MODU Deck General – Safety

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Which shape shown in illustration D016RR below would be displayed by a mobile offshore drilling unit that is being towed more than 200 meters astern of a towing vessel?
B

Illustrations: D016RR_WM_052416

A mobile offshore drilling unit will show the day-shape shown in illustration D010RR below to indicate which of the following?
being towed

Illustrations: D010RR_WM_052416
See REF1694

The sprocket teeth on a wildcat are known as the _____.
whelps

Illustrations: WILDCAT
See REF818

What is the purpose of a chain stopper?
Secures the chain after is has been stopped

Illustrations: NAVYCHAINSTOPPER

If help has not arrived in 10-12 hours after you abandon a MODU in a survival craft, which of the following would be the best course of action?
shut down the engine(s) and set the sea anchor

Illustrations: SEAANCHOR
See REF783

In towing it is desirable for the tug and the MODU to ride wave crests simultaneously because _____.
shock loading on the tow line is reduced

Illustrations: TOW IN STEP
See REF305

The condition where a MODU on the end of a tow line is riding a wave crest at the same time as its tug rides a wave crest is known as riding in _____.
step

Illustrations: TOW IN STEP
See REF305

Yawing can be described as _____.
veering from side to side on the end of the tow line

Illustrations: PITCH_ROLL_YAW
See REF304

If you see someone fall overboard from a MODU, you should _____.
call for help and keep the individual in sight

Illustrations: WILLIAMSON_TURN, ANDERSON_TURN, SCHARNOW_TURN
See REF180

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Standards for fabrication and testing of chain on mobile offshore drilling units are provided by the _____.
American Petroleum Institute

When inspecting anchor chain, the American Petroleum Institute recommends checking the length over 5 links every _____.
100 feet

The maximum number of personnel allowed on a personnel transfer basket is _____.
4

What line receives the hardest service in the mooring system?
Anchor pendant

Connecting elements of a mooring system should be fabricated from _____.
forged steel

While off-loading from an offshore supply vessel with the crane, the wind increases in strength and changes direction significantly, you should _____.
move the offshore supply vessel to the downwind side

The storage device for nitrogen-pressurized hydraulic fluid, which is used in closing the blowout preventers is called the _____.
accumulator
See REF166

For most MODU engines, the fuel is _____.
diesel oil

The heavy three-, four-, or six-sided length of pipe suspended from the swivel through the rotary table and connected to the topmost joint of drill pipe to turn the drill stem as the rotary table turns is called the _____.
kelly

A device used to enlarge the size of an existing bore hole, having teeth arranged on its outside circumference to cut the formation as it rotates is a(n) _____.
hole opener

A heavy, thick-walled tube, usually steel, used between the drill pipe and the bit in the drill stem to weight the bit in order to improve its performance is called a _____.
drill collar

Hydrogen sulfide in explosive concentrations has been detected on the drill floor and the abandon rig signal has been sounded. Which of the following would be the safest way to evacuate?
launch only the windward survival capsules

See REF2006

The ship's drawings for use when the DEEP DRILLER is damaged are available in the _____.
ballast control room

Repair of structures on a MODU in the vicinity of liquid mud handling areas presents what possible hazard?
Flammable gasses may be present.

During severe storms when survival becomes a major concern, it may become necessary to relieve high anchor tensions on the windward side of the unit by _____.
paying out cable on the leeward side

The two courses of action if the underwater hull of a MODU is severely damaged are to plug the openings and to _____.
establish and maintain flooding boundaries
See REF164

The muster list shows each rig hand's muster station, his duties during abandonment, basic instructions, and _____.
all emergency signals
See REF2094

Fire extinguishers used on MODU's are numbered by size I through V, with I being _____.
the smallest

Offshore drilling units must have at least two ring buoys with water lights that, when released from the mounting rack, activate a _____.
smoke signal

The person assigned to command a lifeboat or inflatable liferaft on a MODU shall have a list of the persons assigned to the lifeboat or liferaft. The list shall include each person's _____.
duties

When piggybacking anchors, the distance between the primary anchor and the secondary anchor is determined by _____.
water depth

When dragging of an anchor occurs, you must either reposition it at greater range or _____.
use a piggyback (backing) anchor

Given the same water depth and line tension, the length of the ground cable of a 90 pound/foot mooring chain compared to the length of the ground cable of a 19 pound/ft wire rope mooring line will be _____.
longer

The DEEP DRILLER is moored in 600 feet of water. The tension on anchor line #8 is 190 kips. What is the vertical component of chain tension for that line?
55.3 long tons

While being towed at a 19.5 foot draft, the DEEP DRILLER experiences single amplitude pitching of 7.5 degrees with an 8 second period. You should _____.
continue towing operations and carefully monitor vessel motions

To meet the regulations governing manning requirements outside U.S. jurisdiction, a person holding a foreign credential can serve in any of the following positions EXCEPT which of the following?
offshore installation manager

The signal for fire alarm on a MODU must be indicated _____.
on the Muster List ("Station Bill")
See REF2465

Who is charged with appointing persons to be in command of the lifeboats and(or) liferafts on a mobile offshore drilling unit?
Designated person in charge
See REF2472

Which record must be retained on board after a report of casualty to a mobile offshore drilling unit?
Personnel list

The Master or person in charge of a MODU shall ensure the crane record book shows _____.
date and result of each rated load test

The notice of casualty to a MODU must include _____.
the location of the unit at the time of the casualty

Fires on a MODU must be reported to the Coast Guard if there is death, injury resulting in more than 72 hours incapacitation, or property damage in excess of _____.
25000
See REF097

If there is unsafe machinery on a mobile offshore drilling unit, who is responsible for reporting the existence of the unsafe condition to the Coast Guard?
The designated person in charge

The required portable radio shall be stored in the proper location and be _____.
readily accessible for transfer to a lifeboat

The discharge side of every fire pump must be equipped with a _____.
pressure gauge
See REF2067

What information must be entered on the MODU Muster List ("Station Bill")?
Duties and station of each person during emergencies
See REF2497

Diesel powered industrial trucks on a MODU that are provided with safeguards to the exhaust, fuel, and electrical systems are designated _____.
DS

Offshore drilling units that carry twelve or more persons on a voyage of more than three days must have a _____.
hospital space

On a MODU, an extinguisher with 15 lbs. of CO2 or 10 lbs. of dry chemical is a size _____.
II

What is the minimum number of hand held, rocket propelled, parachute, red flare, distress signals required on board offshore drilling units?
12

Which data is NOT painted on the bow of a lifeboat?
Weight of the boat

The International Oil Pollution Prevention (IOPP) Certificate required by MARPOL is issued to U.S. flag MODUs by the _____.
U.S. Coast Guard
See REF2463

Except as provided by approved special examinations, each offshore drilling unit must be dry-docked at least once during every _____.
24 month period

The order of importance in addressing damage control on a MODU is _____.
control fire, control flooding, repair structural damage

The angle of loll is a stability term which applies to a floating MODU with _____.
negative initial stability
See REF775

The DEEP DRILLER, loaded as shown in Sample Load Form #2 (Ballast to Survival), suffers major damage which results in flooding in tank 10S. Your best countermeasure is to _____.
pump from 9S

Failure of both port-side ballast pumps on the DEEP DRILLER prevents their use. To dewater from the port forward tanks, you should use the _____.
starboard ballast pump and crossover system

The COASTAL DRILLER is experiencing a single amplitude roll angle of 2 degrees and a roll period of 10 seconds. What is the maximum recommended water depth for elevating?
150 feet

For a MODU with trim, a decrease in GMT will cause the angle of inclination to _____.
increase

In the COASTAL DRILLER, LCG is obtained from the sum of the longitudinal moments by _____.
dividing by the sum of the weights

When underway at a draft of 10.5 feet in a severe storm, the COASTAL DRILLER has a maximum allowed KG of _____.
40 feet

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of 6 and 7 drill water tanks are discharged, what would be the new height of the longitudinal metacenter?
252.92 feet

In the COASTAL DRILLER, VCG is obtained from the sum of the vertical moments by _____.
dividing by the sum of the weights

Under extremely heavy weather on the DEEP DRILLER, when operating conditions are too severe to permit the drill string from being tripped out of the hole and laid down in the pipe racks, it may be _____.
hung off

During counterflooding to correct a severe list or trim aggravated by an off-center load, a MODU suddenly takes a list or trim to the opposite side. You should _____.
immediately stop counterflooding

The DEEP DRILLER, at a draft of 60 feet, has -3,600 ft-tons of transverse moments. How much ballast should be transferred between tanks 10P and 10S to level the unit in list?
25.1 long tons

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the shift in VCG if 100.76 long tons of ballast are added to Ballast Tank #8S to replace the discharge of all bulk materials?
0.63 foot down

While loaded as shown in the DEEP DRILLER Sample Load Form #4 (Drilling), all of the liquid mud is dumped. What is the new longitudinal metacentric height?
7.33 feet

The DEEP DRILLER is operating with KGL at the maximum allowable value (70 knots) at a 60 feet draft. What is the value of GML?
2.63 feet

The DEEP DRILLER is observed to be level at a draft of 60.0 feet. At the same time, the calculated load form shows the displacement to be 17,845 long tons, total longitudinal moment 51,466 foot-kips, and total transverse moments -10,000 foot-kips. What is the transverse location of the missing load?
-36.67 feet

