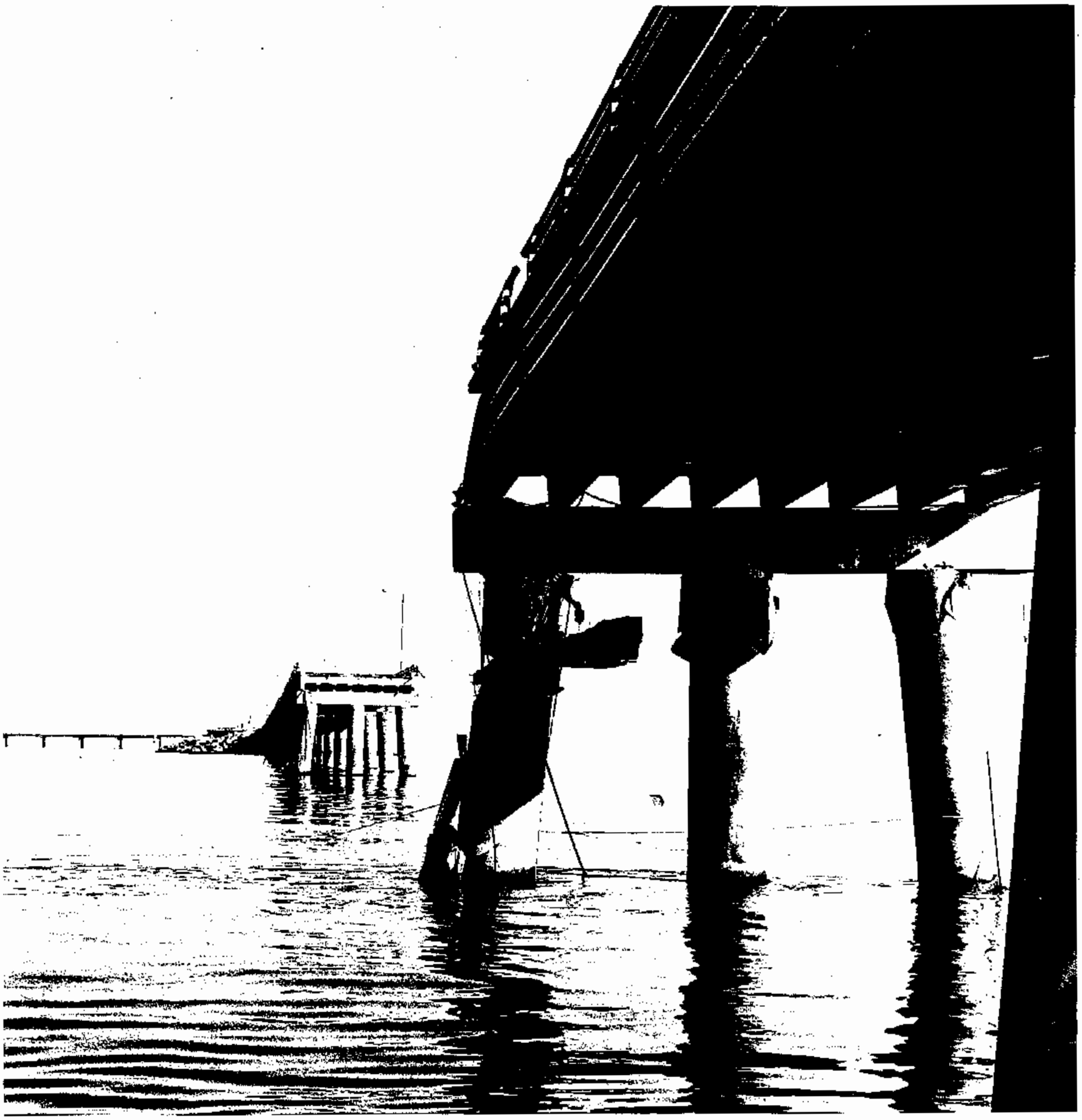
Proceedings

of the Marine Safety Council



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Both the Ports and Waterways Safety Act and its later amending act, the Port and Tanker Safety Act, were prompted by unique marine disasters. Lt. Clayton Evans discusses these events, and the public and congressional concern they evoked, in his article beginning on page 247. (Cover photo courtesy of the Chesapeake Bay Bridge-Tunnel.)

The Making of One of Marine Safety's Most Important Laws -- Part I

Behind the Scenes of the Ports and Waterways Safety Act, As Amended

by LT Clayton W. Evans
Program Development Branch
Port and Environmental Safety Division
U.S. Coast Guard

Both the Ports and Waterways Safety Act and its later amending act, the Port and Tanker Safety Act, were prompted by unique marine disasters. These events, and the public and congressional concern they evoked, are valuable in understanding the intent and character of one of marine safety's most important laws.

Early Catalysts of Ports and Waterways Legislation

One of the earliest events leading to this legislation was in 1967. The tankship TORREY CANYON ran aground off the coast of Cornwall, England, creating one of the worst oil spills in history. At the height of this disaster, Maurice Foley, Navy minister in charge of efforts against the oil pollution, commented grimly:

Given the extra oil now floating off Cornwall, all the extra men and equipment in the world could not deal with this problem. This is a problem no country in the world has had to face before.

The significance of the TORREY CANYON was not lost on American legislators, and it figured largely in congressional hearings and reports when two other incidents—serious collisions—prompted ports and waterways legislation.

