

The information in this report is required by 14 CFR 108.17 & 129.26. Failure to report may result in a civil penalty not to exceed \$1000.00 for each such violation. (Federal Aviation Act of 1958, Section 901)

Department of Transportation Federal Aviation Administration		X-RAY SYSTEM RADIATION LEAKAGE REPORT (BAGGAGE INSPECTION) <i>(Require by 14 CFR 108.17, 14 CFR 129.26)</i>		FIELD TEST SERIAL NO. 11-7 T	Form Approved OMB No. 2120-0098	
AA	1.1 Name and Address of Facility	Name of Facility (18.80) <i>Logan International Airport MA</i>		FDA Region <i>MA</i>	St. No. R.R. or Airline/Airport (10.80) <i>BOS</i>	
CC	Address of Facility	City (10.73) <i>Boston</i>		State Code <i>MA</i>	Zip Code <i>02128</i>	
DD	and Specific Location of X-ray System	Room No. or Other Location of System (10.32) <i>US AIR MAIN CT</i>		Person Interview (23.50)	Telephone No.	
		Certification Label Present <i>YES</i>	Instruments: (type and serial number) <i>Inovision</i>		Model: <i>451P-R4R</i>	Serial No. <i>468</i>
01	1.2 Manufacture And Product ID	A. Manufacture (Responsible Firm) <i>Rapiscan</i>		B. <i>OHU46</i>	C. System Model No. and/or Name <i>TRX 522B</i>	
		D. <i>115vac 60Hz</i> Unique I.D.	E. System Serial No. <i>7003007</i>			
	F. Date of Manufacture	Mo. <i>July</i> Yr. <i>2000</i>	1.4 Operator Instructions Available <i>yes</i>	1.5 Maintenance Schedule Available <i>N/A</i>		
	2.0 Warning Labels	2.1 Warning Label Present at Controls Stating: "Caution: X-Rays Produced When Energized" <i>yes</i>	2.2 Warning Labels Present at Ports Stating: "Caution: Do Not Insert Any Part of the Body When System is Energized, X-Ray Hazard" <i>yes</i>		2.3 Two Indicators Labeled "X-Ray On" Present at Controls (One May Be Labeled "mA Meter") <i>yes</i>	
02	Indicators	2.4 At Least One Indicator, X-Ray Marked "X-Ray On", Visible from Each Port, Door, And Access Panel <i>yes</i>		3.0 Interlocks	3.1 "Captured Key" Control <i>yes</i>	
		3.2 Door Safety Interlocks		A. All Doors and Access Panels That Were Tested Prevent Generation of X-Radiation <i>N/A</i>		
	A. Minimum Number of Interlocks Visible At Any One Door <i>N/A</i>		B. Use of X-Ray Control Necessary to Resume Operation Following Interruption <i>N/A</i>			
	B. At Least One Interlock Dependent on No Moving Part Except Door <i>N/A</i>		3.3 Prevention of X-Radiation By Interlocks			
4.0 Ports and/or Apertures	4.1 Some Part of the Body Can Be Inserted Through a Port Into The Primary Beam <i>NO</i>		4.2 Some Part of the Body Can Be Inserted Into the Aperture <i>NO</i>			
6.0 Baggage Inspection Systems	6.1 Means Provided to Ensure Operator Presence at the Control Area <i>yes</i>		6.2 Means Provided to Operator for Terminating Exposures of Greater than One-Half Second and Preventing <i>yes</i>			
03	7.0 Leakage Radiation	Specific Test Procedure Used <i>04</i>		7.1 Scatter Block Description <i>Relican 1400 case for the Inovision 451P meter</i>		
05	7.2 Technical Factors <i>138</i> kVp <i>.700</i> mA					
	7.3 Location	Exposure Levels	Non-Continuously Activated Systems Only Number of Exposures Initiated	Location	Exposure Levels	
		<i>.220</i> mR/hr	Exp	06	<i>.135</i> mR/hr	exp
		<i>.210</i> mR/hr	Exp		<i>.086</i> mR/hr	exp
		<i>.200</i> mR/hr	exp		<i>.083</i> mR/hr	exp
	<i>.198</i> mR/hr	exp	<i>.073</i> mR/hr		exp	
07	Reasonable Number of Exposures That May Be Initiated in One Hour		OR	Duty Cycle of System Indicated As a Percentage of One Hour <i>100%</i>		
08	8.0 Additional Information					
	8.1 <i>300 mR</i>					
09	8.2					
10	8.3					
11	8.4					
12	8.5					
13	Surveyor Information	Supervisor Name (10.721) (Print, L, F, M)	Su	Date of Survey	Surveying Agency Code	
				<i>3-5-2011</i>		
Remarks:						

FAA Form 165-17 (6-81)

SGS Document# DOEO-0014, Rev. Jun 81

FAA HQ

MWU 3767727

MT 23903

Relo (1)

Siemens Government Services, Inc.