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). What are the new TM (transverse moments) if the entire contents of Salt Water Ballast Tanks 1P and 1S are discharged?
3,446 ft-tons

The transverse free surface correction of a floating MODU displacing 24,000 long tons is 1.0 foot. When the MODU is deballasted by discharging 8,000 long tons of ballast, the FSMT decreases by 4,000 ft-long tons. What is the new FSCT?
1.25 feet

While loaded as shown in the DEEP DRILLER Sample Load Form #4 (Drilling), all of the liquid mud is dumped. What is the new longitudinal free surface correction?
1.67 feet

While in transit, the DEEP DRILLER suffers flooding in the port pump room. Both port bilge pumps are inadequate to dewater the pump room. You may supplement the bilge pumps by using the _____.
port drill water pump

On the COASTAL DRILLER, except when pumping from a tank, the bilge system valves should be _____.
closed

Deck beams on a MODU are generally spaced at equal intervals and run _____.
transversely

Where is thicker plating usually found in the construction of integral tanks on a MODU?
At the bottom of the tank

The DEEP DRILLER, while loaded as shown in the Sample Load #5, discharges 275.8 long tons. The resulting trim by the stern is 3 feet and list to port is 2 feet. What is the draft at the port aft draft mark?
45 feet 6 inches

A semisubmersible, 200 feet in length between draft marks with the LCF 10 feet aft of amidships, records the following drafts: Port Forward 64'-9"; Port Aft 68'-9"; Starboard Forward 59'-9"; and Starboard Aft 63'-9". What is the true mean draft?
64.45 feet

An elevated jack-up weighs 14,000 kips. The drill floor, weighing 700 kips, is skidded 10.0 feet to starboard. The change in TCG is _____.
0.50 foot starboard

An elevated jack-up weighs 14,000 kips. Its TCG is located 1.0 foot to port of the centerline. What would be the new TCG for the jack-up if the drill floor, weighing 700 kips, is skidded 10 feet to starboard?
0.50 foot port

Because there is a possibility of fuel oil being discharged overboard from a full fuel oil tank, it is decided to transfer 25 kips from tank 14 to tank 13. See COASTAL DRILLER Sample Load Form Number 1 (Rig Move). What would be the change in transverse moments with this transfer?
2010 ft-kips

In the DEEP DRILLER, VCG is obtained from the sum of the vertical moments by _____.
dividing by displacement

A mobile offshore drilling unit must display obstruction lights when it is on the waters over the Outer Continental Shelf and is _____.
fixed to the seabed

When must a MODU display navigation lights while underway?
Whenever visibility is restricted

The primary purpose for using stud link chain in a mooring system on a rig is the _____.
stud keeps the chain from kinking

The American Petroleum Institute recommends that a new anchor chain should be inspected after being in service for _____.
3 years

When lowering a personnel basket to pick up personnel from a boat, the personnel basket should be _____.
lowered over open water

What is the primary disadvantage of a permanent chain chaser system?
Chain chasers will not work with piggyback anchors.

Which problem is virtually impossible to detect during an in-service inspection of used mooring chain?
Fatigue

Prior to backloading portable tanks or drums onto an offshore supply vessel, check that each tank is _____.
capped and checked for leaks

In the piping systems of a MODU, what type of valve gives the least resistance to fluid flow when fully open?
Gate valve

The element that supports the weight of the drill stem, allows the drill stem to rotate, and provides a pressure-tight seal and passageway for the drilling mud to be pumped down the inside of the drill stem is called the _____.
swivel

What is the female section of a tool joint called?
Box

You are transferring fuel from a supply vessel to your MODU. If you close off one tank in the line of tanks being filled, what will happen to the rate of flow to other open tanks on the same line?
it will increase

The vertical height and density of the drilling fluid are used to determine the _____.
hydrostatic pressure of the drilling fluid

On a MODU, if there is a probability of encountering H2S during the drilling of a well, where should the air movers (bug blowers) be installed to dilute concentration of the gas?
shale shaker
See REF2006

If you must abandon a rig in VERY HEAVY SEAS, in a survival craft, when should you remove the safety pin and pull the hook release?
Immediately upon launching

Each person on the rig has a designated area to proceed to in the event of a fire. This assignment is shown clearly on which of the following documents?
Muster List ("Station Bill")
See REF198

The edge of a hurricane has overtaken your MODU in the Gulf of Mexico and the northwest wind of a few hours ago has shifted to the west. This is an indication that you are located in the _____.
navigable semicircle

In plugging submerged holes on a MODU, rags, wedges, and other materials should be used in conjunction with plugs to _____.
reduce the water leaking around the plugs

The Muster List ("Station Bill") shows each person's lifeboat station, duties during abandonment, basic instructions, and _____.
all emergency signals
See REF2094

The international shore connection required on a MODU is designed to _____.
allow hook up of fire fighting water from a dock or another vessel

The Master or person in charge on a MODU shall insure that line throwing equipment is not operated _____.
in an explosive atmosphere

Each buoyant work vest on a MODU must be _____.
Coast Guard approved

If the water depth is 500 feet, the length of the pendant wire from the anchor to the buoy is typically _____.
600 feet

An LWT anchor often has difficulty tripping in _____.
soft soil

Given the same water depth and line tension, the catenary length of a 90 pound/foot mooring chain in comparison to the catenary length of a 19 pound/foot wire rope mooring line will be _____.
shorter

The type of shackle used in making up tow lines to a MODU should be _____.
safety

While anchored in 700 feet of water, 3,150 feet of chain is deployed for line #4. Tension on that line is 200 kips. According to the DEEP DRILLER Operating Manual, how much of that chain lies along the bottom?
1,398 feet

While being towed at a 19.5 foot draft, the DEEP DRILLER experiences single amplitude rolls of 10° with a period of 8 seconds. You should _____.
ballast the rig to a 45 foot draft and check the vessel motions

The number of certificated able seamen and lifeboatmen required on a MODU is determined by the _____.
Coast Guard

How long shall the Master or person in charge of a MODU maintaining an unofficial logbook retain this logbook on board?
Until the next inspection for certification
See REF1594

A qualified person must be assigned as the second in command of a lifeboat on a MODU if the lifeboat has a capacity of more than _____.
40 persons
See REF2473

The person-in-charge of a mobile offshore drilling unit must be designated by the _____.
owner or his agent

The Master or person in charge of a MODU is required to log _____.
information on emergency training drills

Records which must be retained on board after report of casualty to a MODU include the _____.
tour reports

On a MODU, where MUST the fire control plan be posted?
Control Center

On a mobile offshore drilling unit it is required to _____.
record the length of each abandonment drill in the rig's log book

Each life jacket light that has a non-replaceable power source must be replaced _____.
on or before the expiration date of the power source

On a MODU, a fire pump may be used for other purposes if _____.
a separate fire pump is available for use on the fire main
See REF2483

On a MODU, hand portable extinguishers are size(s) _____.
I and II
See REF2498

Power operated cranes used on a MODU must not be powered by _____.
gasoline engines

Each drilling unit equipped with helicopter fuel storage tanks must have the tanks installed as far as practicable from the _____.
landing area and sources of vapor ignition
See REF2467

On offshore drilling units, the fire main system must have enough fire hydrants so that each accessible space may be sprayed with at least _____.
two spray patterns

On offshore drilling units each ring life buoy must be marked, in a contrasting color, with the unit's _____.
name and port of registry

When may a work vest be substituted for a required life preserver?
At no time

A record of the types and strengths of steels used on a MODU must be included in the _____.
construction portfolio
See REF2504

A construction portfolio prepared for each new offshore drilling unit must be approved by the _____.
U.S. Coast Guard

The stability which exists after the unintentional flooding of a compartment on a MODU is called _____.
damage stability

The maximum angle at which the intact stability curves are valid for MODU's is the angle for _____.
downflooding

The DEEP DRILLER, loaded as shown in Sample Load Form #2 (Ballast to Survival), suffers major damage which results in flooding in tank 1S. Your best countermeasure is to _____.
pump from 2S

The DEEP DRILLER is loaded as shown in Sample Load Form #4 (Drilling). While the unit is deballasting, starboard valve 19 fails in the closed position. You may deballast from tank 9S by pumping from tank 8S by opening valves 20 and _____.
18

The COASTAL DRILLER is experiencing a single amplitude roll angle of 1 degree and a roll period of 7 seconds. What is the maximum recommended water depth for elevating?
150 feet

For a MODU with list, a decrease in GM will cause the angle of inclination to _____.
increase

Weights added or discharged at the center of flotation on the COASTAL DRILLER while floating will change the _____.
true mean draft

During an ocean tow when the winds are less than 70 knots, the maximum allowable KG for the COASTAL DRILLER is _____.
65.00 feet

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of 6 and 7 drill water tanks are discharged, what would be the new height of the transverse metacenter?
136.38 feet

What are the maximum vertical moments, including free surface moments, permitted on the DEEP DRILLER at a draft of 60 feet if the winds are less than 70 knots?
1,059,885 foot-tons

In anticipation of heavy weather, it is decided to deballast the DEEP DRILLER to survival draft. The marine riser should be disconnected, pulled, and laid down. After doing so, the riser tension will be _____.
zero

While drilling loaded as shown in Sample Load Form Number 4 (Drilling), the DEEP DRILLER suffers a sudden unexpected starboard and aft inclination. The wind and waves are light. What might have caused the inclination?
The drilling crew has dumped the mud.

