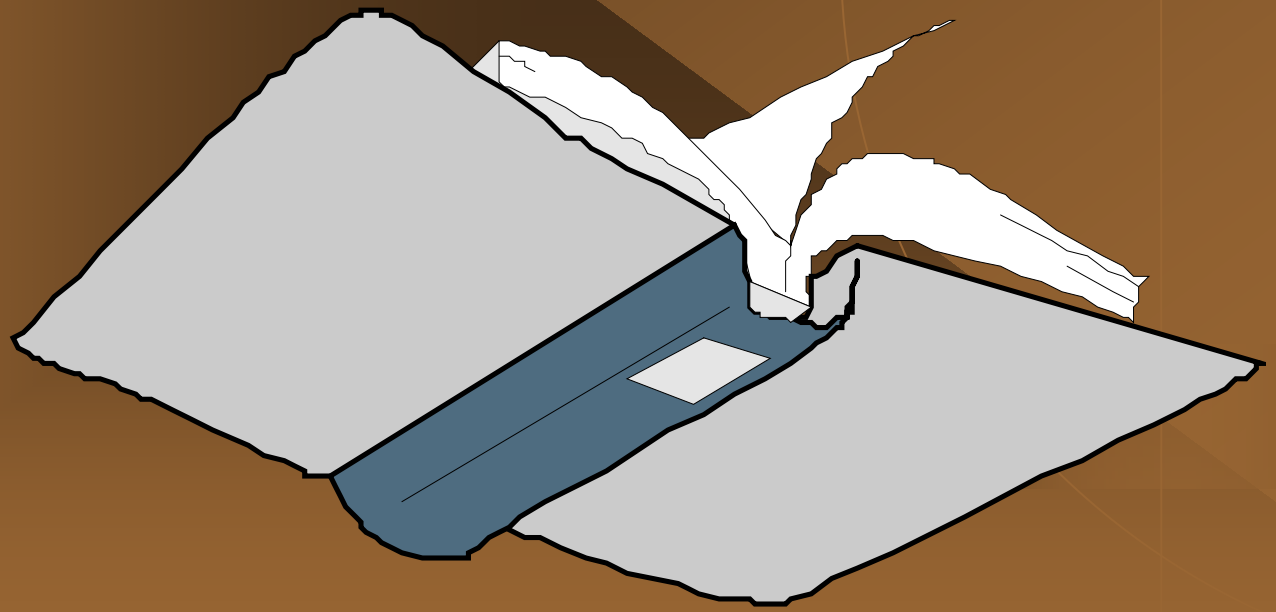
GAS FREE ENGINEER AND GAS FREE ENGINEERING PETTY OFFICER FOR SURFACE AFLOAT OPERATIONS

(K-495-0051)

Lesson Topic 1.1

NSTM 074 VOL 3 (SERIES) FAMILIARIZATION



Introduction

As Gas Free Engineer Personnel you will be required to know the information provided in the NSTM 074, Vol. 3

Enabling Objectives

- Describe the different sections of the 074 Vol. 3 in accordance with NSTM Chapter 074 Vol. 3, Gas Free Engineering

Section 18, Gas Free Engineering Program Requirements

- GFE background
- Legal Provisions for Training
- Program Evaluation and Recertification
- Contractor Operations

Section 19, Gas Free Engineering Procedures

- The need for Gas Freeing
- Sources of Confined Space Hazards
- Entry and Work Restrictions for Confined Spaces
- Working alone
- Exposure Levels

Section 19, Gas Free Engineering Procedures (Cont'd)

- Personnel Protective Equipment (PPE)
- Respiratory Protection
- Breathable Air
- Access to Hazardous Spaces
- Testing Procedures and Resulting Restrictions

Section 19, Gas Free Engineering Procedures (Cont'd)

- Periodic and Continuous Testing
- Conditions for Classifying Confined Spaces as IDLH
- IDLH Space Entry

Section 20, Navy Gas Free Certificates

- Spaces initially certified by the GFEPO, GFEA, and GFE
- Spaces delegated by GFE/GFEA
- Certificate issuance
- Certification and Test Log usage
- Definitions for existing conditions
- Retesting and recertifying spaces

Section 21, Ventilation

- The types of ventilation and ventilation requirements for specific operations.

Section 22, Hot Work

- Requirements / precautions for conducting hot work in or near hazardous and explosive locations.

Section 23, Space Cleaning

- Various cleaning methods and safety precautions.

