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UNITED STATES COAST GUARD



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PASS IT ALONG

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MERCHANT MARINE COUNCIL

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ACCIDENT PREVENTION IN CONNECTION WITH LOADING AND DISCHARGING OF CARGO

By
Joseph H. Travers
Manager, Accident Prevention Bureau
Pacific Maritime Association

There are present in our audience today representatives of top management, supervisory forces and safety engineers. There are ship operators, stevedores, terminal operators, and shipyard people. My subject, "Problems in Accident Prevention in Connection with the Loading and Discharging of Cargo" is of concern to all these groups. Not just because they as individuals are interested in safety but because each of the groups I have mentioned may, whether they realize it or not, play an important part in cargo-handling accidents.

In my remarks I shall tell you of the need for cooperation among all hands, show by example the responsibilities of each group with reference to cargo-handling accidents, touch briefly on the kind of accidents that occur, and discuss with you some of the whys and wherefores of safety rules.

We are told by the Committee on Engineering of the President's Safety Conference, that—

"An accident is almost always a symptom of something wrong in the production process, something wrong with the man, the machinery, the method or the material. Therefore, practically all accidents are prima facie evidence of defects in the working environment, of inefficiency in supervision, or of lack of adequate training of employees."

Keeping this statement in mind, let us consider for a moment who is involved in the controlling of cargo-handling accidents. First there is the shipowner, then the ship designer and ship builder, the terminal operator, the contracting stevedore, and the longshoreman.

While the ship designer's and ship builder's job is finished before cargo handling starts, nevertheless their errors of omission or commission play a very real part in the efficiency and safety of the operation.

In this connection, the following quotation from the Committee on Engineering seems exceedingly apropos:

"It is a fact that adequate consideration has not been given to safety in the important field of design in the past. This probably arose from the lack of appreciation on the part of the designers that safe design and effi-

cient design are synonymous. Another reason may be that designers have had so many details to consider that it is not surprising that they have not looked for data and advice to assist them in making their fundamental layout as safe as possible."

If that statement is true of industry in general, it is equally applicable to the shipbuilding fraternity. Another thought worthy of consideration by our ship designers was expressed by Dr. Ross A. McFarland of the Harvard School of Public Health when he stated that "machines in working areas must be built around the operator rather than simply placing him in a seat without due regard for the human characteristics. One of the first principles in accident prevention, therefore, is to design equipment to suit the operator instead of selecting men to fit the equipment." Now let us consider a few examples where this principle has not been followed:

1. On many vessels the electrical winch control stands are placed so close together that a man cannot stand between them and thus is required to be in an awkward position while operating. Lack of a satisfactory solution to this condition perhaps arises from the different practices in different ports. On the west coast it is the common practice for one man to operate both winches, and we like to have him right at the hatch coaming where he can see into the hold and see for himself what is going on. I understand that on the east coast and most of the European countries, it is required that one man operate only one winch. Thus, designers apparently having only this latter problem in mind never consider what happens to the single man on the west coast when he tries to operate both winches.

2. Another bad situation sometimes occurs where the hatch is provided with folding hatch covers. In one instance the winch driver was stationed on the deck at the coaming but this advantageous position was nullified by the fact that when the covers were folded up they were in front of him and masked off his view of at least half of the hatch. A practical solution for this would be to put the winch driver on an elevated platform and carry the platform sufficiently far over the edge of the coaming so that the winch driver could see vertically below him.

3. Roller strongbacks have been equipped with only small welded beads to keep them from jumping out of place. Oftentimes these beads have been knocked off so that there was nothing except the weight of the hatch beam to secure them. When the beams are not secured it is entirely possible for them to shift and

SPECIAL NOTICE TO SMALL CRAFT OWNERS AND OPERATORS

The Merchant Marine Council is always interested in items, stories, or incidents which reflect safe, courteous, and efficient operation of all types of small craft. You who are readers of this publication may have some interesting observations to report. The editorial staff of the "Proceedings" will be greatly interested and pleased to receive a written account of any such incidents which you may wish to submit for publication.

With the opening of the 1951 boating season, you will undoubtedly have the opportunity to observe others who operate small craft and request that you take this opportunity to write to the editor the story of any incident involving small craft dealing with either safe or unsafe practices.

During this year's boating season, July and August, we would appreciate your story in order that the lesson learned may be passed on to others by its publication in this safety organ.

Three prominent persons in the field of marine safety will judge the winning story among the contestants. The opportunity to win a United States Savings bond is yours!

Further information will be given in the next issue.

permit hatch covers to fall into the holds. A recent fatality on the west coast occurred because of this.

4. Another unsafe condition in which roller strongbacks are involved has been that nothing was provided on the device which raised and lowered them onto the rollers to keep it from being completely unscrewed so the beams could drop off into the hold. This also has occurred.

5. Another place where designers have not given thought to the operating use is in the location of accommodation ladders. Far too often they are so placed that when lowered into position they are directly abreast of a working hatch and of necessity the loads must pass directly over the plank.

6. The lack of a sufficient number of pad eyes for securing guys and preventers is a frequent source of trouble. As a result of improper location of pad eyes, strains in the guys, preventers and booms are greatly increased because of the bad leads which have to be used. In this connection there seems to be a rather complete lack of realization as to what has been happening to rigging stresses and strains because of moving the heels of the booms outboard from the centerline of the ship to king posts.

7. In many passenger vessels with trunked hatches no thought has been given to the problem of removing the covers and strongbacks midway of the trunks. Men have no place to stand at the start and finish of jobs. The resulting operation is enough to make any thoughtful person's hair stand on end as he watches the gyrations the longshoremen must go through in trying to cover and uncover these sections.

8. Diversity of size of hatch covers is another problem. In one ship that I visited recently I noticed seven different lengths of wooden hatch boards and in three of the hatches the size of the boards varied from $\frac{1}{2}$ inch to $1\frac{3}{4}$ inches between the different decks in any one hatch. This creates a hazardous situation because hatch boards are continually getting mixed up. Short boards will ride off their seats and men stepping on the short end will drop through. Long boards also will get out of place and cause accidents. Aside from the accident hazard, the cost of the original procurement and maintenance of replacement boards is greatly increased by this unnecessary variety of sizes.

It would be a relatively simple matter to correct all of these conditions in the design of a new ship, but once the ship is built and in service the correction of many of them is so expensive that it seems almost impossible to obtain. Thus, you see naval architects and shipbuilders can help control stevedoring accidents by considering these problems at the time the ship is designed. Of course, stevedoring can be and is being carried on under these unfavorable conditions, and without too many accidents directly chargeable to them. However, efficiency suffers. Also, it is difficult to try and explain away these things and at the same time demand that the longshoremen get in and help prevent the 80 percent of the accidents in which human failure is responsible.

The shipowner wants a rapid turnaround of his vessels. I wonder if he fully realizes that by providing a safe, efficient work place through

proper design and by adequate maintenance he can help in achieving his desire. Rusty and ill-adjusted steam winches, electric winches where the contacts don't all function, rusty, wickery, discarded falls used for preventer guys; these we find on many ships. They are the result of a lack of a proper inspection and preventive maintenance program on the ship's part. It is difficult to convince the longshoremen that anybody is really sincere in desiring the prevention of accidents under these conditions. The shipowner defeats his own end if he provides inadequate or improperly maintained gear and equipment, for this not only antagonizes the longshoremen but may also result in accidents which are delaying in time and costly in repairs and replacements.

The terminal operator is involved less directly perhaps. Nevertheless, his action in providing an adequately designed terminal, well lighted and properly maintained so that cargo can be handled over it expeditiously, are of assistance. Poor flooring, inadequate aprons, inadequate lighting, unsanitary rest rooms, congestion resulting from poor design or lack of plan for flow of traffic, poor ventilation where gas engine operated vehicles are used, all antagonize the longshoremen and provide setups for accidents with consequent inefficiency in cargo handling. Thus, neglect on the terminal operator's part may defeat or at least hinder his undoubted desire to have the largest possible volume of cargo pass over his premises in the shortest space of time.