The USS YANCEY and Chesapeake Bay Bridge Collision

On January 21, 1970, the U.S. Navy vessel USS YANCEY, anchored about a mile and one quarter west of the Chesapeake Bay Bridge near Virginia Beach, Virginia, broke loose from her anchorage in high winds. At about 1:25 a.m., it was determined that the ship was moving toward the bridge. The engineering department was told to prepare to get underway as soon as possible, and the captain was called to the bridge. In testimony before the House Subcommittee on Coast Guard, Coast and Geodetic Survey and Navigation, Rear Admiral Phillips McManus, Commander, Amphibious Group 2, U.S. Atlantic Fleet, reported:

The captain arrived on the bridge promptly and ordered the port anchor let go. Winds at this time were a steady 30 knots, gusting to 35 knots. The tide was setting on an ebb tide at least one knot toward the bridge. Despite some indications of momentary holding, the ship continued to set toward the bridge. Her port quarter collided with the bridge at about 1:36 a.m., and the ship soon swung parallel to the structure, portside to. Five minutes later the main engines reported ready to answer bells.

The USS YANCEY. Photo courtesy of the Chesapeake Bay Bridge-Tunnel.

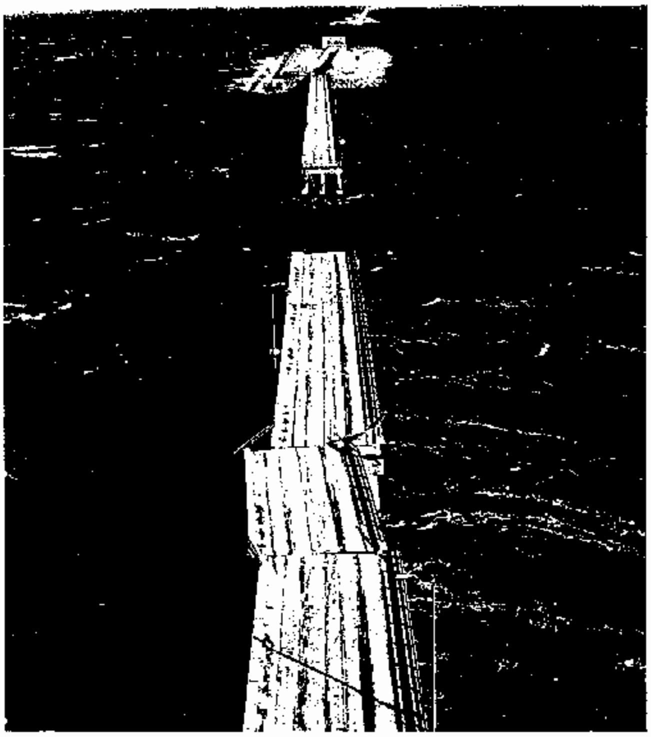
The collision toppled five sections of two-lane roadway and their support pilings. The bridge was completely closed for 42 days, and the total cost of the accident to the Bay Bridge Commission was $2.4 million. However, this was not the first time the bridge had been struck. Three previous collisions had occurred, all in close proximity to the area of the USS YANCEY accident: a U.S. Navy LST on November 3, 1966, the barge NILO on March 16, 1967, and the barge MOHAWK on December 3, 1967. (Damage from the MOHAWK collision was estimated at $1 million.) After the USS YANCEY accident, these prior collisions were resurrected and used to fuel the growing dissatisfaction with waterways safety.

The Congress and the President React

On February 5, 1970, less than a month after the USS YANCEY accident, Congressman Thomas N. Downing of Virginia introduced H.R. 15710, which was the first ports and waterways safety bill presented to the Congress. This bill was the first in a great flurry of legislative initiatives. In his oil pollution message of May 1970, President Nixon also urged the passage of vessel traffic control and ports and waterways safety legislation.

Shortly thereafter, the Coast Guard and the Department of Transportation submitted a Ports and Waterways Safety Act proposal which was introduced in the 91st Congress on May 27, 1970, as H.R. 17830. During this time, two serious spills of hazardous substances occurred in the Chesapeake Bay near Baltimore Harbor, painfully reinforcing the need for improved port and environmental safety.

The House Subcommittee on Coast Guard, Coast and Geodetic Survey, and Navigation held 10 days of hearing on the proposed legislation, beginning July 22, 1970. The general feeling in the testimony on H.R. 17830 was that the bill was too loosely drawn, and, as a result of these comments, the Committee on Merchant Marine and Fisheries began working on an improved ports and waterways safety bill.



The YANCEY's collision knocked out five sections of the bridge. Photo courtesy of the Chesapeake Bay Bridge-Tunnel.

The OREGON STANDARD and ARIZONA STANDARD Collision

While an improved version of the ports and waterways safety bill was being drafted, an event occurred in San Francisco Bay which gave impetus to the port and harbor safety legislation. On January 18, 1971, the SS OREGON STANDARD outbound and loaded with approximately 103,000 barrels of heavy bunker fuel collided with the inbound SS ARIZONA STANDARD, loaded with approximately 113,000 barrels of crude oil. The vessels collided in the vicinity of the Golden Gate Bridge at approximately 1:41 a.m. in heavy fog. About 800,000 gallons of oil were discharged into San Francisco Bay, creating a major oil pollution incident that gained national attention. The Coast Guard Harbor Advisory Radar System was in operation at the time of the accident, but because it was a voluntary participation system, the Coast Guard had no authority to regulate this traffic.

Shortly after the OREGON STANDARD and ARIZONA STANDARD collision, there was another flurry of proposed legislation. One ports and waterways safety bill was introduced to the Senate, and four were introduced to the House, including H.R. 8140, the modified and improved version of H.R. 17830. It was H.R. 8140, after amendment in a conference committee, that ultimately became the Ports and Waterways Safety Act of 1972. This act had been 2 full years in the making.

Comprehensive Legislation Strengthens Coast Guard Authority and Ability

The Ports and Waterways Safety Act strengthened the authority and abilities of the Coast Guard in marine safety and pollution prevention. Significantly, it put the precarious Port Safety Program on a secure statutory footing by making permanent the port security regulations and offspring port safety regulations that were issued under the Magnuson Act of 1950 and Executive Order 10173. The Ports and Waterways Safety Act was configured as a comprehensive approach to the problem of vessel casualties and ensuing damage and marine pollution, largely owing to Senate interest in improving existing standards of ship construction and equipment.

