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SECRETARY OF THE AIR FORCE**



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Communications and Information

***OPERATION AND MAINTENANCE OF
POSTAL EXPLOSIVE TRACE DETECTION
SYSTEMS***

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 33-3, Information Management. It sets forth the policies and procedures for using explosive trace detection technology to enhance the security and safety of the Air Force mail system. It explains the purpose for employing mail-screening technology within the Air Force and addresses the procedures and responsibilities for operating the equipment. This instruction applies to all Air Force military, civilian and contractor personnel who supervise or work at an Air Force "Mail Entry Point" (i.e.; Air Force Post Office (APO), Aerial Mail Terminal (AMT), Mail Control Activity (MCA), Official Mail Center (OMC), Postal Service Center (PSC), and other postal or official mail activities). This instruction also applies to the Air National Guard and Air Force Reserve. This AFI may be supplemented at any level, but any supplements that directly implement this publication need to be routed to SAF/CIO A6 Policy Branch for coordination prior to certification and approval.

Directives and other supporting material used in this Instruction are derived from: 39 CFR, Part 233, Postal Service, Inspection Service Authority; United States Postal Service (USPS) Pub 166, Guide to Mail Center Security; USPS Domestic Mail Manual; DoD 4525.6-M, Department of Defense Postal Manual; DoD 4525.8-M, DoD Official Mail Manual; DoDI 2000.16, DoD Antiterrorism Standards; DoDD 2000.12, DoD Antiterrorism (AT) Program; AFI 10-245, Air Force Antiterrorism (AT) Standards. See Attachment 1 for a glossary of references and

supporting information. Other publication websites: DoD: <http://www.dtic.mil/whs/directives/> USPS: <http://about.usps.com/forms-publications>.

Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Air Force (AF) Form 847, Recommendation for Change of Publication; route AF Forms 847 from the field through the appropriate functional chain of command.

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SUMMARY OF CHANGES

This interim change revises AFI 33-397 by (1) adding tiering, IAW AFIS and AFI 33-360, Publications and Forms Management, and (2) updating signatures, publication dates, office symbols and email addresses to reflect current organizations, (3) incorporates AFGM 33-397, specifically: allows turn-in of IONSCAN systems that were formerly under the SAF/CIO A6 centrally managed warranty by removing the prohibitive language and directs readers to the AF Postal SharePoint for a "by serial number" listing and turn-in guidance.

1. Overview:

1.1. In conjunction with homeland security, Air Force initiated the purchase of explosive trace detection scanners to provide defense in depth (layered security) for all overseas locations and key CONUS locations. These scanners are state-of-the-art technology; they are ideal for screening mail for explosives and gunpowder. They are also instrumental in locating chemical and radioactive "dirty" bombs, since those devices also contain an explosive component for them to be effective. The current inventory includes the IONSCAN system. However, similar systems may be added to the inventory in the future.

1.2. Although there is no specific threat of terrorist mail attacks at Air Force installations, there is still a need to establish procedures and solutions that installations need to implement as Force Protection Conditions (FPCON) elevate, or in the event of a specific threat. The purpose of a mail-screening program is to safeguard personnel, property, and resources during day-to-day postal operations, deter terrorist threats, enhance security, and assign responsibilities.

1.3. Implementing protective measures should enhance the antiterrorism (AT) posture of the installation, but has inherent limitations. Screening can be accomplished for a percentage of mail (paragraph 2.1.10.), but screening 100 percent of all daily mail may not be feasible for extended periods without personnel augmentation. The use of the IONSCAN is designed to supplement visual screening procedures, not replace them. Assigned personnel need to understand they are the first line of defense against terrorists and their acts. Employees need to remain vigilant when it comes to personal security and the security of the work place.

1.4. The IONSCAN system consists of four main equipment items, all are important to the systems continued performance: IONSCAN, printer (label-type), sampling wand, and heavy-duty aluminum shipping case.