The contracting stevedore, in fulfilling his desire to please and satisfy the steamship operator, needs to—

1. Provide stevedore gear of the right type at the right place in adequate quantity and in good operating condition.
2. Provide adequately trained supervision who not only know the technique of stowing and discharging cargo but also have been trained in the modern theories of supervision including how to get along with people and the knowledge that accidents are a sign of something wrong and a reflection on the supervisor's abilities.
3. Properly plan his work, taking advantage in that planning of all his knowledge of cargo handling including what he has learned from past accidents.
4. Realize the limitations from the strength standpoint of the gear he will use, and govern himself accordingly.
5. Train and direct his workmen in the manner in which he wants the work done and then follow up to see that it is done that way.

Failure to do these things antagonizes the longshoremen, results in delays and accidents, and adds to his normal operating costs, the cost of damage to equipment and the cost of compensation for injuries.

The contractual relationship between stevedore and shipowner also makes for difficulty. The stevedore is reluctant to go to the ship for corrections. Little things, yes, he will take up with him, but the big things, no. The shipping company's insistence that the ship must sail on schedule, "delay it not," is all well and good in principle but many times a little delay at the start to fix things right would eliminate accidents and thereby some of the more important unforeseen delays which occur.

Foremen and superintendents must be convinced that they too have a vital part in accident prevention and, equally, that accident prevention is an integral part of operations. I am sure you will all agree that the only person other than himself who can really convince a foreman that he must make accident prevention his business is Mr. Big, the man who signs his pay check. When Mr. Big says he wants something done and shows by his actions as well as his talk, by his continuing interest in the subject, that he really means it, he'll get results all down the line. But until top management makes it unmistakably clear that they want it, well, they won't get very much.

I have pointed out how the ship designers, ship operators, terminal operators, and stevedores all have a part in the cargo handling accident problems and how failure to solve it may react unfavorably on their desires for success.

Now how about the longshoreman? What does he want? Probably it can be briefly expressed as the greatest possible take-home pay for the least expenditure of energy. As long as this is not carried to absurd extremes it should not be an objectionable aim. Modern equipment plus efficient work should permit of good take-home pay with lowered unit costs which would aid in encouraging water transportation of cargoes. Now an accident can directly affect the longshoreman's aim for it in many instances may result in injuries which separate him from his take-home pay. Thus one would think that the longshoreman's cooperation in preventing accidents would be the easiest thing in the world to obtain, but for various reasons we have not found it so.

The longshoreman's antagonism which I said the ship, the terminal, and the stevedore could arouse, results in inefficient work and unwillingness to cooperate even for his own good.

Sometimes also it results in vindictiveness which causes the misuse and abuse of gear, generally resulting in accident and injury but not necessarily to the particular individual who abuses the gear.

The relationship of the various parties involved in cargo handling often leads to a buck-passing contest on the subject of accident prevention. Let us start with the longshoreman. He goes aboard a ship where an accommodation ladder is hung alongside and the ship is breasted out so that he has to perform a flying trap-eze act to get on the lower end. Then he finds the ladder at such a flat angle he has to walk the edge of the steps to get up on deck, and the ropes are slack and he has nothing substantial to hang on by. He finds the deck oily where oil has leaked from the winches and he skids around getting across it. He finds rungs missing from the hatch ladders as he goes below. Such a man is not in the mood to be told how to load cargo so he doesn't strain his back or cut his fingers or drop things on his toes. He says, "If management wants accidents prevented, why don't they fix up the ship. I should save them money by trying to do all the accident prevention!"

There is inadequate illumination on the terminal and the terminal owner says: "If I increase it I will have to increase the rent to the shipping company who leases it and he won't pay any more. Besides it is up to him to keep the fixtures from getting broken. Someone steals the light globes and swings the loads into the outdoor fixtures. Let him stop that monkey business."

The stevedore says: "The ship comes in with inadequate gear and in poor condition. I can't complain to them about it because they will get another stevedore, so I try to get along. And then, too, the longshoremen won't take orders. If they did as I told them to, they wouldn't get hurt. It is their own fault most of these accidents happen."

The shipowner says: "The stevedore and longshoremen abuse my gear. I furnish good gear but I see them overstraining a boom while lifting a load because they think it will take too much time to re-rig the gear properly."

Thus, when we start to talk accident control we are met with all these excuses. I do not deny their truth, but passing the buck doesn't prevent accidents. Accidents, however, can be prevented when each person will take over within his own sphere of responsibility and do all that he can; cast the beam from his own eye rather

than quibble over the mote in the other fellow's, or perhaps get the mote out of his own eye and let the other fellow worry about his beam. It is that cooperation of all working to the common end that I plead for today. Let each put his own house in order first and then it will be possible for all to get together and see what they can do intelligently about solving the remaining problems, and with such cooperation these problems can be solved.

Accident prevention is a sound business procedure and just a part of efficient operation but it requires work. The stevedore gives thought to the kind and amount of stevedore gear he needs to discharge the different cargoes on a ship. Why not preplan the job from the accident-control standpoint as well, and thus take one more step toward insuring an efficient operation? In order to preplan from the accident-control standpoint the stevedore needs to know something of the past history of accidents on his own operations. This is where a study of statistics is of value.

Referring again to the report of the Engineering Committee of the President's Safety Conference we find them saying: "Accident statistics show that some personal injury accidents are caused by unsafe practices alone. Some are caused by a combination of unsafe conditions and unsafe practices, and others are caused by unsafe conditions only."

You may be wondering, for stevedoring operations, just how large a part unsafe physical conditions play. On the west coast we had reported last year a total of 6,693 accidents to longshoremen. On analyzing them we found no unsafe physical conditions existing in 66 percent of the cases. In the 34 percent of the accidents where there were unsafe physical conditions it was found that these resulted from work methods used, housekeeping, and improper piling and stowing in 16 percent of all cases. Inadequate work surfaces were involved in 6½ percent of the cases. Only 2½ percent of all reported accidents resulted from defective gear or equipment. Lack of proper tools, inadequate guarding, inadequate illumination, and ventilation were responsible for less than 1½ percent each. Although physical conditions are involved in only 34 percent of the cases, it is generally agreed that it is usually cheaper and easier and always more permanent to correct unsafe physical conditions than to correct unsafe practices. Therefore there should be no letup on management's part to obtain corrections of all potentially hazardous conditions, al-

Crewmen's Quick Act Saves Tanker

The S. S. *Atlantic Dealer* of the Atlantic Refining Co., while taking water ballast at Philadelphia, Pa., shortly after midnight on 1 February 1951, had a serious fire break out due to an explosion that occurred as a result of an open light igniting dangerously close of gases in the quarters adjacent to living quarters.

The following crewmen, Mr. William B. Scott, AB; Mr. Bruce W. Nickel, AB; Mr. Eric Williamson, AB; Mr. Thomas B. Macom, 2d pumpman; and Mr. James R. Higgenbotham, AB, immediately made heroic and successful efforts to extinguish the fire although their cool courage and devotion to duty under extremely hazardous conditions in exposing themselves to great personal danger were undoubtedly instrumental in saving the ship from possible destruction and in protecting the lives of all their shipmates. Had this fire not been brought under immediate control there would have been great loss. As a result of the effective action taken by these crewmen only minor damages occurred to the vessel and no lives were lost.

though it must be admitted that the actual correction of unsafe physical conditions is often more difficult in this industry than in many others because of the relationships which exist between the various parties. The longshoreman who gets hurt works for a stevedoring company who neither owns nor controls the places where he does his work; that is, the ships or docks. Thus the correction of physical conditions usually depends upon the wholehearted and understanding cooperation of the shipowner or terminal operator.

Too often papers given before a safety group discuss just the unusual accident. Granted that they are more interesting on the whole than the usual or run-of-the-mill one; nevertheless, the latter through sheer weight of numbers pose the greatest problem. Hand handling accidents, which comprise 43 percent of our stevedoring accidents (the strains and sprains, getting caught between objects handled and other objects, dropping objects); the slips and falls—21 percent; the struck by moving objects (including vehicles) 14 percent; the falling objects, 11 percent. How can we go about controlling them? Here is where supervisors and education come in. Men must be taught that they have a definite part in any accident-control program. Supervisors must remember that it is part of their job to everlastingly call to the attention of men their mistakes.