The DEEP DRILLER, at a draft of 60 feet, has 3,765 ft-tons of transverse moments. How much ballast should be transferred between tanks 1P and 1S to level the unit in list?
25.1 long tons

The DEEP DRILLER, at a draft of 19 feet, has a KGL of 59.91 feet and an LCG of 1.57 feet. What is the trim angle?
0.3° by the stern

What is the new location of the transverse center of gravity if 200 short tons are discharged from 10 feet to port of the centerline on a MODU with TCG 0.7 foot starboard of the centerline, and the displacement is 9,000 short tons?
0.94 foot starboard of centerline

What is the minimum required GML for the DEEP DRILLER in winds less than 70 knots while at a draft of 60 feet?
2.63 feet

The DEEP DRILLER is observed to be level at a draft of 60.0 feet. At the same time, the calculated load form shows the displacement to be 17,845 long tons, total longitudinal moments 51,466 foot-tons, and total transverse moments -10,000 foot-tons. What is the longitudinal location of the missing load?
-40.57 feet

In the DEEP DRILLER, VCG is obtained from the sum of the vertical moments by _____.
dividing by displacement

The longitudinal free surface correction of a floating MODU displacing 12,000 kips is 1.20 feet. What would be the new FSCL if 2,400 kips of solid variable loads are added?
1.00 foot

What is the change in longitudinal moments for the DEEP DRILLER if 103.48 long-tons of ballast is transferred from a full ballast tank 1P to an empty ballast tank 10S?
21,913 foot-tons decrease

Aboard the DEEP DRILLER, the drill water pump may be used to provide drill water to the deck and _____.
supplement the bilge pumps

Reinforcing frames attached to a bulkhead on a MODU are called _____.
stiffeners
See REF456

In MODU construction, beam brackets are triangular plates that join the deck beam to a _____.
frame

Structural stress on a MODU can be reduced by _____.
even and symmetrical variable loading

The DEEP DRILLER, while loaded as shown in the Sample Load Form #5, discharges 137.88 long tons. The resulting trim by the stern is 3 feet and list to port is 2 feet. What is the draft at the starboard forward draft mark?
41 feet 6 inches

With no environmental forces on the DEEP DRILLER, the average of the forward drafts is 61.0 feet, and the average of the aft drafts is 59.0 feet. KGL is 51.13 feet. What is the value of LCG?
2.35 feet

A jack-up 210 feet in length is level during transit. The LCF is 140 feet aft of the bow. How much weight should be applied at the bow to level the jack-up if 150 kips are loaded at the transom?
75 kips

An elevated jack-up weighs 17,000 kips. Its center of gravity is located 110 feet aft of frame zero (AF0). What would be the new LCG if the cantilever (weight 900 kips) and drill floor (weight 800 kips) were skidded 70 feet aft?
117.0 feet AF0

Because there is a possibility of fuel oil being discharged overboard from a full fuel oil tank, it is decided to transfer 25 kips from tank 14 to tank 20. See COASTAL DRILLER Sample Load Form Number 1 (Rig Move). What would be the change in longitudinal moments with this transfer?
565 ft-kips

On a semisubmersible drilling unit, decreasing riser tension reduces _____.
KG

When a mobile offshore drilling unit on the waters of the U.S. Outer Continental Shelf has more than one obstruction light, the lights must be operated to flash _____.
at the same time

You are on a semisubmersible being towed and are concerned that a fishing vessel is not taking sufficient action to avoid you. To signal your concern, you should _____.
sound five or more short blasts on the whistle

When anchoring in an area with a soft bottom, the fluke angle of an anchor should be set at _____.
30°

A measurement device for inspecting anchor chain is the _____.
go-no-go gauge

When using a crane for transferring personnel in a basket, the load hook must be equipped with a _____.
safety latch

What is the advantage of a single streamlined fluke anchor over a double fluked anchor of similar weight?
It has increased holding power.

Thirty-five percent of the breaking strength of an anchor cable is generally accepted as the _____.
safe operating load

When lifting loads from a boat in heavy weather, the load should be taken when the boat _____.
reaches the crest

On a MODU, the possibility of a blowout makes which type of diesel engine shutdown desirable?
Air inlet shut-off valve

The element used to keep weight on the bit at a constant value in spite of up-and-down movement of a MODU during floating drilling operations is the heave or drill string _____.
compensator

The connected joints of pipe, usually made of three joints of pipe approximately 90 feet long, racked in the derrick when making a trip are called a _____.
stand

What is a pinion in a jacking system?
Gearwheel

A well kick while drilling from a MODU will cause _____.
increased fluid level in the mud pits

Requirements for H2S preparation and equipment usage aboard MODU's in U.S. offshore waters are administered by the which of the following organizations?
Minerals Management Service
See REF2006

Who is responsible for lowering the survival craft?
Helmsman

Which of the following would be the most probable location to encounter explosive and flammable gasses on a MODU?
on the drill floor and liquid mud handling areas

A hurricane has recurved to the northeast and its forward speed is 20 knots. Your MODU is located 600 miles northeast of the hurricane's center. How long will it take for the hurricane center to reach your position if it holds its present course and speed?
30 hours

The objective of shoring the damaged area of a MODU is to _____.
support and hold the area in the damaged position

At the required fire drill, all persons must report to their stations and demonstrate their ability to perform the duties assigned to them _____.
in the Muster List ("Station Bill")
See REF2455

Automatic mechanical ventilation shutdown is required for CO2 systems protecting the _____.
machinery spaces

Each EPIRB required on a MODU shall be stowed in a manner which will permit _____.
it to float free if the unit sinks

According to the MODU regulations, the capacity of a liferaft is required to be marked _____.
on a sign next to the liferaft

Installing tandem anchors on the same mooring line is referred to as _____.
piggybacking

An effective braking system for windlasses on rigs in deep water is a(n) _____.
electrical regenerative braking system

Consideration should be given in planning for the mooring orientation in a new location so that in adverse weather a crane is available to off-load the supply vessel on what side of the unit?
Leeward side

When a semisubmersible rig under tow veers from side to side on its tow line, the best way of controlling the action is to _____.
trim by the stern

What is the length of the catenary when the DEEP DRILLER is anchored in 600 feet of water and the anchor line tension is 170 kips?
1493 feet
See REF305

When floating, the appropriate leg horizontal must be aligned in the center of the _____.
center of each upper guide structure

The number of certificated able seamen and lifeboatmen required on a MODU is stated in the _____.
Certificate of Inspection

How long must the records of tests and inspections of fire fighting equipment on board a MODU be retained on board?
Until the next inspection for certification
See REF1594

If not attached to the nozzle, each low-velocity spray applicator on a MODU must be stowed _____.
next to the fire hydrant to which the fire hose is attached
See REF2474

On offshore drilling units, a fire drill must be conducted at least once a _____.
week

The Master or person in charge of a MODU shall ensure the crane record book shows the _____.
date and description of each failure

Regulations require certain records to be retained on board a MODU for how long after the report of a casualty?
3 months

On a MODU, where Must the fire control plan be posted?
Pilot house

How often must CO2 systems be inspected to confirm cylinders are within 10% of the stamped full weight of the charge?
annually

When must the Master of a vessel log the position of load line marks in relation to the surface of the water in the Official Logbook?
Prior to getting underway

Each fire hose coupling on a MODU must have threads that meet the specifications of the _____.
National Standard Fire hose Coupling
See REF2484

The light on a life jacket must be replaced _____.
when it is no longer serviceable
See REF307

The design specifications for cranes and crane foundations on MODU's are set and published by the _____.
American Petroleum Institute

Each hose in the fuel transfer system for helicopter refueling must meet the standards of the _____.
Federal Aviation Administration

See REF2503

On offshore drilling units, each fire station is required to be fitted with a hose which has a nominal length of _____.
50 feet

On Offshore Drilling units, in addition to the life jackets stowed at each berth location, life jackets must be stowed at each work station and _____.
each industrial work site

Each buoyant work vest must be _____.
U.S. Coast Guard approved

According to the regulations for mobile offshore drilling units, "industrial personnel" are considered to be all persons carried on the MODU for the sole purpose of carrying out the industrial business of the unit, except for _____.
the crew required by the Certificate of Inspection
See REF2504

Temporary Certificates of Inspection for offshore drilling units are effective until the _____.
permanent Certificate of Inspection is issued
See REF2504

Damage stability of a MODU is the stability _____.
after flooding

A semisubmersible with a negative GM flops to an angle of _____.
loll

While the DEEP DRILLER is loaded as shown in Sample Form #4 (Drilling), casing is accidentally dropped over the starboard side. Because the sounding level and starboard inclination are rapidly increasing, you decide that tank 1S is damaged. Your best countermeasure is to _____.
deballast from tank 2S

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers damage to the port center column below the waterline. Pumping from tanks 2P and 9P is not sufficient to prevent increasing port list. You should consider counterflooding in tank _____.
C2BS

Scouring usually occurs with soils such as _____.
sand

The COASTAL DRILLER has a trim of 2.13 feet by the stern. The draft at the forward draft marks is observed to be 8.0 feet. The draft at the center of flotation is _____.
9.42 feet

Aboard a MODU, multiplying a load's weight by the distance of the load's center of gravity from the centerline results in the load's _____.
transverse moment

While in ocean transit at a draft of 10 feet, the Coastal Driller has a maximum allowed KG of _____.
65 feet