NOTE: The shipping case is important for protecting the scanner when depot-level maintenance is needed. However, long periods between usages can lead to its misplacement. Take steps to ensure shipping case remains in proximity to the scanner and identified for this sole purpose.

2. Responsibilities:

2.1. Senior government representative (or postal contractor), assigned to each Air Force mail entry point or other major mail processing facility will:

2.1.1. Ensure individuals who operate IONSCAN equipment receive and successfully complete appropriate training before operating the equipment. Ensure training records for military, government civilian, and contractor employees are properly documented. (T-3).

2.1.2. Conduct annual refresher training to ensure all personnel are current in procedures and actions required in the event of positive readings.

2.1.3. Ensure Explosive Ordnance Disposal (EOD) and other first responder personnel are aware of the scanner's location and familiar with its operation.

2.1.4. Ensure operators understand the procedures for handling mail determined to be suspicious or hazardous and implement suspicious mail procedures (See Attachment 2 for suspicious-mail procedures).

2.1.5. Develop screening standards to minimize the potential of mail entry points becoming the "soft spot" in installation defense. (T-2). Ensure mail is screened according to priority, on a daily basis, and as soon as possible upon arrival. If suspicious mail is found, the operator immediately notifies the senior person on-duty, who notifies appropriate officials. (See Attachment 2 for suspicious-mail procedures.)

2.1.6. Ensure equipment is used in accordance with manufacturer's guidelines, and required maintenance procedures are followed. (T-3).

2.1.7. Monitor consumable parts and supply replacement program. (T-3).

NOTE: Installations have to fund the purchase of consumable supplies. Budget approximately \$1000 annually per IONSCAN. Supply sources are listed on Air Force Postal SharePoint located at <https://cs3.eis.af.mil/sites/OO-SC-PO-ST/>.

2.1.8. Register each IONSCAN with the Installation Radiation Safety Officer (IRSO) and Bioenvironmental Engineer. (T-2).

2.1.9. Screen 100% of suspicious mail, mail received from foreign country postal systems, and mail destined for billets or personnel identified as "high-risk". See suspicious-mail procedures in Attachment 2. (T-1).

NOTE: Installations have to increase percentages to address specific threats.

2.1.10. Consult with local security forces unit and, using the local design basis threat and completed integrated defense risk management process, determine most effective use of the explosive detector systems. However, as a minimum conduct random daily scanning based on the current FPCON:

(NOTE: Installations will increase percentages to address specific threats.)

- 2.1.10.1. FPCON Normal, randomly scan 10 percent of incoming mail.
- 2.1.10.2. FPCON Alpha, randomly scan 20 percent of incoming mail.
- 2.1.10.3. FPCON Bravo, randomly scan 30 percent of incoming mail, begin target scanning for high-risk billets and personnel at 100 percent.
- 2.1.10.4. FPCON Charlie, randomly scan 50 percent of incoming mail, and continue target scanning for high-risk billets and personnel at 100 percent.
- 2.1.10.5. FPCON Delta, scan 100 percent of incoming mail.
- 2.1.11. Immediately contact warranty contractor's helpdesk to resolve system errors.
 - 2.1.11.1. Authorized Shipping Modes. CONUS locations use FedEx or UPS Ground shipping with mandatory signature and tracking. OCONUS locations use Registered Mail, Diplomatic Pouch, or "bird watch" shipments to ensure positive control of the IONSCAN. Express Mail is also authorized but needs to be used sparingly due to expense.
 - 2.1.11.2. Ensure device is protected from damage during shipment by utilizing appropriate shipping container.
- 2.1.12. Required logbook entries are daily startup and maintenance procedures (attachment 3) and completion of the weekly maintenance procedures (attachment 4), and any supplies ordered.
- 2.1.13. **The IONSCAN contains a radioactive material (RAM) (Ni-63) within a sealed component, never open or remove the sealed component containing the RAM.**
- 2.1.14. Coordinate with the Bioenvironmental Engineer to perform leak tests of the IONSCAN every 6 months. (T-2). Test results need to be documented and maintained for three years in accordance with Records Disposition Schedule.
- 2.1.15. Ensure the IONSCAN is placed on the unit's equipment account (CA/CRL) in a timely manner. Use ASC Code 006E000 and stock number 6665P6811066 to account for the machines.
- 2.1.16. Ensure the IONSCAN is not transferred to or from another party without permission of the Bioenvironmental Engineer (or IRSO) and the MAJCOM OMM. Ensure the IONSCAN is issued as a "generally licensed device" IAW AFI 40-20, *Managing Radioactive Materials in the U.S. Air Force*.
- 2.1.17. Ensure written approval is received from the Bioenvironmental Engineer or IRSO, and all procedures are strictly adhered to before initiating any steps to acquire additional IONSCAN machines.
- 2.1.18. Contact the Bioenvironmental Engineer within 2 hours of receipt of an IONSCAN. (T-2). Place the unopened package in a secure storage location while awaiting further directions from the Bioenvironmental Engineer.

