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SAFETY TRAINING PLAN FOR ENGINEERS/TECHNICIANS/STUDENT
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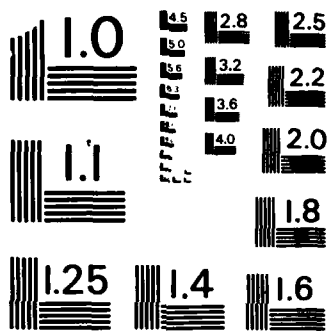
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SAFETY TRAINING PLAN FOR
ENGINEERS/TECHNICIANS/STUDENT TRAINEES

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Jerry W. Richardson

15 October 1985

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APPLIED SCIENCES DEPARTMENT

NAVAL WEAPONS SUPPORT CENTER, CRANE, INDIANA

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19 ABSTRACT (Continue on reverse if necessary and identify by block number) This report outlines a basic safety training plan, for new or inexperienced personnel, which is intended to enhance safety awareness and basic understanding of safety precautions. The report lists instructions, publications, films/videos and courses.			
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SAFETY TRAINING PLAN
FOR
ENGINEERS/TECHNICIANS/STUDENT TRAINEES

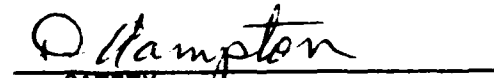
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I. INTRODUCTION

Statistics indicate that job-related accidents are reduced through an individual's occupational experience. In some cases, these job-related accidents have cost lives or dismemberment. When properly utilized, safety training can substitute for certain aspects of these occupational experiences, thus eliminating the occurrence of a job-related accident. Adherence to safe operating practices and procedures can normally be assured with the full cooperation of personnel only when there is a clear and defined knowledge of job-related potential hazards and a practical understanding of the strategies necessary to prevent them. This goal can be reached most effectively by a well-developed and coordinated safety training program.

The following plan is intended to provide new or inexperienced employees with a background in safety awareness and to establish a basic understanding of safety precautions associated with pyrotechnics, explosives, ammunition and related hazardous materials or operations. Although the plan is specifically intended for Applied Sciences Department (ASD) personnel at NAVWPNSUPPCEN Crane, many of the referenced publications, films, courses, etc., are considered to be applicable for other personnel.

II. INSTRUCTIONAL MATERIALS

A. Reading Materials (Mandatory)

<u>Reference</u>	<u>Title</u>
ASDINST 5100.7E	Special Job Procedure Program
ASDINST 5100.9	Safety Roadmap Program
NAVWPNSUPPCENINST 5100.22C	NWSC Occupational Safety and Health Manual
Section III, Explosives	Safety Requirements in Hazardous Areas
Chapter 1	Standard Operating Procedures
Chapter 2	Explosive Operations
Chapter 5	Pyrotechnic Operations
Chapter 6	Decontamination
Chapter 9	Storage of Ammunition & Explosives
Chapter 10	Explosive Qualification/ Certification of Personnel
Chapter 11	Glossary of Explosive Terms
Glossary	

B. Reading Materials (Suggested)

ASD

ASDINST 5100.10 A System of In-Process Hazard Classification and
 Identification for Pyrotechnic Materials

NAWPNSUPPCEN Crane

NWSCCRANEINST 5000.7 Standard Operating Procedures (SOP)
 Program for Production

NWSCCRANEINST 11320.2 Fire Protection Manual

NAVSEA

OP 1014 Ordnance Safety Precautions

OP 2165, Vols 1 & 2 Navy Transportation Safety Handbook for
 Hazardous Materials

SW050-AB-MMA-010 Pyrotechnic, Screening, Dye Marking Devices
(Replaces OP 2213)

OP 2793 Toxic Hazards Associated with Pyrotechnic Items

OP 3237 Safety Principals for Laboratories and Pilot Plants
 Where High Energy Materials are Processed

Army Material Command Publications (AMCP)