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of 6 and 7 drill water tanks are discharged, what is the new height of the center of gravity corrected for longitudinal free surface effects?
50.79 feet

Keeping the draft of a MODU at or below the load line mark will insure that the unit has adequate _____.
reserve buoyancy

The KG of the DEEP DRILLER increases from 57 feet to 59 feet while drilling at a 60 foot draft during an ice storm. What action should be taken?
Reduce the deck load until you reach the allowable KG for draft

Among the possible causes of unexpected rapidly increasing inclination of the DEEP DRILLER while on location is _____.
flooding due to column damage

The DEEP DRILLER, at a draft of 60 feet, has 50,000 ft-tons of longitudinal moments. How much ballast should be transferred between tanks 1P and 10P to level the unit longitudinally?
236.1 long tons

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the improvement in KGL?
1.15 feet

The height of the transverse metacenter for a MODU is 62.44 feet. The height of the center of gravity is 56.10 feet, and the transverse free surface correction is 1.21 feet. What is the value of the metacentric height corrected for transverse free surface effects?
5.13 feet

What are the maximum vertical moments, including free surface moments, permitted on the DEEP DRILLER at survival draft if the winds are greater than 70 knots?
996,522 foot-tons

The DEEP DRILLER is observed to be level at a draft of 60.0 feet. At the same time, the calculated load form shows the displacement to be 17,845 long tons, total longitudinal moments 51,466 foot-tons, and total transverse moments -10,000 foot-tons. What is the weight of the missing load?
272.7 long tons

The DEEP DRILLER is loaded as shown in Sample Load Form #4 (Drilling). What would be the new sum of FSML for Fresh Water if the entire contents of Drill Water Tank #5P are transferred to Tank #5S?
317 ft-tons

A semisubmersible, 200 feet in length between draft marks with the LCF 10 feet aft of amidships, records the following drafts: Port Forward 74'-09"; Port Aft 78'-09"; Starboard Forward 69'-09"; and Starboard Aft 73'-09". What is the trim?
-4.0 feet

What is the change in transverse moments for the DEEP DRILLER if 103.48 long-tons of ballast is transferred from a full ballast tank 1P to an empty ballast tank 10S?
15,181 foot-tons increase

What pump may be used to supplement the bilge pump on the DEEP DRILLER?
Drill water

Lighter longitudinal stiffening frames on the MODU side plating are called _____.
stringers
See REF2512

The deck plating on a MODU is supported primarily by deck longitudinals and deck _____.
beams

Structural stress levels in a MODU are the sum of loading stresses and stresses due to _____.
environmental loads

The DEEP DRILLER, while loaded as shown in the Sample Load Form #5 (Survival) loads an additional 137.88 long tons. The resulting trim by the stern is 2 feet and the list to port is 3 feet. What is the draft at the port forward draft mark?
46 feet 6 inches

The DEEP DRILLER, while loaded as shown in the Sample Load Form #5, loads 275.8 long tons. The resulting trim by the stern is 3 feet and list to port is 2 feet. What is the draft at the starboard aft draft mark?
47 feet 6 inches

A jack-up, 180 feet in length, has the center of flotation at 110 feet aft of frame zero. The draft at the bow is 11.0 feet and the draft at the stern is 13.0 feet. What is the true mean draft?
12.22 feet

A floating jack-up with displacement of 15,000 kips has its LCG 108 feet aft of frame zero (AFO). If 400 kips are loaded at 120 feet AFO and 800 kips are loaded 150 feet AF0, what is the new LCG?
110.4 feet

While loaded as shown in the COASTAL DRILLER sample load form 3 (drilling), all of the casing is discharged. What is the change in LCG?
0.02 foot forward

In the DEEP DRILLER, the longitudinal free surface correction (FSCL) is obtained from the total of the longitudinal free surface moments (FSML) by _____.
dividing by displacement

What color are obstruction lights on mobile offshore drilling units that are located on the waters of the U.S. Outer Continental Shelf seaward of the line of demarcation?
White

While a MODU is underway, a look-out must be maintained _____.
at all times

When anchoring in an area with a soft bottom, the fluke angle of an anchor should be set at _____.
50°

The maximum angular tolerance for a bent link of an anchor chain is _____.
3 degrees

An obstruction on a helodeck is any object that might present a hazard to the _____.
rotor blades and landing gear

Increasing the area of the anchor flukes will _____.
increase holding power

What percentage of the breaking strength is the generally accepted safe operating load of an anchor cable?
35 (%)

When loading or discharging dry mud or cement, crew members should use goggles and _____.
facial respirator mask

Why is electrical power preferred over mechanical power for driving heavy machinery on drilling rigs?
More flexible

A heavy steel device that is set on the sea floor and used as a drilling template in offshore drilling operations is called a _____.
temporary guide base

The end of the joint with the exterior threads is called the _____.
pin

What is the chief advantage of an SCR or AC-DC system over a straight DC system for powering drilling rig machinery?
Required power can be drawn from a common AC bus.

The most accurate method for measuring drilling mud required to fill the hole when drill stem is removed is by use of a _____.
trip tank

Which type of respiratory protection is preferable for repair/investigation personnel on a MODU in a hydrogen sulfide (H2S) environment?
Pressure-Demand Self-Contained Breathing Apparatus (SCBA)
See REF2006

In an emergency, if you must jump from a MODU, what is the best procedure to follow?
holding down the life preserver against the chest with one arm crossing the other, covering the mouth and nose with a hand, and feet together

What is the percentage of oxygen in a typical sample of uncontaminated air?
21 percent
See REF2446

What danger is presented if a waterspout passes over a MODU?
Personnel may be injured by loose deck gear blown by the wind.

When shoring a damaged bulkhead on a MODU, effort should be taken to spread the pressure over the _____.
maximum possible area

Each fireman's outfit and its spare equipment on a MODU must be stowed _____.
in a separate and accessible location
See REF2456

What must be provided on a MODU helicopter deck that is equipped with fueling facilities?
Foam fire protection system

The immersion suit requirements for MODU's apply to units operating in the Atlantic Ocean above _____.
32°North and below 32°South
See REF283

On offshore drilling units, each EPIRB or SART must be tested once every _____.
month

The process of waiting a period of time before pretensioning an anchor is known as _____.
soaking

The indication of a slipping anchor is a(n) _____.
decrease in mooring line tension and amperage

What pressure must a spring buoy, moored at a 500 foot depth, withstand?
225 psig

With the DEEP DRILLER anchored in 500 feet of water and with the tension on the mooring chain of 170 kips, the length of the catenary is _____.
1,378 feet

Under the regulations implementing MARPOL, a mobile offshore drilling unit is required to have an International Oil Pollution Prevention (IOPP) Certificate when the unit _____.
engages in a voyage to a port of another country which is a party of MARPOL
See REF2462

Which of the following will the certificate of inspection of a MODU specify?
number of credentialed personnel required on board

The Master or person in charge of a MODU is required to log _____.
the date and hour of each fire drill
See REF1594

Fire axes required on MODU's must be stored in the enclosure for fire hoses with the location marked "_____".
Fire Station No. ____
See REF2475

The person in charge of a MODU shall insure that the fuel tank of each motor propelled lifeboat is emptied, and the fuel is changed at least once every _____.
12 months

What must the Master or person in charge of a MODU enter in the logbook after conducting an abandonment drill?
Which survival craft was used

If a drill required by regulations is not completed on a mobile offshore drilling unit, the Master or person in charge must _____.
log the reason for not completing the drill

A report of casualty to a mobile offshore drilling unit must include _____.
the name of the owner or agent of the unit

On offshore drilling units, each hand-held portable fire extinguisher, semi-portable fire extinguisher, and fixed fire extinguisher must be tested and inspected at least once every _____.
12 months

Prior to getting underway in fresh or brackish water, the Master must _____.
log the density of the water

Before releasing the CO2 into the space, the alarm for a fixed CO2 system must sound for at least _____.
20 seconds
See REF2485

The instructions for the launching of lifeboats and liferafts must be approved by the _____.
Coast Guard
See REF2499

On offshore drilling units each fire station is identified by letters and numbers at least _____.
2 inches high

All portable fire extinguishers must be capable of being _____.
carried by hand to a fire

The connection facilities for the international shore connection required on board offshore drilling units in international service must be located to provide access _____.
to each side of the drilling unit

The locker or space containing the self-contained breathing apparatus must be _____.
marked "SELF-CONTAINED BREATHING APPARATUS"

Each hose in the fuel transfer system for helicopter refueling must have a _____.
static grounding device
See REF2503

A weather tight door on a MODU must not allow water to penetrate into the unit in _____.
any sea condition
See REF2505

When weight-testing a davit-launched liferaft on a mobile offshore drilling unit, the test weight must be equivalent to the weight of the raft, its required equipment, and _____.
100% of the allowed capacity of the persons for the raft

Fighting a rig fire in a watertight compartment with hoses could reduce the stability of the rig by _____.
causing a list due to the water in the compartment

The analysis of damaged stability for the DEEP DRILLER, disregards the beneficial effects of countermeasures and _____.
mooring system

While the DEEP DRILLER is loaded as shown in Sample Form #4 (Drilling), casing is accidentally dropped over the port side. Because the tank sounding level and port forward inclination are rapidly increasing, you decide that tank 1P is damaged. Your best countermeasure is to _____.
deballast from tank 2P