2.1.19. Do not move the IONSCAN from its appointed location at the mail entry point, unless approved by the MAJCOM OMM.

2.1.20. Ensure personnel understand the private nature of personal mail and information concerning personal mail may not be divulged outside of postal channels except for safety purposes (DoD 4525.6-M, Chapter 10).

2.1.21. For mail entry points that are “outsourced” or utilizing contract employees, the contract's work statement requires compliance with these policies and procedures and any subsequent changes thereto. The contract's quality assurance surveillance plan is designed to make sure the contractor complies with this instruction.

3. Training:

3.1. Formal training addresses two aspects—attaining the skills required to operate the IONSCAN and maintaining currency in those skills.

3.2. The senior government official or postal contractor assigned to the mail entry point will:

3.2.1. Oversee all clerk training.

3.2.2. Provide basic troubleshooting instructions through demonstrations and simulated equipment errors. (T-3).

3.2.3. Provide annual refresher training. (T-3).

3.2.4. Document training for military and civilian employees appropriate Career Field Education and Training Plan (CFETP) or AFJQS. Document contractor training as appropriate. (T-3).

3.3. All training materials are available on the Air Force Postal SharePoint.

4. Leak Testing:

4.1. The IONSCAN needs to be leak tested every 6 months to ensure the continued integrity of the source and to verify no RAM has leaked. In addition, if the unit is physically damaged, it needs to be leak tested (and those results known) before it is returned to service. The base Bioenvironmental Engineer will perform this activity. (T-3).

4.2. Test results need to be documented and maintained for three years per the RDS.

5. Repair and Technical Support.

5.1. Repairs are accomplished by contracted warranty support.

5.2. Coordinate with the warranty contractor via their 24/7 helpdesk phone number. Contact and shipping requirements information is maintained current on the Air Force Postal SharePoint.

5.3. Warranty contractor helpdesk personnel assist with system diagnostic, send operator installable replacement parts, or provide return authorization number if depot-level repairs are required.

5.4. Notify the Bioenvironmental Engineering and your MAJCOM OMM whenever an IONSCAN is inoperative or removed from service.

5.5. Deleted.

6. IONSCAN Turn-in. Air Force Mail Entry Points may turn-in their Explosive Trace Detection Systems with the concurrence of their unit leadership.

6.1. Turn-in authority only extends to machines formerly under SAF/CIO A6 centrally managed maintenance contract. A serial number listing is posted on the Air Force Postal SharePoint: <https://cs3.eis.af.mil/sites/OO-SC-PO-ST>. (ANG) A serial number listing for the ANG is located at https://eis.ang.af.mil/func/CI/kom/Lists/ANG_IONSCAN_Inventory/AllItems.aspx.

6.2. Air Force Radioactive Recycling and Disposal (AFRRAD) step-by-step turn-in instructions are also located Air Force Postal SharePoint.

