PROCEEDINGS OF THE MARINE SAFETY COUNCIL



DEPARTMENT OF TRANSPORTATION

UNITED STATES COAST GUARD

Vol. 28, No. 10

October 1971

IN THIS ISSUE ...

The First Five!...

PROCEEDINGS

OF THE

MARINE SAFETY COUNCIL

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COVERS

FRONT COVER: Closer, closer. . . . Two sections of the SS Washington Mail are drawn together in the marrying process which converted the ship from a 572 foot C-4 Mariner into a 669 foot C-6 Containership. The stretch was accomplished at Bethlehem Steel's San Francisco Shipyard.

BACK COVER: Two photos show the SS Washington Mail before and after her conversion. The conversion involved the launching of a new 105 foot midsection containing cells for 20 and 40 foot cargo containers plus wing tanks for fuel oil. Two sisterships will undergo a similar stretching process for American Mail Lines. Photos are courtesy of American Mail Lines and Bethlehem Steel.

The Marine Safety Council of The United States Coast Guard

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Admiral C. R. Bender, USCG

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MARINE SAFETY COUNCIL CHAIRMAN RETIRES



Hon. John A. Volpe, Secretary of Transportation, presents the Legion of Merit Medal to RADM R. Y. Edwards while Admiral C. R. Bender, Commandant, U.S. Coast Guard, looks on.

The retirement on 30 September 1971 of Rear Admiral R.Y. Edwards, Chairman of the Marine Safety Council and Chief, Office of Public and International Affairs, marked the end of an era for the Coast Guard officer corps.

The merchant marine safety functions of the Department of Commerce Bureau of Marine Inspection and Navigation (BMIN) were transferred to the Coast Guard on a temporary basis in 1942. The transfer was made permanent in 1946. Shortly after the transfer, many of the inspectors in the field, shipping commissioners, and certain administrative personnel in Washington were commissioned in the Coast Guard. In addition, many of the BMIN personnel filled civilian positions for the Coast Guard, and several of these remain.

The new officers formed the initial core of the Coast Guard's activities in the field of merchant marine safety. Of the 333 officers who came from BMIN, RADM Edwards is the last to leave active service and one of only two who achieved the rank of Rear Admiral. As these individuals have retired over the last 29 years, they have been replaced by Coast Guard Officers from other sources many from the Merchant Marine.

RADM Edwards served in the Merchant Marine from 1927 to 1940. Prior to the entry of the United States into World War II, he was employed by BMIN as a Marine Hull In-

spector. He was appointed a Lieutenant in the Coast Guard in February 1943. Between May 1943 and March 1945 he was Commanding Officer of Merchant Marine Details first at Cardiff. Wales, and then at Southhampton, England and at Antwerp, Belgium. He aided in the establishment of the Coast Guard Rescue Flotilla of 83-foot patrol cutters which participated in the Normandy Invasion, and organized the Port of Antwerp, overcoming complex problems to make that port useful for servicing the armed forces on the continent of Europe. He received the Navy Commendation Ribbon for that work

Following the War, his career in the Coast Guard centered on Merchant Marine Safety, including tours as Officer in Charge of the Marine Inspection Office and Captain-ofthe-Port in Philadelphia, as Assistant Chief, Merchant Vessel Inspection Division, Chief, Merchant Vessel Personnel Division and Deputy Chief, Office of Merchant Marine Safety at Coast Guard Headquarters, and as Chief, Merchant Marine Safety Division and Officer in Charge of Marine Inspection at the 12th Coast Guard District Office in San Francisco. He was appointed to the rank of Rear Admiral in 1967 and assumed a newly created position as Chief, Office of Public and International Affairs. In March 1971 he became Chairman of the Marine Safety Council. RADM Edwards has been a long-time representative of the United States in many International Maritime Consultative Organization meetings, and was Vicechairman of the Subcommittee on Marine Pollution. At a ceremony on 8 July 1971, Secretary of Transportation John A. Volpe presented the Legion of Merit Medal to RADM Edwards. Cited was RADM Edwards' exceptionally meritorious achievement while serving as U.S.

(Continued on page 191)

THE FIRST FIVE!

Daniel F. Sheehan

Safety Equipment Branch, Merchant Marine Technical Division, USCG Headquarters

IN THE FIRE protection business the phrase, "The first five minutes of a fire are the most important," endures year after year and is proven time and again. Usually most shipboard fires can be handled during the first five minutes with portable extinguishers. Imagine the sinking feeling a seaman gets, however, when he grabs a marine type portable extinguisher, rushes it to the blaze, and it fails to operate. A sound maintenance program works to insure operation when it is vitally needed. This article sets forth guidelines for the development of such a comprehensive maintenance program.

The National Fire Protection Association defines a well planned and well executed maintenance program as one which affords maximum probability that an extinguisher:

1. Will operate properly between the time intervals established for maintenance examinations in the environment to which it is exposed and,

2. Will not constitute a potential hazard to persons in its vicinity or to operators or rechargers of extinguishers.

As a minimum, the U.S. Coast Guard requires an annual inspection of extinguishers. Regulations state that all hand portable fire extinguishers and semi-portable fire extinguishing systems shall be checked in accordance with *Table 1*. It is not uncommon for extinguishers to be damaged or otherwise rendered in-



THIS EXTINGUISHER burst immediately upon inversion for a test discharge. Fortunately there was no damage to other property, equipment or personnel. The failure was attributed to corrosion cracking. A good monthly inspection would have spotted the corrosion and averted the potentially dangerous explosion. This extinguisher was last serviced eight months before *e* burst, under an arrangement with a commercial facility.

operative during the period between these annual inspections. For this reason an inspection and maintenance program should be established.

At least as many persons as are necessary to perform the function adequately should be assigned to the maintenance and inspection program. There should be three levels of responsibility: (1) Head of the program, (2) Inspector or inspectors, and (3) Maintenance personnel. Inspection and maintenance crews may be combined, although it is not recommended. The head of the program must establish: the inspection frequency, the inspection procedure, a reporting system, the number of inspectors required, and a follow-up method. He must also make the inspectors thoroughly aware of the importance of their function, the types of inspections required, and the frequency with which they must be performed.

INSPECTION FREQUENCY

In order to determine the frequency of inspection, the head of the program must consider in broad terms: the extinguisher's location, its environment, and its susceptibility to damage. The National Fire Protection Association recommends inspection on a monthly basis, or more frequently if one or more of the following exist:

 High frequency of fires in the past

2. Severe hazards

3. Susceptibility to tampering, vandalism, or malicious mischief

4. Locations that make extinguishers susceptible to mechanical injury

TABLE 1

Type Unit	Test
Sada acid	Discharge, Clean hose and inside of extinguisher thoroughly, Recharge,
Foam	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge.
Pump tank (water)	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge with clean water or anti- freeze.
Cartridge operated (water, antifreeze or loaded stream).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Remove liquid. Clean hose and inside of extin- guisher thoroughly. Recharge with clean water, solution or antifreeze. Insert charged cartridge.
Carbon dioxide	Weigh cylinder. Recharge if weight loss exceeds 10 percent of weight of charge. Inspect hose and nozzle to be sure they are clear. ¹
Dry chemical (cartridge-operated type)	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Be sure dry chemical is free-flowing (not caked) and chamber contains full charge.
Dry chemical (stored pressure)	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise de- termine that full charge of dry chemical is in extinguisher. Recharge if pressure is low or if dry chemical is needed.
Vaporizing liquid ² (pump type)	Pump a few strakes into clean pail and replace liquid. Keep water out of extinguisher or liquid. Keep extinguisher completely full of liquid.
Vaporizing liquid ² (stored pressure type)_	See that pressure gage is in operating range. Weigh or check liquid level to determine that full charge of liquid is in extinguisher. Recharge if pressure is low or if liquid is needed.
Type System	Test
Foam	Systems utilizing a soda solution shall have such solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide	Weigh cylinders. Recharge if weight loss exceeds 10 percent of weight of charge. ³

¹ Cylinders shall be tested and marked in accordance with the regulations of the Interstate Commerce Commission, as noted in 46 CFR 147.04–1 of Subchapter N (Dangerous Cargoes) of this chapter.

² Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or other toxic vaporizing liquids shall be removed from all vessels. (See 46 CFR 76.50–5(e) of Subchapter H (Passenger Vessels) of this subchapter.)

⁸ Cylinders shall be tested and marked in accordance with the regulations of the Interstate Commerce Commission, as noted in 46 CFR 147.04–1 of Subchapter N (Dangerous Cargoes) of this chapter.

5. Possibility of visible or physical obstructions

6. Exposure to abnormal temperatures or corrosive atmospheres

 Characteristics of the extinguisher such as susceptibility to leakage.

With the exception of the first item, all of the above conditions exist ahoard ships. Once the frequency needs are determined and an inspection schedule is established, the program should be closely followed.

Inspectors must be informed of what to look for. The effectiveness of the program depends on their thoroughness. The inspection should determine that:

1. The extinguisher is in its designated place. (This should be

checked against the vessel's fire control plan.)

2. Access to or visibility of the extinguisher is not obstructed.

3. No seals or tamper indicators are broken. (Some extinguishers can be checked only by lifting them to determine if they are full.)

4. The extinguisher has not been physically damaged.

5. The extinguisher does not have other obvious defects such as clogged nozzles, corrosion, leakage, damaged hose, etc.

6. The maintenance record tag is up to date.

All of the above items are equally important to insure that an extinguisher will operate when needed. Extinguishers with stainless steel shells deserve close scrutiny with especial reference to corrosion. If any corrosion is present, the extinguisher should be removed from service and set aside for hydrostatic testing.

A common problem for all types of extinguishers is clogged nozzles. The problem has been eased to some degree by use of see-through nozzles; but still, the assortment of debris and corrosion found is amazing. Such items as cigarette filters, small stones, wire, and paper are common. Needless to say, a clogged nozzle will not operate effectively.

Although an extinguisher's gage may indicate that it is charged, it may in fact be empty. A gentle tap of the gage with the finger to determine if there is a slight movement of the pointer is an effective way to be sure the pointer is not stuck, giving an erroneous reading. If there is doubt, discharge the extinguisher and have it serviced.

RECORDS

Good records provide the best ready reference for (1) what must be done, (2) what has been done, and (3) a smooth transition between responsible personnel. Records kept should include at least the following:

1. A plan for each vessel showing extinguisher locations with rating and type for each location. This is required by regulations and facilitates replacement of the extinguishers.

2. An inspection sheet also showing the date of the periodic inspection, the number and location of each inoperable or defective extinguisher along with action taken to correct the deficiencies.

3. A list of personnel designated as inspectors and vessels for which they are responsible, a list of maintenance personnel, and a record of servicing and maintenance performed by a recharge and repair facility.

MAINTENANCE

Coast Guard regulations require vessels to perform extinguisher main-

Daniel F. Sheehan graduated from the University of Maryland in 1965 with a Bachelor of Science degree in Fire Protection Engineering. Beginning in January 1967, he worked as a Fire Protection Engineer with the General Services Administration. In September 1968 he came to the Office of Merchant Marine Safety at Coast Guard Headquarters in the Safety Equipment Branch of the Merchant Marine Technical Division. Mr. Sheehan is a member of the National Fire Protection Association and serves on its 12B Subcommittee on Halon 1211. He also serves on the H-4 Fire Fighting Equipment Committee of the American Boat and Yacht Council.

tenance annually. In addition, maintenance should be performed:

When found necessary by an inspection.

 When the extinguisher is used or otherwise discharged fully or partially. (A partially discharged extinguisher should be fully discharged and serviced.)

useful to persons assigned the tasks of tampering.



ONE MAN LOST eleven days of working time when this extinguisher burst in his vessel's lower engineroom. The cause of the bursting was corrosion cracking, which should have been avoided by a sound maintenance program.

4. When there has been mechanical injury.

5. When it has been exposed to any abnormal temperature, corrosive atmospheres, or materials.

6. When there is leakage or other evidence of impairment. It is realized that the normal procedure for most ship owners is to have a commercial fire extinguisher repair and recharge facility perform the annual maintenance. However, for those times that maintenance must be performed at sea or when a commercial recharging facility is not available, the following guidelines should be helpful.

EXAMINATION

Naturally, the first step in any maintenance program is a thorough examination of the items to be maintained. The normal extinguisher consists of four basic elements, all of which must be examined:

1. Containment vessel (check for evidence of damage, etc.)

2. Mechanical parts (operating mechanism, nozzles, etc.)

3. Extinguishing material (verify amount and condition.)

4. Expelling means (determine amount and any evidence of leakage of gas, or condition of pump.)

The examination should reveal the need for any necessary repair, recharging, or replacement.

Pamphlet 10A published by the National Fire Protection Association, entitled, "Portable Fire Extinguishers, Maintenance and Use 1968," contains a table which is reproduced as *Table 2*. The table is organized into two parts. The first is by the actual mechanical parts of the extinguisher, and the second is arranged by extinguishing material and expelling means. This table should be useful to persons assigned the tasks of inspection or maintenance.

A word of caution. In several cases the word "hydro-test" appears. DO NOT ATTEMPT A HYDRO-TEST. This can be extremely dangerous if the proper test equipment is not available. Hydro-tests should be performed by a commercial recharging agency. For reference purposes, the recommended hydrostatic test interval for extinguishers is as follows:

RECOMMENDED HYDROSTATIC TEST INTERVAL FOR EXTINGUISHERS

Test	Intervo
Extinguisher Type lin	years)
Soda Acid	
Cartridge-operated water and/or antifreeze	
Stored pressure water and/or antifreeze	
Wetting Agent	
Foam	
Loaded stream	
Dry Chemical Extinguishers with Stainless Steel Shells, Aluminum Shells, or Soldered	
Brass Shells	-
Carbon Dioxide	. 5
Dry Chemical Extinguishers with Brazed-Brass Shells, or Mild-Steel Shells	. 13
Bromotrifluoromethane-FE1301	. 1
Dry powder extinguishers with mild-steel shells	. 1
Gas cylinders such as those found on wheeled extinguishers should be tested at 5-year is	nterval

Coast Guard regulations require that:

1. Cylinder shall bear upon the shoulders thereof a test date marking indicating such cylinder has been tested within a period of 5 years. A cylinder continuously installed in place on board a vessel as part of the vessel's equipment for a period exceeding 5 years, shall, after 12 years have elapsed from the date of previous test and marking, be removed from the vessel, its contents discharged, the cylinder retested and remarked.

2. Any cylinder, the contents of which have been discharged or which for any cause has been removed from a vessel subsequent to 5 years from the last test, as indicated by the marking, shall be retested and remarked.

3. Retesting, remarking, or recharging shall be in accordance with the regulations of the Department of Transportation in effect at the time the operation takes place. generally poor condition indicate a poor maintenance program. A brief glance at this extinguisher would have indicated that it should have been replaced, yet it remained aboard and eventually caused one death and a serious injury.

