SAFETY TRAINING GOUGE #17

MEDICAL SURVEILLANCE

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About This Training Resource

If you're an afloat safety officer or division officer, you have a challenging, important role at your command. This series of newsletter-style training references will help you meet your bi-monthly training requirements. Modify and use them at quarters or muster.
Check the Naval Safety Center website at **www.public.navy.mil/navsafecen/Pages/safety-gouge/SafetyGouge.aspx** for the latest issues.
Send your feedback and suggestions to LTJG Melissa Balint at **melissa.balint@navy.mil**.

Introduction

If you have been following the "Safety Gouge" series, you have seen the terminology "industrial hygiene", "industrial hygienist" and "industrial hygiene report." You may also be familiar with the term "medical surveillance," although you may better understand it as your annual audiogram or respirator use certification exam.

The goal of this issue of "Safety Gouge" is to explain how industrial hygiene and medical surveillance work closely together.

Overall policy is set forth in NAVADMIN 312/12, which directs the collection of medical surveillance data across the Navy.

At sea aboard a carrier, an industrial hygienist uses a microscope to analyze lagging samples from another ship for asbestos.

How industrial hygiene and medical surveillance work together is described in the 2012 Fall/Winter edition of *Decisions* (http://www.public.navy.mil/navsafecen/Documents/media/decisions/fall-winter12/Decisions-FallWinter2012.pdf), by Joe Perfetto and CDR Dave Horn (an Industrial Hygiene Officer). The Q&A on page 2 of this issue derives from that article.

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Industrial Hygiene Survey Q&A

A logistics specialist performs a fit test on a P100 respirator to ensure a proper seal aboard an aircraft carrier.

What is an Industrial Hygiene (IH) survey?

IH surveys are comprehensive exposure assessments of the workplace. The goal of the IH survey is to recognize and evaluate potential health risks and make recommendations to control those risks.

The IH survey identifies operations that require personal protective equipment (PPE), such as those types of work that produce respiratory hazards, noise and sight hazards. IH surveys also identify personnel for inclusion in medical surveillance programs such as hearing conservation, asbestos, and sight conservation. All in all, the IH survey is an essential tool for developing your command's safety and occupational health programs.

Who conducts the IH survey?

Local medical treatment facilities (MTF): naval hospitals, branch medical clinic, and Navy Environmental Preventive Medicine Units (NEPMUs conduct IH surveys for afloat and ashore commands).

Who do I contact if I have questions?

Contact the local naval hospital, branch medical clinic or NEPMU closet to your activity. You can also access these commands at: http://www.public.navy.mil/navsafecen/Documents/OSH/SafetyOfficer/IH_Contact_Info.xls.

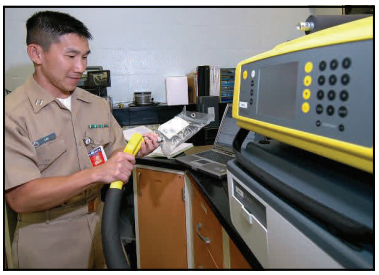
Which commands are required to have a baseline IH survey?

Every Navy command. The IH survey will evaluate work processes. This report is reviewed by your CO and safety officer (who usually retains a copy). A copy may also be found in your medical department.

IH Survey Q&A, cont.

Why does the IH have to do more than just observe?

Monitoring instruments are used by the IH to document (e.g., take samples) of what the chemicals and physical hazards that employees are exposed to. Once the IH survey is complete, the supervisor along with the CO and safety officer will receive a comprehensive report on all the processes within each work center. The supervisor should review the survey along with employees informing them of all exposures.



An industrial hygiene officer assigned to a Navy Environmental and Preventative Medicine Unit tests an air sample for contaminants with a Hazardous Air Pollutants On-Site (HAPSITE) machine.

What is the connection between taking samples in my workplace and my wearing a respirator?

In an industrial work, requiring an employee to wear a respirator is usually the last step in a formal process. For example, you are painting, using a paint that contains organic solvents, which can be harmful if inhaled. The IH may find this information on a material safety data sheet (MSDS) and decide that it is best to actually measure the levels of organic solvents in your work center rather than make an educated guess that there is something in the air.

