U. S. Navy Department • U. S. Maritime Commission

Minimum Requirements

FOR

SAFETY AND INDUSTRIAL HEALTH

IN

CONTRACT SHIPYARDS

PLAINTIFF'S EXHIBIT
tables SOTA-48



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U. S. Navy Department
Washington, D. C.

U. S. Maritime Commission
Washington, D. C.

To All Contractors Constructing Ships for United States Navy-United States Maritime Commission:

As a result of the national conference on safety and health in shipyards holding contracts with the United States Navy and Maritime Commission, conducted under the auspices of these agencies in Chicago December 7 and 8, 1942, a unanimous agreement was reached upon the minimum standards which have now been approved by the Navy Department and United States Maritime Commission and which should be put into effect in shipyards holding contracts with the two agencies.

These standards represent a specialized study based upon a fact-finding survey on all coasts by experts in that field. They have received the unanimous concurrence of the representatives of the medical and safety departments and of labor-management committees from shipyards on all coasts.

The necessity for conserving manpower and promoting the physical welfare, health, and safety of what shortly will amount to one million workers in shipyards requires that careful observance of standards for the prevention of accidents and protection of health be accorded. Aside from the weight which must be given humanitarian considerations, it is simply good common sense that as much care and attention be given to protecting the human factors in the war production program as is given machines.

Under the administrative direction of the Maritime Commission, safety and industrial health consultants will be made available in all regions wherein shipyards holding contracts with the Navy and the Commission are located.

Each contractor is hereby given notice that the Navy Department and the Maritime Commission will expect full and complete compliance with the minimum standards which bear the approval of the Navy Department and the Maritime Commission, and each is requested to give full cooperation to the consultants on health and safety who will be charged with the coordination and supervision of the safety and health programs of the two agencies.

The cumulative restriction of manpower makes speedy attention and comprehensive action in respect to the subject matter hereof of vital importance.

Frank Knox

Frank Knox, *Secretary of the Navy.*

E. S. Land

E. S. Land, *Chairman, U. S. Maritime Commission.*

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II-3. Physical Facilities.

3.1 The medical department should be provided with:

a. A waiting room with suitable registration facilities.

b. A general treatment room.

c. An eye treatment room.

d. A minor surgery room.

e. A ward with three beds for the first 5,000 employees, and one bed for each additional 10,000.

f. Doctors' offices and private examining rooms.

g. A nurses' office and dressing room.

h. X-ray room for yards employing 5,000 men and above.

i. A physiotherapy room.

j. Toilet facilities for doctors, nurses, and patients.

k. A storeroom for general medical stores.

l. X-ray files and viewing room.

3.2 First-aid treatment rooms, manned by nurses, should be provided wherever there is overcrowding at the main dispensary and loss of time due to distance from shipways and shops. These substations may be located under building ways or near locations where the number of men working is large so that the distance a man need travel to a sub-station will not exceed approximately 400 yards.

II-4. Equipment.

4.1 The following equipment should be provided:

a. One ambulance for each 15,000 employees, or reasonable fraction thereof, with an ordinary passenger car always in reserve.

b. In some yards a station wagon is used satisfactorily inside the yard and an ambulance used only for trips outside.

c. An X-ray unit for yards employing about 5,000 men and above.

d. Medical and surgical stores required for minor surgery, eye injuries and physiotherapy.

II-5. Records and Forms.

5.1 The following records and forms are recommended:

NOTE.—*In an emergency no form need be filled out.*

a. A form authorizing the workman to report to the medical department for examination or treatment issued by a foreman or leading man or other supervisor. This shall show time of issue, arrival at dispensary, discharge from dispensary and return to work.

b. Appointment form for revisits and retreatments issued by the physicians and nurses.

c. A disposition form issued by physicians and nurses indicating return to work, hospitalization, to home, or other disposition.

d. A complete and accurate permanent filing system recording personal data, nature and cause of injury, diagnosis, treatment, disposition,

e. The necessary state and insurance company forms.

f. Daily report to the safety department showing all new cases for the day, together with the nature and cause of injury, and the *diagnosis.*

g. The adoption of the standard nomenclature when made available by the Council on Industrial Health of the American Medical Association, Chicago, Illinois.