Fortunately, emergencies requiring the use of fire extinguishers do not often occur. And personnel do not come into contact with emergency equipment until the emergency is present. To alleviate this situation, many shipowners use those extinguishers which are required to be discharged annually, for training purposes. This practice not only discharges the extinguishers as required, but it also provides emergency personnel with valuable training experience.

Even the best maintenance program will seem useless if, in an emergency, the extinguishers are ineffectively used. *Table 2* follows on pages 186, 187 and 188. ‡

CONCLUSION

This article has given guidelines for the establishment of a sound maintenance program for marine type portable fire extinguishers. The effectiveness of the program is a function of the personnel involved and the support it obtains from management. Remember that a properly maintained extinguisher is often the difference between a fire that is quickly controlled and one that spreads and is stopped only at the bulkheads.

One of the additional benefits of involving shipboard personnel in the maintenance program for portable extinguishers is that, through handling and servicing, a degree of familiarity is achieved that would not normally be obtained.

Recently, several cases have crossed the author's desk which verify the need for a sound maintenance program. The photograph on this page shows an extinguisher whose bottom blew off. The corrosion, the paint peeling from the surface where shell damage had occurred, and its



THIS EXTINGUISHER is discussed in the text. The shipping company ran its own maintenance program. Obviously the program was not well executed. The bottom of the extinguisher blew aff, killed one man and injuring another.

TABLE 2

Acknowledgement is gratefully given to the National Fire Protection Association, 80 Batterymarch St., Boston, Mass. 02110, who gave its permission to reprint the following portions of its pamphlet 10A "Portable Fire Extinguishers, Maintenance and Use, 1968."

	ITEMS TO INSPECT		CORRECTIVE ACTION
	Shell		Corrective Action
1.	Hydrostatic test date or date of manufacture	1.	Retest if needed
2.	Corrosion	2.	Hydrotest and refinish; or discard
3.	Mechanical damage (denting or abrasion)	3.	Hydrotest and refinish; or discard
4.	Paint condition	4.	Refinish
5.	Presence of repairs (welding, soldering, brazing, etc.)	5.	Discard or consult manufac- turer
6.	Damaged threads (corroded,	6.	Discard or consult manufac-
7.	Broken hanger attachment,	7.	Discard or consult manufac-
	Sagling surface damage	8	Clean, repair, and leak test;
υ.	(nicks or corrosion)		or discard
	Nameplate		Corrective Action
1.	Illegible wording	1.	Clean
2.	Corrosion or loose plate	2.	Inspect shell under plate (see Shell Check Points) and re- attach plate
	Nozzle or Horn		Corrective Action
1.	Deformed, damaged, or cracked	1.	Replace
2.	Blocked openings	2.	Clean
з.	Damaged threads (corroded,	3.	Replace
4.	crossthreaded or worn) Aged (brittle)	4.	Replace
_	Hose Assembly		Corrective Action
1.	Damaged (cut, cracked or	1.	Replace
2.	Damaged couplings or swivel	2.	Replace
3.	Damaged threads (corroded, crossthreaded, worn)	3.	Replace
	Restraining of Locking Device	-	Corrective Action
1.	Damaged (bent, corroded, or binding)	1.	Repair and lubricate; or re- place
2.	Missing	2.	Replace
	Gage or Pressure-Indicating Device		Corrective Action
1.	Immovable, jammed, or miss-	1.	Depressurize and replace gage
2	ing pointer (tap to check) Missing deformed or broken	2	Depresurize and replace gage
2.	crystal	2	Depressurize and replace and
3.	Correction	4	Depressurize and check cali
4.	Contosion	-	bration, clean and refinish; o replace agge
5.	Dented case or crystal re-	5	Depressurize and check cali
6.	Immovable or corroded pres-	6	. Replace head assembly, de
	sure-indicating stem (nongage type)		pressurize and replace shell or complete extinguisher

_		
	Shell or Cylinder Valve	Corrective Action
1. 2.	Corroded, damaged, or jam- med lever, handle spring, stem, or fastener joint Damaged outlet threads (cor- roded, crossthreaded, or	 Depressurize, check freedom of movement, and repair; or replace Depressurize and replace
_	worn)	
_	Nozzle Shutoff Valve	Corrective Action
1.	Corroded, damaged, or jam- mend binding lever, spring, stem or fastener joint	 Repair and lubricate; or re- place
2.	Plugged, deformed, or cor- roded nozzle tip or discharge passage	2. Clean or replace
	Puncture Mechanism	Corrective Action
1.	Damaged, jammed or bind- ing puncture lever, stem or fastener jaint	1. Replace
2.	Dull or damaged cutting or	2. Replace
3.	Damaged threads (corroded, crossthreaded, or worn)	3. Replace
	Gas Cartridge	Corrective Action
	A	1 Poplace cartridge
2.	Damaged seal disc (injured, out or corroded)	2. Replace cartridge
3.	Damaged threads (corroded, crossthreaded, or worn)	3. Replace cartridge
4.	Illegible weight markings	4. Replace carfridge
	Gas Cylinders	Corrective Action
1.	Hydrostatic test date or date of manufacture	1. Retest if needed
2.	Corrosion	 Hydrotest and refinish or dis- card
3.	Paint condition	3. Refinish
4.	Presence of repairs (welding, soldering, brazing, etc.)	4. Discard or consult manufac- turer
5.	Damaged threads (corroded, crossthreaded, or worn)	5. Discard or consult manufac- turer
	Wheel Cap or Fill Cap	Corrective Action
1.	Corroded, cracked, or broken Damaged threads (corroded,	1. Replace 2. Replace
3	crossthreaded, or worn) . Sealing surface damage (nick-	3. Clean repair and leak test;
4	Blocked vent hole or slot	4. Clean
-	Disposable Shell	Corrective Action
1	. Corrosion	1. Depressurize and replace shell
2	 Damaged seal disc (injured, cut, or corroded) 	2. Depressurize and replace shell
3	. Damaged threads (corroded, crossthreaded, or worn)	3. Replace shell
4	. Illegible weight markings	4. Depressurize and replace shel

	Carriage and Wheels		Corrective Action
1.	Corroded, bent, or broken	1,	Repair or replace
2	carriage	2	Clean repair and lubricate:
	broken spoke, bent rim or axle,		or replace
	loose tire, low pressure, jam-		
_	med bearing		
	Carrying Handle	-	Corrective Action
1.	Broken handle lug	1.	Discard shell or valve; or consult manufacturer
2.	Broken handle	2.	Replace
3.	Corroded, jammed, or worn fastener joint	3.	Clean or replace
	Seals or Tamper Indicator		Corrective Action
1.	Broken or missing	1.	Inspect, recharge if necessary, reseal
	Hand Pump		Corrective Action
1.	Corroded, jammed, or dam-	1.	Repair and lubricate; or re-
-	aged pump		place
2.	Improper adjustment of pack- ing	2.	Adjust
	Inner Cage, Chamber Stopple,		
_	Acid Container, or Tube		Corrective Action
1.	Corroded, damaged, bent, cracked or distorted	1.	Replace
	Pressurizing Valve		Corrective Action
1.	Leaking seals	1.	Depressurize and replace valve or core
	Gasket "O" Ring and Seals		Corrective Action
1.	Damaged (cut, cracked, or	1.	Replace and lubricate
2.	Missing	2.	Replace and lubricate
3.	Aged or weathered (compres- sion set, brittle, cracked)	3.	Replace and lubricate
	Brackets		Corrective Action
1.	Corroded, worn, or bent	1.	Repair and refinish; or replace
2.	Loose or binding fit	2.	Adjust tit or replace
0.	ing screw or bolt	5.	inginent of replace
4.	Worn bumper, webbing or grommet	4.	Replace
	Gas Tube and Siphon or Pickup Tube		Corrective Action
-	Corrodad dented washed as	1	Ponlace
2	broken	1.	Clean or replace
4.	tube	4.	crean or replace

