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Memo

To: Jerry Raymond
From: Sal Dassaro, CMDSM
Date: October 25, 2001
Subject: Mail Handling Procedures for Current Biological Threats and Protection of Staff

As you know, I have been in touch with quite a few of our customers and colleagues concerning mail handling procedures in response to the current concerns about biological contaminants. Dag Gonzalez and I have spoken to customers and manufacturers here in the New York - New Jersey area and other parts of the country and we have done some research on methods for cleaning and processing incoming mail. Some or all of the following ideas might be implemented with the intention of protecting mail center staffs and facilities from Anthrax and other biological contaminants.

We thought this might be helpful to our colleagues. We will update this information as frequently as we can.

Sanitizing Mail and Material: Some of our customers have expressed concern about sanitizing material as it is being examined. We have looked at several methods of accomplishing this.

Ultraviolet Light - Dag reviewed research material that shows that ultraviolet (UV) light neutralizes bacteria in general and Anthrax in particular. It is not entirely clear how much UV exposure is needed to kill Anthrax, but we are told by the manufacturers we have contacted that it apparently is similar to families of contaminants that are well within the parameters of the UV systems available. By passing envelopes under the right kind and intensity of UV light, the exposed bacteria are effectively made harmless. There are various types of equipment (including conveyor systems) that can expose mail under an overhead UV fixture. Some conveyor models have multiple UV lamps that will sanitize the top and bottom surfaces of mail in a single pass. We are exploring whether it is of any practical value to use UV lamps under stationary workstations to sanitize individual mail as it is analyzed. We have already determined that this application requires careful consideration of the intensity of the lamps, height from the work surface, shielding/filtering of non-essential UV wavelengths and proper exposure time of mail surfaces.

There are also UV fixtures that treat broader areas with wall or ceiling mounted treatments, but these would tend to clean airborne contaminants rather than mail.

Note: This potential solution will only sanitize the outside of the envelopes because UV light has "poor penetrative properties."

Ozone Saturation - An alternative to UV devices (or something to use in combination with UV) is an ozone generator. Saturating an enclosed area with the proper amount of ozone will effectively kill all organic life. This method could be very effective for sanitizing a room full of mail trays, bags or buckets. Unlike UV, ozone will penetrate containers and envelopes and kill bacteria such as anthrax. Ozone generators come in various sizes and work best in a sealed environment. (We have heard that some corporate mail centers are proposing to set up off-site facilities to process incoming mail, a few of which are setting up mobile offices (trailers) parked near their main facilities. These

would isolate the preliminary handling of incoming mail and have obvious benefits of being separated from a main building and containing its own HVAC.) Theoretically, a mobile office or room dedicated to special handling of mail and deliveries could be pressurized, filled with ozone and completely sterilized in about an hour and half. Lesser concentrations of ozone or room pressure will determine the amount of time for treatment. On a positive note, ozone will breakdown to oxygen in a very short period of time, making this a very safe alternative for employees and the environment. We are continuing to gather information for this treatment method. There may also be some issues of ozone's effect on adhesives and paper.

Microwave - We have heard questions about using microwave ovens to sanitize mail. Even if the time required was not so long, it is not practical because there is a significant risk of fire if you microwave material that might contain staples, paper clips, credit cards, reflective tape, etc.

Laboratory-type handling devices - We have a couple of customers who have moved laboratory equipment into a mail center to allow mail clerks to handle suspicious items without touching them, using self-contained chambers with glove-devices for handling. We have not yet gotten any information about their effectiveness or cost.

Off-Site Processing: As we noted above, some organizations are considering using off-site facilities, mobile offices or isolated rooms to process incoming mail. The reasoning behind this is to protect facilities from real or potential contamination and the resulting disruption caused by closing and clean-up. If an organization takes this route, it has to consider a variety of material handling equipment and challenges such as weather and security issues in moving the mail to the end users.