II-6. Examinations.

6.1 Physical examinations to insure proper placement of employees shall be given.

6.2 Periodic check examinations shall be given men working in occupations potentially hazardous to themselves or others, as for example to crane operators, locomotive and hoisting and portable engineers. Periodic check examinations should be given men in jobs in which there may be health hazard, as for example to sand blasters, radium and X-ray workers, and paint sprayers.

6.3 Special examinations such as X-ray, serologic and urinalyses shall be given in the individual case as indicated and in accordance with local needs.

II-7. Air Raid Precautions.

7.1 The medical department shall locate, equip, and maintain such emergency first aid dressing stations as may be deemed necessary to handle air raid casualties.

7.2 A certain number of yard employees shall be trained in first aid procedures to render assistance to the medical department in handling air raid victims.

7.3 Close cooperation should be maintained with the local civilian defense officials in order that evacuation and care of air raid victims may be carried out to the best advantage.

7.4 In keeping with local army and navy regulations, steps should be taken to provide protection of dispensaries by sandbags, or otherwise, from fragments and concussion of bombs.

II-8. Responsibilities of the Medical Services.

8.1 Frequent inspection of the yard by the medical staff shall be required in order that physicians may become familiar with shipyard jobs and thus help intelligently in preventing accidents and occupational disease.

8.2 Close collaboration shall be maintained with the safety department especially in regard to records of accidents and absenteeism.

8.3 It shall be the joint responsibility of the medical and safety departments through the supplies department to know the composition of paints, thinners, paint removers, and other chemicals used in the yard, and to see that the workers exposed are protected by the best safety practices.

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UNITED STATES NAVY—MARITIME COMMISSION

MINIMUM REQUIREMENTS
FOR
SAFETY AND INDUSTRIAL HEALTH IN CONTRACT SHIPYARDS

S and H-1. Introduction.

1.1 The standards for industrial health and safety as presented in this manual cover only minimum requirements. It is not to be assumed that compliance with these minimum standards is insurance of the development of good health and safety records.

1.2 It is recognized that in many shipyards, standards for health and safety are already in effect which go beyond the requirements of those listed here. The Maritime Commission and Navy urge that any standards of higher level be continued and that where substandard conditions of health and safety exist, they immediately be brought to the required standard or better.

1.3 In all cases the use of the words *shall* or *must* indicates that compliance with that section of the minimum requirements is mandatory. Where the words *should* or *may* are used the section may be considered desirable but not necessarily mandatory under certain circumstances which the contractor in his discretion may determine.

MINIMUM REQUIREMENTS FOR INDUSTRIAL HEALTH

H-2. Medical Facilities.

2.1 *Personnel.*—Yards employing up to 5,000 men should have two full-time physicians, and one additional physician for each additional 5,000 men. Yards with less than 2,000 to 3,000 men will not need full-time physicians.

2.2 Specialists in the various branches of the medical profession available in the area should be consulted as indicated.

2.3 Yards employing up to 5,000 men should have in the main dispensary six full-time nurses and three additional nurses for each additional 5,000. Additional nurses will be required for first aid stations.

2.4 There should be at least three clerks employed in the medical department for each 5,000 employees.

2.5 One ambulance driver should be available per ambulance per shift.

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tions of doctor' ' patient shall be maintained.

8.8 It is certain that in the near future women in large numbers are to be employed in the mechanical trades. It is necessary in shipyards to make special provisions for this class of patients. This will necessitate the establishment of separate waiting, treatment, and examining rooms. In yards where the number of employees is large, it may be logical to establish a separate dispensary for the handling of women patients.

H-9. Sanitary Inspections.