	Pressure Regulator		Corrective Action			
1.	Corroded or damaged	1.	Replace or consult manufac- turer			
	Safety Relief Device		Corrective Action			
1.	Corroded or damaged	1.	Depressurize and replace or consult manufacturer			
2.	Broken: operated, plugged	2.	Depressurize and replace or repair			

Agent and Expelling Means Extinguisher Type and Part, Check Points and Corrective Action

	Self-Ger	nerat	ing
S	oda-Acid Water		Corrective Action
1. R	echarging date due	1.	Empty, clean, and recharge
2. li tl	mproper fill levels in acid bot- le and shell	2.	Empty, clean, and recharge
3. A s	agent condition (check for ediment)	3.	Empty, clean, and recharge
F	oam		Corrective Action
1. R	echarging date due	1.	Empty, clean, and recharge
2. In c	mproper fill levels in inner ontainer and shell	2.	Empty, clean, and recharge
3. A s	gent condition (check for ediment)	3.	Empty, clean, and recharge

Self-Expelling					
	Carbon Dioxide		Corrective Action		
1.	Improper weight	1.	Recharge to proper weight		
2.	Broken or missing tamper in- dicator	2.	Leak test and weigh, recharge or replace indicator		
	Bromotrifluoromethane		Corrective Action		
1.	Punctured cylinder seal disc	1.	Replace shell		
2.	Improper weight	2.	Replace shell or return to man- ufacturer for refilling		
3.	Broken or missing tamper in- dicator	3.	Examine cylinder seal disc, re- place indicator		

	Mechani	cal P	ump
	Water and Antifreeze		Corrective Action
1.	Improper fill level	1.	Refill
2.	Defective pump	2.	Clean, repair, and lubricate, or replace
3.	Water condition (dirty, cloudy, or sediment)	3.	Recharge
4.	Antifreeze condition (check specific gravity, or recharge record or weigh; check for sediment)	4.	Recharge

	Hand Propelled	-Bucket or Scoop	Stored Pressure
	Water and Antifreeze	Corrective Action	Dry Chemical and Multi- purpose Dry Chemical Corrective Action
1. 2.	Improper fill level Antifreeze—improper charge (check specific gravity or re- charge record) Missing bucket	1. Refill 2. Recharge 3. Replace	1. Refillable 1. (a) Improper extinguisher (a) Refill to correct weight (b) Improper gage pressure (b) Repressurize and leak test (c) Defense minima tamper (c) Leak test and replace in-
_	Der Deurder	Corrective Action	indicator 2. Disposable shell with pressure 2.
1. 2. 3.	Dry Powder Improper fill level Agent condition (contamina- tion or caking) Missing scoop	1. Refili 2. Discard and replace 3. Replace	indicator (a) Punctured seal disc (b) Low pressure (c) Broken or missing tamper indicator 3. Disposable shell without pres- sure indicator (a) Replace shell (b) Depressurize; replace shell (c) Check pressure; check seal disc; replace indicator (c) Parlere shell (c) Depressure; check seal disc; replace shell (c) Depressure; check seal disc; replace shell (c) Depressure; check seal disc; replace shell
	Gas Cartridg Dry Chemical, Multipurpose Dry Chemical and Dry Powder	e or Cylinder Corrective Action	 (a) Punctured seal disc (b) Low weight (c) Broken or missing tamper indicator (c) Broken extinguisher with (c) Depressurize; replace shell (c) Check seal disc; replace (c) Check seal disc; replace
1. 2.	Improper weight or charge level Agent condition (contamina- tion, caking, or wrong agent)	 Refill to correct weight Empty and refill 	pressure indicator (a) Low pressure (b) Broken or missing tamper indicator (c) Low pressure (c) Depressurize and discard extinguisher (b) Leak test; check pressure; replace indicator
3.	 (a) For cartridge Punctured seal disc Improper weight Broken or missing tamper indicator (b) For gas cylinder with gage Low pressure Broken or missing tamper indicator (c) For gas cylinder without gage Low pressure (attach gage and measure pressure) (2) Broken or missing tamper indicator 	 3. (a) Replace cartridge Replace cartridge Examine seal disc, replace indicator (b) Replace cylinder Leak test—replace indicator (1) Leak test. If normal, leak test and repair indicator. If low, replace cylinder (2) Measure pressure; leak test; replace indicator 	Water, Antifreeze, and Loaded Stream Corrective Action 1. Improper fill level (by weight or observation) 1. Refill to correct level 2. Agent condition if antifreeze or loaded stream. Improper charge (check recharge record or weigh) 2. Empty and refill 3. Improper gage pressure 3. Repressurize and leak test 4. Broken or missing tamper in- dicator 3. Repressurize and leak test
-	Water, Antifreeze, and Loaded Stream	Corrective Action	
12	. Improper fill level . (a) Agent condition (1) Dirty, cloudy, or sedi- ment . (2) If antifreeze or loaded	 Refill to correct level (a) 	
	stream — improper charge (check specific gravity, recharge rec- ord or weigh)	(1) Empty and refill (2) Recharge	ZERO
345	 Punctured cartridge seal disc Improper cartridge weight Broken or missing indicator 	 Replace carridge Replace Examine seal disc; replace in- dicator 	
1	Wet Water	Corrective Action	ON SAFETY

- Improper fill level
 Agent condition (sediment and Agent contained seament and incorrect surface tension) See NFPA No. 18—Wetting Agents
 Improper cartridge weight
 Broken or missing tamper in-
- dicator

1. Refill 2. Empty and refill

- - - 3. Replace
 - 4. Leak test cartridge; weigh; re-place indicator

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maritime sidelights

U.S. Coast Guard Academy Announces Annual Competition

The U.S. Coast Guard Academy has announced that it is now accepting and processing applications for appointment as Cadet, U.S. Coast Guard, Class of 1976. Appointments to the Coast Guard Academy are tendered solely on the basis of an annual nationwide competition with no congressional appointments or geographical quotas. Applications for appointment must be submitted to the Director of Admissions, U.S. Coast Guard Academy, prior to 15 December 1971, and candidates must arrange to participate in the prescribed College Entrance Examination Board tests prior to or including the 4 December 1971 administration. The competition for appointment as Cadet is based on the candidate's high school rank, his performance on the CEEB (1) Scholastic Aptitude Test, (2) English Composition Achievement Test, and (3) either Level I or Level II Mathematics Achievement Test, and his leadership potential as demonstrated by his participation in high school extracurricular activities, community affairs or part-time employment. Most successful candidates rank in the top quarter of their high school class and demonstrate proficiency in both the mathematical and applied science fields.

To qualify for the competition, an applicant must be unmarried and must have reached his 17th but NOT his 22nd birthday by July 1, 1972. The minimum educational requirement is a high school diploma; however, high school seniors assured of graduation by June 30, 1972 are eligible to compete provided they have at least 15 credits by that time. Applicants must have completed three units in English, and three in mathematics including algebra and plane or coordinate geometry or their equivalents, and must fulfill the basic physical and moral requirements.