Although concurring in the need for vessel traffic services, systems, and controls as contained in H.R. 8140, the Commerce Committee believed that a complete approach to the prevention of pollution from marine operations and casualties required, in addition, improvement of the vessels themselves: their design, construction, maintenance, and operation. The Senate report to accompany H.R. 8140 said:

The testimony and data received at the committee's hearings in September made this conclusion inescapable. It is clear that a systems approach to prevention of damage to the marine environment requires not only better control of vessel traffic but an improvement in the vessels themselves.

An analysis of 1,416 tanker casualties that occurred in 1969 and 1970 was received during the Commerce Committee hearings, and it illustrated the many types of tanker casualties. It also showed that the casualties were not limted to harbors and harbor entrances. These statistics supported the systems approach to reducing vessel casualties.

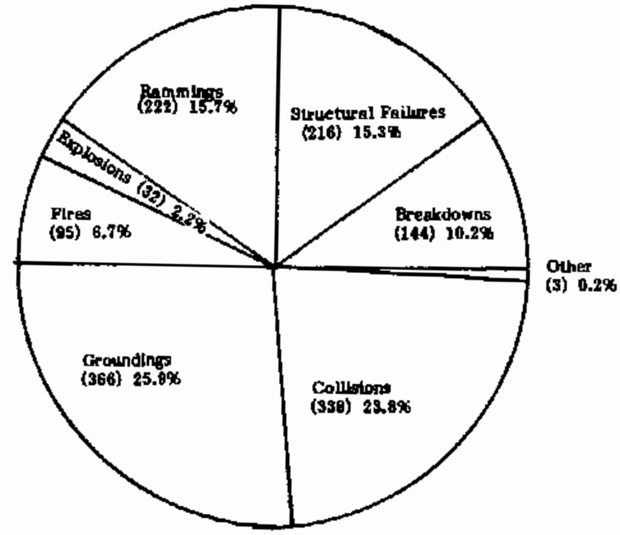
A Partial Solution

Title I of the Ports and Waterways Safety Act empowers the Secretary of Transportation to establish vessel traffic systems in areas where vessel traffic is congested, and to generally control vessel improvement to ensure port and waterway safety. Additionally, the Secretary may establish requirements for handling explosives or other dangerous articles, and in this manner, the port safety regulations developed under the Magnuson Act have been preserved.

Title II of the Ports and Waterways Safety Act declares that the carriage of certain cargoes in bulk by vessels creates substantial hazard, and the existing standards for design, construction, and operation must be improved for satisfactory protection of the marine environment. Title II goes on to describe the rules and regulations considered necessary to achieve such protection.

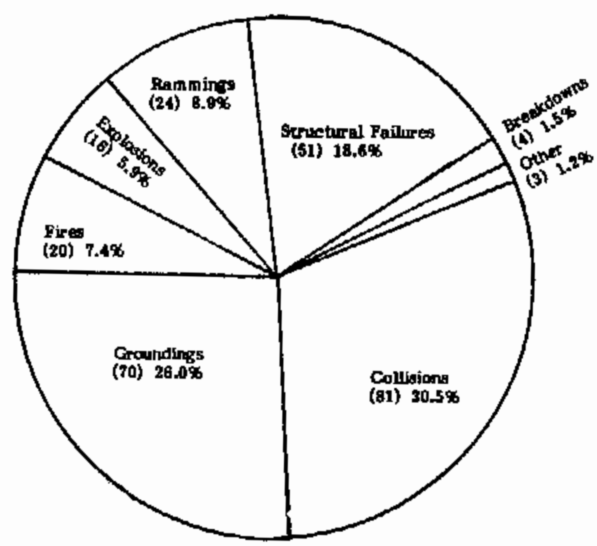
In late 1976 and early 1977, it was clear to legislators that the Ports and Waterways Safety Act was only a partial solution. In Part II of this article, the unprecedented rash of tanker casualties that fostered the additional Port and Tanker Safety Act of 1978 will be examined. ✱

Type, number, and percentage of the 1,416 tanker casualties.



Source: *U.S. Congress, Senate, Navigable Waters Safety and Environmental Quality Act of 1972, S. Rept. 92-724, to accompany H.R. 8140, 92nd Cong., 2nd sess., 1972, pg. 15.*

Type, number, and percentage of the 269 polluting incidents resulting from tanker casualties.



Part II will appear in our next issue.

Ship and Equipment Design

This series is based on responses to a questionnaire issued by London's Nautical Institute. The results of this survey were published in Seaways -- The Journal of the Nautical Institute. Although some of the items discussed are covered by regulation for U.S. ships, many are not.

Part III discusses dry cargo work.

Part III
Dry Cargo Work

Compiled by E. J. Riley
from responses to the
Nautical Institute Questionnaire

1. Ballast

Problem: Ballast systems don't seem to be designed for easy use. The following problems were experienced on a 7-year-old bulk carrier. The chief officer's comment? "It was a nightmare!"

— Both pumps are sited close together on the port side.

— There is common suction.

— There are no stripping pumps.

— Drain holes in the stiffeners in the upper wing tanks are too small, which entails a lengthy process when trying to strip these tanks.

— There is common overboard discharge.

— Pumps are underrated for the job when the vessel is loading bulk cargo in a matter of hours—e.g., Christmas Island, 8 hours; Hay Point, 6 hours.

— There are no manual isolating valves for the ballast hold.

— At sea in ballast condition, the ballast hold has to be filled to prevent severe hogging and takes about 10 hours to pump dry.

— There are too many ballast tanks—a total of 26, including fore and after peaks.

— Total tonnage of ballast tanks (not including ballast hold) is 7,608 tons. Eight of these tanks (hoppers) are in total only 1,034 tons. One can imagine the problem trying to drain these without stripping a pump. Numbers 2 and 5 forward hoppers have their sounding pipes at the fore end of the tanks, as do Number 5 top tanks. This is very handy when keeping the vessel trimmed by the stern to drain tanks.