Section 24, Inerting, Pressing-up, and Steam Blanketing

- Restrictions and requirements

Section 25, Emergency Rescue Procedures

- Responsibilities of Rescue Personnel
- Equipment
- Entry Procedures
- Rescue Procedures
- Attending to victims
- Rescue Personnel Training

Section 26, Post-Fire Atmospheric Testing

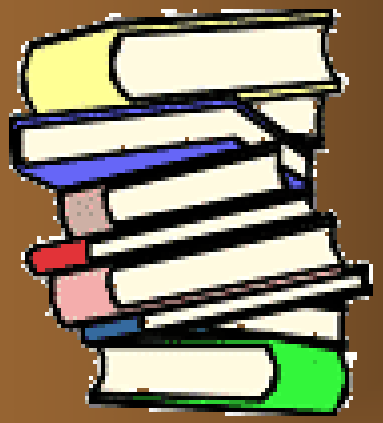
- Testing requirements on Surface ships and Submarines
- Locations for Atmospheric testing

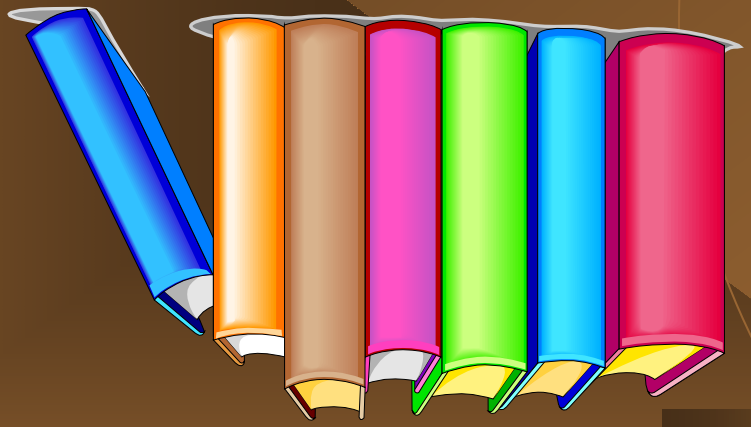
Section 27, Navy Gas Free Instrumentation

- Approved instruments
- Instrument limitations
- Calibration and maintenance
- Four Gas Analyzer
- Safety precautions
- Maintenance

Appendix A, GFE Information sources (shipboard)

- Lists 71 publications to be used as references when conducting GFE operations.





Appendix B, Introduction to Shipboard Gas Free Engineering

- Provides outline materials for teaching the basics of gas free engineering.

Appendix C, Sample Gas Free Engineering Notebook

- Sample of a Ship's gas free instruction
- Section for active gas free chits
- Section for inactive gas free chits
- Gas Free Engineering procedural working guide
- IDLH space emergency entry checklist
- Closed Compartment Opening Request Form

Appendix D, Navy Gas Free Certificate and Test Log

- Contains the Gas Free certificate and Test Log

SERIAL #_____

NAVY GAS FREE CERTIFICATION AND TEST LOG

INITIAL CERTIFICATION

SHIP/UNIT/ACTIVITY:_____

ITEM/COMPARTMENT/SPACE:_____

TYPE OF OPERATION TO BE CONDUCTED:_____

INITIAL DATE OF TEST: HOUR:_____ DATE:_____

INITIAL EXPIRATION: HOUR:_____ DATE:_____

VENTILATION REQUIRED: YES NO

TYPE: _____

INERTED GAS:_____(gas)

OR

PRESSED UP WITH:_____(liquid)

REQUIREMENTS/CONCLUSIONS/PRESCRIBED PRECAUTIONS/INSTRUCTIONS

GAS RELATED HOT WORK

PQS QUALIFIED FIRE WATCHES ASSIGNED

LOCATIONS	PRINT NAME/RATE	SIGNATURE (upon completion)

FINAL CHECKUP, WORK AREA AND ALL ADJACENT AREAS TO WHICH SPARKS AND HEAT MIGHT SPREAD WERE INSPECTED 30 MINUTES AFTER THE WORK WAS COMPLETED AND WERE FOUND TO BE FIRE SAFE. THE EQUIPMENT AND STRUCTURES WORKED ON WERE COOL TO THE TOUCH.

TIME SECURED_____

I CERTIFY THAT I AM FAMILIAR WITH AND WILL COMPLY WITH ALL SAFETY PRECAUTIONS PERTINENT TO THIS TYPE OF WORK.

