

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) (Require by 14 CFR 108.17, 14 CFR 129.26)		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) Logan International Airport	FDA Region MA	St. No. R.R. or Airline/Airport (10.80) RR BOS	City (10.73) Boston	
CC	Address of Facility	Room No. or Other Location of System (10.32) US Air Main Lane 1	Person Interview (33-54)	State Code MA	Zip Code 02128	
DD	and Specific Location of X-ray System	Certification Label Present YES	Instruments: (type and serial number) Inovision Model: 451P-RYR Serial No. 468	Telephone No.		
01	1.2 Manufacture And Product ID	A. Manufacture (Responsible Firm) Rapiscan	B. OHU46	C. System Model No. and/or Name TRX 522B		
		D. 115vac 60 Hz Unique I.D.	E. System Serial No. 7003203			
	F. Date of Manufacture Mo. Aug Yr. 2000	1.4 Operator Instructions Available YES	1.5 Maintenance Schedule Available N/A			
	2.0 Warning Labels Indicators	2.1 Warning Label Present at Controls Stating: "Caution: X-Rays Produced When Energized" YES	2.2 Warning Labels Present at Ports Stating: "Caution: Do Not Insert Any Part of the Body When System is Energized, X-Ray Hazard" YES	2.3 Two Indicators Labeled "X-Ray On" Present at Controls (One May Be Labeled "mA Meter") YES		
02	3.2 Door Safety Interlocks	2.4 At Least One Indicator, X-Ray Marked "X-Ray On", Visible from Each Port, Door, And Access Panel YES	3.0 Interlocks	3.1 "Captured Key" Control YES		
		A. Minimum Number of Interlocks Visible At Any One Door N/A	3.3 Prevention of X-Radiation By Interlocks	A. All Doors and Access Panels That Were Tested Prevent Generation of X-Radiation N/A		
	B. At Least One Interlock Dependent on No Moving Part Except Door N/A	B. Use of X-Ray Control Necessary to Resume Operation Following Interruption N/A				
	4.0 Ports and/or Apertures	4.1 Some Part of the Body Can Be Inserted Through a Port Into The Primary Beam NO	4.2 Some Part of the Body Can Be Inserted Into the Aperture NO			
6.0 Baggage Inspection Systems	6.1 Means Provided to Ensure Operator Presence at the Control Area YES	6.2 Means Provided to Operator for Terminating Exposures of Greater than One-Half Second and Preventing YES				
03	7.0 Leakage Radiation	Specific Test Procedure Used 94	7.1 Scatter Block Description Pelican Case for the Inovision 451P-RYR meter			
05	7.2 Technical Factors 141 kVp .716 mA					
	7.3 Location	Exposure Levels	Non-Continuously Activated Systems Only Number of Exposures Initiated	Location	Exposure Levels	
		.136 mR/hr	Exp	06	.098 mR/hr	exp
		.123 mR/hr	Exp		.052 mR/hr	exp
		.122 mR/hr	exp		.046 mR/hr	exp
	.099 mR/hr	exp	.036 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 100%		
08	8.0 Additional Information					
09	8.1 200 uR					
10	8.2					
11	8.3					
12	8.4					
13	8.5					
13	Surveyor Information	[Redacted]			Date of Survey 3-23-2011	Surveying Agency Code
Remarks:						

Siemens Government Services, Inc.

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

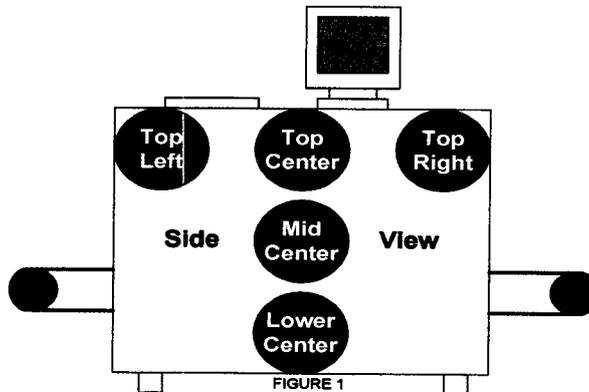
WO#: 3744345

Location: USAir Main Lane 1 Background Reading: 7  $\mu$ R/hr

Date: 3-23-2011

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 DOE0-0014 FAA Form 165-17.