- The ballast control console is in the engine room on the bottom platform against the forward bulkhead.
- Two pipe passages between the wing and center tanks in double bottoms are where the ballast valves are situated. This entails a long crawl up the passage to get to them when the control console goes haywire. It quite often does, or the valves fail to open or close properly.
- Ballast suction is too close to the alternator cooling water intake, and at certain drafts, the ballast suction is liable to draw water away from alternators.
- Insufficient data is given for correction to soundings at various states of trim--supplied for 1, 2, and 3m only.
- There is no priming system, except by cracking open main sea suction. As this is nearer, the pumps favor the sea suction and not the ballast tanks.
- One of the ballast pumps also doubles as a main engine standby circulating pump.

Remedy. The design of ballast and heel control systems should be such that they can be operated from a control station on the bridge.

2. Bilges

Problem: Cleaning of bilges is labor-intensive and is often required at short notice between discharge and loading. The siting and size of hold bilges are often decided with little regard to personnel having to get in to clean out the bilges. Hold and engine room bilges served by the same pumps via a common manifold results in oily water in the bilge line, thus requiring cleaning out before bilges can be pumped when in port. On some ships, bilge pumps double as fire pumps and for circulating the alternators in port. When the bilge line mud traps are sited at the top of a vertical pipe, rubbish falls down the pipe when suction is taken off.

Remedy. Design of bilges should allow easy access for cleaning out. One suggestion was to provide a removable strainer designed to sit in the hat box to allow water/moisture to pass through only, thus allowing rubbish to be disposed of easily.

3. Containers

Problem: In cellular ships, cell guides are of weak construction, and they frequently fracture. The after bays platform is awkward for lashing purposes. Containers with reefer plugs are frequently loaded the wrong way. Crane and gantry drivers are unable to see bay and cell numbers. Securing arrangements on deck for containers are prone to vibrating free, particulary twist-type locks. It is difficult to secure containers stowed four high on the deck.

Remedy: Rubber damping should be provided around cell guides to absorb shock and limit springing of guides. Internationally recognized symbols denoting the plug end on reefer containers should be developed and used. Cell and bay numbers should be painted on respective cell guides for ease of sighting by crane/gantry drivers. Container fittings need to be more uniform, and the design of twist-type locks needs to be improved. Also, securing arrangements need to be more robust for the marine environment. Plans should be provided showing securing arrangements, slack loads (in holds/'tween decks, etc.), permitted to load per m^2 for easy reference. Recommendations for the safe securing of containers are contained in the ICHA Guide, <u>The Securing of ISO Containers Theory and Practice 1981</u>.

4. Cargo Lifts

Problem: Remote-operation cargo lifts are considered a problem on some ships. The siting of exits directly into moving traffic and other dangerous areas has led to some serious accidents.

Remedy. Standards for cargo lifts should be improved by following the ILO Code of Safety and Health in Dockwork, Section 13, Ships' Cargo Lifts.

5. Cranes

Problem: Cranes are generally considered more serviceable than derricks. However, many 5-ton cranes are quite inadequate for modern cargo-handling requirements, particularly containers. Doubling-up is time-consuming and reduces cargo throughout. Frequently, cranes are inaccessible for essential maintenance. Access to the driver's cab is blind and dangerous on some designs, and the crane can be operated with a person caught by the rotating section. The crane driver's cab is sometimes too restricted if it is necessary to get out an unconscious crane driver in an emergency. Crane lift wires can be badly damaged if used for opening hatches.

Remedy. More attention should be given to long-term cargo handling requirements at the design stage, with the siting and shape of the cranes selected to give maximum forward visibility from the bridge. Adequate access should be provided in view of the crane driver and maintenance platform. Separate hatch opening and closing wires should be provided.

6. Derricks

Problem: Derricks are very labor-intensive to rig, operate, overhaul, and service, particularly with reduced crews. Guy leads of heavyweight derricks often foul open hatch covers.

Remedy. Systems should be designed for maximum ease of servicing. Prepare a mock cargo-gear layout prior to construction. If obstructions cannot be avoided, provide portable guy leads with securing lugs. Ensure there is adequate access to every moving and standing part.

7. Gantry Cranes

Problem: Serious accidents have occurred when gantry cranes are moved while personnel are working on the equipment or standing near the rails.

Remedy. It is a good design practice to provide enough room between the gantry and obstructions for a person to stand clear the entire length of the deck section without fear of being crushed.

8. Hatches

Problem: The operation of some hatch lids is still dependent on cargo handling equipment. Controls of electrically operated hatch lids are sited on the opposite side to cable and reel and can result in cut cable. Motors are frequently recessed into hatch lids and are not efficiently watertight. Worn tracks result from 'tween-deck covers using the single pull wire method of opening and closing.

Remedy. On some ships, it would be helpful if the design operation of opening and closing hatch lids and 'tween-deck covers could be independent of cargo handling equipment and designed for safe operation by the OOD and one seaman. This is particularly essential with reduced manning. Motors should be sited in sufficiently watertight housing. An effective protective coating for hatches/void spaces should be provided. Tanks shold be strong enough to withstand grab knocks. More substantial tracks need to be provided.

9. Hatch Access

Problem: Hatch access is frequently badly designed, with the ladder directly inside the weather door of mast house/entrance, with lack of space and facilities for handling equipment down hold.

Remedy. The access should be designed with a large, square, well-lit platform (a meter or so) inside the weather door, before siting the ladder. To facilitate handling equipment into the hold, an eyebolt adjacent to the ladder for a block and tackle attachment should be provided.

10. Hatch Coamings

Problem: Cargo supervision in hatches is difficult due to the height of coamings--3m in some cases.

Remedy. Design mini-platforms around coamings to overcome the height problem.

