

## **HEARING CONSERVATION PROGRAM**

### **PROGRAM OVERVIEW**

Noise is unwanted sound, and is a common health and safety hazard in many marine environments. Because of the potential for noise exposure on pilot boats, **Launchmasters, Deckhands** and the **Shore Engineer** are the primary focus of this Hearing Conservation Program. **Pilots** may also be at some risk, so their participation is required in specific elements of this program.

This Hearing Conservation Program has been developed to prevent gradual but permanent hearing loss due to noise exposure. It is also intended to prevent occurrences due to the inability to hear verbal communications, alarms or other warnings. Furthermore, reducing noise exposure has been shown to reduce physical and psychological stress.

Fortunately, noise exposure can be controlled. Every effort should be made to select and use quieter machinery and boats, or to isolate the noise. When engineering controls do not reduce the noise level to or below acceptable limits, proper hearing protection must be provided and used.

Because the Atlantic Pilotage Authority falls under federal jurisdiction, the Canada Labour Code – Pt. II applies. The Marine Occupational Safety & Health Regulations (made under the Canada Labour Code) normally pertain to pilot boat operations. However, “Part V - Levels of Sound” does not apply to vessels under 300 tons registered tonnage. Therefore, for the purposes of evaluating the noise exposure of APA employees who work on pilot boats, the **Canada Occupational Safety & Health Regulations** (made under the Canada Labour Code) shall be considered the relevant regulation. Within that regulation, “Part VII – Levels of Sound” provides detailed guidance and includes a chart that describes the permissible limits of exposure to noise.

**Contractors** that operate APA vessels are expected to observe and meet the requirements of this Hearing Conservation Program.

This Hearing Conservation Program includes provision for

- **Noise measurements or “surveys”**
- **Education and training**
- **Engineering controls for reducing noise**
- **Hearing protection**
- **Posting of noise hazard areas**
- **Annual program review**

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## **NOISE MEASUREMENT**

1. The success of this Hearing Conservation Program depends on an accurate knowledge of the existing noise environment. Noise measurement surveys define areas within permissible limits for noise exposure and those areas where potentially harmful noise exposure exists. Effective noise exposure measurements prevent possible loss of hearing by identifying work areas where employees must wear hearing protection.
2. Where noise exposures are likely to exceed the permissible limits, the **Pilot Boat Manager** shall appoint a qualified person to conduct noise measurement surveys and provide a written report on exposures. This qualified person should be an occupational hygienist or should work under the direction of an occupational hygienist.
3. Surveys and written reports must meet the requirements outlined in "Part VII – Levels of Sound" of the Canada Occupational Safety & Health Regulations. The **Pilot Boat Manager** shall ensure that reports are kept on file for a minimum of thirty years.
4. APA **Launchmasters and Deckhands** tend to move from one area to another in their daily routines. As well, noise exposure levels may vary considerably during the shift because of trip frequency and other factors. In these cases, noise dosimetry should be performed whereby an employee carries a small device that measures noise levels encountered throughout the shift. In addition, sound level meters shall be used to measure noise levels in engine rooms and other areas of concern.

**Noise surveys have been performed on APA #1, #18, and Chebucto Pilot.**

**In all cases, noise levels in the engine rooms were very high when the engines were running. Noise levels in other areas were within the acceptable limits.**

**The results of those surveys should reflect noise exposures experienced on other APA pilot boats, and have been incorporated within this Hearing Conservation Program.**

5. The **Pilot Boat Manager** shall require Noise Level surveys every four years in for APA boats under direct Transport Canada oversight and every five years for APA boats delegated to a classification society. Additional surveys and follow-up measurements whenever changes in vessels, equipment, work practices or methods may change workplace noise

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exposures. The WHSC must be informed of all noise surveys and be provided with a copy of all reports.

### **EDUCATION & TRAINING**

1. To be effective, a Hearing Conservation Program must have a strong educational component. The **Pilot Boat Manager** must ensure that education and training is provided to all employees who are exposed to noise levels that may require the use of hearing protection (Launchmasters, Deckhands, Pilots and the Shore Engineer).
2. The educational program shall inform the effected employees of:
  - the results of any noise exposure measurements
  - the effects of noise on hearing
  - advantages and disadvantages of various types of hearing protection
  - proper selection, fitting, use, and care of hearing protection
3. The Information Handout - Hearing Protection (attached to this program) should be used, along with videos and other appropriate training aids.
4. The **OHS Coordinator** shall ensure that the educational program is delivered to employees as part of the New Hire Orientation, with an annual refresher thereafter. The OHS Coordinator shall ensure that accurate records of training are kept on file for a minimum of thirty years.