**Cabinet X-Ray Unit Radiation Survey Form (non-AT)**

WO#: 376 7727

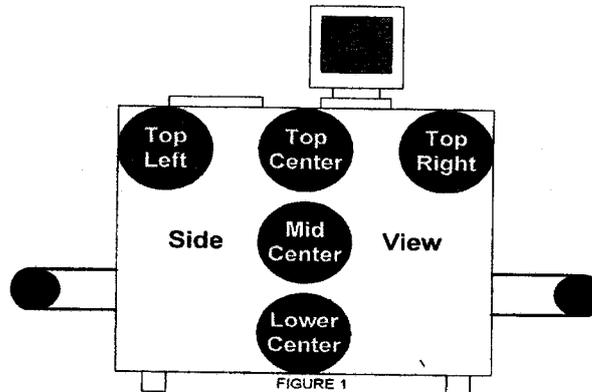
Location: BOS - US Air Main Background Reading: 6  $\mu$ R/hr

Date: 3-5-2011

1. Identify Cabinet X-ray Unit and X-ray Generator information:
  - a. Check appropriate Make/Model box below (if 'Other', record Make and Model on the line provided);
  - b. Record the X-ray Unit's serial number next to the Make/Model;
  - c. With the X-rays turned "ON", record the X-ray Generator Voltage (kV) and Anode Current ( $\mu$ A) Readings;
  - d. Convert Anode Current readings from  $\mu$ A to mA by dividing the  $\mu$ A value by 1000 (example: 100  $\mu$ A = 0.100 mA);
  - e. Transfer the Observed Voltage and Converted Anode Current readings to Box 05, Section 7.2 (Technical Factures) of DOE-0014 FAA Form 165-17.

Make / Model	Serial Number	Observed Voltage and Anode Current	Convert Anode Current to mA for FAA form (divide $\mu$ A by 1000)
<input type="checkbox"/> Smiths Heimann 5030s	s/n _____	+ _____ kV, - _____ kV, _____ $\mu$ A	_____ mA
<input type="checkbox"/> Smiths Heimann 6040i	s/n _____	+ _____ kV, - _____ kV, _____ $\mu$ A	_____ mA
<input type="checkbox"/> Smiths Heimann 7555i	s/n _____	+ _____ kV, - _____ kV, _____ $\mu$ A	_____ mA
<input type="checkbox"/> Rapiscan 519	s/n _____	_____ kV, _____ $\mu$ A	_____ mA
<input type="checkbox"/> Rapiscan 520B	s/n _____	_____ kV, _____ $\mu$ A	_____ mA
<input checked="" type="checkbox"/> Rapiscan 522B	s/n <u>7003007</u>	<u>138</u> kV, <u>700</u> $\mu$ A	<u>.700</u> mA
<input type="checkbox"/> Other _____	s/n _____	_____ kV, _____ $\mu$ A	_____ mA

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2. While holding the meter 5 centimeters (about 2 inches) from the surface, take readings in the area of the circles shown (Figure 1 above) on BOTH sides (Left and Right) of the X-ray machine (total of 10 readings):

**Note:** The Invision 451P Radiation Meter has a default range setting of  $\mu$ R/hr. Meter readings in  $\mu$ R/hr must be converted to mR/hr for this form and DOE-0014 FAA Form 165-17.  
 Conversion: 100  $\mu$ R/hr = 0.100 mR/hr.