11. Lighting

Problem: Cargo spaces and decks are frequently poorly lit. Portable cluster lights cause numerous problems: cables get caught and split, and light bulbs continually break through rough handling. Clusters are very vulnerable to rough handling and careless stacking. Junction boxes frequently fuse with salt water. Fixed cargo hold lights are frequently obstructed by open hatch covers, and switches are often high and inaccessible. There is poor illumination of the poop deck for mooring.

Remedy. Design fixed hold lighting for all cargo holds. The height of lights should be suitable for easy bulb changing. There should be adequate protection from cargo operations, giving adequate lighting levels. Deck lighting switches should be provided on the bridge to avoid inadvertent interference with vessel navigation. A light indicator panel situated in the deck office would be useful to show which deck lights are on and where. Saving energy is important. On/off switches should be provided at hatch access only for hold lights, thereby ensuring safety of personnel working down hold.

12. Maintenance

Problem: There is a lack of facilities for handling equipment into the holds for maintenance--see number 9, "Hatch Access." Similarly, there is a lack of facilities to assist in handling equipment aloft.

Remedy. An eyebolt for block and tackle attachment should be sited adjacent to ladder/platform, whether aloft or for holds.

13. Ro-Ro Operations

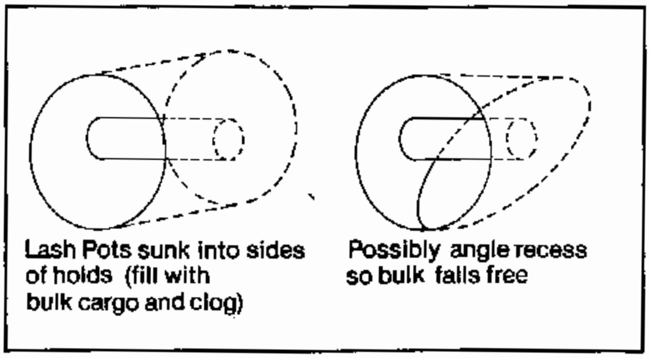
Problem: A number of accidents have been reported when vehicles have crushed passengers embarking or disembarking along the same ramp.

Remedy. If possible, passengers should enter and leave by separate gangways. Where the same ramp is used, passengers should be segregated on a walkway protected by a substantial barrier.

14. Securing

Problem: Lashing chains have a tendency to vibrate free during passage. There are insufficient securing points on deck. "Lash pots" built into upper hopper sides of hold to use for securing heavy lifts and containers have a tendency to fill with bulk cargoes when loading bulk.

Remedy. A more efficient lashing system for securing on deck, with regard to adverse weather conditions, should be designed. Lash pots with an angled recess would not collect bulk cargoes and rubbish in them.



15. Stowage

Problem: Deck cargoes frequently block scuppers and walkways and are difficult to secure on deck.

Remedy. Design efficient means of securing/stowing cargoes away from scuppers. One suggestion was for permanent dunnage fixed inside bulwark with sufficient eyebolts for lashing purposes.

16. Transverse Bulkheads

Problem: It is a common practice on bulk carriers to provide corrugated bulkheads stepped in and out by 2 feet every 3 feet. Accidents occurred when dockers fell down these "shafts" behind the cargo.

Remedy. Provide a means to close off the openings.

17. Ventilation

Problem: On ro-ro vessels, serious carbon monoxide poisoning can develop when there is inadequate ventilation in the vehicle decks when drivers start their motors. Ventilation intake and extractors are frequently designed with the opening facing upward, and these are prone to letting water through. "Cowl covers" are awkward and heavy to handle.

Remedy. More careful design calculations must be made with respect to threshold limit values and adequate ventilation supplied. Ventilation of holds and spaces should be designed to allow circulation of air efficiently without water from rain or spray leaking through.

18. Void Space

Problem: Uncovered void spaces—i.e., hatch wells, vent trunkings, etc.--are prone to filling with cargo and are difficult to clean out.

Remedy. Design void spaces so that cargo is unable to collect in or block space. *

"Well, they warned us that this would be a tough course!"

Keynotes

The Coast Guard published the following items of general interest in the Federal Register between September 1 and October 1, 1984.

Notices of Proposed Rulemaking (NPRMs)

CGD 83-030	Lifesaving Equipment	(Sept. 27)

Advance Notices of Proposed Rulemaking (ANPRMs)

CGD 83-026	Fire Protection Regulations	(Oct. 1)

Copies of NPRMs are available free of charge. Requests for copies should be directed to the Marine Safety Council at the following address:

Commandant (G-CMC)
U.S. Coast Guard
Washington, D.C. 20593
Tel.: (202) 426-1477

The Marine Safety Council Office, Room 2110 at Coast Guard Headquarters, 2100 Second Street, SW, Washington, DC, is open between the hours of 8:00 a.m. and 3:30 p.m. Monday through Friday. Comments are available for inspection or copying during those hours.

Lifesaving Equipment
CGD 83-030

This proposal would substitute independent laboratory inspection for Coast Guard factory inspection of approved inflatable liferafts; lifeboats, including disengaging apparatus and hand-propelling gear; and lifeboat davits and winches. While the Coast Guard's marine inspection responsibilities have steadily increased, this proposal will reduce the Coast Guard's resource commitment to these functions and will ensure that approved equipment meets Coast Guard standards.