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers damage to the port forward column below the waterline. Pumping from tank 2P and 3P is not sufficient to prevent increasing port list and bow down trim. You should consider counterflooding in tank _____.
10S

Leg penetration to depths which require pullout forces greater than that which can be supplied by the buoyancy of the hull may exist in _____.
soft to firm clays

The COASTAL DRILLER has a trim of 2.13 feet by the stern. If the draft at the forward draft marks is 8.0 feet, the draft at the after draft marks is _____.
10.13 feet

The rotary of the COASTAL DRILLER is located 34 feet aft of the transom and 2 feet to port of the centerline. With the changes to lightweight shown in the Operating Manual, the maximum allowable hook load is _____.
854 kips

The COASTAL DRILLER, in ocean transit at a draft of 10 feet 6 inches with winds greater than 70 knots, has a KGT of 38.7 feet and a KGL of 38.2 feet. The margin on the maximum allowable KG is _____.
1.3 feet

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of 6 and 7 drill water tanks are discharged, what is the new height of the center of gravity corrected for transverse free surface effects?
50.82 feet

A semisubmersible displacing 700,000 cubic feet while floating in sea water (64 pounds per cubic foot) weighs _____.
20,000 long tons

The DEEP DRILLER is drilling on location at a 60 foot draft. Waves are approaching within 2 feet of the underside of the spider deck. You should _____.
suspend drilling operations and deballast to a 45 foot draft

The DEEP DRILLER is loaded as shown in the Sample Load Form #5 (Survival) when an unexpected slowly increasing port list and bow down trim occurs. A leak in C1P is found. By deballasting from ballast tanks 2P and 3P, the inclination slowly decreases. The increase in the transverse free surface correction is _____.
0.18 foot

The DEEP DRILLER is level at a draft of 60 feet in calm water. What is the value of the righting moment?
0 foot-tons

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the centerline. What is the improvement in KGT?
1.16 feet

A MODU displacing 28,000 long tons has a KG of 60 feet. A weight of 500 long tons is discharged from a VCG 150 feet. The change in KG is _____.
1.64 feet

What are the maximum vertical moments, including free surface moments permitted on the DEEP DRILLER at a draft of 60 feet if the winds are greater than 70 knots?
942,120 foot-tons

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the metacentric height corrected for transverse free surface effects if 100.76 long tons of ballast are added to Ballast Tank #8S to replace the discharge of all bulk materials?
12.13 feet

A semisubmersible 300 feet long and an LCF of 0 (amidships) is in transit with hulls awash and an MT1" of 87.67 foot-tons. Work on the BOP (weight 263 long tons) requires that it be moved aft 12 feet. What is the resulting trim change?
3.0 feet

A semisubmersible, 200 feet in length between draft marks with the LCF 10 feet aft of amidships, records the following drafts: Port Forward 64'-09"; Port Aft 68'-09"; Starboard Forward 59'-09"; and Starboard Aft 63'-09". What is the trim?
4 feet by the stern

What is the decrease in longitudinal moments for the Deep Driller if 2.0 feet of ballast is transferred from 1S to 10P?
14,609 ft-tons

On the DEEP DRILLER, to use the drill water pump to supplement the bilge pumps, it is necessary to open valves 28 and _____.
26

In MODU construction, bulkheads in the quarters are generally _____.
non-structural

Stanchions prevent the entire deck load on a MODU from being carried by the _____.
frames and beam brackets

The mean draft of a MODU is the draft _____.
midway between the forward and aft draft marks

The DEEP DRILLER, at a mean draft of 45 feet, has a three-foot trim by the stern and a two-foot list to port. What is the draft at the starboard forward draft mark?
42.5 feet

For a MODU with trim, an increase in GMT will cause the inclination to _____.
decrease

A jack-up 180 feet in length with the LCF at 120 feet AF0 has a true mean draft (draft at LCF) of 10 feet. If the trim is 3 feet by the stern, what is the draft at the stern?
11.0 feet

A floating jack-up with displacement of 15,000 kips has its LCG 106 feet aft of frame zero (AF0). If 200 short tons are loaded at 20 feet AF0 and 400 short tons are loaded 149 feet AF0, what is the new LCG?
106.0 feet

Because there is a possibility of fuel oil being discharged overboard from a full fuel oil tank, it is decided to transfer 25 kips from tank 14 to tank 13. See COASTAL DRILLER Sample Load Form Number 1 (Rig Move). What would be the change in longitudinal free surface moments?
674 ft-kips increase

On a semisubmersible drilling unit, decreasing riser tension increases _____.
GM

The requirements for obstruction lights on mobile offshore drilling units apply on all waters _____.
over the Outer Continental Shelf and on waters under the jurisdiction of the United States

Your jack-up is being towed along a shipping channel. You are concerned that a vessel that is overtaking you is coming too close to pass safely. You must _____.
sound five or more short blasts on the whistle

The LWT anchor has two angular positions for the flukes. These are _____.
30° and 50°
See REF799

The length of chain between the anchor and the end of the pendant line is called the _____.
crown chain

The fluke angle of an anchor system is the angle between the _____.
flukes and the shank

The only wire rope termination which may be made in the field is _____.
spelter poured and resin sockets

When loading or discharging dry mud or cement, crew members should use facial respirator masks and _____.
goggles

For well control, the American Petroleum Institute recommends that hydraulic units have sufficient horsepower to close the annular preventer in _____.
30 seconds

In very deep water drilling, it becomes necessary to reduce tension caused by the weight of the riser joints. This is accomplished by using a(n) _____.
buoyant riser

A heavy, thick-walled tube, usually steel, used between the drill pipe and the bit in the drill stem to weight the bit in order to improve its performance is called a _____.
drill collar

The operation of hoisting the drill stem out of and returning it to the wellbore is called a _____.
trip

A drilling bit which is doughnut shaped to permit recovery of the center portion of the hole drilled is called a _____.
core bit

The probability of sulfide stress cracking in the presence of hydrogen sulfide is greatest for which of the following materials?
high strength steel
See REF2006

In evacuation from a MODU, an individual without the option of a survival craft or liferaft should enter the water on the leeward side. This procedure is valid except when which of the following circumstances applies?
there is burning oil on the water

When H2S is burned (flared) on a MODU, what can you expect to occur?
Only 80% of the H2S will be converted to SO2 or free sulfur.
See REF2006

What kind of conditions would you observe as the eye of a storm passes over your MODU's position?
Huge waves approaching from all directions, clearing skies, light winds, and an extremely low barometer

The procedure of strengthening damaged structures on a MODU by using wood or steel is called _____.
shoring

The record of tests and inspection of fire fighting equipment on board a MODU must include _____.
the name of the person conducting the test
See REF2457

What equipment is included in the fireman's outfit?
Self contained breathing apparatus

Where would you find the FCC authorization for transmitting on your rig's EPIRB?
On the Ship Station License

During the required periodic abandon ship drill aboard a MODU, each person not assigned duties in the muster list is _____.
instructed in the use of life jackets

Why should you soak an anchor?
It can prevent the anchor from slipping during pretensioning.

When a MODU is afloat in equilibrium, the horizontal component of mooring line tensions should equal _____.
environmental forces

What pressure must a spring buoy, moored at a 500 foot depth, withstand?
225 psig

When a semisubmersible rig under tow experiences pounding on the forward transverse brace, the surest way to alleviate the condition would be to _____.
ballast down

While anchored in 600 feet water depth, 3,150 feet of chain is deployed for line #8. Tension on that line is 220 kips. According to the DEEP DRILLER Operating manual, how much of that chain lies along the bottom?
1,422 feet

The International Oil Pollution Prevention (IOPP) Certificate required by MARPOL is issued to U.S. flag MODUs by the _____.
U.S. Coast Guard
See REF2463

A person who holds a foreign credential can serve as the ballast control operator to meet manning requirements on a MODU, on waters outside U.S. jurisdiction, until what point in time?
MODU returns to a U.S. port

After conducting an abandonment drill, the Master or person in charge of a MODU shall log _____.
the names of crew members who participated in the drill
See REF1594

In the event of a casualty to a MODU, who is responsible to make records available to the Coast Guard official authorized to investigate the casualty?
The owner
See REF2476

The person in charge shall insure that each lifeboat on a MODU is lowered to the water, launched, and operated at least once every _____.
3 months

What must the Master or person in charge of a MODU enter in the logbook after conducting a boat drill?
Which survival craft was used in the drill

With regard to accommodation spaces on board mobile offshore drilling units, what must the Master or person in charge log?
The date of each inspection of each space

On offshore drilling units, any reports of a casualty that are made are required to be retained on board for a period of at least _____.
3 months

On offshore drilling units, the minimum number of persons required to be trained in the use of fireman's outfits is _____.
2

It is the responsibility of the Master to ensure that _____.
temporary personnel and visitors are advised of emergency stations

Operation of the valve control release on a fixed CO2 system must immediately _____.
secure all mechanical ventilation in the protected space
See REF215

On a MODU, size I and II extinguishers are considered _____.
hand portable
See REF2500

On a self-elevating drilling unit, draft marks must be located _____.
near each corner of the hull

On a MODU with lifeboats stowed in two different locations, if all the lifeboats are lost in one location then the remaining lifeboats must accommodate what percentage of the persons permitted on board?
100 (%)