**FRONT**

**BACK**

TOP LEFT	<u>.009</u> mR/hr	TOP LEFT	<u>.017</u> mR/hr
TOP CENTER	<u>.030</u> mR/hr	TOP CENTER	<u>.018</u> mR/hr
TOP RIGHT	<u>.013</u> mR/hr	TOP RIGHT	<u>.012</u> mR/hr
MID CENTER	<u>.017</u> mR/hr	MID CENTER	<u>.083</u> mR/hr
LOWER CENTER	<u>.013</u> mR/hr	LOWER CENTER	<u>.016</u> mR/hr

Cabinet X-Ray Unit Radiation Survey Form (non-AT)	Version: 6	Effective Date: Apr 2, 2010	Document No.: F-ALL-049	Page: 1 of 2
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WO#: 3767727

X-Ray Serial #: 7003007

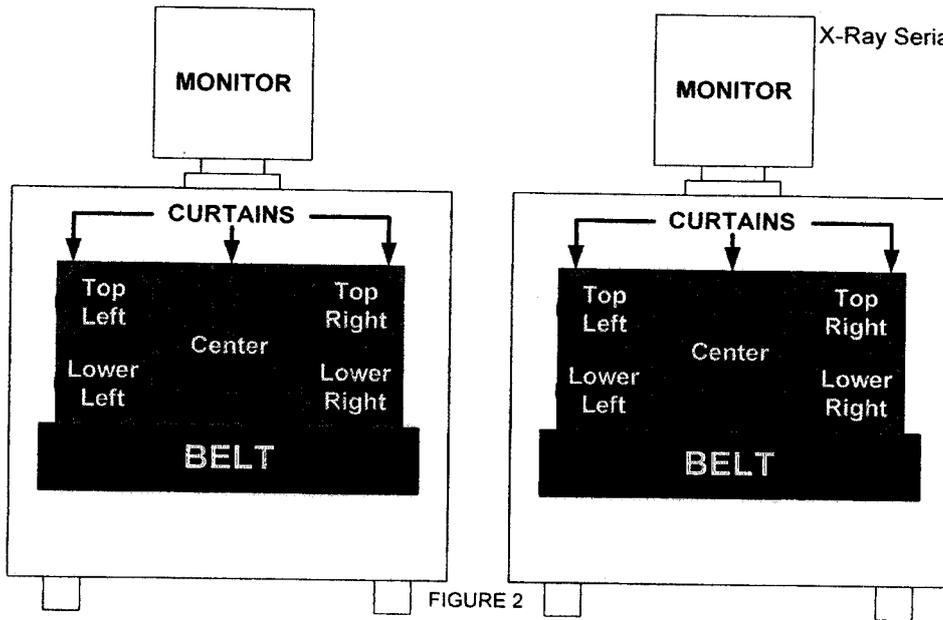


FIGURE 2

3. While holding the meter 5 centimeters (about 2 inches) from the surface, take readings in the area of the circles shown (Figure 2 above) on **BOTH** sides (ENTRANCE and EXIT) of the X-ray machine (total of 10 readings):

<u>ENTRANCE</u>		<u>EXIT</u>	
TOP LEFT	<u>.200</u> mR/hr	TOP LEFT	<u>.068</u> mR/hr
TOP RIGHT	<u>.198</u> mR/hr	TOP RIGHT	<u>.057</u> mR/hr
LOWER LEFT	<u>.135</u> mR/hr	LOWER LEFT	<u>.073</u> mR/hr
LOWER RIGHT	<u>.210</u> mR/hr	LOWER RIGHT	<u>.051</u> mR/hr
CENTER	<u>.220</u> mR/hr	CENTER	<u>.086</u> mR/hr

4. Transfer the **8 highest** readings (out of all 20 readings) to **Box 05, Section 7.3 (Exposure Levels)** of DOE-0014 FAA Form 165-17. Be sure to enter values in mR/hr! (100  $\mu$ R/hr = 0.100 mR/hr).

**Note:** On all X-Ray equipment, any reading of 0.5 mR/h (= 500  $\mu$ R/h) or higher is considered a failure of the Radiation Leak Survey.

5. Perform **Cumulative Exposure Test**:
- Push the MODE button once on the Invision 451P;
  - Verify that the meter's scale changes from  $\mu$ R/h to  $\mu$ R (Cumulative Mode);
  - Place the meter on the belt and run through the X-Ray beam 10 times in Cumulative Mode. Record total here: 3000  $\mu$ R
  - Divide the cumulative exposure value by 10 to obtain the **Dosage per Inspection**;
  - Record this result in Section 8.1 (Additional Information) of DOE-0014 FAA Form 165-17.

Survey Performed By (print your name): [REDACTED]

Signature: [REDACTED]

Date: 3-5-2011

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