

University of California, Davis
Health System, Sacramento
Department of Medical Pathology & Laboratory Medicine

***MAIN HOSPITAL PEVCO/SWISSLOG PNEUMATIC
TUBE DELIVERY SYSTEM***

Administrative Procedure 525.A

PURPOSE:

To establish standardized instructions for the safe usage and maintenance of the Pevco/SwissLog Computerized Pneumatic Tube Transport System. The system is be used to deliver specimens from the Hospital Tower(s) to the Main Hospital Clinical Laboratory located in Room 2P340 and send Blood Products to the Hospital Tower(s) from the Clinical Laboratory.

PROCEDURE:

- A. Receiving Specimen Carriers
1. See Section C, *Sending Specimens Through the Tube System* for proper specimen packaging instructions.
 2. Remove the carrier from the Receive Bin. Press the *Clear Button* to turn off the indicator light and audible alarm.
 - a. Do not let carriers back up in the Receive Bin. Too many carriers in the bin can cause the system to shut down.
 3. Open the carrier and remove specimens. Make sure you ***do not set carriers aside without the removing contents.***
 4. Return the empty carrier to the system utilizing the Empty Carrier Return (ECR) feature or to the floor the carrier was sent from.
 - a. Make sure the carrier is properly closed and latched without any material sticking out of the carrier.
 - b. Place the carrier upright on the metal arm of the dispatcher on the tube station.
 - 1) Clear out any carriers behind the dispatcher, otherwise the station will jam.
 - c. Press: *Clear Button*
 - d. Enter Address: station location address or 00 for general send or the designated station.
 - e. Press: *Send Button*
 - f. ***Never attempt to send more than one carrier at a time.***
 5. In the event that a carrier is received with a broken specimen, refer to Section D, ***Biohazard Cleanup.***
 6. If a carrier is received that was intended for another station, check the enclosed contents or Routing slip to determine the correct destination. Send carrier to proper location. See *Sending Specimens Through the Tube System*.

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- a. If you are unable to determine the correct destination, contact the sending unit. If sending unit is not identified, contact Plant Operations and Maintenance (PO&M) @ 4-2763 for assistance. PO&M maintains a computer log of every system transaction.

 - B. Delivery of Blood Components via Tube System: the Pneumatic Tubes are not validated for delivery of blood components and this process is not in use.
 - 1.

 - C. Sending Specimen Carriers
 - 1. All specimens sent through the pneumatic tube system must be double bagged in approved Ziploc biohazard bags or otherwise packaged in a screw top or other leak-proof containers to prevent biohazard spills.
 - 2. Specimens that are loosely packaged are more susceptible to breakage.
 - 3. Multiple specimens must be wrapped tightly within a leak-proof container. Five Vacutainer per plastic bag and two plastic bags end to end with multiple specimens can be safely sent in each pneumatic tube. Rubber bands are useful to keep the specimens from bumping each other during transport in the system.
 - 4. Extra care must be taken with the packaging of iced specimens to prevent leakage before transporting through the pneumatic tube system.
 - 5. Urine and fluid containers prone to leakage must be inspected and secured before sending via pneumatic tubes. Zip-lock bags are not acceptable when used as the primary container. Leak proof containers are required to avoid system contamination. Specimens that do not fit in the available and appropriate leak proof containers, must be double bagged or hand delivered.
 - 6. Any specimen more than 5-pounds must be hand delivered.
 - 7. Make sure the carrier is properly closed without any material sticking out of the carrier. Improperly closed carriers may result in a system failure.
 - 8. Place the carrier upright on the metal arm of the dispatcher on the tube station.
 - 9. Clear out any carriers behind the dispatcher, otherwise the station will jam.
 - 10. Check to see that the display at the pneumatic tube station says either Station On

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or "***PTX v X.XX**" on the top line. These messages indicate that carriers can be sent.

11. Press the *Clear Button*.
12. Select the station address of the unit where the carrier is to be sent.
13. Press the number keys to enter the station address. Watch the digital display to be certain it shows the correct address. As you press the keypad, there will be a beep after each number entered.
14. Press *Send*. The display will indicate one of the following messages:
 - a. "Send in Progress", if the carrier can be sent at once.
 - b. "Send Accepted"; Verify Route, if the carrier must wait for a route to be verified. Once the route is clear, the message will change to "Send in Progress".
 - c. "Send Denied", if the system will not allow a transport to location. This may be the result of full station or of the station not being in operation.
 - 1) Press the *Clear Display Button* and repeat steps g, h & i in a few moments, in the event of a **Send Denied** message.