Coast Guard cadets obtain an excellent undergraduate education at no personal cost and, in addition, receive pay and allowances fully adequate to fulfill all their ordinary living expenses. The constantly updated Academy curriculum offers liberal arts, engineering, and professional subjects, with a choice of thirteen academic options which include: general, occan, marine, electrical, nuclear and civil engineering; mathematics; computer science; ocean science; physics; chemistry; history/ government; and economics/management. These areas of academic interest, combined with the varied elective courses, establish a solid foundation for a challenging career. Graduates of the Academy are awarded a Bachelor of Science degree and are commissioned as Ensigns in the U.S. Coast Guard. Selected officers may pursue further post-graduate education and specialized training in many leading civilian and military graduate or professional schools in such fields as aviation, business administration, electronics, engineering, law, naval architecture, and oceanography.

Should you know of a young man who is interested in the above fields, please inform him of this outstanding educational opportunity offered by the Coast Guard Academy. Any young man coming within the prescribed age limits who believes he meets the scholastic, physical, and character standards and is interested in a professional career as a Coast Guard officer is encouraged to make application.

Applications and additional information may be obtained by writing to: Director of Admissions, U.S. Coast Guard Academy, New London, Conn. 06320. ‡



This model shows how three 120,000 ton, 883-foot tankers on order by Atlantic Richfield Company from Bethlehem Steel's Sparrows Point, Maryland Shipyard will look when they begin service in 1973 and 1974. The tankers, under power of geared steam turbines developing 26,000 shaft horsepower, are designed to carry 940,000 barrels of North Slope crude oil at 16 knots from southern Alaska to west coast ports of the United States.

FIRES IN ECONOMIZERS AND AIR HEATERS

Fire in economizers and air heaters presents a problem that requires special knowledge to effectively combat the blaze. The following discussion offers general guidelines on the prevention, detection, and fighting of such a fire. The boiler manufacturer's operating instructions will offer fire safety suggestions for specific units.

First of all, soot fires do not start in the economizer (or air heater) bank in any close proximity to the soot blower elements. This is because the area close to the soot blowers is usually kept relatively clean of soot pockets. Therefore, such fires will originate in those sections of the economizer bank which are, by comparison, remote from the blowing elements and where soot pockets can form. Soot of itself is hard to burn but if conditions of poor combustion allow unburned or vaporized fuel to travel from the furnace and condense out in the cold end of the boiler, such as the economizer or, air heater, and mix with the soot pockets, you then have an ideal combination for setting up a fire. The only other ingredients needed are a spark and sufficient excess air in the gases of combustion, and the result can be a fire of great intensity. The fire can become so intense that the tube metal actually begins to burn. This is why you often note so much damage to pressure parts below the economizer, or air heater, when such a fire goes unnoticed until it then becomes difficult to control or extinguish.

Now, if you use the steam soot blowers—first of all the fire might have spread to that location and rendered them useless but more important than that, you may only stir up the burning soot and spread the fire. There is also definite danger of a

serious explosion due to the possible release of hydrogen in the soot blower steam. There are cases on record where this has actually happened.

Since there is a lot of misunderstanding on what actually goes on when a soot fire occurs in the cold end heat exchanger of a boiler, the following list of indications of an economizer fire may be helpful.

INDICATIONS OF ECONOMIZER FIRE

1. Sudden, unexplainable increase in uptake gas temperature.

2. Flame visible in the smoke indicators.

3. Possible loss of feedwater pressure and feedwater supply to boiler due to overheated and ruptured economizer tube.

4. Overheating of casing or uptake in the zone of the economizer.

When an economizer fire is detected, the following action should be taken immediately:

1. Secure all oil burners, close burner air doors, and remove atomizers.

2. Secure forced draft blowers.

3. Avoid using the soot blowers when it is suspected that there is a fire in the gas passages; such action at this time may lead to serious explosion by stirring up soot deposits.

4. Remove the boiler from the line and open the superheater circulating line, if necessary, to prevent an excessive rise in steam pressure. Crack superheater drain to bilge.

5. Provided no tubes have ruptured as a result of the fire, immediate steps should be taken to establish a continuous flow of feedwater through the economizer, and the water level in the steam drum should be raised to nearly the top of the visible limit of the gage. Feed flow through the economizer must be maintained until the economizer fire is extinguished and the water level controlled by discharging overboard by means of the boiler bottom blow valve.

6. Do not attempt to open access door in the uptake as a means of smothering the fire with CO_2 or other suitable extinguisher for this type of fire. To do so may supply more oxygen to the fire and cause a sudden flareup with possible injury to personnel.

The smoke indicator should be opened up and the lens removed. The extinguisher should then be discharged through the smoke indicator opening. If the fire still persists, a hose connected up to the steam smothering system can be used in the same manner through the smoke indicator opening, or a water hose with velocity fog nozzle can also be used.

7. After the fire is extinguished the economizer and economizer casing should be examined to determine the extent of any damage, and prior to any decision to return the boiler to service, a hydrostatic test should be applied.

8. When clean and tight, the economizer will again be ready for regular service.

PRECAUTIONS TO AVOID ECONOMIZER FIRES

1. Oil burning equipment and the combustion air supply should always be operated so as to assure good combustion conditions. This will prevent smoking or diluting the combustion gases with too much excess air, particularly under lighting-off and low load operating conditions. It will also assist in preventing the deposition and accumulation of unburned combustion material, either on the external heating surfaces or in the gas passage surfaces.

2. All external heating surfaces and gas passages should be frequently and periodically examined. If examination shows that deposits tend to accumulate at any particular location despite periodic soot blowing, it will be necessary to arrange to regularly hand clean such sections of the unit.

3. The uptake gas temperature should be checked at regular intervals during each watch. Any sudden and unexplainable rise in the gas temperature should be investigated. Experience has indicated that these temperatures reflect the fire approximately an hour before it has otherwise been observed. Action taken at this time would save the heater since at this stage only the soot is involved and not the air heater metal. The temperatures should be watched and if they continue to rise (or fire is visible), the fans should be shut down and sufficient quantities of water admitted to the heater to be effective.

4. Under port, or low-load operating conditions, load changes are frequently experienced, necessitating the cutting in and out of burners as required. When operating under such conditions, the fuel-oil pressure, fueloil temperature, quantity of air supplied, and the flame appearance should be kept under close observation so as to assure proper atomization and burning of the fuel oil.

5. Whenever it becomes necessary to secure all hurners under a boiler or should the burners be extinguished due to low oil pressure, water in the oil, etc., the furnace and gas passages must be thoroughly purged before an attempt is made to again light a burner.

6. Careful attention to the above precautionary measures will normally minimize the possibility of delayed or accidental burner ignition and furnace explosions. Furnace explosions, while generally of a minor character, may be of sufficient magnitude to shoot flames up into the gas passages and cause the ignition of accumulated combustible material.

-MSTS Damage Control Bulletin-

SPONTANEOUS COMBUSTION

An area of fire hazard that is oftentimes overlooked in the field of fire safety precautions aboard ships is spontaneous combustion. We know that spontaneous combustion is caused by the chemical action of substances oxidizing when in contact with oxygen in the air and producing heat. Other factors assist in generating more heat causing various suhstances to become flammable of their own accord. Thus, the conditions and factors that bring about this type of fire are not too obvious and may appear harmless, therefore, few people realize their potential danger.

The following is a set of conditions sometimes found on a ship that will produce a fire from spontaneous combustion.

A rag soiled with vegetable oil, paint, or linseed oil is discarded or stowed in a warm place. The oil starts to oxidize; that is, to combine chemically with the oxygen in the air. This chemical action produces heat, which, in a vicious circle, hastens the oxidation thus generating heat. This cycle continues until the rag bursts into flame. Then, if something else is nearby, that will burn, you'll have a real fire on your hands.

