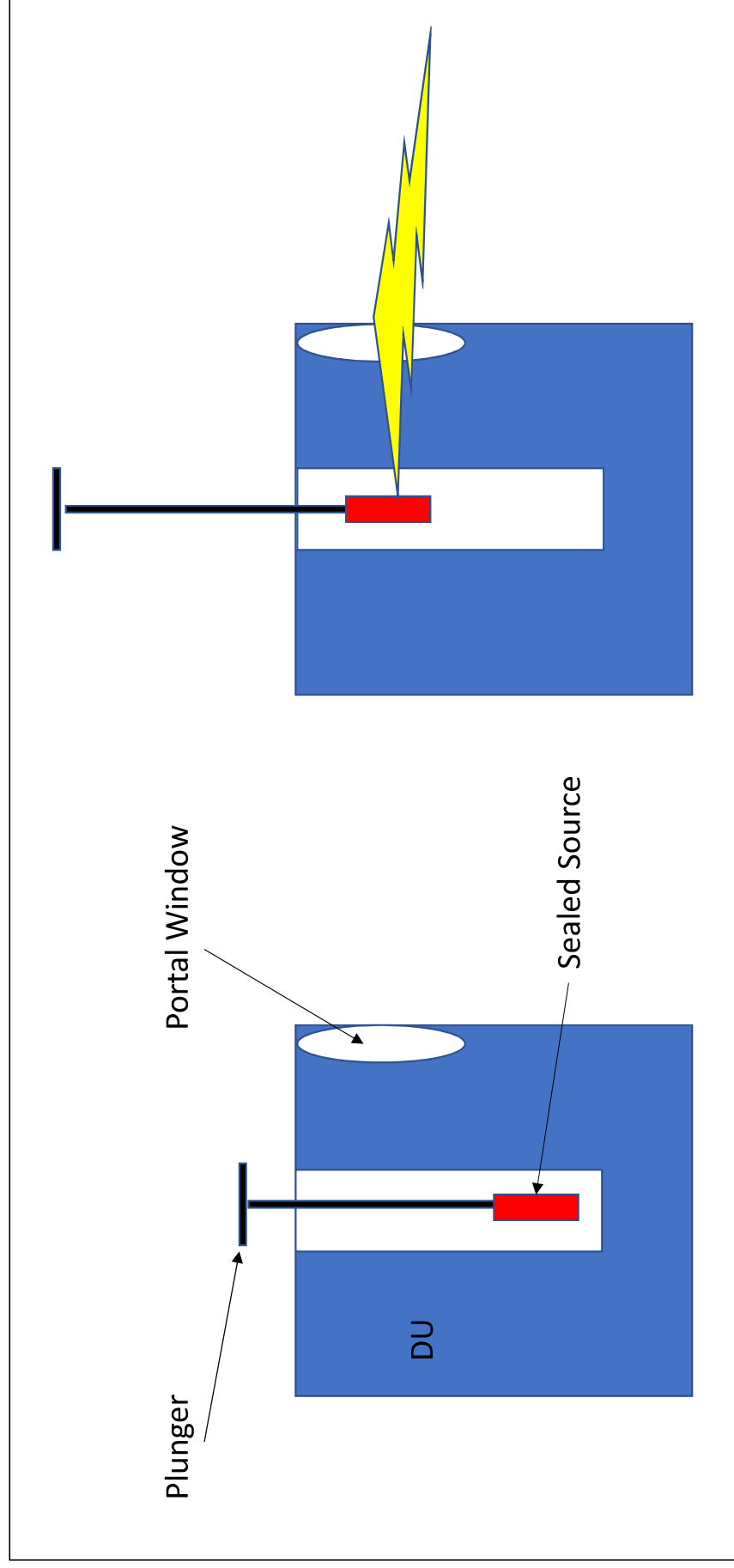
Chapter 7: How Do Radiography Cameras Work?



Types of Cameras

- 773 Survey Meter Calibrator.
- Not used for field applications.
- QSA Global.
- <http://www.qsa-global.com/>

Chapter 7: How Do Radiography Cameras Work?



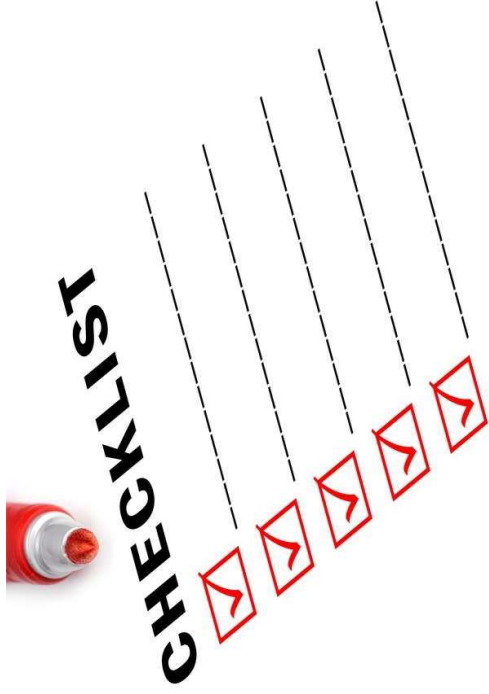
Chapter 7: How Do Radiography Cameras Work?