Some customers we have spoken to have set up work tables and sorters in these isolated facilities and are using special carts that are easily cleaned. *Some have mentioned that they would like to use work tables that are of a dark, one-color finish that will show powder and some potential contaminants.* We do not think there is any particular advantage from one type of furniture construction as opposed to another (steel vs. laminates). Both can be cleaned with appropriate solutions. Some customers have told us they do not want to use tables that have cabinets or shelves underneath for obvious reasons.

Centralized Mail Opening: We have spoken to organizations that are considering opening all incoming mail using high-speed envelope openers. Some are implementing procedures to open all mail that meets a protocol for sensitive items (e.g., items addressed to executives, handwritten envelopes, and others that meet the Postal Service screening protocols). We have been told that some people are concerned about using a traditional "slitter" or hand-held stiletto opener, either of which can cut the contents of an envelope. Some envelope openers are available that grind the envelopes open while protecting the contents. These have additional advantages of (1) doing less to disturb potentially dangerous contents and (2) reducing or eliminating the danger of paper cuts in handling the envelopes and contents. This last consideration can provide additional protection to employees. This should be a serious consideration.

Envelopes opened on machines like this can be counted, date-stamped and batched at the same time. Some organizations may consider extracting the contents also. Obviously, there are security and confidentiality issues that should be considered.

Sort Stations: A wide variety of sort stations can be used for an appropriate primary and/or fine sort of mail. We are looking into sort stations that can have appropriate UV devices mounted under the sort modules, but these are not yet available. In a case like this, a sealed UV device would not be likely to hurt the mail processor's eyes.

One of my customers (a major New York media company) set up sort stations that have light tables built into the work surface. The idea was to allow mail clerks to have some visual review of the possible contents of envelopes as they are being handled. We could provide these, but I am not sure of their practical value. However, they may have some psychological value to mail center employees.

Cleaning work surfaces: We have been told that peroxide and bleach solutions are effective for cleaning equipment and furniture. Some of these might have an effect on the surface of furniture and paints. We have been told that there is a derivative of a phenol-type disinfectant (Chlorhexidine) which is not toxic or corrosive and can be used in aqueous solution or in *iso*-propanol.

Material Handling Equipment: As with all of the above ideas, all equipment should also be sanitized periodically. Carts and other appropriate equipment would be needed, especially if the mail processing function is located off-site.

Shrink Wrap: Organizations may want to consider shrink wrapping the mail after it has been sorted. This will make a lot of sense, especially if the contents are extracted. An alternative would be to use see-through envelopes. These are available in self-sealer formats or in the form of re-usable pouches. This strategy might offer peace of mind to the end users that their mail has been properly handled before delivery.

Tracking of Items: A wide variety of tracking and control systems can be used to place bar codes on sorted mail or on the shrink-wrapped or see-through envelopes. This will create the added benefit of tracking all personnel who handled the items with time frames. Maintaining a delivery tracking process for all incoming mail might be time-consuming, but the types of systems we have used for accountable items can be adapted to this purpose immediately. Some of them might also have the capability of allowing organizations to track the sender of items, if they want to take the time and trouble to record that data.

Security: We have heard that some of our customers have tried to address security issues in the mail handling process. In a segregated facility, it might be a good idea to provide video surveillance both to record events if an incident occurs and to assure compliance with the proper protocols. The use of shrink-wrap or clear envelopes for processed materials is another good security concept (as described above).

I hope this is helpful. We will give you an update as we get more information. If any of our customers need help with any of this, we can direct them to the right resources.



Summary Checklist 10/25/01

Mail Handling Procedures for Current Biological Threats and Protection of Staff

- Sanitizing mail and material**
 - Ultraviolet light**
 - Ozone ionization generators**
 - Laboratory-type handling devices**
- Off-site processing**
 - Off-site facilities (mobile offices)**
 - Isolated rooms**
- Tables and sorters**
- Special carts**
- Centralized mail opening**
- Sort stations with UV devices**
- Light tables**
- Shrink wrap**
- See-through envelopes**
- Tracking of items**
- Security**