9.1 *Cafeterias and canteens.*—It shall be the duty of the medical department to adapt from Army and Navy standards, in reasonable conformity with the local health department rules, and inspection scheme to include preemployment examination of food handlers, quality and quantity of food, general cleanliness and comfort, screening, dishwashing, garbage and waste disposal. These inspections shall be made at unscheduled times and never less than once each week.

9.2 *Water supply, sewerage, and waste disposal.*—In cooperation with Maritime and Navy engineers the medical department shall inspect and report upon the above as often as seems advisable, but not less than twice yearly.

9.3 *Salt tablets.*—Salt tablets shall be made available to all employees and shall be kept in covered dispensers appropriately located.

H-10. Respiratory Protective Equipment for Shipyards.

The U. S. Bureau of Mines, 4800 Forbes Street, Pittsburgh, Penna., maintains a laboratory which tests and *approves* for use in industry respiratory protective equipment of all kinds. The Maritime Commission and Navy will require the use of *approved* equipment throughout all yards. The safety department shall be responsible for instructing men in the proper use of such equipment and for the maintenance of ample supplies.

10.1 Details of Bureau of Mines respirators with names of manufacturers, prices, and descriptions can be obtained from the Bureau or from the Maritime Commission.

10.2 The safety department shall be responsible to the management for cleaning and sterilizing all such equipment as often as may be agreed upon with the medical department. (A method for such sterilization is included in these standards; see section H-12.0)

10.3 *General requirements for respirators.*—

a. Adequate protection as defined by American Standard Safety Code for the Protection of Heads, Eyes, and Respiratory Organs. Handbook H-21, Nov. 1, 1938. Superintendent of Documents, Washington, D. C.; price 15¢.

b. Comfort (light weight and not obstructive to vision).

11.1 *Dust.*—

Zone	Protective devices
Silica of Sand Dusts (as in sand blasting)	(1) Abrasive blasting helmets. (2) Dust respirator.
Lead Dust (as in mixing paint)	(1) Air line respirator. (2) Lead dust respirator.
Asbestos (as in covering pipes)	(1) Air line respirator. (2) Dust respirator.

11.2 *Metal fumes and smokes.*—

Zone	Protective devices
Lead and zinc oxide from welding and burning.	(1) Air line respirator. (2) Fume respirator for lead. (3) Dust respirator for zinc oxide.

11.3 *Solvent vapors.*—

Zone	Protective devices
Spray painting, both indoors and outdoors. Paint removing, usually indoors Cementing, usually indoors Cleaning, usually indoors Degreasing, usually indoors	(1) Air line respirator. (2) Chemical cartridge respirator.

11.4 *Acid gases and mists.*—

Zone	Protective devices
Pickling (indoors) Cleaning (indoors) Degreasing (indoors)	(1) Mist respirator. (2) Chemical cartridge respirator

11.5 *Alkali mists.*—

Zone	Protective devices
Cleaning (indoors) Degreasing (indoors)	(1) Mist respirator. (2) Chemical cartridge respirator.

11.6 *Asphyxiating atmospheres.*—

Protective devices
(1) Hose mask. (2) Oxygen breathing mask. (3) All-service mask.

11.7 *Air supply for air-line masks of all kinds.*—Air at a comfortable temperature and free from odors and excessive moisture sometimes is difficult to furnish, especially for outdoor jobs in winter. Air quality and temperature shall be tested by the Safety Department and shall meet the suggestions of the American Standard Safety Code for air-supplied respirators (sec. 10.3a).

H-12. Sterilization of Respirators.