On offshore drilling units fitted with fixed CO2 systems, the system must withstand a bursting pressure of at least _____.
6,000 pounds per square inch

On offshore drilling units, all lifeboats are required to be marked with the _____.
name and port of the unit

Load line regulations are designed to insure that a MODU has adequate structural strength and sufficient _____.
stability
See REF490

Certificates of Inspection for offshore drilling units are issued for a period of _____.
24 months
See REF2506

When weight-testing a davit launched liferaft on a mobile offshore drilling unit, the deadweight equivalent for each person in the allowed capacity of the raft is _____.
165 pounds

The COASTAL DRILLER has sufficient reserve stability to overcome damage due to flooding of any one watertight compartment in winds to _____.
50 knots

When a floating MODU inclines to an angle slightly less than the angle of loll, she will _____.
return to the angle of loll

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers severe damage to the starboard forward column below the waterline. You should pump from tank _____.
1S

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers damage to the starboard aft column below the waterline. Pumping from tanks 8S and 9S is not sufficient to prevent increasing starboard list and stern down trim. You should consider counterflooding in tank _____.
1P

Scouring is the result of _____.
interruption of the normal current flow by the footing

The maximum load line draft for the COASTAL DRILLER is _____.
10 feet 10.5 inches

The rotary of the COASTAL DRILLER is located 38 feet aft of transom and 6 feet to starboard of the centerline. With the changes to lightweight shown in the Operating Manual, the maximum allowable hook load is _____.
424 kips

The COASTAL DRILLER, in field transit at a draft of 10 feet 0 inches with winds less than 70 knots, has a KGT of 39.0 feet and a KGL of 38.6 feet. The margin on the maximum allowable KG is _____.
26.4 feet

The COASTAL DRILLER is in transit loaded as shown in the Sample Load Form Number 1 (Rig Move). What would be the new KGT if, during the move, 170.9 kips of fuel oil is consumed from Diesel Oil Tanks 13 and 14?
50.70 feet

The maximum draft to which a drilling unit may be safely loaded is called _____.
load line draft

The emergency power system for the DEEP DRILLER should be placed in operation when the weather forecast predicts winds greater than 90 knots and when _____.
evacuating the unit

The DEEP DRILLER is loaded as shown in the Sample Load Form #5 (Survival), when an unexpected, slowly increasing port list and bow down trim occurs. A leak in C1P is found. By deballasting from ballast tanks 2P and 3P, the inclination slowly decreases. The increase in the longitudinal free surface correction is _____.
0.49 foot

The DEEP DRILLER, at a draft of 60 feet and a total vertical moment of 1,012,598 foot-tons, pumps 2,068.7 long tons of ballast overboard. The VCG of the discharged ballast is 15.0 feet. What is the new height of the center of gravity?
61.16 feet

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the new GMT?
9.24 feet

A semisubmersible, displacing 20,500 long tons, has vertical moments of 1,060,000 foot-long tons. What is the change in KG if 500 long tons are discharged from a VCG of 120 feet?
1.71 feet downward

What are the maximum vertical moments, including free surface moments, permitted on the DEEP DRILLER at a draft of 60 feet if the winds are less than 70 knots?
1,059,885 foot-tons

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the metacentric height corrected for longitudinal free surface effects if 100.76 long tons of ballast are added to Ballast Tank #8S to replace the discharge of all bulk materials?
7.72 feet

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the resulting trim angle?
5.18 degrees to the stern

The righting moment created by a MODU that displaces 15,000 tons with a righting arm (GZ) of 0.02 foot is _____.
300 foot-tons

The DEEP DRILLER has a KGT of 52.90 feet while at a draft of 58.0 feet. List is 2.0 feet to port. What is the value of TCG?
-0.16 foot

Aboard the DEEP DRILLER, to use the drill water pump to supplement the bilge pumps, it is necessary to open valves 26 and _____.
28

A continuous watertight bulkhead on a MODU is normally also a(n) _____.
structural bulkhead

The deck loads on a MODU are distributed through the deck beams to the _____.
frames

The true mean draft of a MODU is the draft _____.
at the center of flotation

While drilling ahead with 60 foot draft, the DEEP DRILLER encounters lost circulation and loses 460 barrels of 16 pounds per gallon mud to the hole. What is the resulting draft if no additional ballast is taken on?
59 feet

For a floating MODU, the center of buoyancy and the metacenter are in the line of action of the buoyant force _____.
at all times

A jack-up 180 feet in length with the LCF at 120 feet AFO has a true mean draft (draft at LCF) of 10 feet. If the trim is 3 feet by the stern, what is the draft at the stern?
11.0 feet

A floating jack-up with displacement of 16,200 kips has its LCG 110.37 feet aft of frame zero (AF0). If 200 short tons are discharged from 120 feet AF0 and 400 short tons are discharged from 150 feet AF0, what is the new LCG?
108.0 feet

A MODU displacing 30,500 long tons has a KG of 60 feet. A weight of 500 long tons is discharged from a VCG of 150 feet. What is the change in KG?
1.5 feet downward

A virtual rise in the center of gravity of a MODU may be caused by _____.
using fuel from a pressed fuel tank
See REF777

What lighting characteristic is required of an obstruction light on a mobile offshore drilling unit on the waters of the U.S. Outer Continental Shelf?
Quick-flashing

A jack-up drilling rig being towed must _____.
turn off all lights that interfere with the navigation lights

With adaptor blocks/chocks removed from an LWT stock anchor, the trip angle will be _____.
50°

The chemicals in sacks aboard MODU's are palletized to reduce _____.
labor in loading and handling

The unit used to measure anchor line tensions in the offshore drilling industry is the _____.
Kip

A chain stripper is used to _____.
prevent chain from clinging to the wildcat

A common class of wire rope used for mooring is the 6x19 class. What does the 6 represent?
Number of strands per wire rope

Offshore drilling units that are on an international voyage must have a portable radio apparatus that meets specific requirements. Which of the following organizations mandates these requirements?
Federal Communications Commission

The shear rams of a MODU blowout preventer stack are used in emergency well control to _____.
cut off pipe inside the preventer stack

The device that allows a floating MODU to sway without bending the marine riser system is the _____.
flex or ball joint

An integral part of a blowout preventer that serves as the closing element on an open hole, and whose ends do not fit around the drill pipe but seal against each other and shut off the space below completely is the _____.
blind ram

When drilling from a MODU, the conductor casing is landed with its top extending to just _____.
below the drill floor

Oil well casing will fail when the external pressure exceeds the internal pressure by a differential equal to the casing's rated _____.
collapse pressure

What additional precautions should be taken when making temporary repairs to a MODU that is operating when hydrogen sulfide is present?
Provide respiratory protection and monitoring.
See REF2006

All personnel boarding a davit-launched liferaft from a MODU should be checked. Which of the following items is of the highest importance to ensure that they are not in possession of or wearing?
sharp objects that may puncture or damage the liferaft

When H2S has been encountered on a MODU, or is anticipated, monitoring devices must sound an alarm (which differs from the lower concentration alarm) or otherwise warn employees when concentration of H2S reaches or exceeds how many parts per million?
50
See REF2006

A tropical storm is building strength some distance from your MODU. Waves are coming from the east, with periods increasing from 5 seconds to 15 seconds. The swell is from the east. Where was the storm when these new swells were generated?
To the east of you

The procedure of strengthening damaged structures on a MODU by using wood or steel is called _____.
shoring

On a MODU, a CO2 extinguisher is checked by _____.
weighing the extinguisher
See REF2458

Control of fire on a MODU should be addressed _____.
immediately

The routes to be used during evacuation of the MODU are shown in the _____.
posted Fire Control/Lifesaving Plan

On a MODU, each EPIRB or SART must be tested at least once _____.
each month

What effect is achieved from soaking an anchor?
It allows the bottom soil to consolidate.

Why are symmetric mooring patterns frequently used to keep MODU's on station?
Environmental forces will probably vary in direction during the time the MODU is on station.

Who has the ultimate responsibility for the safety of a mobile offshore drilling unit while it is being towed to a new location?
The rig mover

When cargo aboard a jack-up in transit becomes adrift, the tow vessel should be asked to _____.
turn into the seas

The DEEP DRILLER is anchoring in 600 feet of water. In the absence of environmental forces, the mooring lines should be adjusted to _____.
222 kips

The International Oil Pollution Prevention Certificate on a MODU is valid for a period of _____.
four years from the date of issue
See REF2463

To have the ultimate authority for a mobile offshore drilling unit while it is under tow, a rig mover must _____.
hold an endorsement as Offshore Installation Manager and be held as the person in charge of the rig

Mobile offshore drilling units not required to have an official logbook shall _____.
maintain an unofficial logbook
See REF1594

Who shall insure that all records required by regulations are retained on board a mobile offshore drilling unit involved in a casualty?
Owner
See REF2477

Who is responsible for insuring that the accommodations on a mobile offshore drilling unit are maintained in a clean and sanitary condition?
The designated person in charge

Prior to getting underway, the Master or person in charge of a MODU must _____.
log the fore and aft draft marks

Regulations require certain records to be retained on board for at least 3 months after a MODU is involved in a casualty or until advised that they are no longer needed on board by the _____.
Officer in Charge, Marine Inspection

After reporting a casualty to a mobile offshore drilling unit, which record must be retained on board?
Record of drafts

The Master or person in charge of a mobile offshore drilling unit shall ensure the crane record book shows _____.
the American Petroleum Institute name plate data