HOT WORK OPERATER SIGNATURE_____

HOT WORK SUPERVISOR_____

FIRE MARSHAL_____

TEST RESULTS

TESTS CONDUCTED AS REQUIRED	INITIAL TEST	1st RETEST	2nd RETEST
OXYGEN			
COMBUSTABLE GAS			
TOXIC TYPE:			
TOXIC TYPE:			
TOXIC TYPE:			
TOXIC TYPE:			

EXISTING CONDITIONS	INITIAL TEST	1st RETEST	2nd RETEST
NOT SAFE FOR PERSONNEL/ NOT SAFE FOR HOT WORK			
NOT SAFE FOR PERSONNEL WITHOUT PROTECTION/ NOT SAFE FOR HOT WORK			
SAFE FOR PERSONNEL/ NOT SAFE FOR HOT WORK			
SAFE FOR PERSONNEL/ SAFE FOR HOT WORK			
NOT SAFE FOR PERSONNEL INSIDE/SAFE FOR HOT WORK OUTSIDE			

NOTE: THIS INSPECTION INDICATES THE CONDITIONS THAT EXISTED AT THE TIME THE TESTS WERE CONDUCTED

GFE PERSONNEL SIGNATURE _____

CO SIGNATURE, If required _____

RECERTIFICATION

1st RETEST/UPDATE TIME:_____ DATE:_____ EXPIRES:_____

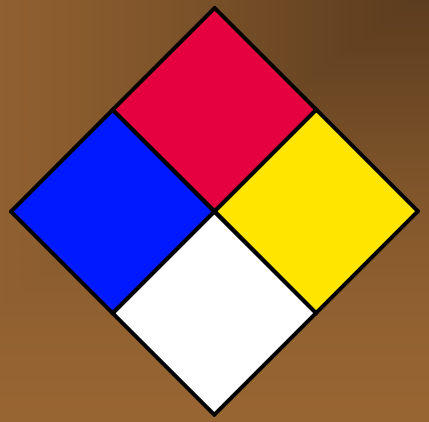
GFE PERSONNEL SIGNATURE_____

2nd RETEST/UPDATE TIME:_____ DATE:_____ EXPIRES:_____

GFE PERSONNEL SIGNATURE_____

Appendix E, Shipboard Hazardous Atmospheres and Compartments Identification Tables

- Provides guidance for identifying hazardous atmospheres and compartments aboard ship.



Appendix F, How to Read Material Safety Data Sheets (MSDS)

NOTE: Always be sure you are using the latest version of an MSDS.

NOTE: An MSDS does not have to follow any specific format but each has to provide the same kind of information.

Appendix F, How to Read Material Safety Data Sheets (MSDS)

- Contains descriptions of eight sections into which the MSDS's are divided.

Appendix F, How to Read Material Safety Data Sheets (MSDS)

1. Section I - General Information

Appendix F, How to Read Material Safety Data Sheets (MSDS)

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5. Section V - Reactivity Data

Appendix F, How to Read Material Safety Data Sheets (MSDS)

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5. Section V - Reactivity Data
6. Section VI - Health Hazard Data

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3. Section III - Physical/chemical characteristics
4. Section IV - Fire and Explosion Hazards Data
5. Section V - Reactivity Data
6. Section VI - Health Hazard Data
7. Section VII - Precautions for safe handling and use

Appendix F, How to Read Material Safety Data Sheets (MSDS)

...and last but not least,

- Section VIII - Control Measures

Appendix G, Permissible Exposure Limits

- Contains a wide range of chemical names with their PEL and IDLH limits

Appendix H, Gas Free Engineering Equipment References

- Contains a quick reference listing of many types of gas free equipment and protective clothing

Appendix I, Approved GFE Signage

- Contains illustrations of approved Gas Free Signs

Appendix J, Metric Conversion Charts

- Celsius - Fahrenheit and Volume

Appendix K, Portable Gas Free Instrument Certification

- Standards for gas free instruments
- Provides a list of gas free equipment

Appendix L, Chemical Detection Tubes

- System components, testing process, care and maintenance of detector tube systems.

Appendix M, INDEX

- List of Subjects and the associated page numbers.

GLOSSARY

- Alphabetical list of Terms and Definitions associated with Gas Free Engineering.

Appendix N, Technical Manual Deficiency/Evaluation Report (TMDER)

- Contains Information on how to submit needed changes and errors contained in the NSTM 074V3R4

REVIEW AND SUMMARY

Review and Summary

- Section 18 ?
- Section 19 ?
- Section 20 ?
- Section 21 ?
- Section 22 ?
- Section 23 ?

Review and Summary

- Section 24 ?
- Section 25 ?
- Section 26 ?
- Section 27 ?
- Glossary?
- Appendices A - N?

ANY QUESTIONS?