Of all reported accidents, we found in 1949 that in only 20 percent of the cases was no unsafe act involved. True, in many of the cases there were both unsafe acts and unsafe condi-

tions, for the human element plays an exceedingly important part in practically all accidents. Let not the stevedoring contractor shrug off his responsibilities by pointing to these figures and saying, "See, it is the men's fault. I can't help it." Management still bears the cost of these accidents and has the responsibilities for controlling them. Management hires these men and directs their work. It is management's responsibility to educate their workers to the fact that there is a safe and an unsafe way to accomplish even the most trivial acts connected with their jobs.

Let's take just three examples of accidents in cargo handling and see what lessons we can learn from them.

In the first case the ship had a hinged steel hatch cover in the 'tween deck which came down over the reefer plugs. The hinged cover was lifted by a bull line to the winch on deck. After being raised to a vertical position it was held there by a latch which in turn was secured by a pin through a hole so that it could not become unlatched. On the morning in question the cover was raised and one man went below to put the pin in the latch. He found the latch was bent so that the holes did not line up and the ¾-inch pin did not fit. He also found a nail lying nearby that would go in and he used it. He told neither the gang boss nor the mate, nor anyone else about the defective latch. It was also the custom after having raised the cover and latching it to then carry the bull line around a cleat or a stanchion as a preventer. This was done. Came evening, and work in the hatch was finished. Two

men stayed below to put on the last remaining reefer plugs. On deck the gang boss sent one man down to remove the pin and unlatch the hook and in the meantime, without looking to see what was going on below, told another man to release the bull line and take it to the winch so that the cover could be lowered when it was unlatched. But the minute the bull line was released the cover began to move and soon it had sufficient momentum that it could not be stopped. The warning cry was too late and one man was caught as the cover came down. Investigation showed that the latch could be shifted enough with the nail instead of the pin in it to permit it to become disengaged and evidently vibrations throughout the day had caused just this to happen and the only thing that was holding the cover up was the preventer.

If the mate had inspected the securing mechanism on this hatch at sufficiently frequent intervals and had had better maintenance; or

If the longshoreman discovering that it was out of repair had reported it at that time; or

If the gang boss had seen that all men were in the clear before slacking off the bull line, then the accident would not have happened. A man's life would have been saved.

Second example: A lift driver lifted a load of baled cotton approximately 5 feet above the floor. Two dock men stepped under the suspended load to remove the blocks on which the cotton had been placed. The driver started forward and the men ran in a stooped position to get clear. The right front wheel of the truck dropped into a depressed place on the floor, caused the load to sway and the bales to fall off the blades. One man got in the clear and one man was caught by a falling bale.

If the fork lift driver had only raised the load about 2 feet as he had been instructed; or

If the men had used wire hooks which were provided to pull the blocks out; or

If the driver had not driven forward when men were under the load; or

If the owners of the pier had repaired the broken pavement, the accident would not have happened.

A third example: In this instance the man was taking the midship fall to the inshore side to top up the gear. He had the fall in one hand and stepped on the hatch coaming flange, slipped and fell into the open hatch. Here we have an unsafe method being used. The man did not have to walk the coaming flange; there was room to travel on the deck. However, the flange presented the shortest path. Obviously an unsafe method

was being used to get from one place to another. The man was probably following habit. He had undoubtedly done that thing many times before without an accident occurring. This time his unsafe habit caught up with him. One wonders, though, why the boss on the job let him carry on in this manner, not only this time but why when the man had done the job previously in the same way had he not been called on it? The big question that confronts us all is, "How can we get each person in the industry to accept his own share of the responsibility for the control of accidents?"

It is inevitable that in any discussion of accident prevention the subject of safety rules must come up. I have this feeling regarding safety rules. First, they are necessary; second, having rules is not the sole answer. They must be complied with. Third, there must be a certain degree of flexibility in them, particularly in regard to stevedoring work where conditions change from moment to moment. A set of safety rules is not an accident-control program. It, however, may be a useful adjunct to a control program and may form a desirable framework on which part of the program is built. A trellis is a useful thing in your garden. You may have many of them. But their purpose is not in themselves to beautify the garden but rather to serve as a support and a guide to best display the living, climbing roses which are the important things of beauty. Even so, we do not have safety rules for the sake of the rules themselves but rather as the framework to help in guiding our program in controlling accidents.

There are those who feel that safety rules must be so detailed as to cover any and all possible contingencies. There are those who insist that come what may, the rule must be followed simply because it is a rule. On the Pacific Coast we have had some experience with this idea and it has not been too happy. Others would have labor and management sit down around the table and develop a set of rules by the bargaining process. This, too, we have experienced. Still others would have management lay down the rules which they feel desirable, not taking advice or asking the opinion of labor. This solution does not seem the best to me. Rather, I would have management promulgate a set of rules that has been drawn up based on the advice and experience of the workers. This, I believe, gives the most satisfactory set of rules. The men are more inclined to feel kindly towards complying with them since they have had a part in developing them. In-

asmuch as management bears the responsibility for providing a safe place to work; is charged with the responsibility for directing the work and is the only agency which can make changes and betterments in places and methods, therefore, they, management, are the proper ones to say finally what the rules shall be.

The Pacific Coast Marine Safety Code was developed in 1929 as a voluntary code. There was no enforcement machinery. It was recommended by the steamship and stevedoring associations to their respective members as a workable set of rules which should be followed. The code was of great assistance, even though it was voluntary and a management code, in effecting correction of substandard physical conditions aboard ship. But it was not successful in controlling the practices of the men. It remained as a voluntary code until 1946, although after 1934 the union made at least two efforts to have it made a contractual matter. The first attempt was in about 1937 when a negotiated code was sought. Agreement was finally reached on all but one rule out of some hundred odd and because agreement could not be reached on this one rule, the whole matter was dropped. During the war years the union again raised the issue before the War Labor Board. This time the Board ruled adversely because they felt that the state of labor relations between the groups was such that the inclusion of the rules would only be another source of conflict. Finally in the settlement of the 1946 strike, it was agreed to include the then current edition of the code which had not been revised since 1932 as a part of the contract. One of the conditions of settling the 1948 strike was an agreement to revise the code. As it turned out, the revision really took the form of negotiation between the parties and as a result the wordings finally adopted were in many instances compromises rather than the result of clear thinking on accident prevention matters alone.

From the accident-prevention standpoint, experience has shown no greater degree of safety resulting from the safety rules being a part of the contract. There have been disadvantages, as in some of the ports business agents have insisted upon compliance with a given rule not because under the circumstances it resulted in any greater degree of safety but rather as a matter of contract observance. Needless to say, all these cases worked to the detriment of the employer. I have yet to hear of a threatened work stoppage because an employee failed to comply with a rule, nor have I yet heard of

employers forcefully insisting upon compliance with the rules by employees. Actually, our Pacific Coast Marine Safety Code more nearly resembles a State safety code or State safety orders than it does the safety rule book of an individual concern. As a part of the contract the union enforces rules against the employer by means of threats of work stoppages or actual work stoppages. The employer does not enforce rules against employees because this could be done only by discharge and that has serious complications in view of the "ship must sail on time" philosophy. Management does not want to force the issue.

Conclusion

At the start of my remarks I said that all of you have a part in any successful accident-control program for the stevedoring industry. In conclusion, let me urge you to take such steps as you can in your own field. To naval architects, think of the working longshoreman and his problems when you design and locate cargo-handling gear; to shipyard supervisors, be sure that the work you do is well enough done to stand the strains that are put upon it. For example, when welds are made be sure they are safe welds. To ship operators, in addition to seeing that the hull, propulsion machinery, and steering gear are seaworthy, see that cargo-handling gear is seaworthy to start with and is always maintained that way through adequate preventive maintenance programs. To stevedores, be sure that the gear you supply and the methods you use are adequate to get the job done safely and see that your supervisory force knows that you mean it when you say you want accidents reduced. To top management, regardless of the branch of industry, remember that you need to be more than antiaccident. It has been well said that though everybody is antipneumonia, still many people die from it. You need to make your supervisory force understand that you truly want accidents controlled. You need to convince them of your sincerity by a continuing interest in their problems. Supervisors need to accept the fact that accident prevention is an integral part of every operation, not an extra like frosting on a cake. Never forget that you cannot have an efficient operation if accidents are occurring on the job.