<u>Make / Model</u>	<u>Serial Number</u>	<u>Observed Voltage and Anode Current</u>			<u>Convert Anode Current to mA for FAA form (divide <math>\mu</math>A by 1000)</u>
<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>7063203</u>	<u>141</u> kV,	<u>716</u> $\mu$ A		<u>.716</u> mA
<input type="checkbox"/> Other _____	s/n _____	_____ kV,	_____ $\mu$ A		_____ mA



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 DOE0-0014 FAA Form 165-17.  
 Conversion: 100  $\mu$ R/hr = 0.100 mR/hr.

**FRONT**

**BACK**

TOP LEFT	<u>.010</u> mR/hr	TOP LEFT	<u>.016</u> mR/hr
TOP CENTER	<u>.015</u> mR/hr	TOP CENTER	<u>.017</u> mR/hr
TOP RIGHT	<u>.016</u> mR/hr	TOP RIGHT	<u>.011</u> mR/hr
MID CENTER	<u>.019</u> mR/hr	MID CENTER	<u>.026</u> mR/hr
LOWER CENTER	<u>.012</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#: 3744345

X-Ray Serial #: 7003203

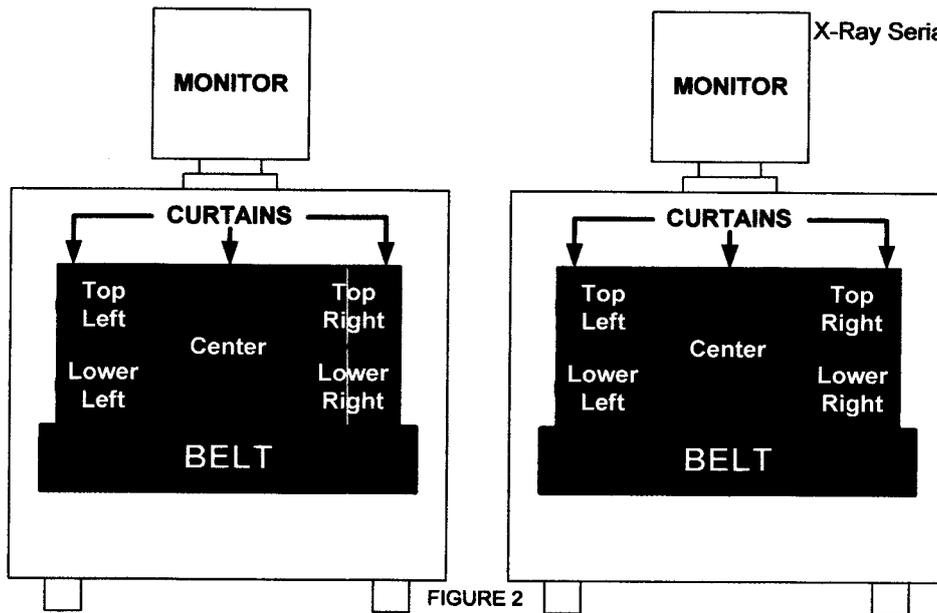


FIGURE 2

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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>.123</u> mR/hr	TOP LEFT	<u>.036</u> mR/hr
TOP RIGHT	<u>.122</u> mR/hr	TOP RIGHT	<u>.046</u> mR/hr
LOWER LEFT	<u>.098</u> mR/hr	LOWER LEFT	<u>.035</u> mR/hr
LOWER RIGHT	<u>.099</u> mR/hr	LOWER RIGHT	<u>.031</u> mR/hr
CENTER	<u>.136</u> mR/hr	CENTER	<u>.052</u> mR/hr

4. Transfer the **8 highest** readings (out of all 20 readings) to **Box 05, Section 7.3 (Exposure Levels)** of DOEO-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: 2000  $\mu$ R
  - Divide the cumulative exposure value by 10 to obtain the **Dosage per Inspection**;
  - Record this result in Section 8.1 (Additional Information) of DOEO-0014 FAA Form 165-17.

Survey Performed By (print your name): \_\_\_\_\_

Signature: \_\_\_\_\_

Date: 3-23-2011

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