



MANAGEMENT SYSTEM MANUAL

ATL 7.8.6 R/V Atlantis Air Lock Procedures

Originator:	Approved By:
Theophilus Moniz III	Albert F. Suchy

1. Purpose

The purpose of this procedure is to establish guidelines for the operation of the air lock onboard R/V Atlantis.

2. Responsibility

The safe operation of the vessel ultimately rests with the master. The master or designated representative shall be advised every time air lock operations are being conducted.

It is recognized that the master is not on board the vessel at all times when the vessel is in port. In the absence of the master, the deck officer on watch and the engineering officer on watch shall be advised of all air lock operations.

It is important for the deck officer on watch to be aware of air lock operations to ensure deck operations such as crane work or shifting the vessel do not interfere with the procedure. Interference with air lock operation is not easy to define; however, when evaluating the deck activities that are taking place, the deck officer on watch should take into consideration the fact that using the air lock usually results in the compartment having a free communication with the sea. The only thing keeping the water out is the air pressure existing within the compartment. In addition the Mate on watch is the primary person in charge of emergency procedures. The deck officer on watch needs to know the status of the air lock.

The engineer on watch needs to be aware of air lock activities because that operation is directly dependent on reliable compressed air supply. Indirectly the air lock operation is dependent on a reliable electrical power supply to support the need for a reliable compressed air supply. Engineering activities should consider the need for this reliability while air lock operations are taking place.

If the vessel is docked in Woods Hole and the vessel is in a lay-up or extended maintenance period with reduced crewing, the Port Office shall be advised prior to beginning any air lock operations.

3. General

The use of the air lock onboard R/V Atlantis is an operation that is not to be taken lightly. The operation and placing people in the air lock is a sensitive evolution requiring special procedures. This evolution involves exposing individuals to above atmospheric pressure within a confined space.



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Special considerations shall be made before beginning air lock operations. Areas of consideration are: notification, maintenance of other shipboard systems and operation of the air lock itself.

Notification: Prior to operating the air lock, the master shall be informed of the activity. This notification should include what is being done, who is doing it and an estimate of how long the operation will take; as much information as possible shall be provided.

Maintenance of other shipboard systems: The maintenance of other shipboard systems is important to verify and maintain because the air lock operation is dependent on reliable compressed air. The failure of the compressed air system renders the air lock operation unsafe. Therefore, activities are to be avoided which jeopardize the reliability of the compressed air system while air lock operations are taking place.

Operation of the Air Lock: The air lock system shall only be operated by individuals familiar with the operation. There is no formal qualification to use the air lock. The name of the individual in charge of the operation must be relayed to the master and/or his/her designees.

R/V Atlantis has one space equipped with an air lock capability. This space is considered a confined space. As such, entering the air lock must be checked out in accordance with confined space procedures prior to the air lock operations. (Refer to SMM 7.8.1)

Instructions for operating the air lock shall be posted at the operating station for the air lock. It is the responsibility of the Chief Engineer to ensure these instructions are accurate for the system as it is installed. The Chief Engineer is also responsible for the maintenance and testing of the relief valves in the air lock compressed air system.

Personal Protective Equipment:

1. The following equipment is to be brought into the Airlock prior to operation:
 - a. A fully charged SCBA for each person. The people are to be well versed in the donning and operation of the SCBA. Should there be a failure of or compromised quality of the supply air, the SCBA can provide safe breathing air while the airlock is evacuated.
 - b. A ship supplied Analox O₂/CO₂ air monitor, model C1SAACAAA 5601A. This model can accurately measure gases in air at pressures higher than atmospheric.



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- The people in the air lock are to be familiar with the operation of the Analox meter.
- c. VHF or UHF radio communication with a spare radio.
2. The following equipment is to be provided and used at the airlock control station:
- a. Proper filters in the supply air piping to trap any airborne oil from the compressors. The filters should be equipped with an indicator to notify the operator of the condition of the filter.
 - b. A CO monitor able to sample the supply air via a bleed from the supply air piping. This monitor is to be calibrated prior to use and set to alarm when CO levels approach dangerous levels.
 - c. VHF or UHF radio communication with a spare radio.
4. **Reporting**
All air lock operations shall be conducted with the knowledge of the master or his/her designee. While docked in Woods Hole, the Port Office must be informed. It is the responsibility of the individual in charge of the air lock operation to notify all appropriate parties once the air lock operations have been completed.
- Reporting procedures required for the confined space entry must be followed as stated in SMM 7.8.1.