The most effective way to prevent such fires is to keep things shipshape.

 Keep flammable fabrics off the deck or on gratings to provide air space. 2. Maintain good ventilation in all storerooms, paint and rope lockers.

3. Keep oily or greasy towels and uniforms separate. Dry out wet fabrics before stowing.

4. Provide metal containers for disposal of oily material such as waste paint rags, etc., and empty containers at least daily.

5. Clean up materials that might feed a fire such as wastepaper, oilsoaked dunnage and old rope.

6. Store paints, thinners, and solvents in closed containers.

NO SMOKING

Smoking in cargo holds or on deck while hatches are open is strictly forbidden. Smoking in storerooms is equally hazardous. Smoking in bunks has caused many fatalities.

NO SMOKING signs should be posted in conspicious places throughout the ship and officers instructed to require compliance. The crew should be warned against throwing lighted matches, cigarette butts, etc., overside or out of portholes.

The NO SMOKING rule should be strictly enforced while a vessel is taking bunkers.

-National Safety Council

CHAIRMAN RETIRES

(Continued from page 181)

Representative and Acting Chairman of the U.S. Delegation to the Committee for Challenges to the Modern Society Oil Spills Conference held in NATO Headquarters at Brussels, Belgium last November. RADM Edwards was praised for his leadership and skill in managing the preparation work for the Transportation Department's position at the Conference and for his follow-up of the results which has placed the Department and the Nation in a position of leadership in preventing oil pollution of the seas. \$

MERCHANT MARINE PERSONNEL STATISTICS MERCHANT MARINE OFFICER LICENSES ISSUED

FISCAL YEAR ENDING JUNE 30, 1971

DECK

Grade	July through September (1970)		October through December (1970)		January]through]March (1971)		April through June (1971)	
	Original	Renewal	Original	Renewal	Original	Renewal	Original	Rene
Mastar:	1			077	29	954	45	30
Ocean	50	317	58	2//	10	10	7	25
Constwise	7	24	6	10	12	10	ó	1
Genot Lakes	0	12	8 1	40	10	80	10	-
DC & T	5	60) 5	43	1	00	10	20
D.0, & D.	7	46	6	31	6	55	8	-
KIVers.	7	70	3 13	81	8	77	15	26
Radio Omcer Licenses								
Chief Mate:	50	75	48	86	37	87	60	2
Ocean	30		, î	1	0	1	1	
Coastwise	0		Š Ő	ĩ	2	3	2	
Great Lakes	0		0	â	ñ	0	1	
B.S. & L.	0			0	ň	ň	ō	
Rivers	0) 1	0	v	•		
and Mote.				NA	=0	00	60	CE CE
	88	92	2 68	79	18	00	00	
Cassimian	0	(0 0	1	2	1		
0.4 Mater				1 Part 1			100	
ard Mate:	91	9	5 33	56	20	63	198	7.00
Uceans	0		1 2	3	0	0	0	
Coastwise								
Pilots:	90	10	9 11	40	39	90	10	13
Great Lakes	20	71	5 92	76	110	109	126	14
B,S, & L	00	10	4 45	95	47	141	33	12
Rivers	41	14	a 40	81	22	25	45	
Master: Uninspected vessels	19	1	0 10	10	ß	5	6	
Mate Uninspected vessels	3		3 12	10	959	750	1 072	500
Motorboat operators	753	56	3 498	4/2	000	100	1,012	
maal	1.236	1,60	3 926	1,441	1, 121	2,008	1,717	2,1
Totar	2 9	299	2.3	367	3,1	29	3,8	67
Totals	. 290			19	202	60 (0		
Grand total			12,202					

ENGINEER

Grade	July through September (1970)		October through December (1970)		January through March (1971)		April through June (1971)	
	Original	Renewal	Original	Renewal	Original	Renewal	Original	Renet
STEAM								
Chief engineer:		104	51	960	40	439	24	305
Unlimited	89	409	2	36	4	56	2	47
Limited	0	00		00				
1st assistant engineer:	63	010	65	137	63	173	55	15
Unlimited	0.0	20	2	4	3	19	0	
Limited		01						
2d assistant engineer:	06	976	84	243	147	273	94	265
Unlimited	0		4	7	4	14	0	-
Limited	U							
3d assistant engineer:	109	320) 66	211	64	220	242	311
Unlimited	4		6	1	6	1	1	
L/mited								
MOTOR								
Chief engineer:		-	10	09		73	19	9
Unlimited	20	10	12	01	12	131	17	112
Limited	17	106	5 . 11	31	1.0	101		
1st assistant engineer:			0.0	20	0	43	12	. 1
Unlimited	11	2	20	22	5	42	7	3
Limited	1	0.	0	00	•			
2d assistant engineer:	10	0	2 8	40	9	44	18	2
Unlimited	19	1	2	7	3	11	- 1	-
Limited								
3d assistant engineer:	20	95	20	259	28	300	210	34
Unlimited		00	4	55	1	12	7	1
Limited	· · ·		· ·					
Chief engineer:	19		7 42	16	23	23	26	1
Uninspected vessels	10							
Assistant engineer:	4		5 9	4	10	8	7	
Uninspected vessels				1 007	400	1 009	742	1.71
Total	- 438	1, 91	1 420	1,607	460	1,084	1-14	
	2 249		2.027		2, 342		2,479	
Totals								
Grand total				9,	. 197			

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MERCHANT MARINE PERSONNEL STATISTICS—Continued

MERCHANT MARINERS APPLICATIONS RECEIVED

	July through September (1970)	October through December (1970)	January through March (1971)	April through June (1971)	Total		
Originals Additional andorsoments	3,957 1,107	5,318 731	3, 543 1, 065	5,141 1,365	17, 959 4, 268		
Tota]	5,064	6,049	4,608	6,506			
Grand total	22, 227						

FIRE PREVENTION WEEK, 1971

By the President of the United States of America

A Proclamation

Despite unparalleled technological advances in many areas of our society, uncontrolled fires continue to bring a great deal of tragedy and widespread loss to our Nation. Fires now kill more than 12,000 persons each year and cause annual property losses exceeding \$2 billion.

The most shameful aspect of this terrible waste is that it is so unnecessary. Most fires are caused by carelessness, by lack of knowledge, or by hazardous conditions—all of which can be eliminated. But while we all give occasional lip-service to the importance of fire prevention, our deeds too often fail to match our words—and so the loss continues.

But this pattern need not continue. If each of us will anly focus his attention on the practical implications of fire prevention in his daily life, a great deal can be done to reduce the destruction caused by fires.

NOW, THEREFORE, I, RICHARD NIXON, President of the United States of America, do hereby designate the week beginning October 3, 1971, as Fire Prevention Week.

I call upon citizens to participate in the fire prevention activities of their various governments, of community fire departments, and of the National Fire Protection Association. Every persan should be alert to the ways in which he can eliminate fire hazards. Every citizen should learn how to report fires, how to use basic extinguishing agents and firefighting techniques, and haw to react when major fires strike his place of work or his residence. The need to rethink all of these matters is especially important as new technologies change our living environments and the nature of the fire risks we encounter.

I also encourage all Federal agencies, in cooperation with the Federal Fire Council, to conduct effective fire prevention programs, including fire exit drills and other means of training employees, in order to help reduce this waste of life and resources which now plagues our Nation.

IN WITNESS WHEREOF, I have hereunto set my hand this seventh day of June in the year of our Lord nineteen hundred seventy-one, and of the Independence of the United States of America the one hundred ninety-fifth.