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and Chief Information Officer

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

39 CFR, Part 233, *Postal Service, Inspection Service Authority*

United States Postal Service *Domestic Mail Manual*

DoD 2000.12-H, *DoD Antiterrorism (AT) Program*, 1 March 2012

DoD 4525.6-M, *Department of Defense Postal Manual*, 15 August 2002

DoD 4525.8-M_ AFMAN 33-306, *DoD Official Mail Manual*, 29 January 2007

DoDI 2000.16, *DoD Antiterrorism Standards*, 2 October 2006

DoDI 4525.08_AFI 33-365, *DoD Official Mail Program*, 2 January 2013

AFI 10-245, *Antiterrorism (AT)*, 21 September 2012

AFI 33-322, *Records Management Program*, 4 June 2012

AFI 40-201, *Managing Radioactive Materials in the U.S. Air Force*, 17 September 2014

AFPD 33-1, *Information Management*, 9 August 2012

Air Force Records Disposition Schedule (RDS)

Prescribed Forms

N/A.

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AFJQS—Air Force Job Qualification Standard

AFRRAD—Air Force Radioactive Recycling and Disposal

AMT—Aerial Mail Terminal

AT—Antiterrorism

APO—Air Force Post Office

FP—Force Protection

FPCON—Force Protection Condition

IMS—Ion Mobility Spectrometry

ISRO—Installation Radiation Safety Officer

MCA—Mail Control Activity

OMC—Official Mail Center

OMM—Official Mail Manager

PSC—Postal Service Center

RAM—Radioactive Material

Attachment 2

SUSPICIOUS-MAIL PROCEDURES

A2.1. Characteristics of Suspicious Mail. Does the letter or package have one or more of the following characteristics?

- A2.1.1. Restricted endorsements such as “personal” or “private”.
- A2.1.2. Misspelled addressee name/title, or addressed to a position title or organization.
- A2.1.3. Distorted handwriting or a name and address prepared via homemade labels or cut-and-paste lettering.
- A2.1.4. Visible protruding wires, aluminum foil, oil stains, discolorations, or strange odor.
- A2.1.5. A large number of postage stamps or excessive postage.
- A2.1.6. A rigid feeling or an uneven or lopsided appearance.
- A2.1.7. Excessive or unprofessionally wrapped with several combinations of tape.
- A2.1.8. Endorsed “Fragile—Handle With Care” or “Rush—Do Not Delay”.

A2.2. Procedures To Follow for Suspicious Mail. If any item in paragraph A2.1. is present:

- A2.2.1. Do not open the package or letter.
- A2.2.2. Leave the package or letter where found. Do not cover it or place it in an area where the EOD robot could not easily access it. If possible, mark the item’s location with a cone or something distinguishable.
- A2.2.3. Do not put the package or letter in water or a confined space.
- A2.2.4. If possible, ascertain if the addressee is expecting the item.
- A2.2.5. Evacuate the immediate area or building.
- A2.2.6. From a safe distance, call your emergency response phone number, and contact your chain of command. Do not use a cell phone near the suspected parcel. Ensure all mail employees are accounted for and remain available to answer questions.

A2.3. If the letter or package appears to contain a biological or chemical agent, immediately:

- A2.3.1. Call your emergency response phone number and let the first responders control the situation. Be prepared to give a detailed description of the item and its location.
- A2.3.2. Turn off all ventilation systems.
- A2.3.3. Close all windows and doors.
- A2.3.4. Take digital pictures of the suspect package from various angles without moving, touching or disturbing the package. If possible zoom in on the area(s) of the package that make it “suspicious”. Ensure to take camera when evacuating.
- A2.3.5. Evacuate the immediate area and cordon it off.

Note: If biological contamination is suspected, list all persons who have touched or come in close contact with the item. These personnel cannot come in close contact with others who have evacuated the facility. Ensure personnel remain at the evacuation point until cleared by first responders to avoid spreading contamination.