12.1 Each worker who needs a respirator should be assigned his own respirator. Where this is not done, it is important that the respirator be sterilized in addition to being cleaned. Adequate sterilization may be accomplished by—

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a. Washing rubber and metal parts with soap, a brush and warm water, after which the respirator is sterilized by immersion for 10 minutes in a solution of formalin made by placing one part of 40 percent formaldehyde solution into nine parts of water.

b. Washing the rubber and metal parts with soap and warm water, after which the respirator is sterilized by dipping in a 3 percent solution of carbolic acid, a 2 percent solution of lysol, or a 70 percent solution of denatured alcohol.

c. Subjecting the respirator to sterilization by a moist atmosphere of antiseptic gas, preferably formaldehyde, for a period of ten minutes at room temperature.

d. After following any one of the outlined procedures, the respirator should be rinsed with water and hung up to dry. The respirator should not be used until it has been dried thoroughly.

e. The filters, felt screens, and elastic headbands should be removed, if detachable, before washing or sterilization of the respirator, unless it is evident that washing and sterilization will not harm these parts.

12.2 The National Safety Council has issued an Industrial Data Sheet No. D-Gen. 16, "Cleaning and Sterilizing Goggles and Respiratory Equipment."

13-13. A Guide for Prevention of Industrial Disease in Shipyards.

13.1 Eight common types of disease and methods for their prevention are given in the following sections. Help in applying these methods will be given by the local Safety Department and by safety and medical consultants of the Navy Department and the Maritime Commission.

13.2 *Flashburns and foreign bodies in the eye.*—

a. Effects on workers: "Flash" is a surface eye burn resulting from even momentary unprotected exposure to the welding arc. In this condition the eye is painful and sensitive, especially to light. An eye flash shall be treated only by the doctor or by methods he has prescribed.

b. Foreign bodies in the eye shall be removed only under the doctor's orders or by methods he has prescribed. Like flashburns, they are preventable.

c. For safe practice:

All workers:

1. Whenever near welding arcs wear antiflash goggles which have been approved by the Safety Department.
2. Wear safety goggles when grinding, chipping, buffing, scratch-brushing, or forging.

Welders:

3. Wear approved antiflash goggles even when helmet is being worn.
4. Use portable screens to protect the eyes of fellow workers.

13.3 *Lead poisoning.*—

a. Sources: In general, any job in which dust, fume, or smoke from any substance containing lead is breathed daily.

b. For example:

JOB:	WHEN MATERIAL IS:
Welding	Metal, coated with paint containing lead.
Cutting	Lead.
Burning	Lead pigments.
Shrinking	
Grinding	
Buffing	
Spray painting	
Mixing paint pigments	

c. Job can be done safely with:

1. (a) Special ventilation: Use a local exhaust hood approximately 8 inches from the job and drawing at least 200 c. f. m. into the hood with filtration of the discharge, or discharge, to a place where the contaminated air will not be breathed, or
   (b) Wearing of fume respirators, or
   (c) Wearing of supplied air respirator.
2. Periodic medical examination which includes blood and urinalyses.

13.4 *Solvent vapors.*—

a. Sources: In general, any job in which solvent vapors are breathed. For example:

Spray painting.
Painting.
Using paint remover.
Applying cements.
Paint brush and spray gun cleaning.

b. Job can be safely done with:

1. Segregation of such work, and
2. (a) Special ventilation as may be required.
   (b) Provision of spray booths with exhaust system.

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(c) Wearing of special respirators:

(1) For spray painting: Supplied air respirators or air line hoods.

(2) For other jobs: Chemical cartridge respirators.

(See H-10 on respiratory protective equipment.)

13.5 *Zinc fume fever (zinc chills or shakes).*—

a. Sources: In general, any job in which the fumes from heated zinc are breathed. For example:

JOB:	WHEN MATERIAL IS:
Welding	Galvanized metal
Cutting	Zinc
Shrinking	Zinc alloy
Pouring zinc alloys	Brass

b. Job can be safely done with:

1. Special ventilation: Local exhaust hoses or hoods located close enough to operation at all times to remove smoke completely.
2. Wearing of special respirators.

NOTE.—There are no known cumulative effects from zinc chills.

13.6 *Fiberglas.*—

a. Effects on workers: Men working with Fiberglas may develop a dermatitis or conjunctivitis which are skin and eye conditions. It is best to transfer to another job those who continue to be sensitive.