RICHARD NIXON

nautical queries

- Q. CO₂ cylinders must be pressure tested:
 - a. Every 12 years.
 - b. Every 10 years.
 - c. Upon transfer to another vessel.
 - d. a & c above.
 - e. Upon renewal of the certificate.
- A. d. a & c above.
- Q. In a fixed CO_2 system, the amount of CO_2 to be carried is:
 - a. Enough for all spaces.
 - b. Enough for the largest space protected.
 - c. Enough for 50% of the spaces protected.
 - d. Enough for the engine spaces.
- A. b. Enough for the largest space protected.
- Q. CO₂ cylinders should NEVER be:
 - a. Painted a different color.
 - b. Left standing upright without support.
 - c. Stored for use in a horizontal position.
 - d. All the above.
- A. d. All the above.
- Q. The best extinguishing agent for class "C" fires is:
 - a. CO₂.
 - b. Water.
 - c. Foam.
 - d. Dry chemical.
- A. a. CO₂
- Q. It is recommended that a steam smothering system be tested:
 - a. Annually
 - b. Every quarter.
 - c. Every two months.
 - d. Monthly.
- A. c. Every two months.





- A. c. C.
- Q. Foam extinguishing agent should be:
 - Applied at the base of the flames.
 - b. Directed into the burning liquid.
 - c. Banked off a vertical surface.
 - d. Used sparingly.
- A. c. Banked off a vertical surface.
- Q. A solid stream of water should not be used on an oil fire because:
 - a. It is difficult to direct.
 - b. It requires too much pressure.
 - c. It can damage surrounding equipment.
 - d. It will stir up and spread the fire.
- A. d. It will stir up and spread the fire.
- Q. Foam extinguishes oil fires by:
 - a. Smothering.
 - b. Retarding vapor formation.
 - c. Cooling.
 - d. All the above.
- A. d. All the above.

- Q. While low velocity fog has the higher degree of diffusion, high velocity fog:
 - a. has higher force and range.
 - b. is easier to control.
 - c. requires less pressure.
 - d. requires less water.
- A. a. has higher force and range.
- Q. When dealing with a magnesium fire (i.e. a flare), you should:
 - a. place a metal container over it.
 - b. use foam only.
 - c. get it over the side by any means.
 - d. use sand or any other dry extinguishing agent.
- A. c. get it over the side by any means.
- Q. The first step in operating a portable foam fire extinguisher is to:
 - a. pull the lock pin.
 - b. turn it bottom up.
 - c. pierce the safety disc.
 - d. open the valve.
- A. b. turn it bottom up.
- Q. A fire in the linen locker on a tank vessel would be considered a:
 - a. Class A fire.
 - b. Class B fire.
 - c. Class C fire.
- d. Class D fire.
- A. a. Class A fire.
- Q. In some situations it is better not to extinguish a LNG fire if:
 - a. it is in a remote area.
 - b. it is not endangering personnel.
 - c. it is from a small leak.
 - d. the escaping gas cannot be shut off.
- A. d. the escaping gas cannot be shut off.

AMENDMENTS TO REGULATIONS

Title 46 Changes

Chapter I—Coast Guard, Department of Transportation

SUBCHAPTER N-DANGEROUS CARGOES

PART 146—TRANSPORTATION OR STORAGE OF EXPLOSIVES OR OTHER DANGEROUS ARTICLES OR SUBSTANCES, AND COM-BUSTIBLE LIQUIDS ON BOARD VESSELS

Sulfuric Acid Containers

This amendment revises the requirements for sulfuric acid in 46 CFR 146.23-100. Among the changes made are the deletion of the following containers: Jugs in tubs (DOT-31), wooden barrels or kegs (DOT-11A, 11B); plywood drums (DOT-22A, 22B); and metal barrels or drums (DOT-5H). This amendment also authorizes DOT-33A packaging (46 CFR 178.150) for any strength sulfuric acid and limits use of the DOT-17F drums (49 CFR 178.117) to sulfuric acid not evceeding 98 percent concentration. This amendment authorizes certain additional tank cars and makes certain editorial changes. Finally, this amendment authorizes DOT-12R packaging (49 CFR 178.212) for concentrations of sulfuric acid up to 100.5 percent, with DOT-2B bottles (49 CFR 178.24A) added as inner packaging.

At page 15047 of this issue of the FEDERAL REGISTER, the Hazardous M a terials Regulations Board of the Department of Transportation is amending 49 CFR Part 173. Their amendment provides additional packaging for sulfuric acid and deletes other packaging considered obsolete. In addition, their amendment limits the use of DOT-17F metal drums to sulfuric acid solutions not exceeding 98 percent concentration. For reasons fully stated in that document, the Board changes its proposal to add the word "lined" to the description of authorized tank cars and allow the transportation of 65 percent to 65.25 percent concentration of sulfuric acid in certain tank cars.

The Board's amendment to the hazardous material regulations of the Department of Transportation in Title 49 applies to shippers by water, air, and land and to carriers by air and land. This amendment to Title 46 applies to carriers by water.

Interested persons were afforded an opportunity to participate in the making of this rule. This amendment was published as a notice of proposed rule making (CGFR 71–17) on March 19, 1971 (36 F.R. 5296) and a hearing was held on this amendment on May 4, 1971, at Washington, D.C.

This amendment is changed from the proposal as the result of a comment received. The comment pointed out that specification 103AW. 111A100F2, and 111A100W2 tank cars having tanks equipped with a phenolic lining impervious to sulfuric acid were included in the Hazardous Materials Board proposal, for sulfuric acid of concentrations greater than 51 percent but less than 65.25 percent, but omitted from the Coast Guard's proposal. This was an oversight by the Coast Guard. Therefore, this amendment authorizes the carriage of tank cars laden with sulfuric acid in the concentrations permitted under the Department of Transportation regulations on hoard cargo vessels (trainships only). In particular it authorizes the tank cars for sulfuric acid of concentrations greater than 51 percent but less than 65.25 percent.

Accordingly, § 146.23–100 of Title 46, Code of Federal Regulations, for the article "Sulfuric acid," is amended as follows:

The complete text of these changes was published in the "Federal Register" of August 12, 1971.

Title 33 Changes

Chapter I—Coast Guard, Department of Transportation

SUBCHAPTER A-GENERAL

PART 3—COAST GUARD AREAS, DISTRICTS, MARINE INSPECTION ZONES, AND CAPTAIN OF THE PORT AREAS

Ninth Coast Guard District

This amendment revises the boundaries of the Ninth Coast Guard District and reorganizes the Marine Inspection Zones and Captain of the Port areas within the Ninth Coast Guard District.

The reorganization of the Ninth Coast Guard District's Marine Inspection Zones and Captain of the Port Areas includes adding the Oswego Marine Inspection Zone to the Buffalo Marine Inspection Zone and adding the Ludington and Milwaukee Marine Inspection Zones to the Chicago Marine Inspection Zone. The present Ludington, Milwaukee, and Oswego Marine Inspection Offices are designated Marine Inspection Detachments. The changes affecting the Marine Inspection Offices will be effective on the date of publication of this document in the FED-ERAL REGISTER. It is expected that the inspected cargo vessels going into summer operation will have been certificated before that date. The

Coast Guard has established internal procedures to minimize any inconvenience to the public during the period that the changes are being made.