A mobile offshore drilling unit crane certificate is required to be maintained _____.
on the unit

If a mobile offshore drilling rig has four hand portable fire extinguishers that can be recharged by personnel on the unit, how many spare charges must be carried?
2
See REF2486

The minimum number of portable C-II fire extinguishers required on the drill floor of a MODU is _____.
2
See REF2500

A branch line valve of a fire extinguishing system on a MODU must be marked with the _____.
name of the space or spaces which it serves

In how many locations must lifeboats be installed on a mobile offshore drilling unit?
2

On offshore drilling units fitted with fixed CO2 systems, the system must discharge at least 85 percent of the required amount of CO2 within _____.
2 minutes

A cabinet or space containing the controls or valves for the fixed firefighting system must be _____.
posted with instructions on the operation of the system

Periodic surveys to renew the load line assignment for a MODU must be made at intervals not exceeding _____.
5 years
See REF487

If a fixed foam firefighting system on a MODU is not of the premix type, a sample of the foam liquid must be tested by _____.
the manufacturer or his authorized representative
See REF2507

What organization is approved by the Coast Guard for certifying cranes on mobile offshore drilling units?
American Bureau of Shipping

The COASTAL DRILLER's ability to meet the damage stability criteria depends on maintaining a watertight integrity, KGL and KGT less than maximum allowed, level attitude, and displacement less than _____.
14,158 kips

Fighting a rig fire in a watertight compartment with hoses could reduce the stability of the rig by _____.
causing a list due to the water in the compartment

While the DEEP DRILLER is loaded as shown in Sample Form #4 (Drilling), casing is accidentally dropped over the port side. Because the sounding level and port aft inclination are slowly increasing, you decide that tank 10P has minor damage. Among the possible corrective actions is _____.
deballast from tank 9P

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers damage to the starboard forward column below the waterline. Pumping from tank 2S and 3S is not sufficient to prevent increasing starboard list and bow down trim. You should consider counterflooding in tank _____.
10P

Use of air gaps in excess of that stated in the Limits of Elevated Service for the COASTAL DRILLER could result in _____.
increased overturning moments

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the drill water in drill water tanks 6 and 25 are discharged, what is the new draft?
10.66 feet

Considering the changes to lightweight shown in Section 5 of the COASTAL DRILLER Manual, with the rotary 36 feet aft of the transom and 4 feet to port of the centerline, and with 300 kips in the setback, the maximum hook load is limited to _____.
314 kips

The COASTAL DRILLER, in ocean transit at a draft of 10 feet 0 inches with winds greater than 70 knots, has a KGT of 39.0 feet and a KGL of 38.6 feet. The margin on the maximum allowable KG is _____.
2.6 feet

What is the decrease in vertical moments for the Coastal Driller if 2.5 feet of drill water is discharged from a full drill water tank 23?
482 ft-kips

In a storm, the leeward lines of a MODU's mooring system will _____.
pull the unit in the same direction that the weather is pushing it

The DEEP DRILLER is loaded as shown in the Sample Load Form Number 5 (Survival) when an unexpected slowly increasing starboard list and bow down trim occurs. A leak in 1S is found. By deballasting from ballast tanks 2S and 3S, the inclination slowly decreases. The increase in the transverse free surface corrections is _____.
0.22 foot

While drilling loaded as shown in Sample Load Form #4 (Drilling), the DEEP DRILLER suffers a sudden unexpected forward inclination. The wind and waves are light from the starboard bow. Among the possible causes, you should consider _____.
the drill string has broken

The DEEP DRILLER, at a draft of 45 feet and total vertical moments of 981,567 ft-long tons, floods 2068.7 long tons of sea water through the overboard discharge into tanks 3 and 8 on both sides. The VCG of the added ballast is 7.22 feet. The shift in the height of the center of gravity is _____.
6.16 feet

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the new KGL?
54.32 feet

A MODU displacing 29,500 long tons has a KG of 60 feet. A weight of 500 long tons is added at a VCG of 150 feet. What is the change in KG?
1.5 feet upward

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). What is the new height of the center of gravity corrected for transverse free surface effects if the entire contents of Salt Water Ballast Tanks 1P and 1S are discharged?
68.59 feet

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the VCG of the added liquid if 100.76 long tons of ballast are added to Ballast Tank #8S?
15.26 feet

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the resulting list angle?
2.87 degrees to starboard

A semisubmersible displacing 18,000 long tons has an LCG 2 feet forward of amidships. Bulk, weighing 400 long tons, is discharged from P-tanks located 50.8 feet aft of amidships. What is the new LCG?
3.20 feet forward of amidships

The DEEP DRILLER is level at a draft of 58 feet when there are no environmental forces. What is the value of TCG?
0.00 on the centerline

Among the valves that must be opened on the DEEP DRILLER to pump bilge water out of the port pump room using both bilge pumps is valve _____.
41

Joiner bulkheads on a MODU provide _____.
compartmentalization

Support of MODU side plating is provided primarily by transverse _____.
frames

The free surface effects of a partially-full tank in a floating MODU increase with the _____.
surface area of the fluid in the tank

While drilling ahead with 60 foot draft, the DEEP DRILLER encounters lost circulation and loses 900 Bbls. of 16 pounds per gallon mud to the hole. How much ballast must be taken on to maintain 60 foot draft?
270 long tons

For a MODU with longitudinal inclination, an increase in GML causes _____.
trim to decrease

What is the trim of a jack-up with forward draft of 11 feet and aft draft of 13.75 feet?
2.75 feet by the stern

While in transit at a draft of 10.5 feet, the COASTAL DRILLER has a KGT of 60.0 feet. What is the GMT?
78.89 feet

A floating MODU displacing 20,000 long tons with a VCG of 50 feet loads 100 long tons at 100 feet above the baseline and 200 long tons at 130 feet above the baseline. What is the new KG?
51.0 feet

A virtual rise in the center of gravity of a MODU may be caused by _____.
using an on board crane to lift a freely swinging heavy object
See REF777

An obstruction light on a mobile offshore drilling unit on the waters of the U.S. Outer Continental Shelf, shall have a lens that is visible over an arc of _____.
360°

The prohibition against displaying lights which may be confused with required navigation lights applies _____.
from sunset to sunrise and during restricted visibility

With adaptor blocks/chocks in place on an LWT stock anchor, the trip angle will be _____.
30°

If, during helicopter refueling operations, fuel is spilled on clothing, the person should first _____.
remove the clothing and wash

A J-chaser is used to _____.
retrieve an anchor after the buoy has been lost

What is the most important difference between the bow type anchor shackle and the D-type anchor shackle?
The bow type shackle is weaker than the D-type.

A common class of wire rope used for mooring is the 6x37 class. What does the 37 represent?
Number of wires per strand

What agency issues the Ship Station license for the VHF marine radio on a mobile offshore drilling unit?
Federal Communications Commission

In comparison to electric power, hydraulic power for jacking systems has the advantage of _____.
better control capabilities

The pipe and special fittings used on floating offshore drilling rigs to establish a connection between the top of the wellbore, which is on the ocean floor, and the drilling equipment, located above the surface of the water, is called a _____.
marine riser pipe

What is a pinion in a jacking system?
Gearwheel

The space around a pipe in a wellbore, the outer wall of which may be the wall of either the borehole or the casing, is the _____.
annulus

A casing string that is run below the previous casing string, but does not extend to the wellhead is called a _____.
liner

The airborne concentrations of substances (such as H2S) under which nearly all workers may be repeatedly exposed without adverse effects defines which of the following phrases?
threshold limit values
See REF1999

Prior to entering a davit-launched liferaft, which of the following checks should make first?
the liferaft is well ventilated of excess carbon dioxide

If H2S exposure is anticipated, fixed monitoring devices aboard a MODU should have a low level concentration alarm to alert personnel. at what concentration level will the alarm activate?
10 PPM
See REF2447

In a storm, the windward lines of a MODU's mooring system provide _____.
a positive restoring force

The two factors which make underwater hull repair of a MODU difficult are accessibility and the _____.
pressure exerted by the water

On offshore drilling units each inflatable liferaft that is not intended for davit launching must be stowed so as to float free or be _____.
equipped with a hydrostatic release
See REF785

A fire in a ballast pumproom can be brought under control with minimal impact on stability by _____.
shutting all sources of air into the compartment

The MODU has suffered a casualty which requires an orderly evacuation of the unit using the lifeboats and liferafts. Among the items to accomplish in preparing to evacuate the unit is _____.
securing the unit as in preparation for a severe storm

Each EPIRB required on a MODU shall be tested using the integrated test circuit and output indicator every _____.
month

To develop maximum anchor holding power, the optimum angle between the anchor's shank and the mooring lines is _____.
0 degrees

Using high working tensions in the mooring system reduces the _____.
margin between working tension and breaking strength

When a marine surveyor is employed to assist in the move of a mobile offshore drilling unit, he _____.
is a specialist who is hired to provide advice and guidance on aspects of the move

During a long ocean tow of a jack-up the clearance in the upper guide should be reduced to zero to restrain the leg and eliminate the impact loads from dynamic responses. This is best done by _____.
tapering the upper guides and building up the teeth

The full period of motion of the DEEP DRILLER while in transit is 7 seconds and the maximum pitch angle as seen on the inclinometers is 7°. From the standpoint of critical motion, the motion is _____.
unsatisfactory, ballast to survival draft