### **ENGINEERING CONTROLS FOR REDUCING NOISE**

1. When new vessels and equipment is to be purchased, APA management should consider noise and the potential exposure of employees. Noise output from equipment and the resulting noise levels in areas such as accommodation spaces and wheelhouses should be given careful consideration when making purchase decisions.
2. Due to the nature of some equipment (e.g. diesel engines), and in view of economic limitations, some noise outputs may exceed acceptable limits. The design and construction of enclosures, insulation of bulkheads and deck heads, and isolation devices (resilient mounts) should be considered as means to minimize those noise levels, especially in occupied spaces.
3. Regular equipment maintenance is an important noise control measure. Well-maintained equipment, in addition to being more reliable, also tends to be quieter.

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## **HEARING PROTECTION**

1. Any person who enters the **engine room** of a pilot boat while an engine is running (including at idle) **must** wear hearing protection.
2. **Pilots** are encouraged to carry disposal earplugs for use in those situations (including onboard ships) where high noise levels may pose a risk to hearing.
3. The following sections outline the two general types of hearing protection devices:

### **Earmuffs**

- Earmuffs are external hearing protection devices consisting of a headband and earcups. The earcups are cushioned and are intended to fit snugly (but not uncomfortably tight) against the side of the head. The earcup must completely encircle the ear in order to provide a good seal and thereby protect the noise-sensitive inner ear. Earmuff fit can be compromised by the use of other safety equipment such as eyeglasses, so care must be taken to ensure a proper fit. Earmuffs used by the APA must comply with **CSA Standard Z94.2-M1984, Class AL**.
- The **Pilot Boat Manager** shall ensure that earmuffs are supplied on each APA pilot boat. Date of issue should be recorded. Earmuffs should be replaced as required.
- Earmuffs must not be modified (e.g. by reducing headband tension) as this can drastically reduce the noise attenuation and protection for the user.
- **Users** must regularly inspect and maintain earmuffs in good condition. For example, if earcup cushions are cracked or hardened, or a headband has inadequate tension, the OHS Coordinator should be notified and a replacement obtained.

### **Earplugs**

- Earplugs are hearing protection devices that are inserted into the ear canal. Earplugs must fit snugly and seal the ear canal to provide adequate noise attenuation and to protect the noise-sensitive inner ear. Earplugs used by the APA must comply with **CSA Standard Z94.2-M1984, Class AL** (attached to this program).

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- There are a variety of different earplugs available but the most common ones are expandable foam or preformed plugs with flanges. A variety of disposable earplugs are provided on each pilot boat, in regular and small sizes (for smaller ear canals).
- To get the best fit, the ear should be pulled back with the opposite hand to straighten the ear canal and the earplug should be properly inserted with clean hands. Earplugs can work loose from talking or activity and may need to be resealed periodically.
- Earplugs must not be modified (e.g. by removing flanges) as this can drastically reduce the noise attenuation and protection for the user.
- **Launchmasters** are responsible to notify the Pilot Boat Manager when the supply of earplugs needs to be replenished.

### **WARNING!!**

**Noise levels in pilot boat engine rooms can be very high, especially when engines are running at speed. When it is necessary to enter engine rooms, either earmuffs or earplugs provide adequate protection for short periods of time (minutes). For work that takes longer, both earplugs and earmuffs must be worn for increased protection.**

### ***Purchase of Hearing Protection For APA Use***

*Appropriate hearing protection must guard against the level of noise hazard, provide a comfortable fit, and comply with CSA Standard Z94.2-M1984.*

*Hearing protection is classified as Class A, B or C, based on the minimum noise attenuation (reduction) at various assigned frequencies. **Class A** provides the highest level of attenuation across the test frequencies, and shall be selected by the APA when purchasing hearing protection.*

*Because engine noise is predominantly low frequency, specific hearing protectors which carry an "**L**" **designation** must be selected. These particular hearing protectors must meet the requirements for Class A described above, and also provide better low frequency attenuation. They are labeled "**AL**".*

*Hearing protection is also rated using a Noise Reduction Rating or **NRR**. Higher NRR values provide better noise attenuation. Select hearing protection with **NRR values of 26 or greater**.*

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## **POSTING OF NOISE HAZARD AREAS**

The **Shore Engineer** must ensure that noise warning signs are posted at the entrance to all pilot boat engine rooms

## **HEARING TESTS**

A functional hearing test is a regular part of a seafarer's medical examination. These functional tests are considered a reasonable means of identifying noise-induced hearing loss.

## **REVIEW OF EFFECTIVENESS**

1. To ensure that this Hearing Conservation Program is effective in reducing workplace induced hearing loss, it must be reviewed at least annually.
2. At the April meeting of the WHSC, the following points shall be considered and discussed:
  - a. the selection and use of hearing protection. For example: is hearing protection selected in accordance with this program? Is the hearing protection easy to use and comfortable? Does it make communication difficult? What is the general level of compliance?
  - b. the procurement (or planned procurement) of new vessels and equipment that may result in noise reduction.
  - c. the effective maintenance of equipment to ensure that noise output is minimized.
3. The results of this annual program review, including recommendations for improvement, shall be noted in the minutes of the WHSC meeting.