The Ludington Captain of the Port Office is moved to Muskegon, Mich., and the Captain of the Port Area is redesignated the Muskegon Captain of the Port Area. The area formerly called the Oswego Captain of the Port Area is added to the Buffalo Captain of the Port Area and the Oswego Captain of the Port Office is closed. Changes affecting the Captain of the Port areas will be effective on the date of publication of this document in the FEDERAL REGIS-TER.

There is a minor change in the boundary of the Third Coast Guard District and the Ninth Coast Guard District which places the entire Alleghany River Reservoir in Pennsylvania, in the Ninth Coast Guard District. In addition, there are minor boundary changes in the Marine Inspection Zones and Captain of the Port Areas in the Great Lakes area.

Since this is a matter relating to agency managament, it is exempted from notice of proposed rule making and public notice and procedure thereon by 5 U.S.C. 553 and the amendments may be made effective in less than 30 days after publication in the FEDERAL REGISTER.

The complete text of these changes was published in the "Federal Register" of August 24, 1971.

AFFIDAVITS

The following affidavits were accepted during the period from July 15, to August 15, 1971:

AMF Cuno Division, 400 Research Parkway, Meridan, Conn. 06450, FITTINGS.

Anvil Products Inc., P.O. Box 67, Allison Park, Pa. 15101, FITTINGS.

Chain Rails Around Anchor Hawse Pipes



American Mail Line Ltd. has found that chain rails around hawse pipes make good sense from the standpoint of accident prevention. Safety Director Captain Paul F. Stumpf has implemented this safety feature on American Mail Line vessels as a result of an original recommendation by the Deck Department. Captain Stumpf said: "We have outlined the rim of the hawse pipe and painted the chain railing a contrasting color to aid in minimizing accidents. When one is otherwise occupied, his peripheral vision alerts him to the potential hazard nearby."

-The Channel P.M.A.

YOUR SKIN IS NO PLACE FOR FUEL OIL

Some cautions on the possibility of skin irritation by fuel oils were recently published by the Marine Section of the National Safety Council.

The fact sheet suggested that the following safety precautions be taken to prevent irritation of the skin by certain bunker fuel oils:

1. When bunker fuel oils are handled or the tanks which have contained bunkers are cleaned, all exposed workers should take a bath when the job is completed, having first removed any of the fuel oil from the skin by the use of an approved liquid household soap or an approved liquid degreaser diluted with water (do not use kerosene, varsol, or other solvents). Dry the skin with paper towels.

2. To avoid skin contact with fuel oil while taking bunkers, sampling, or gaging, safety gloves (acidcaustic-oil resistant) should be worn where their hands might come in contact with fuel oil. If fuel gets on the skin, remove it as indicated above.

3. Clothing contaminated with fuel oil should be changed immediately and soaked in keroscne in a wellventilated area. The residual kerosene should be rinsed from the clothing before being laundered with soap or an approved detergent.

4. Should any skin rash or irritation develop, a doctor should be consulted at the first opportunity.

MERCHANT MARINE SAFETY PUBLICATIONS

The following publications of marine safety rules and regulations may be obtained from the nearest marine inspection office of the U.S. Coast Guard. Because changes to the rules and regulations are made from time to time, these publications, between revisions, must be kept current by the individual consulting the latest applicable Federal Register. (Official changes to all Federal rules and regulations are published in the Federal Register, printed daily except Sunday, Monday, and days following holidays.) The date of each Coast Guard publication in the table below is indicated in parentheses following its title. The dates of the Federal Registers affecting each publication are noted after the date of each edition.

The Federal Register will be furnished by mail to subscribers, free of postage, for \$2.50 per month or \$25 per year, payable in advance. The charge for individual copies is 20 cents for each issue, or 20 cents for each group of pages as actually bound. Remit check or money order, made payable to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Regulations for Dangerous Cargoes, 46 CFR 146 and 147 (Subchapter N), dated January 1, 1971 are now available from the Superintendent of Documents price: \$3.75.

CG No.

TITLE OF PUBLICATION

- 101 Specimen Examination for Merchant Marine Deck Officers (7-1-63).
- 108 Rules and Regulations for Military Explosives and Hazardous Munitions (5-1-68). F.R. 6-7-68, 2-12-69, 10-29-69.
- 115 Marine Engineering Regulations (7–1–70). F.R. 12–30–70.
- 123 Rules and Regulations for Tank Vessels (5-1-69). F.R. 10-29-69, 2-25-70, 6-17-70, 10-31-70, 12-30-70.
- 129 Proceedings of the Marine Safety Council (Monthly).
- 169 Rules of the Road—International—Inland (9–1–65). F.R. 12–8–65, 12–22–65, 2–5–66, 3–15–66, 7–30–66, 8–2–66, 9–7–66, 10–22–66, 5–11–67, 12–23–67, 6–4–68, 10–29–69, 11–29–69, 4–3–71.
- 172 Rules of the Road-Great Lakes (9–1–66). F.R. 7–4–69, 8–4–70.
- 174 A Manual for the Safe Handling of Inflammable and Combustible Liquids (3-2-64).
- 175 Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department (3-1-65).
- 176 Load Line Regulations (2-1-71).
- 182 Specimen Examinations for Merchant Marine Engineer Licenses (7-1-63).
- 184 Rules of the Road-Western Rivers (9-1-66). F.R. 9-7-66, 5-11-67, 12-23-67, 6-4-68, 11-29-69, 4-3-71.
- 190 Equipment Lists (8-1-70). F.R. 8-15-70, 9-29-70.
- 191 Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel (5-1-68). F.R. 11-28-68, 4-30-70, 6-17-70, 12-30-70, 6-17-71.
- 200 Marine Investigation Regulations and Suspension and Revocation Proceedings (5–1–67). F.R. 3–30–68, 4–30–70, 10–20–70.
- 220 Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels (4-1-57).
- 227 Laws Governing Marine Inspection (3-1-65).
- 239 Security of Vessels and Waterfront Facilities (5-1-68). F.R. 10-29-69, 5-15-70, 9-11-70, 1-20-71, 4-1-71, 8-24-71.
- 249 Marine Safety Council Public Hearing Agenda (Annually).
- 256 Rules and Regulations for Passenger Vessels (5-1-69). F.R. 10-29-69, 2-25-70, 4-30-70, 6-17-70, 10-31-70, 12-30-70.
- 257 Rules and Regulations for Cargo and Miscellaneous Vessels (8–1–69). F.R. 10–29–69, 2–25–70, 4–22–70, 4–30–70, 6–17–70, 10–31–70, 12–30–70.
- 258 Rules and Regulations for Uninspected Vessels (5-1-70).
- 259 Electrical Engineering Regulations (3-1-67). F.R. 12-20-67, 12-27-67, 1-27-68, 4-12-68, 12-18-68, 12-28-68, 10-29-69, 2-25-70, 4-30-70, 12-30-70.
- 266 Rules and Regulations for Bulk Grain Cargoes (5-1-68). F.R. 12-4-69.
- 268 Rules and Regulations for Manning of Vessels (5-1-67). F.R. 4-12-68, 4-30-70, 12-30-70.
- 293 Miscellaneous Electrical Equipment List (9-3-68).
- 320 Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (11-1-68). F.R. 12-17-68, 10-29-69, 1-20-71, 8-24-71.
- 323 Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (7-1-69). F.R. 10-29-69, 2-25-70, 4-30-70, 10-31-70, 12-30-70.
- 329 Fire Fighting Manual for Tank Vessels (7-1-68).

CHANGES PUBLISHED DURING AUGUST 1971

The following have been modified by Federal Registers:

Subchapter N of Title 46 CFR, Federal Register August 12, 1971.

CG-239, CG-320, Federal Register August 24, 1971.