Fire Protection Regulation
CGD 83-026

The Coast Guard is considering changes to the fire protection regulations in 46 CFR, subchapters D, H, and I, that will incorporate the 1981 set of amendments to the Safety of Life at Sea (SOLAS) 1974 Convention, update the existing fire protection regulations, and consolidate the fire protection regulations in subchapters D, H, and I into a single new subchapter. The Coast Guard is seeking public comment on these changes. *

Chemical of the Month

by Ronald Magoon

Cresols

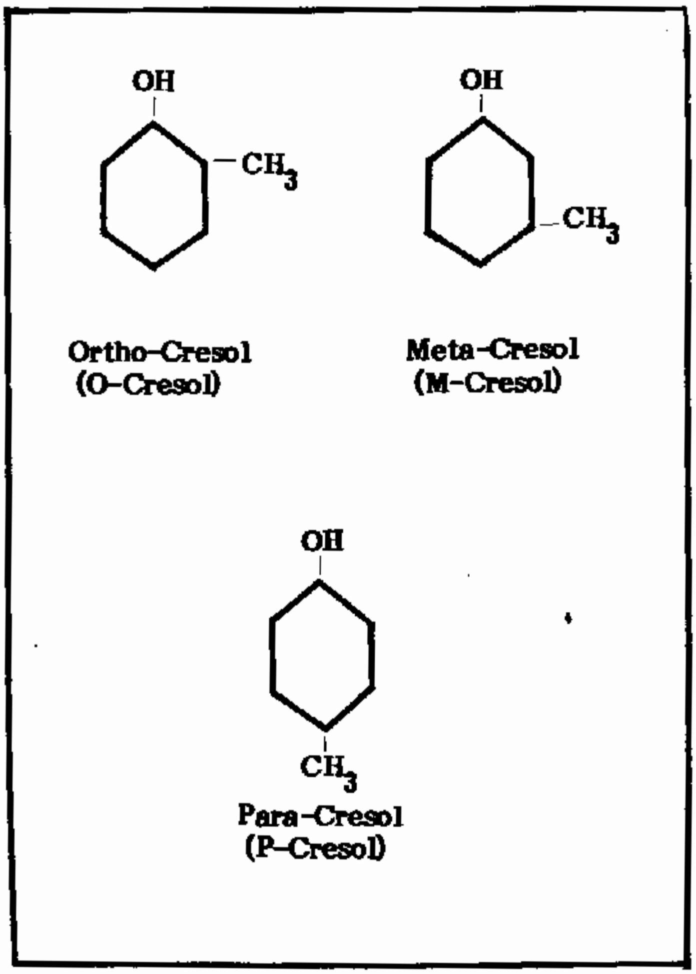
$CH_3C_6H_4OH$

Ronald Magoon was a second-class Cadet at the Coast Guard Academy when he wrote this article. It was written under the direction of instructor LCDR Thomas J. Haas for a class on hazardous materials transportation. Technical assistance was provided by personnel in the Cargo and Hazards Branch at Coast Guard Headquarters.

<u>Synonyms:</u>	cresylic acid hydroxytoluene methyl phenol oxytoluene tar acid
<u>Physical Properties</u>	
boiling point:	146-192°C (295 378°F)
freezing point:	12-35°C (54)
vapor pressure at 20°C (68°F): 76°C (115°F):	 .52 mm Hg .03 psia
<u>Threshold Limit Values (TLV)</u>	
Time weighted average:	5 ppm; 22 mg/m^3
Short-term exposure limits:	none established
<u>Flammability Limits in Air</u>	
lower flammability limit:	1.1% by vol.
upper flammability limit:	none established
<u>Combustion Properties</u>	
flash point	81-86°C (178-187°F)
autoignition temperature:	559-646°C (1038-1195°F)
<u>Densities</u>	
liquid (water=1):	1.03-1.07 at 20°C
vapor (air=1):	3.72
<u>Identifiers</u>	
U.N. Number:	2076
CHRIS Code:	CRS=mixtures; CRL=m-cresol; CSL=o-cresol; CSO=p-cresol
Cargo Compatibility Group:	21 (Phenols, Cresols)

The name cresol (kree-sol) comes from a combination of the Greek word "kreas" (flesh) and "sos" (safe). The chemical was given this name because of its use in disinfectants. Ironically, cresol can present some serious health hazards.

There are three forms (isomers) of this chemical: ortho-, meta-, and para-. Cresol is made up of a methyl group (CH_3-) and a hydroxyl group (OH-), both attached to a benzene ring. What differentiates each form of cresol is the location of the methyl group with respect to the hydroxyl group on the benzene ring. Each form has its own set of physical propeties, but for the sake of brevity in this article, we will generally refer to the technical grade of cresol, a mixture of the three isomeric cresols.



Placement of the methyl group on the benzene ring differentiates the types of cresol.

The technical grade of cresol is a combination of its three forms. It exists as a liquid or a solid, depending upon the ambient temperatures, that is, the temperature of the local environment.

Cresol can be synthesized in a number of different ways, depending on the final form desired. Commercial cresol contains approximately 20% o-cresol, 40% m-cresol, and 30% p-cresol. The remaining 10% is made up of phenol (last month's "Chemical of the Month") and xylenol. The exact composition depends upon the method of production. Hydrolysis of this material will produce a crystal (p-cresol) and a liquid (m-cresol). These substances are usually sold individually.

Cresol is used in a variety of ways. It is used as a disinfectant in many name-brand household cleaners, and it is beginning to be used in such areas as synthetic resins, explosives, photographic developers, and insecticides.

The major hazard in dealing with cresol is exposure. It will burn the skin and eyes. If swallowed, even in small quantities, it could cause serious injury or death. To avoid contact with it, one should wear the proper protective clothing: rubber gloves, a face shield, a self-contained breathing apparatus, an apron, and rubber boots.

If the skin or eyes are splashed with cresol, immediately begin flushing with plenty of water for 15 minutes. If cresol is swallowed, do not induce vomiting—have the victim drink a lot of water or milk. Fresh air is the best thing for victims who have inhaled cresol vapors. Artificial respiration should be given if difficulty in breathing is experienced. In all cases of exposure, a physician should be consulted.

The sweet-smelling vapors given off by this chemical can be a serious problem since they do not provide adequate warning of its hazardous nature. Five parts per million (ppm) is the cresol exposure level a person can tolerate, if this exposure is over an extended period of time (normally, an 8-hour day in a full work week). Short-term exposure of very high concentrations can be fatal. It can also be absorbed through the skin in toxic amounts.