And to everyone, remember that accident prevention is a personal matter. Every person has his part to play if jobs are to be done without the cost, delay, and suffering which attend all accidents. The reduction

of accidents requires that all—and I mean each individual—get into the act and play his required part.

AMERICAN FLAG TANK VESSELS

The largest single group of vessels used for our purpose in the American Merchant Marine is tank vessels. These vessels not only travel the seven seas but are extensively used on the coastal and inland waters of the United States to supply bulk transportation of many liquid products.

The Coast Guard issued certificates of inspection dated to expire during the fiscal year ending June 30, 1951 to 2,672 tank vessels. The breakdown of the number of vessels is:

Steam tank ships.....	447
Motor tank ships.....	228
Tank barges (ocean, coastwise and Great Lakes waters).....	131
Tank barges (bays, sounds, small lakes and river waters).....	1,866
Total.....	2,672

MOPE and DOPE



COVER PICTURE

The steamer *Benjamin F. Fairless* is shown off Two Harbors, Minn., as a tug *Edda G.* maneuvers the big carrier, one of the Pittsburgh Steamship Co. fleet, into position to move alongside of the docks and take on a cargo of iron ore.

**Long chances—
shorten lives**

NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of undocumented vessels numbered under the provisions of the Act of June 7, 1918, as amended (46 U. S. C. 288), in each Coast Guard district by Customs ports for the quarter ending 31 March, 1951. Generally speaking, undocumented vessels are those machinery-propelled

vessels of less than 5 net tons engaged in trade which by reason of tonnage are exempt from documentation. They are also those motorboats and motor vessels of 5 net tons and over used exclusively for pleasure purposes which are not documented as yachts or those of less than 5 net tons which by reason of tonnage, are not entitled to be so documented.

Coast Guard district	Customs port	Total
1 (Boston)	(4) Boston.....	16,219
	(1) Portland, Maine.....	11,402
	(2) St. Albans.....	2,888
	(5) Providence.....	4,489
		34,998
2 (St. Louis)	(45) St. Louis.....	17,137
	(12) Pittsburgh.....	2,430
	(34) Pembina.....	86
	(35) Minneapolis.....	6,483
	(40) Indianapolis.....	4,308
	(42) Louisville.....	3,915
	(43) Memphis (part).....	7,976
	(46) Omaha (part).....	501
	(47) Denver.....	6
		42,842
3 (New York)	(10) New York.....	48,808
	(6) Bridgeport.....	8,929
	(11) Philadelphia.....	20,833
		78,570
5 (Norfolk)	(14) Norfolk.....	16,330
	(13) Baltimore.....	23,289
	(15) Wilmington, N. C.....	8,623
		48,242
7 (Miami)	(18) Tampa (part).....	23,145
	(16) Charleston.....	1,941
	(17) Savannah.....	3,413
	(49) San Juan.....	458
	(51) St. Thomas.....	86
		29,043
8 (New Orleans)	(20) New Orleans.....	20,143
	(18) Tampa (part).....	801
	(19) Mobile.....	8,298
	(21) Port Arthur.....	4,027
	(22) Galveston.....	10,740
	(23) Laredo.....	2,103
	(24) El Paso.....	6
	(43) Memphis (part).....	76
		46,194
9 (Cleveland)	(41) Cleveland.....	14,271
	(7) Odensburg.....	6,515
	(8) Rochester.....	8,774
	(9) Buffalo.....	8,292
	(36) Duhrth.....	4,198
	(37) Milwaukee.....	12,559
	(38) Detroit.....	20,196
	(39) Chicago.....	8,482
		92,287
11 (Long Beach)	(27) Los Angeles.....	8,871
	(25) San Diego.....	1,696
	(26) Nogales.....	106
		10,673
12 (San Francisco)	(28) San Francisco.....	29,634
		29,634
13 (Seattle)	(30) Seattle.....	32,886
	(29) Portland, Oreg.....	9,791
	(31) Great Falls.....	1,054
		43,731
14 (Honolulu)	(32) Honolulu.....	3,488
		3,488
17 (Juneau)	(31) Juneau.....	6,879
		6,879
Grand total.....		457,381

A cook ran a chicken bone into his finger. He thought nothing about it until a couple of days later when his finger and arm were aching. He had to be left in the hospital when the ship sailed.

No one can deny that many minor cuts and scratches will heal up with-

out treatment. It is also true that proper first aid treatment at once will prevent infection in nearly every case.

The treatment costs you nothing but the inconvenience of stopping work to get it. Is that small gain worth the risk of a serious infection? *Courtesy Shipboard Safety.*

MAILING LIST FOR "PROCEEDINGS"

It is required by the Regulations of the Joint Committee on Printing, dated July 1, 1948, that the mailing list for the Proceedings of the Merchant Marine Council be circularized to determine whether this publication is still desired by the persons to whom it is addressed.

To all addressees on the mailing list for the Proceedings a card will be sent requesting an affirmative reply, to be returned to the Commandant (CMC), United States Coast Guard, by no later than May 31, 1951. If you desire to continue to receive the Proceedings and you do not receive a card by May 1, 1951, it is suggested that you send a card to the Commandant (CMC), United States Coast Guard Headquarters, Washington 25, D. C., setting forth the following information:

- (a) Quantity desired.
- (b) Quantity now received.
- (c) Name and address to which the Proceedings are now sent.
- (d) The new postal address if different from that to which the Proceedings are now sent.
- (e) Name of firm, company, corporation, or individual requesting the Proceedings.

In order to reduce the size of the mailing list it is most advantageous to have copies of the Proceedings, when several are involved, mailed under the same cover to the same address.

If no affirmative reply requesting continuance is received by May 31, 1951, the addressee's name will be removed from the mailing list.

"In process of tending turkey, oven door fell open and burned calf."

"Pouring hot grease over french fries from bucket. Handle came loose and grease spilled over him."

Accidents like these are often the result of worn, broken or defective equipment. The man using it is accustomed to the minor difficulties he has with it and never bothers to report it. Then sometime he forgets that he has to take special precautions and an accident occurs.

Check your gear carefully at regular intervals and report those things which should be replaced or repaired. Often the defects are small and show up only in use so they are easily overlooked by an inspecting party. *Courtesy Shipboard Safety.*

**If you don't heed safety stencils
You may end up selling pencils**

SLOW BUT SURE

Several cases have been reported recently concerning seamen who were stricken violently ill and subsequently died because they mistook carbon tetrachloride for whiskey or drank from a water glass that had been used for handling carbon tetrachloride. However, inhaling its fumes is just as deadly and in some cases deadlier.

Not so long ago a report of casualty was received relating the facts concerning a seaman who had partaken of a few "short beers," on a Sunday afternoon while his ship was in port. The following morning he was assigned duties with the first assistant engineer. Approximately 10 a. m., he stated that he felt sick and nauseated. He was sent to the doctor who gave him milk of magnesia and returned him to duty, although the seaman still felt sick. The next day the first assistant engineer saw the seaman vomit in the engine room and told him to go to bed. However, he was feeling better the next day and stood his 0800 to 1200 watch, afterwards returning to his bed in the afternoon where he remained until the end of the voyage.

He was under the ship's doctor's care who made no definite diagnosis, but a general diagnosis of acute gastroenteritis because the patient had developed diarrhea, nausea, vomiting, and abdominal cramps and a slight temperature.

Upon arrival in port the patient was able to walk off the ship three or four blocks to the company medical dispensary. He later reported to a United States Marine hospital, but was classed only as an out-patient and told to return the next day at which time he was admitted.

The doctor at the hospital upon recognizing the patient's symptoms as carbon tetrachloride poisoning, questioned him as to his possible use of this cleaning agent prior to his illness. He stated in the presence of two doctors that he had been cleaning parts of an electric motor with carbon tetrachloride a day or two before he got sick in the hold of the vessel. The doctor stated that he had suspected carbon tetrachloride poisoning from the symptoms, however, he had not given the suggestion to the seaman. Fourteen days after the patient had been cleaning various parts of an electric motor, with carbon tetrachloride, he died.