D. Sending Specimen Carriers from the Laboratory

1. Broken or leaking specimens should *never* be sent from the lab through the tube system.
 - a. Always check with the supervisor before returning a specimen to the floor for any reason.
2. See Section C, *Sending Specimens Through the Tube System* for proper specimen packaging instructions.

E. Biohazard Cleanup

1. Broken specimen or leakage of a specimen inside the carrier, *with no exposure to outside the carrier*.
 - a. Remove the specimen and set the carrier in the Contaminated Carrier Rack. Contact Environmental Services at 4-3777 and inform them that you have a carrier from the pneumatic tube system with a biohazard contamination. Someone from Environmental Services (ES) will be dispatched to the laboratory to deal with the contaminated carrier. This carrier should not be returned to service until cleared by ES.

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2. Broken specimen or leakage of a specimen outside the carrier, *with exposure to outside the carrier into the tube system.*
 - a. Discontinue use of the system at once.
 - b. Turn off the tube system until spill is cleaned up.
 - c. System Off Instructions:
 - 1) Press *Special Function Key*.
 - 2) Enter *Authorization Code AC* using lettered keypad.
 - 3) Press *Send* to enter.
 - 4) Enter EE. ***This command will shut the tube system down throughout the hospital. Request System Off*** is displayed.
 - 5) Press *Send* to enter.
 - 6) System is now off.
 - d. Contact PO&M to notify them of spill at 4-2763. Tell the operator that this is a ***Priority 1 call. Tell them that you have shut the system down, your station number and the station the carrier was sent from.***
 - e. Notify floors that the system is down due to biohazard spill in the tube system.
 - f. Station On Instructions:
 - 1) Press *Special Function Key*.
 - 2) Enter *Authorization Code AC* using lettered keypad.
 - 3) Press *Send* to enter.
 - 4) Toggle through special function options by pressing the *Special Function Key* until the message ***Request Station On*** is displayed.
 - 5) Press *Send* to enter.
 - 6) Station is now returned to operation
 - 7) Notify floors that the tube system is back in operation.

MAINTENANCE:

- A. Daily
 1. Wipe down keypad with a 4x4 moistened with isopropyl alcohol.
 2. Clean carriers with a 4x4 moistened with isopropyl alcohol.
 3. Inspect carriers for cracks and damage. Check that all carrier latches work properly.
- B. Scheduled maintenance
 1. All scheduled maintenance will be performed by Plant Operation & Maintenance Department usually the 2nd Tuesday morning of each month.

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REFERENCES:

Pevco Systems International, Inc., Computerized PT-3000 Pneumatic Tube System, Operation and Maintenance Manual, 1993-1994.

Pevco Systems International, Inc., Computerized PT-3000 Pneumatic Tube System, Station Operation Manual, 1996, Swiss Log Computerized Pneumatic Tube System 2010 Manual located within UCDHS Plant Operations (916) 734-2763

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PROCEDURE HISTORY:

Date	Written Revised By	Revision	Approved Date	Approved By
11/97	D. Wright	New	11/97	E. Larkin
4/98	D. Wright	Revised	4/98	E. Larkin
6/11/98	D. Wright	Revised	6/98	E. Larkin
6/30/98	D. Wright	Revised	7/98	E. Larkin
11/00	D. Wright	Revised	11/00	E. Larkin
10/02	D. Wright	Revised	10/02	E. Larkin
10/03	D. Wright	Reviewed	10/03	E. Larkin
10/04	D. Wright	Revised	10/04	E. Larkin
11/05	D. Wright	Reviewed	10/05	E. Larkin
9/06	D. Wright	Revised	09/06	E. Larkin
06/07	C. White	Reviewed	06/07	E. Larkin
06/08	C. White	Revised	06/08	R. Green
6/09	C. White	Reviewed	6/09	L. Howell
06/10	C. White	Revised	6/10	L. Howell
06/11	C. White	Reviewed	06/11	L. Howell
09/11	C. White	Revised	09/11	L. Howell
10/13	T. Cox	Revised: removed Blood Component delivery as NIU		
08/14	A.Castaneda	Revised- change address	09/14	