1. Both experimental and practical evidence show conclusively that the inhalation of Fiberglas causes no lung damage.
2. The cement used with Fiberglas may contain a toxic solvent such as carbon tetrachloride (CCl_4) which can cause severe illness or even death if the cement is used indoors with inadequate ventilation.

b. For safe practice:

1. Clothing: Supply loose coveralls with collars and sleeves buttoned over cheesecloth.
2. Goggles: Should be worn.
3. Shower: Should be taken rather than bath, at end of shift. Respirators are usually not necessary, *but* if a cement containing a toxic solvent is used, proper protection either by ventilation or by a respirator must be supplied and used.

a. Sources: In general, any job in which asbestos dust is breathed. For example:

JOB:	WHEN MATERIAL IS:
Handling.	Asbestos
Sawing.	Asbestos mixtures.
Cutting.	
Molding.	
Welding rod salvage.	

b. Job can be done safely with:

1. Segregation of dusty work and,
2. (a) Special ventilation: Hoods enclosing the working process and having linear air velocities at all openings of 100 feet per minute, or

(b) Wearing of special respirators.

3. Periodic medical examination.

13.8 Silicosis.—

a. Sources: In general, any job in which the dust of free silica (sand) is breathed daily. For example:

JOB
Sand-blasting
Sand packing of pipes
Shot blasting of castings

b. Job can be done safely with:

1. Isolation of dusty process and, in addition,
2. Special ventilation: In the case of sand-blasting, the work should be done in the standard type of sand blast room, cabinet, or machine.
3. Special respirator for dust-containing free silica.
4. Periodic examination by doctor.

13.9 Dermatitis.—

a. Sources: Excessive or improper use of cleaning agents such as gasoline. It is not at all uncommon to find dermitiitis caused by excessive use of common soaps such as those used in laundering. Cutting oils, certain greases, certain insulating materials used on electric cables and conduits can cause dermatitis.

b. Job can be done safely with:

1. Precautions against excessive use of the causative agent.
2. Advice of the medical department in the use of protective salves and creams.

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H-14. Ventilation Standards.

14.1 Ventilation is required to control temperature and to remove air impurities, as from welding and paint spraying.

14.2 The maintenance of proper working conditions shall be the responsibility of the safety department, whose staff shall work in close cooperation with the welding, paint, and electrical departments. Air analyses and tests shall be made by the safety and medical consultants of the Navy Department and the Maritime Commission as may be needed.

14.3 Personnel of Department.—

a. Number:

1. The size of the ventilation crew will vary with the type of ship, equipment available, etc. The head of the safety department will be responsible for the organization of the safety department or division.
2. There shall be a ventilation supervisor on each shift responsible to the head of the safety department. Under the supervisor there shall be a sufficient crew to inspect and maintain good working conditions.
3. An EC-2 ship shall have at least one ventilation man aboard. Larger ships, or ships like carriers with considerable galvanized welding, shall have at least two ventilation men.
4. The number of ventilation men on the night shifts shall be in proportion to the construction crews.
5. The ventilation crew must have available a maintenance and repair crew of sufficient size to keep equipment on the job and operating efficiently. Long waits during which equipment is idle must be avoided.

b. Training:

1. The ventilation supervisor (that is, the safety engineer) shall be trained to handle the entire ventilation program in the yard. Local educational institutions, State Industrial Hygiene Units, Maritime Commission engineers, and other sources are available to give this training.
2. The ventilation supervisor shall organize classes, demonstrations, and short talks on standard procedures for ventilating specific spaces on the ships.