The health effects of prolonged cresol exposure are varied. Cresol will attack the kidneys, the liver, the lungs, and the mucous membranes. In known fatalities from exposure to cresol, the cause of death was attributed to respiratory failure. This indicates that cresol also attacks the respiratory system, although there is no medical proof. There is no antidote for cresol exposure.

Cresol is a combustible liquid with a very high flash point and boiling point: 81°C (178°F) and 177°C (351°F) respectively. A major hazard associated with cresol is that it can give off poisonous fumes when burning. Firefighters should wear protective clothing and a self-contained breathing apparatus. A cresol fire can be extinguished with water, dry chemicals, foam, or carbon dioxide. Containers that may be exposed to fire conditions should be cooled with water spray.

Use extreme caution when working in areas where cresol is being handled. If a spill occurs, all personnel who risk exposure should don the proper safety equipment previously described. The spill area should be hosed down to remove the chemical. If this is not feasible, cresol can be neutralized using 2%-5% sodium hydroxide. Sawdust will readily absorb the spill, as will commercial oil absorbents.

The Coast Guard regulates cresol as a Subchapter O cargo. The International Maritime Organization includes it in Chapter 6 of the bulk chemical code and Chapter 17 of the international bulk code. The International Maritime Dangerous Goods Code (IMDG) lists cresol on page 6148-1 as a class 6.1 cargo. *

From the "New" Editor

As noted in our July issue, editor Julie Strickler resigned from the Proceedings *this past summer to accept an editorial position in the San Francisco area. Julie left the office in smooth running order, and when I reported for work on September 4, 1984, I was able to continue publication with only a short delay.*

Many of you have already called or stopped by to welcome me as I start my new job. I'm looking forward to a long and productive association with the Coast Guard and the Marine Safety Council, and I hope future issues of the magazine will reflect this.

My role as editor is to provide you with information that is useful to the maritime community. Please drop me a line and let me know what your particular interests are. Who knows? Your letter could be the basis for an article in an upcoming Proceedings.

Barring unforeseen circumstances, the Proceedings *will be back to a regular schedule by January 1985. Thanks for bearing with me while I get my "sea legs."*

Sharon Chapman

At midnight, the morning drilling shift reported for work on the floor of the platform rig. Assigned to the driller's crew were two floormen, a derrickman, and a pumpman.

The workers were pulling the drill string out of the hole and were subsequently laying down drill collar pipe. Because the crew could not locate the lift-nipple generally used for hoisting, they had rigged a line to lift the drill collar from the "v-door" on the drill floor down to the deck. The steel line was anchored to the drill floor on one end by means of a padeye plate and ran through a "snatch-block," and the other end was tied to the drill collar pipe. The crew had connected an air hoist to the "snatch-block" to help lift the drill collar. (The drill collar pipe was 4-3/4" in diameter. One length weighed approximately 1,500 pounds and was approximately 30 feet long.)

At approximately 2:00 a.m., a length of drill collar pipe with a stabilizer unit attached to the bottom was laying in the "v-door" on the drilling floor. The driller went over to assist the floorhand in preparing the rotary for reintroduction of pipe down the hole.

The driller and floorhand were bent over the rotary as the derrickman picked up the length of drill collar laying near the "v-door." When the drill collar was approximately 20 feet in the air above the rotary table, the derrickman heard a popping sound and immediately yelled a warning. An instant later the drill collar fell, striking the driller on the left neck and chest.

The crew members rushed to assist the driller. They noted several deep gashes in the driller's chest and massive bleeding in the chest area. The floorman ran for the toolpusher, who administered first aid to the driller for bleeding and shock. The toolpusher then called a helicopter and paramedics.

After the driller was taken off the rig and flown to the hospital, the derrickman and floorhand brought down the "snatch-block" rigging. They noted that the pin on the "snatch-block" had popped out of its housing, and some of the threads were stripped. The pin's backing out had allowed the "snatch-block" to come open. Consequently, the cable jumped out, and the drill collar pipe fell.

Six days later, the driller died in the hospital.

In investigating this accident, the Coast Guard concluded that the driller's death resulted from the failure of the "snatch-block" rigging which was being used to lift and lay down drill collar pipe. The "snatch-block" failed because the securing pin backed out.

Using the "snatch-block" to lift and lay down the drill collar was not normally done. A lift-nipple was generally used for this purpose, but it could not be located. To shorten the nonproductive, non-drilling time, the crew had used the "snatch-block" rigging while continuing to look for the lift-nipple.

The crew were not aware of "seizing" or "mousing" procedures which would have prevented the pin from backing out and allowing the "snatch-block" to open. The encyclopedia of nautical knowledge defines "seizing" and "mousing" as follows:

Seizing:

The turns of marline, spunyard, wire, or special cordage used to fasten or bind, as one rope to another, a block to a stay, etc.

Mousing:

Turns of spunyard, wire, etc., comprising seizing for securing a hook.

Because the crew did not know about these procedures, they believed the "snatch-block" rigging was safe.

The Coast Guard was unable to determine if the weight of the drill collar was excessive for the "snatch-block" rigging. The stripping of the pin on the "snatch-block" was most likely caused by the pin's backing out, leaving the weight of the drill collar on the last few threads of the pin. This may have caused the popping sound heard just prior to the accident.

Nautical Queries

The following items are examples of questions included in the Third Mate through Master examinations and the Third Assistant Engineer through Chief Engineer examinations:

ENGINEER

1. A pneumercator tank gage utilizes

A. a Bourdon tube indicator.
B. a balance chamber.
C. an electronic sensing line.
D. all of the above.

REFERENCE: Osbourne, Modern Marine Engineer's Manual, Vol. I.

2. Which statement describes a fuel injection pump marked "timed for port closing"?

A. Injection has a constant beginning and variable ending.
B. The pump stroke determines the amount of fuel injected.
C. Fuel is metered by the pump's delivery valve.
D. All of the above.