The Public Health Service doctor who attended this man, is coauthor of an article entitled "Carbon Tetrachloride Nephrosis," which was published in the journal of the American Medical Association, stated that the time interval between poisoning and resultant death was not unusual. He further stated that ingestion of alcohol proximal to the period of exposure to the chemical greatly increases the hazard of the development of acute poisoning, lessens the outlook for recovery, and reduces the chances of getting an accurate history. The alcohol serves to obscure the cause in the patient's mind.

Upon personal interview the master, chief engineer, chief mate, and first assistant engineer stated that the deceased was not required to use carbon tetrachloride in the performance of his duties. It was also pointed out that when the use of carbon tetrachloride was authorized extreme precautions were taken.

It should be constantly remembered that carbon tetrachloride is a clear, volatile, colorless liquid with a characteristic aromatic odor. It is definitely toxic by inhalation of vapor and prolonged or repeated contact of the liquid with the skin or mucous membranes.

Being over five times as heavy as air, the vapor settles, tending to increase concentrations in the breathing zone, at floor level, in pits, and in closed rooms. Concentrations above 100 parts per million are deadly and may linger indefinitely. Dangerous vapors may accumulate in depressions, under platforms, in holds, or in void spaces.

The toxic symptoms of absorption, regardless of mode of entry into the body are: Headache, mental confusion, depression, fatigue, loss of appetite, nausea, vomiting, loss of coordination and sense of balance, and visual disturbances. Carbon tetrachloride poisoning—depending upon severity and duration of exposure—results in injury to the liver, kidneys, adrenal gland, heart, lungs, and to the digestive and nervous systems. Toxic signs are: rapid, irregular, or weak pulse; fever; bloody stools; suppression of urine; swelling of face; enlarged and painful liver; and bloody urine. There may be local irritation of eyes, skin, and respiratory tract, but onset of symptoms may be delayed two to eight days after severe exposure. Persons who have recently partaken of alcoholic beverages are particularly susceptible.

A person showing symptoms of poisoning should be given plenty of fresh air. In case breathing has stopped artificial respiration should be started. Medical assistance should be obtained as soon as possible. Hot tea or coffee may be administered. Do not give alcohol, fats, oils, adrenalin, or epinephrine to a person who has been exposed to carbon tetrachloride.

(1) Adequate ventilation to prevent the accumulation of vapors must be provided, when possible, if carbon tetrachloride is used, or transferred from one container to another. The vapors must be removed from the space, from below the point of breathing, and exhausted well clear, to prevent the settling of vapors in a compartment.

(2) If thorough ventilation is not practicable, personal protective equipment, consisting of hose mask, or gas mask or respirator (approved for use with CT), and gas-tight safety goggles, must be employed. It should be remembered that all persons within the working area must be protected. Due to variations in concentration, time limits for gas mask canisters or cartridges cannot be established, although time limits of 1 hour for canisters and 30 minutes for cartridges are recommended.

(3) Prolonged contact with the skin should be prevented by means of protective clothing such as neoprene gloves.

(4) Any transfer of the liquid, for example, the filling of fire extinguishers, should be made out of doors when winds will disperse the vapor.

(5) Small quantities of carbon tetrachloride should be handled in safety cans. Uncovered containers are prohibited. Leaky containers should be immediately discarded.

(6) Rags or swabs wet with the liquid must be placed in the open.

(7) Carbon tetrachloride must be kept from open flame or intense heat since it decomposes at high temperatures, generating a deadly gas (phosgene) and corrosive products. In the presence of moisture it decomposes slowly, to liberate highly corrosive hydrochloric acid.

(8) Gas masks must be provided as soon as possible for men using carbon tetrachloride to extinguish fire whether indoors or out in the open.

(9) Certain individuals have been found unduly susceptible to carbon tetrachloride poisoning and should not be assigned to operations involving the use of this product, even in

small quantities. Exposure to carbon tetrachloride, even in concentrations known to be nonhazardous to others, may be dangerous in the following cases:

- (a) Alcoholics.
 - (b) Exceedingly fleshy individuals.
 - (c) Undernourished persons.
 - (d) Those with pulmonary disease, peptic ulcers, hypertension, liver, kidney, or heart diseases.
 - (e) Persons with respiratory defects, either temporary or permanent.
 - (f) Persons who cannot readily detect odors.
- (10) Carbon tetrachloride must not be mixed with other liquids.
- (11) Warning labels should be placed on all containers, regardless of volume, before issue.

PREPAREDNESS IS ESSENTIAL

From time to time casualty cases are reported which illustrate the ingenuity of American seamen. Although no lesson probably can be obtained from the case, yet it is interesting to note how people have utilized equipment in order to prevent serious injury to themselves or have been able to receive aid from others without suffering undue hardship.

One August day last year two men went fishing commercially in the North Pacific Ocean. The boat was sixteen years old and constructed of wood and was powered by a gasoline motor. It was approximately of nine gross tons in size.

The occupants were trawling before a heavy sea in overcast weather and a southeast wind of approximately four.

It was during this operation that the vessel shipped water over the starboard quarter, which caused her to roll over on her side. The two men managed to escape in a small lifeboat which was carried with the forethought that something like this would happen. The fishing vessel remained on her side and filled with water but did not sink because of the wood construction and captured air within the boat. When it was noticed that the boat was not going to sink, one of the men crawled back aboard the vessel, through a pilothouse window, to the radiotelephone which was still in commission and sent a distress call which was picked up by another fisherman some distance away. This fisherman relayed the distress signal to the Coast Guard and proceeded to the scene of the accident where he picked up the two fishermen. The Coast Guard vessel also arrived shortly thereafter and, after refloating the fishing vessel, towed it to port.

In this case the fisherman exercised extreme courage in returning to his

boat and utilizing the radiotelephone equipment in order to get assistance. Since the weather was becoming progressively worse he probably saved himself and his companion from a considerable amount of suffering since it is likely that under normal conditions they would not have been missed for many hours and rescue attempts would have been left entirely to chance.

GASES GO BOATING TOO

With wonderful air and plenty of it all around us, we are more than apt to forget that other gases, not quite as hazard free, go boating with us. These gases need not all be considered unfriendly, but let's keep them friendly and give them the old "heave ho" when they get out of bounds.

GASOLINE.—Our everyday association with gasoline tends to breed contempt for its hazards. Many of us are not aware that it is poisonous to the human body in quite small amounts irrespective of the means of entry into the body. It can be swallowed or absorbed by the skin as well as breathed in vapor form. Inhaling a high concentration of vapor, say 2 or 3 percent by volume, will prove fatal in a short time and even a concentration as low as one-tenth of 1 percent is hazardous if the exposure is long continued. However, the principal danger of gasoline vapor develops from its property to explode and burn. The explosive limits of gasoline vapor concentrations are from about 1¼ percent to 6 percent by volume but according to observations made in the laboratories of one of the larger oil companies the vapor is detectable by all persons who have a sense of smell at concentrations as low as two-tenths of 1 percent which is less than one-sixth the concentration required for explosion. The least trace of gasoline vapor should be sufficient warning to exert every caution, ventilate the area thoroughly, and track down and eliminate the cause for its presence.

Gasoline opens our door to much fun by the power it packs, but only while we restrict it to its proper places. It can be a treacherous friend when "out-of-bounds." Speaking of the power in gasoline—5 gallons vaporized could explode with as much force as 415 pounds of TNT.

COOKING GASES (liquefied petroleum).—Many of us have been attracted by the "home" type of convenience which these gases make possible afloat. 'Tis O. K., provided those of us who make use of them pay the price of care that is vital to their safe use. Like gasoline, these gases can be very treacherous friends.

The liquefied petroleum gases most frequently used are propane and butane or propane-butane mixtures. They are not particularly harmful to breathe but too great a concentration will cause a slight headache. In order to identify their presence in case of leakage they are supplied with a distinctive odor. These gases are similar to gasoline, but vaporize much more easily and are in a liquid state only when under pressure. In their gaseous phase they are considerably heavier than air, will not readily diffuse into the atmosphere unless the air velocity is quite high, and are readily ignitable within their "flammable ranges," in which they are quite close to gasoline. Hence, these are gases which must be kept in bounds and to do that only the best systems, the best consuming appliances, and the best maintenance care on our part, are adequate.