14.4 *Type of equipment needed.*—In ship construction, two types of ventilation are used—local exhaust as for removal of welding fumes at the point of origin, and general ventilation to supply fresh air to confined working spaces.

a. Local exhaust:

1. A common length for a local exhaust-hose is forty feet. In ordering exhaust fans for use with local exhaust hoses, the following specifications should be met: Capable of drawing a minimum of 200 c. f. m. through each of 3-inch (or 4-inch) diameter flexible hose. Fans should have provisions for attaching three or more local exhaust hoses per unit.
2. In the interests of power economy, it is undesirable to move much more than 200 c. f. m. through each local exhaust hose.

b. General ventilation:

1. It is frequently desirable to introduce air into large working spaces such as deep tanks, fore- or after-peaks. This is done in many yards by using a flexible fabric duct, with metal elbows, and a fan of about 5,000 c. f. m. capacity.
2. It is desirable sometimes to supply a quantity of fresh air into the double bottom. Here a 2,000 c. f. m. unit may be used.
3. These two examples represent the two extremes of this type of work, and therefore are the two extremes in fan sizes. Fan static pressures in each case should exceed four inches of water.
4. For general ventilation of a ship engineroom during construction, a 10,000 c. f. m. blower is recommended. On the other hand, operations in confined quarters where heat is generated (plate shrinking, for example) may use a small portable fan to circulate the air. For this purpose, small blowers of from 800 to 1,500 c. f. m. shall be provided.

c. Ventilating procedures:

1. Local exhaust shall be used whenever a welding operation is being conducted in a confined space, or whenever galvanized metal is being welded. Local exhaust is always a suction process. Never blow a stream of air upon a welding arc.
2. Many welders think that it is enough to hold the end of the suction hose in the same compartment with the welding operation. This is not so. In order to capture the welding fumes, the end of the hose must be within six or eight inches of the arc, assuming a 200 c. f. m. volume per hose. Beyond this distance, the suction hose is ineffective.
3. The air supply to a general ventilation fan must be fresh outside air. Recirculation of air already contaminated shall not be permitted. A minimum of 400 c. f. m. per welder shall be supplied to a given working space such as a deep tank when general ventilation is used alone.

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... in cold weather a minimum of air movement is desired and local exhaust will serve best. In temperate weather, it is most satisfactory to use a combination of local exhaust and general ventilation.

14.5 *Coordination of department with construction program.*—

a. The ventilation supervisor shall keep abreast of construction, and thus anticipate the ventilation needs.

b. The construction foremen shall inform the ventilation department of ventilation needs before the needs occur.

c. Blackboards, boxes, signal lights, or similar devices shall be installed on board and used to inform the ventilation department of immediate needs.

14.6 *Supplementary ventilating procedures.*—

a. Ventilating confined spaces, such as the fore- or after-peaks and deep tanks, is greatly simplified by the temporary removal or cutting through of certain plates.

b. For example, the fore-peak of a Liberty ship can best be ventilated by cutting a combination access and ventilation hole through the watertight bulkhead near the ship's bottom.

c. The tank top can be left off of the midship deep tanks until all welding has been completed in this space.

d. A side p'. te can be left or cut out of the engineroom at the bottom deck level.

MINIMUM REQUIREMENTS FOR SAFETY

S-2. Management Part.

2.1 It is absolutely essential, if a successful accident-prevention program is to be installed and operated, that top plant management take an active and interested part in the work. The same supervision given any other important activity in the shipyard shall be given the safety program.

2.2 The responsibility of management insofar as industrial safety is concerned shall be considered to include—

2.21 The provision of a safe working environment.

2.22 Training of employees for safety.

2.23 Establishment of an accident record and reporting system which will definitely tie into nationally uniform reporting, record, and statistical requirements.

2.24 The appointment, where necessary, of a safety engineer (or a safety director) and staff to install, maintain, and properly supervise an accident-prevention program.

heads, foremen, leaders, leadingmen and to any persons in supervisory capacity, that they are considered responsible for preventing accidents which involve employees working under their direction and requiring them to comply with all of the provisions of the accident prevention program in effect in the shipyard.

2.26 An active and interested participation in safety through—

(a) Review of, and executive action on, safety records.

(b) Regular attendance at safety meetings.

(c) Action upon good or bad departmental safety records through personal interviews with department heads.

(d) General letters, for bulletin board posting, addressed to employees and discussions of good or bad yard accident record.