- To conduct a measurement, IH has asked you to wear a pump on your belt, connected by tubing to a small filter. The filter is placed on the collar of your shirt because the IH is trying to capture what you might be breathing in.
- The pump is pre-set to a specific flow rate so that it is able to pull the air from around you in order to capture it onto the filter. This is completed before measures to control (e.g. engineering or personal protective equipment) your environment have been put in place.
- Next, the samples taken from your work center are evaluated at a lab. The lab compares the results to federal occupational exposure limits (OELs). These “exposure” limits are based upon the review of scientific research. If the sample taken in your workcenter exceeds the recommended OEL, controls must be put in place.
- The first two steps in establishing controls are engineering related (i.e. replace the equipment or the process, or an administrative change to the process by substituting a material).
- If engineering controls or substitution is not feasible, then the IH determines that the use of personal protective equipment, such as a respirator is necessary. This information will be put into the report provided to your command.

Example from an IH Inspection Report

Your workcenter should maintain a copy of their section of the report. Below is an example.

Category I Operations					
Work Task OPCODE	**Stressor(s)**	**Number of Workers Involved**	**Frequency/ Duration**	**Assessment Basis**	**Exposure Monitoring Needed**
Paint and corrosion removal (IND-001-00) (IND-003-00) Data presented in **TABLES V101.1** and **V101.3**	Noise[R], metal and nuisance particulates	70	Weekly/ Up to 3 hours	Noise dosimetry sample results are > OEL during mechanical paint removal; hearing protection required during chipping and mechanical paint removal. Similar task air sample results for nuisance particulates are < OEL (LHD-5); PPE required.	None
Brush and roller painting using paint or primer containing n-butyl alcohol (IND-005-05)	Organic solvents (including n-butyl alcohol, xylene[R], and toluene[R])	70	1-2 times a week/ Up to 3 hours	Similar task air sample results for n-butyl alcohol > OEL (FFG-47, LHA-4, and CVN-68); PPE required including a respirator. Similar task air sample results for other organic solvents are < OEL (LPD-15).	None

LEGEND: PBZ = Personal Breathing Zone; ND = Noise Dosimetry; DR = Direct Reading; SPL = Sound Pressure Level
[R] Classified as a known occupational reproductive hazard in Chapter 29 OPNAVINST 5100.23G

About the columns:

- The "Work Task OPCODE" describes the jobs performed in the workcenter.
- The "Stressor" column lists the chemical and physical hazards identified by the IH.
- The "Frequency/Duration" column displays the occurrences.
- The "Assessment Basis" column provides recommendations for control (i.e. PPE required).

You should also read the "General Comments" and "Recommendations" sections of the report (not shown in this example). The "Recommendations" section will provide guidance on training, proper work practices and medical surveillance guidelines. Don't skip over the fine print; there may be some additional guidance.

Medical Surveillance

Certain medical surveillance programs are intended to monitor your health and the effectiveness of controls put in place by the IH. Other types are intended to ensure that you are healthy enough to do a certain job or task. The overall goal of medical surveillance is to ensure both your safety and health and that of personnel around you.

Two Types of Medical Surveillance Exam Requirements

1. Exposure based. These are intended to identify slight changes in your body resulting from exposure to health stresses and to control the exposure before health effects occur (i.e., your annual audiogram determines if exposure to noise is affecting your hearing). The idea is that you should not get sick from performing the tasks necessary for you to do your job. Exposure-based exams are indicated on the industrial hygiene survey report. Refer to the column "Recommended Medical Program".

Below is an example of recommended medical surveillance programs taken from an IH survey. The IH identifies the job titles requiring surveillance, the tasks that generate the exposures, and the specific medical exam to be completed. The "Number of Workers" column lists the number of workers who were doing the tasks at the time of the survey. This is primarily for medical department planning.

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Based on the results of industrial hygiene evaluations, the following medical surveillance is recommended:

Job Title	Work Task	Recommended Medical Program	Number of Workers
BMs	Flight deck operations; Watchstanding/Shop operations/ Drills; Mechanical paint removal	Noise (503)	10
	Interior brush and roller painting of two-part epoxy paints and primers	Current PHA and Fit for Full Duty	10
		Mixed Solvents (e.g., n-butanol) (603)	10

Medical Surveillance Exam Requirements, cont.