A2.3.6. Be prepared to remove contaminated clothing. First responders provide further instructions.

A2.3.7. Wash your hands with soap and warm running water.

Attachment 3

DAILY STARTUP AND MAINTENANCE PROCEDURES FOR THE IONSCAN

A3.1. Startup and Maintenance Procedures:

A3.1.1. Ensure your hands are clean and surfaces have been cleaned with isopropyl alcohol of 70 percent or greater.

A3.1.2. Check Drierite®, ensuring the color is blue and at least up to the seam on the tube. Approximately 2 cm of blue charcoal is needed to start a shift. Cartridge needs to be changed once Drierite® has turned pink to 1cm above charcoal.

A3.1.3. Check for proper installation of Drierite® quick disconnect fittings, located on Drierite® cartridge to unit hoses.

A3.1.4. Visually inspect the air filters and only remove them if they need to be cleaned. Clean filters with compressed air or simply pat clean taking care not to tear the filter. Heavily soiled filters can be rinsed with water but need to be completely dry before replacing.

A3.1.5. Clean the swipe tray and Teflon ring with a clean paper towel wipe dampened with isopropyl alcohol of 70 percent or greater.

A3.1.6. Prior to turning on the IONSCAN, remove the high temperature cover to access the Desorber heater and inlet area. If cleaning after using the IONSCAN, the system needs to be cooled to room temperature to avoid damage.

A3.1.7. Clean the top of the desorber heater and bottom of the inlet with a cotton swab dampened with isopropyl alcohol of 70 percent or greater.

A3.1.8. Visually inspect the exhaust condenser tube at the top of the unit; has to be replaced if sponge upstream from arrows has turned off white.

A3.1.9. Reinstall the high temperature cover.

A3.1.10. Turn the switch at the back of unit to the ON position.

A3.1.11. Check the lights on the front panel and ensure the yellow standby and green ready lights are on.

A3.1.12. Wait for the “beep”, and then press the ready/standby key. The green ready light begins to flash on and off.

A3.1.13. Wait for the IONSCAN to warm up, which could take 15 minutes or more. The green “ready” light remains constantly on, followed by a short beep. The IONSCAN is now ready to begin the sampling process.

A3.1.14. Run a blank analysis by sliding the empty slide tray to the analysis position. If the Pressure Auto Adjust warning message appears press “ENTER” to clear the message. Repeat the blank analysis until the message no longer appears. If the blank sample consistently alarms, clean the desorber heater, Teflon ring, and swipe tray with a cotton swab dipped in isopropyl alcohol of 70 percent or greater. A few passes may be needed in order to burn off all impurities.

A3.1.15. Run blank samples until you get two consecutive passes.

A3.1.16. Place a clean cotton swipe or swab in the swipe tray. The cotton swipe needs to have 2 passes within 10 attempts in order to begin the verification process. The readings do not have to be from consecutive passes.

A3.1.17. Sign the verifac printed receipt and record the results in a logbook (operational time, total samples run to date, your name, Drierite® level, calibrant level, and autocalibration and bakeout processes).

A3.1.18. If you do not see a verifac alarm, repeat the process a second time.

A3.1.19. If you fail to see a verifac alarm after the second attempt, wait 15 minutes and try a third test. Make sure the variability or Δ (Delta) is within specifications ($\pm 50 \mu\text{sec}$ from the peak position). The most accurate IONSCAN readings are given if the calibrant level is closest to absolute zero.

A3.1.20. If verification cannot be performed successfully and autocalibration is available (YES/ NAPP), perform autocalibration (accessed through “function menu”).

A3.1.21. To perform an autocalibration, place a swab w/verifac lipstick on it into the slide tray and move tray to the right for analyzing. After a successful autocalibration, press the Save Exit and then Esc function keys and proceed doing a verifac using the verification lipstick to obtain a verifac alarm. After you obtain a verifac alarm, press the ALARM RESET button, and thoroughly clean the area with 70% or better isopropyl alcohol. Sign the verifac printed receipt and record the results in the logbook.