AMCP 706-185 Pyrotechnics - Part I

AMCP 706-187 Pyrotechnics - Part III

AMCP 706-188 Pyrotechnics - Part IV

Miscellaneous

- McLain, J. H., PYROTECHNICS, The Franklin Institute Press, Philadelphia, Pennsylvania, 1980.
- Ellern, Dr. Herbert, MILITARY AND CIVILIAN PYROTECHNICS, Chemical Publishing Company, Inc., New York, 1968.
- McIntyre, Fred L., LARLCD-CR-80047, A COMPILATION OF HAZARD AND TEST DATA FOR PYROTECHNIC COMPOSITIONS, October 1980.
- NIOSH/OSHA, POCKET GUIDE TO CHEMICAL HAZARDS, September 1978.
- American Conference of Governmental Industrial Hygienists, THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES IN THE WORK ENVIRONMENT, 1983.
- Shidlovskiy, A. A., FSTC-HH-23-0380-75, PRINCIPLES OF PYROTECHNICS, December 1974.
- Conkling, John A., CHEMISTRY OF PYROTECHNICS, Marcel Dekker, Inc., New York, N.Y., June 1985

C. Technical Films/Video Tapes (Mandatory)

<u>Title</u>	<u>Film No.</u>	<u>Length of Film</u>
Pyrotechnic Training	244	60 Min.
Pyrotechnic Training	245	60 Min.
Pyrotechnic Training	246	60 Min.
Pyrotechnic Training	247	60 Min.
Easy on the Eyes	34	15 Min.
Blocking and Bracing	53	27 Min.
Explosive Trucks		
Handling High Explosives Safely	56	25 Min.
Insult to Injury	62	29 Min.
Anatomy of an Explosion	65	20 Min.
Behavior of Explosives	66	27 Min.
Lifestyle - Explosive Safety Film	70	28 Min.
When Your Clothes Burn	99	20 Min.

III. SAFETY BACKGROUND DEVELOPMENT

A. Short Courses Offered at NWSC Crane (Suggested)

<u>Title</u>	<u>Classroom Hrs.</u>
Hazard Identification, Evaluation, Control and Briefing	20
DuPont Explosive Seminar (This course replaces "Basic Explosive Safety In Test & Evaluation Operations" as scheduled previously)	32
Initial Training in Cardiopulmonary Resuscitation	4
The Preparation, Evaluation and Loading of Pyrotechnic Mixtures (This course presented by Dr. John Conkling of Washington College)	32

B. Short Courses Held Off-Station (Suggested)

<u>Title</u>	<u>Location</u>	<u>Classroom Hrs.</u>
The Chemistry of Pyrotechnics & Explosives (301) 778-2800	Washington College Chestertown, MD	40
Joseph McClain Seminar- Pyrotechnics, Solid State Chemistry and Explosives (215) 448-1104	Franklin Research Philadelphia, PA	32

C. NAVSEASYSCOM Safety School (Suggested)

Following is a list of recommended classes currently offered by the Safety School. To apply for space(s) submit DD Form 1556 via 063 well in advance of class dates. Four months is not too far in advance. For ES-310, Basics of Explosive Hazard Control, submit as far in advance as possible.

<u>Course Title</u>	<u>Location</u>	<u>Course Length</u>
ES-305, Explosive Safety for Facility Planning	Bloomington, IN	5 days
ES-310, Basics of Explosives Hazard Control	Bloomington, IN	8 days
	New Orleans, LA	10 days
	Bloomington, IN	8 days
	Bloomington, IN	8 days
	Bloomington, IN	8 days
SS-300, Applied Hazards and Human Reliability Analysis	Norfolk, VA	8 days
	San Diego, CA	8 days
SS-400, Systems Safety for Facilities Design	Bloomington, IN	5 days
SS-420, Systems Safety Analysis	Bloomington, IN	8 days
SS-450, Human Factors Analysis	Bloomington, IN	7 days

D. Local Seminars/Presentations (Mandatory)

- (1) Code 04 (Safety)
- (2) Code 10 (Fire Department)
- (3) Code 12C (Industrial Hygienist)

IV. LOCAL TOUR SERIES (Mandatory)

- A. Building 198
- B. Building 105
- C. Ordnance Testing Area
- D. Rocket Range

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