2) **Certification exams**. These assess your health to determine if you are well enough to perform strenuous jobs (such as firefighter, police or security), or jobs where you have the potential to affect the health of others (health care worker, food service worker), or jobs that require a certain degree of hearing, sight, or other factors (such as aviation or forklift operator).

Some command medical surveillance program managers have a hard time identifying which certification exams may apply to their personnel because certification exams are not usually listed in the IH report. The Naval Safety Center, however, developed a Certification Examination Selection guide located on the Medical Surveillance Toolbox webpage that can help. An illustration of this guide is below. Move down the "Afloat Military" column and then look left. The green or yellow boxes will help you chose the appropriate certification exams.

Certification Exam Program Number	Certification Examination Name	Certification Program Applicability Guidance				Periodicity
		Afloat Military	Afloat Civilian	Ashore Military	Ashore Civilian	
701	AVIATION	Y	N/A	Y	N/A	≤ Age 50: every 5 years > Age 50: annual
723	BARBER AND BEAUTY SHOP EMPLOYEES	Y	Y	Y	Y	Preplacement Baseline
703	CHILD CARE WORKER	N/A	N/A	N/A	Y	Annual
705	DIVER/HYPERBARIC WORKER	Y	Y	Y	Y	Diver Candidates: Upon application to diving duty Designated Divers: ≤ Age 50: every 5 years ≥ Age 50 < Age 60: every 2 years ≥ Age 60: annual
721	EXPLOSIVE HANDLER	Y	Y	Y	Y	< Age 60: every 5 years ≥ Age 60: annually
720	EXPLOSIVES VEHICLE OPERATORS	Y	Y	Y	Y	Civilians: < Age 60: every 2 years ≥ Age 60: annual Active Duty Military: every 5 years
707	FIREFIGHTER (COMPREHENSIVE)	N/A	N/A	N/A	Y	Annual This exam incorporates many elements from several certification exams. See the "Medical Matrix" for mo information.
709	FOODSERVICE PERSONNEL	Y	Y	Y	Y	Preplacement
710	FORKLIFT OPERATOR	Y	Y	Y	Y	< Age 60: every 5 years ≥ Age 60: annual
718	FREON (HALOALKANE) WORKERS	See Comment #1	See Comment #1	See Comment #1	See Comment #1	Annual
711	HAZARDOUS WASTE WORKERS AND EMERGENCY RESPONDERS	N/A	N/A	Y	Y	Annual
719	HEALTH CARE WORKERS (HCWs)	Y	Y	Y	Y	Preplacement Baseline
706	MOTOR VEHICLE OPERATORS (DOT)	See comment #2	Y	See comment #2	N	Every 2 years
712	MOTOR VEHICLE OPERATOR (OTHER THAN DOT)	See comment #3	See comment #3	See comment #3	See comment #3	Every 4 years

Common Medical Surveillance Programs

Respirator use, health care worker, blood and body fluids, chromium, wastewater/sewage worker, food service workers, heat stress, radiation, lead, cadmium, asbestos, metal fumes, welding, isocyanates, laser, noise. It is your responsibility (as well as your supervisor's) to ensure that you are completing the required medical exams.

References

Additional information on both exposure-based and certification exams can be found in the Medical Surveillance Procedures Manual and Medical Matrix (Edition 11); Navy and Marine Corps Public Health Center Technical Manual NMCPHC-TM OM 6260; available on the Navy and Marine Corps Public Health Center website. The easiest way is to refer to the medical surveillance toolbox on the Naval Safety Center website (http://www.public.navy.mil/navsafecen/pages/osh/medsurv.aspx). This resource helps commands to manage an effective program. The toolbox includes:

- The Medical Surveillance Exam Completion Report spreadsheet (along with detailed instructions).
- Medical Surveillance Program Process: http://www.public.navy.mil/navsafecen/Documents/OSH/MedicalSurv/NavMedSurvProgProcess.pdf
- Medical Surveillance Afloat Program Management: http://www.public.navy.mil/navsafecen/Documents/OSH/MedicalSurv/AfloatMedSurvPM.pptx
- Navy certification examination guide (completed from CH-7 of the NMCPHC-TM OM 6260). Move down the “Afloat Military” column and then look left. The green or yellow boxes will help you chose the appropriate certification exams.

Aboard an LHD, members of the safety department use a plastic bag to conduct respirator fit testing.