NOTE. Should be rare to use autocalibration. If you need to use autocalibration on a daily basis, system is not operating properly. Check Drierite® level and ensure IONSCAN is clean.

A3.1.22. Once you get a verifac alarm, discard the swab used in the verifac alarm process.

A3.1.23. Check your hands and the scanner surfaces to ensure they are not contaminated.

A3.1.24. Place a clean cotton swipe or swab in the swipe tray. Make sure to handle cotton swab by the edges and avoid touching the middle of the swab where sample is collected. The cotton swipe needs to have 2 passes within 10 attempts in order to begin the verification process. The readings do not need to be consecutive passes. (If you continue to get a verifac alarm, be sure to slide the swipe tray to the right to burn off any impurities on the Teflon gasket.) If alarms persist after 5 blank analyses contact Smiths Detection service department.

A3.1.25. Proceed to test your work area and the letters or packages. (A swab is good for approximately 30 applications or until visibly dirty.)

A3.1.26. Make sure the logbook is annotated daily.

A3.1.27. Corrective actions for a positive alarm are as follows:

A3.1.27.1. Run another sample. If it still tests positive, inform your supervisor.

A3.1.27.2. Ensure your hands are clean and scanner surfaces have been cleaned with an isopropyl alcohol wipe of 70 percent or greater. Make sure the integrity of the system is maintained by performing the aforementioned methodology. If tests still result in a positive alarm, inform the proper authorities.

Attachment 4

MONTHLY MAINTENANCE PROCEDURES FOR THE IONSCAN

WARNING. Maintenance activities described need to be performed with the power switch OFF, the AC power cable unplugged, and the unit at room temperature.

A4.1. Maintenance Procedures for the Back of the Unit:

A4.1.1. Turn off the IONSCAN by pressing the ready/standby key (green ready light flashes on and off). When the IONSCAN prompts you with the question, "Are you sure?", select the YES button. Then turn off the IONSCAN with the red power switch on the back of the unit.

A4.1.2. Unplug the AC power cable and printer cable from the IONSCAN.

A4.1.3. Remove the air purification unit by disconnecting the two air line quick connectors located next to the unit.

A4.1.4. Undo the hook-and-loop fastener strips and remove the air purification unit.

A4.1.5. If the filters are dirty simply pat clean, or if extremely dirty, rinse with water and pat dry with a paper towel. Filters need to be completely dry before replacing.

A4.1.6. Reinstall the air purification unit.

A4.1.7. Secure the air purification unit with the hook-and-loop fastener strips.

A4.1.8. Fasten the air line quick connectors.

A4.2. Maintenance Procedures for the Front of the Unit: CAUTION: Under no circumstances should laboratory solvents (especially halogenated solvents such as carbon tetrachloride chloroform, or methylene chloride) be introduced into the cell because they can damage the detector.

WARNING: Because the ion mobility spectrometry (IMS) detector becomes very hot during operation, this maintenance procedure can only be performed when the system is off and cold.

A4.2.1. Turn the IONSCAN so the front of the unit is facing you. Remove the inlet cover to expose the inlet door and desorber heater.

A4.2.2. While loosening the two captive screws with the screwdriver, simultaneously apply gentle pressure with the tweezers to the inlet door to prevent the screws and threads from stripping.

A4.2.3. While loosening the two captive screws with a flat head screwdriver, simultaneously apply gentle pressure with the tweezers to the inlet door. The door is spring loaded and gentle pressure while removing screws is necessary to prevent the screws and threads from stripping.

A4.2.4. Using tweezers, carefully remove the Teflon gasket and inspect for damage. If gasket is damaged or worn, discard.

A4.2.5. Do not tear the Teflon gasket. Place the used Teflon gasket in a jar of isopropyl alcohol of 70 percent or greater. This gasket can be used for the following week's maintenance replacement. Continue to cycle and change Teflon gaskets in this manner.