Pop Quiz

- Survey meters must be calibrated to what accuracy?
- Rate alarms must be calibrated to alarm at what mR/hr?

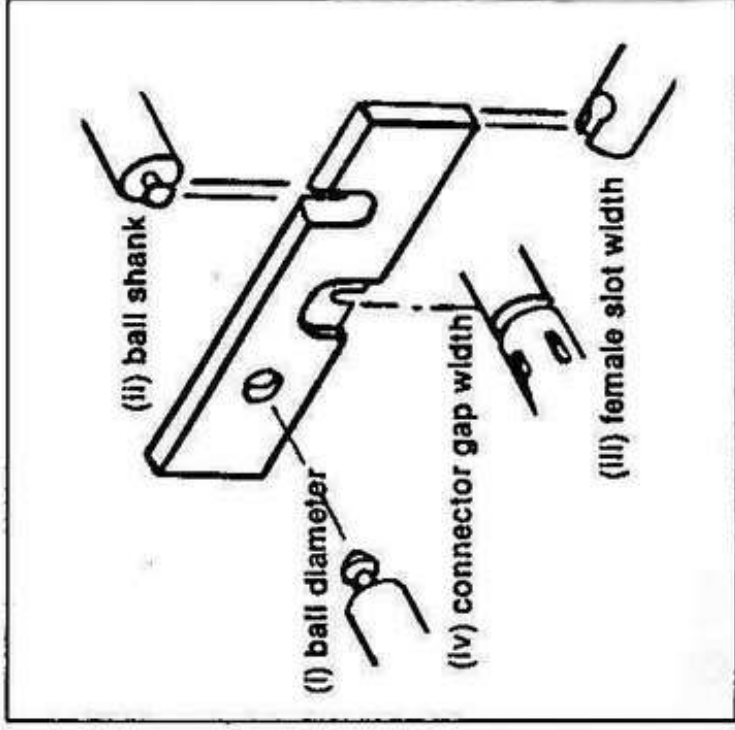
Chapter 7: How Do Radiography Cameras Work?



Daily Maintenance

- Watch instructor perform Steps 1-9 on page 70.
- Listen as instructor explains each step and reasons why.
- Go/no-go gage.

Chapter 7: How Do Radiography Cameras Work?



Go/No-Go Gage

- Checks connection integrity of crank control cable and source assembly connector.
- No-go or No-use if test does not pass. Why?

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Source Exchanges

- Change sources after use.
- Connect source guide tube to exchanger.
- Safe.

Chapter 7: How Do Radiography Cameras Work?



Making Sense of It All

- Types of cameras.
- Depleted uranium.
- S-tube.
- Radiographer safety.
- Maintenance.

Quiz 1 of 8:

What material of the camera is actually shielding most radiation emission?

Depleted uranium.

Quiz 2 of 8:

Beam type cameras are best used for what?

Calibrating survey meters and rate alarm meters.

Quiz 3 of 8:

When referring to Industrial Radiography, what is another term used referring a “camera”?

Exposure device.

Quiz 4 of 8:

What's the purpose of checking the source guide tube for crimps?

The source must travel freely and safely back and forth through the source guide tube. A crimp could prevent the source from being retracted to a shielded position.

Quiz 5 of 8:

A Go/No-Go Gage is used for what purpose?

The device is used on the connection points of camera. The device will test points and indicate if too much wear is present. If too much wear, the Radiographer shall not use the camera or equipment.

Quiz 6 of 8:

What is a “source disconnect”?

A “source disconnect” occurs when the source assembly disconnects from the crank control cable. An emergency source retrieval procedure must be performed to safely return the source to its shield.

Quiz 7 of 8:

During your regular daily maintenance checks you find a problem, what course of action do you take?

Inform your Level 2 Radiographer. Do not attempt to fix equipment without consulting with your Level 2 Radiographer or Supervisor.

Quiz 8 of 8:

While surveying the camera on contact, the survey meter indicates a slightly higher dose rate on one side than the other side. Why is this?

Less depleted uranium is present and less distance to the source in the area surveyed.



charles lowe

End of Chapter 7

How Do Radiography Cameras Work?