HYDROGEN.—Too frequently in boating this gas has been the waiting fuel for an igniting spark. The gas is liberated whenever storage batteries are being charged, and while, by virtue of its lightness, it is easily diffused in air, its flammable range is so great that a small quantity of it in the air or a small quantity of air mixed with hydrogen is highly explosive. Hydrogen is colorless, odorless and when mixed with air, harmless to the human system. Its peril is eliminated by plenty of good, continuous ventilation of battery areas.

CARBON MONOXIDE.—Let's get this one outside the boat and keep it there. There is enough of it in engine exhaust gases to be extremely poisonous to humans. It is colorless, odorless and most treacherous. Many examples are in the record of boatmen overcome by this gas. Its insidiousness is indicated by the apparent lack of awareness of its attack until a complete black-out occurs, and that is the end unless promptly discovered and respiratory first aid administered. Engine exhaust systems must be maintained completely tight.

CARBON-TETRACHLORIDE.—We mostly think of this element as a liquid, and a friendly one because of its extensive use as the charge in fire extinguishers. Nonetheless, it has its very perilous features and should be used only by those who are conscious of those features. It can be extremely injurious to humans from inhalation of its vapor, from repeated contact with the skin or through exposure to gases formed by decomposition of the liquid in the presence of open flames or hot surfaces. Thus, if used as a cleaner, even if mixed with another

solvent, be sure the area in which it is used is well ventilated, and be sure to protect the hands with synthetic rubber gloves; if used for fire extinguishment be sure that adequate ventilation follows.

The gases mentioned here are the ones that turn up quite frequently as causes for accidents afloat. Our freedom from such accidents is dependent upon the effort we make to keep them and their generating liquids where they should be and to ventilate them overboard when they escape from their restrictions. *Courtesy Yacht Safety Bureau.*

RUNG FAILURE SPELLS DEATH

Fortunately, rung failure does not always spell death. Recently, however, that was the case when an unfortunate longshoreman, descending a permanent steel ladder into a ship's hold, grasped a rung for support. The rung gave way and the man fell to his death—15 feet below.

The accident was witnessed by a fellow longshoreman working in the hold at the time, sweeping coal from the ship's beams. According to his statement the victim fell to his death while in the act of descending a ladder—the same ladder that he (the witness) had “gone up and down several times.” The witness, however, was of the featherweight class, weighing a scant 120. The victim was a heavy man, weighing 200 pounds.

The fact of culpability does not enter into this picture. Subsequent investigation produced no evidence of “misdoings of crew members.”

According to report, the ship docked at 11 a. m. Longshoremen came aboard about noon to clean the holds of coal dust, preparatory to taking on new cargo. About the same time a repair detail also came aboard to repair structures that required welding.

According to the ship's master, it was known that rungs were missing from the ladders in the hold; that repairs had been recommended and that, in fact, shipyard workers were aboard making those repairs to the vessel at the time the longshoreman fell to his death in the hold.

Visual examination of the rung, made by consulting engineers contacted to determine, if possible, the cause of the rung failure, revealed that one side of the rung was completely rusted with no evidence of paint adhering to the surface. It was also found that a degree of deformation existed and that there was a nick in the edge of the rung.

Photomicrographs of the welds at each end of the rung showed remains of fillet welds at both ends and that

MOPE and DOPE



“Now you go slow and I’ll keep both hands on the ladder.”

both parent metal and weld metal were rusted. Evidence of battering or burnishing was noted with a moderate amount of entrapped slag vis-

ible in the welds as well as porosity. One end of the rung, however, differed in that the weld fracture on the concave side of the rung for a depth

of approximately one sixteenth-inch was bright, indicating that this was the last portion of the weld to break.

The conclusion reached by the consulting engineers was that failure occurred as the result of serious weakening of the welded joints by some external force or forces which resulted in almost complete severance of the welded joints. The remaining metal had insufficient strength to withstand the normal loads to which the ladder rung would be subjected.

Ladders leading into the holds of ships are sometimes exposed to hard knocks from cargo moving in and out of the holds. Such was the case here. The ladder rung in question could have been partially knocked off and suspended by a small portion of remaining metal, a condition not evident to a casual visual inspection. It is doubtful that the defect in the rung would have been visible to one making an inspection of the ladder.

It has been concluded that the longshoreman's death was not the result of "misdoing of crew members." And, certainly, faulty ladders are not knowingly provided for the use of ship workers. The thought, however, occurs that in the interest of safety, stevedores should have followed the welders. That is to say, the men should not have descended into the holds until the recommended repairs had been completed. Then the unlucky longshoreman might have grasped for a rung that would have supported him, in spite of his heft of 200 pounds, and he would have reached his destination—instead of his death.

SEA MANNERS

The attention of shipmasters is called by the Hydrographic Office to the danger to all concerned which is caused by a single vessel approaching a squadron of warships or merchant vessels in convoy so closely as to involve risk of collision, or attempting to pass ahead of or through such a squadron or convoy.

Mariners are therefore warned that single vessels should adopt early measures to keep out of the way of a squadron or convoy. The following report illustrates the danger, confusion, and inconvenience that results when a single vessel fails to extend this courtesy:

"On the evening of November 17, 1950, 42 naval vessels were in a convoy formation with an 8-ship antisubmarine screen. All ships were burning prescribed navigational lights and were proceeding on course 037° at a speed of 10 knots. The officer in tactical command, embarked in his flagship, was in the right center sta-

tion of the antisubmarine screen. The large formation, including a number of ships with 10 knots maximum speed, was not a readily maneuverable one.

"At 1840R, when it appeared that a southward bound vessel, plotted by radar 6 miles distant, bearing 032° from the flagship, would pass very close to the formation, a destroyer was directed to close and request her to alter course slightly to port to clear the formation. At 1856R, the destroyer, having closed the unknown vessel, sent a message requesting her to alter course to southeast to clear the naval convoy formation. At about this time, it became apparent that this vessel had altered course to the right for some unaccountable reason and was heading through the screening vessels directly for the leading ship of the right convoy column.

"The destroyer kept close to the merchant vessel endeavoring to lead her clear, but she took a course directly across the front of the convoy proper, gradually changing her course to right to northwest. The officer in charge of the convoy vessels ordered the formation to stop until the situation clarified itself. His flagship, leading the right center column, was forced to back to avoid the merchant ship. Other individual maneuvers by various ships were made as the close proximity of the merchant vessel was dangerous.

"Eventually the merchant ship crossed ahead of the port column leader, and changed course to southward to drop astern and resume course toward her destination. The destroyer remained in her vicinity until the merchant ship was clear."

It is incomprehensible that a competent master would endanger his ship and others by deliberately altering from a course he had been on for some time to show his "port side light" to gain a privileged status and expect 50 other ships to give way. All ships were burning navigational lights. Had the merchant ship adhered to her original southerly course or altered a small amount to the left, she would have undoubtedly cleared the heavy ship formation with ease. The master's chosen action endangered his ship and others while at the same time causing himself a considerable deviation and delay from

SHORT SHORT

"Injury", said the workman.
"Inattention", said the supervisor.
"Inflammation", said the physician.
"Incurable", said the hospital.
"Incredible", said the mourners.
"In PEACE", said the tombstone.

his original course. His judgment as a seaman in this instance is questioned.

EXPLOSIVE VAPORS TRAVEL FAR

Apparently when enough persons are injured by vapor explosions and fires people will heed safety precautions and live. It seems that too many people have the idea that after certain areas have been gas freed then the danger is over. They fail to realize that the very conditions which caused the vapors to settle in one place can very readily be duplicated in another. That a gas-freeing operation may only move the vapors from one spot to another. This can happen on any vessel that is propelled by, transports, or uses petroleum products in any way; particularly under conditions of "dead air" or calm weather.

Practically everyone knows that when gasoline vapor is mixed with air under certain conditions an explosive mixture of vapors is formed. Usually people are cautious enough of gasoline in its liquid form. However, once it is in vapor form its dangerous potentialities are often forgotten or ignored.