A4.2.6. Using tweezers, lift out the glass inlet liner. If the glass inlet liner is dirty, replace it or clean it with isopropyl alcohol 70 percent or better and allow drying before replacing inlet liner.

A4.2.7. While the inlet glass liner is removed, clean the gold repelling grid. A cotton swab dampened with isopropyl alcohol of 70 percent or greater needs to be *gently* inserted where the inlet glass liner would normally reside.

A4.2.8. Using cotton swab, *gently* press and turn the swab against the repelling grid. Be careful not to press hard enough to leave cotton residue on the repelling grid or to punch through it.

A4.2.9. Reinstall in reverse order. Do not over tighten the inlet door screws.

A4.3. Maintenance Procedures for the Top of the Unit:

A4.3.1. Visually inspect the exhaust condenser tube assembly during monthly maintenance. If it appears yellowish or brown in color on any part of the foam area, it is time to replace it.

A4.3.2. If the condenser tube does not require replacement; clean the condenser tube port during monthly maintenance.

A4.3.3. Remove the high voltage power supply by loosening the three screws and sliding it back.

A4.3.4. Using a slotted screwdriver, unscrew the back fastener of the exhaust condenser tube. Do not discard the screw.

A4.3.5. **NOTE:** Be careful not to crack the plastic condenser tube or lose/damage the O rings. If you damage the condenser tube or O rings during maintenance, replace it with a new one.

NOTE: Be careful not to crack the plastic condenser tube. If you crack it during maintenance, replace it with a new one.

A4.3.6. Push the exhaust condenser tube forward toward the front of the IONSCAN and pull the tube out of the retaining brackets.

A4.3.7. Using some pliers and a strand of wire (a paper clip is sufficient), clear the exhaust port by *gently* pushing the wire a few inches into the port. Move the wire back and forth several times to clear any debris in the port.

A4.3.8. Insert the new exhaust condenser tube into the brackets.

NOTE: Replace the condenser tube only if it appears yellowish brown in color.

A4.3.9. Using a slotted screwdriver, screw in the back fastener.

A4.3.10. Reinstall the high voltage power supply, detector cover, printer cable, and AC cable.

A4.3.11. Document all maintenance (including cleaning) in the log.

A4.3.12. Proceed to the bakeout process (paragraph A4.4.).

A4.4. Performing the IONSCAN Bakeout Process:

A4.4.1. The bakeout is used to clean the IMS detector of contamination accumulated during prolonged use or when analyzing dirty samples.

A4.4.2. The bakeout is automatic, and the time is adjustable. Two hours of bakeout time is recommended.

A4.4.3. Turn the switch on the back of unit to the ON position.

A4.4.4. Check the lights on the front panel and ensure the yellow standby light is flashing.

A4.4.5. Wait approximately one minute and then press the ready/standby key. The green ready light flashes on and off.

A4.4.6. Wait for the IONSCAN to warm up, which could take 15 minutes or more. The green ready light remains constantly on, followed by a short beep.

A4.4.7. Place the IONSCAN into standby mode and enter the function menu by pressing the function key. The green ready light flashes on and off. When the IONSCAN prompts you with the question, "Are you sure?", select the YES button.

A4.4.8. In the function menu, highlight system maintenance, using the up and down arrow keys. Then press enter.

A4.4.9. In the system maintenance menu, highlight bakeout by using the up and down arrow keys. Then press enter.

A4.4.10. After selecting bakeout, the screen prompts the user to slide the sample tray into the analyzing (right) position. After sliding tray to the analyzing position press enter.

NOTE: The tray cannot be loaded with a sample swipe or cartridge.

A4.4.11. After the bakeout time has expired, the IONSCAN returns to the standby mode.
NOTE: The bakeout process can take up to 3 hours to complete. Make sure the logbook is annotated on the respective bakeout dates.