REFERENCE: Kates & Luck, Diesel and High Compression Gas Engines.

3. Difficulty in maintaining vacuum in a main condenser may be caused by

I. excessive noncondensable gases on the steam side.
II. fouled heat transfer tubes.

A. I only
B. II only
C. Either I or II
D. Neither I nor II

REFERENCE: Harrington, Modern Engineering

4. Which operational precaution(s) is (are) necessary before you blow tubes?

A. Increased force on draft fan speed.
B. Open all drains in soot blower steam supplying pipe.
C. Thoroughly warm all soot blower steam piping.
D. All of the above.

REFERENCE: Osbourne, Modern Marine Engineer's Manual, Vol. I.

5. A ground on a particular phase of a three-phase, low voltage distribution system would be indicated by

A. high switchboard wattmeter readings.
B. low switchboard wattmeter readings.
C. dark or dim switchboard ground detecting light.
D. bright switchboard ground detecting light.

REFERENCE: Hubert, Preventive Maintenance of Electrical Equipment.

DECK

1. Five or more short blasts on a vessel's whistle means that she is

A. in doubt that another vessel is taking sufficient action to avoid a collision.
B. altering course to starboard.
C. altering course to port.
D. the stand-on vessel and will maintain course and speed.

REFERENCE: COMDINST. M16672.2

2. The term "spring tides" means tides which

A. have lows lower than normal and highs higher than normal.
B. have lows higher than normal and high lower than normal.
C. are unpredictable.
D. occur in the spring of the year.

REFERENCE: Bowditch, American Practical Navigator, Vol. I.

3. Which of the following conditions may cause a combustible gas indicator to give false readings?

A. I or II
B. II only
C. II or III
D. I, II, or III

REFERENCE: Page & Gardner, Petroleum Tankship Safety.

4. Skin burns are classified as first, second, or third degree by their

A. size.
B. location.
C. blisters.
D. depth.

REFERENCE: Red Cross First Aid Manual, 1981.

5. When carried in bulk, combustible liquids are defined as any liquids having a flash point above

A. 40°F.
B. 80°F.
C. 110°F.
D. 150°F.

REFERENCE: 46 CFR 30.10-15

ANSWERS

ENGINEER
1.B;2.A;3.C;4.D;5.C.
DECK
1.A;2.A;3.D;4.D;5.B.

If you have any questions about "Nautical Queries," please contact Commanding Officer, U.S. Coast Guard Institute (mvp), P.O. Substation 18, Oklahoma City, Oklahoma 73169; tel.: (405) 686-4417.

Happy Thanksgiving!

If you have ever taken a Coast Guard multiple choice examination and questioned the correctness of the answer, or even the background and fairness of the question, this item should be of interest. The Coast Guard realizes that candidate feedback on our examinations is a very valuable tool for the quality control of our examinations. Accordingly, candidate Comment and Protest forms are now available in the examination room to help in this feedback process. At the completion of an examination module, the license examiner will determine the appropriate classification of the form, "comment" or "protest."

A protest can only relate to questions just completed, and sheets marked "protest" must be submitted by the candidate before leaving the exam room. A sheet will be marked "protest" only if it can affect a pass/fail situation. The protest sheet will be forwarded to the Coast Guard Institute for review and its possible effect on the exam score. This additional evaluation will normally cause a delay in the final determination of the examination score. The new policy clearly explains that the protest submitted in the examination room will be treated as a protest to the specific question. The candidate's score will change if the protest is valid and if the change makes the difference between passing or failing.

If applicants are not in a pass/fail situation, or if they desire to make only a comment, then the appropriate title of the form is "comment." Sheets designated as comments can be submitted at any time by a candidate and will be evaluated by the Institute to determine item and comment validity; however, the candidate's score will not be affected.

The Comment and Protest forms available in the examination room help define when and how a candidate's views will relate to his or her examination score. In some past cases, candidates have commented on a question and have fully expected their score to change when the Institute validated their comments. The instructions on the form clearly explain that comments, even validated ones, do not change scores. Each comment is indeed highly valued, and the Institute considers each one when developing future examinations. If the comment is especially noteworthy, the examinee who wrote it may receive a letter from the Coast Guard Institute discussing the comment's merits. On the other hand, protest evaluation results will be passed to the local Regional Examination Center for action there.

The Coast Guard encourages all examinees to use these new forms, whether to protest or comment. This is your chance to directly improve the quality of merchant marine examinations. ✱

COMMENT ☐ PROTEST ☐

(Candidate to have Examiner check one box only)

CANDIDATE'S NAME:__________ SS#:__________

TEST NAME:__________ TEST NUMBER(4 DIGITS):__________

PORT:__________ QUESTION NUMBER(S):__________

PROTESTS: REMARKS THAT ARE INTENDED TO CHANGE YOUR SCORE AND MUST BE EVALUATED BY MERCHANT VESSEL PERSONNEL, COAST GUARD INSTITUTE, OKLAHOMA CITY. THIS REQUIRES THAT THE CANDIDATE'S SCORE WILL BE DELAYED UNTIL THE RESULTS OF THIS EVALUATION CAN BE FORWARDED TO THE REGIONAL EXAM CENTER.

COMMENTS: FEEDBACK THAT IS HIGHLY VALUED BY THE COAST GUARD INSTITUTE BUT IS NOT SUBMITTED FOR THE PURPOSE OF CHANGING THE CANDIDATE'S GRADE.

PROTESTS MUST BE SUBMITTED WITH THE EXAM BOOKLET CONCERNED AND PRIOR TO LEAVING THE EXAM ROOM. ADDITIONAL SHEETS AVAILABLE FROM EXAMINER.

SIGNATURE__________ DATE__________

This is a reduced illustration of the Comment and Protest sheet. The actual page size is 8½" x 11".

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