Many times when taking on gasoline as fuel people think that by merely mopping up "spills" they have eliminated all hazards. What they have forgotten is that while the fuel was exposed to the air it was busy giving off its dangerous vapors, which will collect in low spots unless broken up by strong drafts of air.

This gas, if not immediately displaced by air, settles in the most readily accessible place, being heavier than the surrounding air, settles in the bilges and/or other low areas. Then these fumes under certain conditions are ready for the smallest spark from any source to touch them off as an explosion or fire, with the resultant injury and death to those near it, as well as severe property damages.

These accidents aboard pleasure craft are common occurrences because, when considering the inexperience of the operators or passengers, the hazards, and potential dangers are not well understood. However, aboard tankers where explosive vapors are understood and appreciated, the recurrence of accidents by explosions in places set aside as "smoking areas" for the officers and crew are indications of forgetfulness and carelessness.

A tanker after unloading her cargo had her tanks ballasted with sea water at the dock. By this operation explosive vapors were forced from the

tanks through the venting system. The senior officer apparently thought that after the fumes were exposed to the atmosphere they would disperse. However, a slight breeze blowing across the vessel merely carried them into officers quarters where some doors had been left open during the ballasting operation. When the ship was ready to sail, an officer entered

his quarters to smoke a cigar and relax. When he attempted to light his cigar, a severe explosion occurred. It is possible that even snapping the light "on" or "off" could have caused a similar explosion.

Seven men were injured, four requiring hospitalization as a result of the explosion. Damage to the tanker was estimated at \$4,000.

"Smoking areas" can be just as hazardous as other places when the atmospheric conditions are such that inflammable vapors will gather there. This casualty shows that dangerous conditions can arise even in crew's quarters where under any but the most extraordinary circumstances, smoking would be quite safe.

APPENDIX

Amendments to Regulations

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

Subchapter N—Explosives or Other Dangerous Articles or Substances and Combustible Liquids on Board Vessels

[CGFR 51-16]

PART 146—TRANSPORTATION OR STORAGE OF EXPLOSIVES OR OTHER DANGEROUS ARTICLES OR SUBSTANCES AND COMBUSTIBLE LIQUIDS ON BOARD VESSELS

CONTAINERS FOR DANGEROUS CARGO; AUTHORITY TO WAIVE OR RELAX REGULATIONS

The purpose for the amendments to 46 CFR 146.05-4 is to authorize the Commandant to permit the use of certain containers that are not presently authorized for the shipment of hazardous materials, upon a determination by him that the interests of national defense would be served or the interests of safety would not be impaired by such use as well as to permit the Commandant to authorize the use of certain containers in the transportation of explosives or other dangerous articles or substances which have already been authorized for use in land transportation by the Interstate Commerce Commission. Because of the national emergency declared by the President I find an emergency exists and this amendment to the regulations governing explosives or other dangerous articles on board vessels shall be made effective on the date of publication of this document in the Federal Register in accordance with the provisions in R. S. 4472, as amended (46 U. S. C. 170). The cancellation of 46 CFR 146.28-4, regarding authority to waive or relax regulations by the Captain of the Port is necessary since it is in conflict with the policies established

under the act of December 27, 1950, Public Law 891, 81st Congress, and the order of the Acting Secretary of the Treasury, dated January 23, 1951, and identified as CGFR 51-1 (16 F. R. 731). These amendments to the regulations governing transportation of explosives or other dangerous articles on board vessels are published without prior general notice of their proposed issuance for the reason that notice, public rule making procedure, and effective date requirements in connection therewith are hereby found to be contrary to the public interest.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by Treasury Department Order No. 120, dated July 31, 1950 (15 F. R. 6521), and Order CGFR 51-1, dated January 23, 1951 (16 F. R. 731), to promulgate regulations in accordance with the statutes cited with the regulations below, the following amendments to the regulations are prescribed which shall become effective on the date of publication of this document in the Federal Register:

SUBPART—SHIPPER'S REQUIREMENTS RE: PACKING, MARKING, LABELING, AND SHIPPING PAPERS

1. Section 146.05-4 is amended to read as follows:

§ 146.05-4 *Prescribed containers.* (a) The regulations in this subchapter prescribe four groups of outside containers for use in shipping permitted explosives or other dangerous articles or substances as follows:

- (1) I. C. C. specification containers.
- (2) M. I. N. specification containers. (See § 146.05-6.)
- (3) C. F. C. specification containers. (See § 146.05-7.)
- (4) Non-specification containers.

(b) In the interest of national defense or at such times as it shall be determined that the interest of safety would not be impaired, the use of containers other than those specified in this part, for the transportation of

permitted explosives and other dangerous articles or substances may be authorized in the discretion of and upon special permit to be issued by the Commandant of the Coast Guard.

SUBPART—TEMPORARY AMENDMENTS TO REGULATIONS

2. Section 146.28-4, *Authority to waive or relax regulations*, is canceled.

(R. S. 4405, as amended; 46 U. S. C. 375. Interprets or applies R. S. 4472, as amended; 46 U. S. C. 170)

Dated: March 30, 1951.

[SEAL] MERLIN O'NEILL,
Vice Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 51-4123; Filed, Apr. 5, 1951; 8:53 a. m., 16 F. R. 3013-4/6/51]

Equipment Approved by the Commandant

AFFIDAVITS

The following affidavits were accepted during the period from March 15, 1951, to April 15, 1951:

Moore Dry Dock Co., foot of Adeline Street, Oakland 4, Calif. Valves, flanges, and forgings.

WELDING ELECTRODES

The below listed electrodes have been tested in accordance with ASTM designation A316-48T and the requirements thereof have been met. In addition to the present sizes listed, the following sizes are also acceptable.

Air Reduction Sales Co., Forty-second Street, opposite Grand Central, New York 17, N. Y., Arcrods Corp. (manufacturer), Airco 93 (.50 Mo.), Type E-7010.

Air Reduction Sales Co., Forty-second Street opposite Grand Central, New York 17, N. Y., Arcrods Corp. (manufacturer), Airco 94 (.50 Mo.), Type E-7020.

General Electric Co., Schenectady,

N. Y., Arcrods Corp. (manufacturer), GE W-52 (.50 Mo.), Type E-7010.

General Electric Co., Schenectady, N. Y., Arcrods Corp. (manufacturer), GE W-54 (.50 Mo.), Type E-7020.

Metal & Thermit Corp., 120 Broadway, New York 5, N. Y., Arcrods Corp. (manufacturer), Murex Molex (.50 Mo.), Type E-7010.

Metal & Thermit Corp., 120 Broadway, New York 5, N. Y., Arcrods Corp. (manufacturer), Murex Type O (.50 Mo.), Type E-7020.

Wilson Welder & Metals Co. Inc., Lincoln Building, Forty-second Street and Grand Central, New York 17, N. Y., Arcrods Corp. (manufacturer), Wilson Alloyrod A (.50 Mo.), Type E-7010.

Wilson Welder & Metals Co. Inc., Lincoln Building, Forty-second Street and Grand Central, New York 17, N. Y., Arcrods Corp. (manufacturer), Wilson Alloyrod B (.50 Mo.), Type E-7020.

OPERATING POSITIONS AND ELECTRODE SIZES

The Airco 93 Type E-7010 $\frac{1}{16}$ " and $\frac{3}{32}$ " diameter electrodes will be allowed for all position welding. The $\frac{3}{32}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The electrodes are for direct current and the specimens were stress relieved.

The Airco 94 Type E-7020 $\frac{1}{16}$ ", $\frac{3}{32}$ " and $\frac{5}{32}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The electrodes are for alternating and direct current and the specimens were stress relieved.

The GE W-52 Type E-7010 $\frac{1}{16}$ " and $\frac{3}{32}$ " diameter electrodes will be allowed for all position welding. The $\frac{3}{32}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The electrodes are for direct current and the specimens were stress relieved.

The GE W-54 Type E-7020 $\frac{1}{16}$ ", $\frac{3}{32}$ " and $\frac{5}{32}$ " diameter electrodes will be allowed for horizontal fillet and

flat position welding. The electrodes are for alternating and direct current and the specimens were stress relieved.