(e) By setting a good example. (Goggles, safety shoes, hard hats and other necessary protective equipment shall be used by any executive who exposes himself to yard operations.)

S-3. Safety Director and Staff.

3.1 A full-time safety director (title may be safety engineer or safety inspector, etc.) and staff shall be appointed for all shipyards. (See Section 3.25 for duties and responsibilities.) The safety director shall report to, and be responsible to, the highest ranking managerial executive or his designated representative.

3.2 The staff in the safety department in addition to the safety director, shall consist of:

3.21 An assistant safety director in yards having 5,000 employees or more except that there shall always be at least one safety engineer per shift.

3.22 One safety engineer (safety inspector) for each additional 1,500 employees. Example: If a yard has 35,000 employees there would be required a safety director and an assistant plus 21 safety inspectors.

3.23 The staff of engineers shall be distributed over the three shifts in proportion to the number of employees on each shift.

3.24 One clerk and/or stenographer for the first 5,000 employees and one clerk for each additional 7,500 employees. (It is not to be assumed that the time of safety inspectors or the safety director can be spent on clerical detail. All office functions, while adequately supervised by the safety

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...staff may be spent in the shipyard.)

3.36 The duties and responsibilities of the safety director shall include:

(a) Complete responsibility for formulating, administering and making necessary changes in the shipyard accident prevention programs within the limits of authority granted by the shipyard management. The safety director shall also be required to correlate the shipyard accident program with the minimum safety and health standards of the United States Navy Department and Maritime Commission.

(b) Submission of regular monthly, weekly or daily reports on the status of safety directly to the general manager or his designated representative.

(c) Acting in an advisory capacity on *all* matters pertaining to safety to the management, general manager, superintendents, foremen, quartermen, leadermen, purchasing department, engineering department, commissary department, or contractors.

(d) Maintenance of the accident record system, making all necessary reports, personal investigation of all fatal or serious accidents, investigation through his staff of all accidents, securing supervisor's accident reports, checking corrective action taken by supervisors to eliminate accident causes.

(e) Supervising, or closely cooperating with the training supervisor in the safety training of all employees. (See Section 6.26.)

(f) Correlating safety work with medical department to insure proper selection and placement of employees.

(g) Making personal inspections and supervising inspections by staff and by special employee committees, for the purpose of *discovering and correcting unsafe conditions or unsafe work practices BEFORE THEY CAUSE ACCIDENTS.*

(h) Exchanging information with other shipyards on best safety methods and consulting with United ...sion Regional Safety Consultants on safety problems which cannot be solved with methods or information at hand.

(i) Making certain that all federal, state or local laws, ordinances or orders bearing on industrial safety are complied with.

(j) Securing any necessary help or advice from the state labor departments on matters pertaining to safety and health.

(k) Initiating activities that will stimulate and maintain the interest of employees in safety.

(l) Acting as secretary of all safety committees and in such capacity he shall prepare an agenda for each such meeting covering the business to be discussed and, he shall prepare for the record, minutes of each such meeting.

(m) Directing the activities of his staff including the assistant safety director, so that the shipyard accident prevention program will be efficiently operated. It is expected that the safety director may delegate certain responsibilities to his staff engineers, such as that of acting as secretary of certain of the safety committees. Permission for such delegation of authority is expressly given in the interest of efficiency and for training the safety staff.

(n) Submission of the required reports on the status of safety in the shipyard to the interested government agencies at the time and intervals hereinafter requested.

8-4. Accident Prevention Forms and Reports.

4.1 The safety director shall cause to be designed and put into use at least the following forms and records:

4.11 *Supervisor's report of accident.*—

(a) Giving all vital data on case plus statements as to unsafe act and/or unsafe condition, reason unsafe act or condition was permitted to exist or occur, and the immediate corrective action taken or recommended. (See Form 1.)

4.12 *Safety engineer's recommendation form.*—

(a) Form used by safety staff to record recommendations made during inspection. Used for follow-up. Made in triplicate; one to leader-

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