The Murex Molex Type E-7010 $\frac{1}{16}$ " diameter electrodes will be allowed for all position welding. The $\frac{3}{32}$ " and $\frac{1}{4}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The $\frac{5}{16}$ " diameter electrodes will be allowed for flat position welding. The electrodes are for direct current and the specimens were stress relieved.

The Murex O Type E-7020 $\frac{1}{16}$ ", $\frac{3}{32}$ ", $\frac{1}{8}$ ", $\frac{5}{32}$ ", $\frac{3}{16}$ ", $\frac{1}{4}$ " and $\frac{5}{16}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The $\frac{5}{16}$ " diameter electrodes will be allowed for flat position welding. The electrodes are for alternating and direct current and the specimens were stress relieved.

The Wilson Alloyrod A Type E-7010 $\frac{1}{16}$ " and $\frac{3}{32}$ " diameter electrodes will be allowed for all position welding. The $\frac{3}{32}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The electrodes are for direct current and the specimens were stress relieved.

The Wilson Alloyrod B Type E-7020 $\frac{1}{16}$ ", $\frac{3}{32}$ " and $\frac{5}{32}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The electrodes are for alternating and direct current and the specimens were stress relieved.

The following types of electrodes have been tested in accordance with the requirements of ASTM designation A233-48T for mild steel arc-welding electrodes in the presence of an American Bureau of Shipping Surveyor and the test reports indicate that the requirements were met.

A. O. Smith Corp., Welding Electrode Division, Milwaukee 1, Wis., A. O. Smith Corp. (manufacturer), SW-35, Type E6020.

Westinghouse Electric Corp., East Pittsburgh, Pa., Westinghouse Electric Corp. (manufacturer), LOH-2, Type E6016.

The Type E6020 $\frac{3}{32}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The electrodes are for alternating and direct current and the specimens were not stress relieved.

The Type E6016 $\frac{3}{32}$ ", $\frac{1}{8}$ " and $\frac{5}{32}$ " diameter electrodes will be allowed for all position welding. The $\frac{3}{16}$ ", $\frac{3}{32}$ " and $\frac{1}{4}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding. The $\frac{5}{16}$ " diameter electrodes will be allowed for flat position welding. The electrodes are for alternating and direct current and the specimens were stress relieved.

Don't let an accident take your vacation

MERCHANT MARINE PERSONNEL STATISTICS

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 707 cases during the month of March 1951. From this number, hearings, before examiners resulted involving 10 officers and 45 unlicensed men. In the case of officers, no licenses were revoked, none were suspended, 4 were suspended with probation granted, 2 were voluntarily surrendered, none were dismissed after hearing, and 2 hearings were closed with an admonition. Of the unlicensed personnel 6 certificates were revoked, 2 were suspended, 30 were suspended with probation granted, 17 were voluntarily surrendered without hearings, 2 were closed with an admonition and 3 were dismissed after hearing.

WAIVER OF MANNING REQUIREMENTS FROM MARCH 1 TO MARCH 31, 1951

Region	Number of vessels	Deck officers substituted for higher ratings	Engineer officers substituted for higher ratings	Ordinary seamen substituted for able seamen	Wiper or coal passers substituted for qualified members of engine department	Total
Atlantic coast	6			6		6
Gulf coast	4			3		5
Pacific coast	2	1	2			3
Great Lakes	1			2		2
Total	13	1	2	13		16

NOTE.—In addition, individual waivers were granted to permit the employment of 12 able seamen holding certificates for "any water—12 months" in excess of the 25 percent authorized by statute.

MERCHANT MARINE LICENSES ISSUED DURING MARCH 1951

DECK OFFICERS

		Region								Total	
		Atlantic coast		Gulf coast		Great Lakes and rivers		Pacific coast			
		O	R	O	R	O	R	O	R	O	R
Master.....	Ocean.....	16	106	6	31	0	3	8	63	30	203
	Coastwise.....	1	11	1	3	0	1	0	1	2	16
	Great Lakes.....	0	7	0	2	11	42	0	0	11	51
	B. S. & L.....	4	54	0	5	0	4	2	12	6	75
	Rivers.....	0	5	0	6	2	11	0	0	2	22
Chief mate.....	Ocean.....	14	40	10	15	0	3	6	17	30	75
	Coastwise.....	0	2	0	1	0	0	0	0	0	3
Second mate.....	Ocean.....	11	36	5	11	0	7	5	21	21	75
	Coastwise.....	0	0	0	0	1	0	0	0	0	1
Third mate.....	Ocean.....	25	39	6	6	0	7	9	26	40	78
	Coastwise.....	0	0	0	0	0	0	0	1	0	1
Mate.....	Great Lakes.....	0	0	0	0	0	0	0	0	0	0
	B. S. & L.....	1	1	0	0	0	0	2	3	3	4
	Rivers.....	0	0	0	2	5	9	0	5	5	16
Pilots.....	B. S. L. & R.....	69	148	13	41	47	101	11	48	140	338
Master.....	Uninspected vessels.....	0	0	0	1	0	0	3	16	3	17
Mate.....	Uninspected vessels.....	0	0	0	0	0	0	5	0	5	0
Total.....		141	449	41	124	65	189	51	213	298	975
Grand total.....		590		165		254		264		1273	

ENGINEER OFFICERS

Steam.....	Chief engineer : Unlimited.....	4	101	4	33	5	17	6	48	19	199
	Limited.....	3	55	0	8	3	56	0	4	6	123
	First assistant engineer : Unlimited.....	14	38	7	10	3	5	6	21	30	74
	Limited.....	2	4	1	0	5	15	0	3	8	22
	Second assistant engineer : Unlimited.....	12	57	5	11	4	15	7	29	38	112
	Limited.....	1	0	0	0	0	6	0	0	1	6
	Third assistant engineer : Unlimited.....	18	73	6	11	5	22	17	22	46	128
	Limited.....	0	0	0	0	3	1	0	0	3	1
	Chief engineer : Unlimited.....	3	13	2	8	0	7	1	14	6	42
	Limited.....	11	36	3	8	6	9	1	11	21	64
Motor.....	First assistant engineer : Unlimited.....	1	12	0	0	0	0	1	0	2	12
	Limited.....	5	2	0	1	4	0	0	0	9	3
	Second assistant engineer : Unlimited.....	4	1	0	2	0	2	0	1	4	6
	Limited.....	0	0	0	0	0	0	2	1	2	
	Third assistant engineer : Unlimited.....	0	59	1	15	1	16	2	24	3	114
	Limited.....	0	0	0	0	1	0	0	0	1	0
Uninspected vessels.....	Chief engineer.....	0	2	0	0	0	0	4	1	4	3
	Assistant engineer.....	2	1	0	0	0	0	5	0	7	1
Total.....		80	454	28	107	40	171	52	179	200	911
Grand total.....		534		135		211		231		1111	

RADIO OFFICERS

Total..... 59

ORIGINAL SEAMEN'S DOCUMENTS ISSUED MONTH OF MARCH 1951

Region	(1) Staff officer	(2) Contin- uous dis- charge book	(3) U. S. mer- chant marin- er's docu- ments	(4) AB any waters un- limited	(5) AB any waters 12 months	(6) AB Great Lakes 18 months	(7) AB tugs and tow- boats any waters	(8) AB bays and sounds ¹	(9) AB sea- going barges	(10) Life- boat- man	(11) Q. M. E. D.	(12) Radio opera- tors	(13) Certifi- cate of service	(14) Tanker- men
Atlantic coast.....	23	229	433	149	31	3		23	1	319	97	6	580	5
Gulf coast.....	4	13	174	46	20	1				32	48	4	146	23
Pacific coast.....	14		353	77	37	1				57	67	2	323	4
Great Lakes and rivers.....	2		283	72	31	36				42	64		263	10
Total.....	43	242	1243	344	119	41	0	23	1	450	276	12	1312	42

¹ 12 months, vessels 500 gross tons or under not carrying passengers.

NOTE.—Columns 4 through 14 indicate endorsements made on United States merchant mariner's documents.