A MODU which is required to carry an Oil Record Book must log in the book _____.
discharge of ballast or cleaning water from fuel tanks
See REF529

A MODU crane which has been idle for a period of over six months shall be inspected to the same standards as a _____.
yearly inspection

What must be entered in the unofficial logbook by the Master or person in charge of a mobile offshore drilling unit after conducting a fire drill?
The condition of all fire fighting equipment, watertight door mechanisms, and valves used during each drill
See REF1594

With regard to the opening and closing of watertight integrity appliances not fitted with a remote operating control or alarm system, what must the Master or person in charge of a MODU enter in the logbook?
The reason for opening or closing each appliance
See REF2478

How many people on board a MODU must be trained in the use of the fireman's outfit?
2

Prior to getting underway in fresh or brackish water, the Master or person in charge of a MODU must _____.
log the density of the water

A casualty report of an intentional grounding of a MODU is required under what condition?
If it creates a hazard to the environment

Under the regulations for mobile offshore drilling units, you must submit a casualty report for which occurrence?
Accidental grounding

Two individuals authorized to serve as a lifeboatman must be assigned to any lifeboat that has a capacity of more than _____.
40 persons

A MODU must report a collision with an aid to navigation maintained by the Coast Guard to which office?
Nearest Officer in Charge, Marine Inspection

Fire extinguishers on inspected vessels are numbered by size I through V, with I being _____.
the smallest
See REF2487

Semi-portable extinguishers used on MODU's are sizes _____.
III, IV, and V
See REF2501

How must each storage tank for helicopter fuel on a MODU be marked?
DANGER - FLAMMABLE LIQUID

What is the minimum number of lifeboats which MUST be carried on a mobile offshore drilling unit that is allowed to carry more than 30 persons?
2

On offshore drilling units fitted with CO2 systems, each space that contains a cylinder must be vented and designed to keep temperature in the space at not more than _____.
130°F

Each hand portable fire extinguisher must be marked with _____.
an identification number

A load line is assigned to a MODU to insure adequate stability and _____.
structural strength
See REF486

All fire hoses on mobile offshore drilling units must be tested to a pressure of at least _____.
110 psi
See REF2508

How often must a rated load test be performed on a crane on a MODU?
Every 48 months

The COASTAL DRILLER's ability to meet the damage stability criteria depends on maintaining watertight integrity, displacement less than 14,158 kips, level attitude, and KGT and KGL less than _____.
the maximum allowed

Fighting a rig fire in the ballast pumproom with hoses would adversely affect the stability of the rig most by _____.
a list caused by water filling the compartment

While the DEEP DRILLER is operating loaded as shown in Sample Load Form #4 (Drilling), casing is accidentally dropped over the port side. If the port forward inclination is slowly increasing, which tank is probably damaged?
1P

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers damage to the port aft column below the waterline. Pumping from tank 8P and 9P is not sufficient to prevent increasing port list and stern down trim. You should consider counterflooding in tank _____.
1S

For stronger leg support when the COASTAL DRILLER is elevated, locate a set of horizontal leg braces as near as possible to the _____.
center of each lower hull guide

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of the four bulk tanks are back-loaded to a supply boat, what would be the new draft?
10.57 feet

Considering the changes to lightweight shown in section 5 of the COASTAL DRILLER Manual, the maximum allowable combination of hook, rotary, and setback load for the COASTAL DRILLER with the rotary located 34 feet aft of the transom and two feet to port of the centerline is _____.
854 kips

The COASTAL DRILLER, in ocean transit at a draft of 10 feet 6 inches with winds less than 70 knots, has a KGT of 50.6 feet and a KGL of 51.4 feet. The margin on the maximum allowable KG is _____.
13.6 feet

Because there is a possibility of fuel oil being discharged overboard from a full fuel oil tank, it is decided to transfer 25 kips from tank 14 to tank 13. See COASTAL DRILLER Sample Load Form Number 1 (Rig Move). What would be the change in transverse free surface moments?
1492 ft-kips

The overturning forces acting on a floating jack-up are generally dominated by _____.
wind

After jacking down your liftboat you have an unexpected list. You find that the only cause of this list must be a flooded leg. To keep adequate stability you should _____.
jack back up and ballast the vessel's high side as necessary

While drilling loaded as shown in Sample Load Form #4 (Drilling), the DEEP DRILLER suffers a sudden unexpected inclination to port and aft. Strong winds and high waves are from the starboard bow. Among the possible causes, you should consider _____.
failure of mooring lines 3 or 4

The DEEP DRILLER has a KGL of 53.16 feet while at a draft of 58.0 feet. Although there are no environmental forces, trim is 2.0 feet by the stern. What is the value of LCG?
2.16 feet

The DEEP DRILLER, at 60.0 feet draft in sea water, has VM = 974,441 foot-long tons, and FSMT = 18,732 foot-long tons. What is the metacentric height corrected for transverse free surface effects?
8.02 feet

A semisubmersible with a displacement of 20,000 tons and KG of 52 feet discharges 300 long tons of barite from P-tanks located 120 feet above the keel. Ballast added to maintain draft has a VCG of 20 feet. What is the change in KG?
1.50 feet decrease

The DEEP DRILLER, at a draft of 60 feet, has a KGL of 55.4 feet and an LCG of 2.43 feet. What is the trim angle?
2° by the head

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the shift in LCG if 100.76 long tons of ballast are added to Ballast Tank #8S to replace the discharge of all bulk materials?
0.06 foot aft

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the new LCG?
1.64 feet

A semisubmersible, with a TCG of 0.5 feet to port, displaces 20,000 long tons. Bulk, weighing 400 long tons, is discharged from P-tanks located 50 feet starboard of the centerline. What is the new TCG?
1.53 feet port of centerline

The DEEP DRILLER is level at a draft of 58 feet when there are no environmental forces. What is the value of LCG?
2.26 feet forward of amidships

Among the valves that must be opened on the DEEP DRILLER to pump bilge water out of the port pump room using the number 1 bilge pump is valve _____.
41

Vertical partitions which provide strength and compartmentalization on a MODU are called _____.
bulkheads

When the longitudinal strength members of a MODU are continuous and closely spaced, the vessel is _____.
longitudinally framed

The DEEP DRILLER departs a fresh water port at a draft of 20 feet. What will be the draft in sea water?
19.6 feet

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). Weather conditions make it necessary to ballast down to survival draft. It is decided to check the stability at the intermediate draft of 32 feet. How much ballast is required to ballast to 32 feet?
2,294 long tons

When a MODU is inclined at a small angle, the center of buoyancy will _____.
move toward the low side

What is the trim of a jack-up with a forward draft of 12 feet and an after draft of 13 feet?
1.0 foot by the stern

How much drill water is required for transfer between drill water tanks 25 and 26 in order to correct the list of the COASTAL DRILLER with total transverse moments of -6,800 ft-kips?
100 kips from tank 25 to tank 26

A semisubmersible with a displacement of 20,000 long tons and a KG of 52 feet discharges 300 long tons of barite from P-tanks located 120 feet above the keel. What is the change in KG?
1.04 feet downward

A semisubmersible which flops between forward and aft trim angles is likely to have _____.
KML less than KGL

A mobile offshore drilling unit is on the waters of the U.S. Outer Continental Shelf. It has a length of 220 feet and a breadth of 190 feet. Where must the obstruction lights be located?
On each corner of the rig

A mobile offshore drilling unit under tow is approaching a fog bank. When should fog signals be started?
Immediately

What are the two main types of stud link chain?
Oil Rig chain and Oil Field Stud Link chain

At a refueling area or fuel facility, smoking or any flame or spark is prohibited _____.
within 50 feet

A shepherd's crook is used to _____.
find an anchor after the buoy has been lost

What is the bow type anchor shackle primarily used for?
Wire rope connections

What is an advantage of the 6x19 class of wire rope over the 6x37 class of wire rope of the same diameter?
Resistance to corrosion

You cannot operate a VHF or SSB radiotelephone aboard a rig unless that station is licensed. Which of the following organizations issues the license?
Federal Communications Commission

On a MODU, an obvious indicator of lost circulation of drilling fluid is _____.
fluid level in the mud pits decreases rapidly

When filling fuel-oil tank 6P on the DEEP DRILLER, it is necessary to open valve _____.
12

The pneumatic containers which store bulk dry mud additives and cement on a MODU are called _____.
P-tanks

Most drill ships and barges have a walled opening below the derrick, open to the water's surface and through which various drilling tools can pass down to the sea floor called a _____.
moon pool

A special device that, when fitted into the rotary table, transmits torque to the kelly and simultaneously permits vertical movement of the kelly to make the hole is called a _____.
kelly bushing

If you have to jump in the water when abandoning a MODU, what position should you maintain your legs?
extended straight down and crossed at the ankles
See REF243

The order to abandon a MODU should only be given by the which of the following personnel?
Offshore Installation Manager

For H2S detection, sensitized tapes indicate H2S presence by means of discoloration of an exposed spot on the tape. The shade of the color on the spot depends upon the concentration of H2S and which of the following factors?
duration of the exposure

When hanging off drill pipe in emergency situations aboard a MODU, the preferred location of the drill bit is _____.
no deeper than the shoe of the last casing set

When patching holes in the hull of a MODU, pillows, bedding, and other soft materials can be used as _____.
gaskets

The Coast Guard requires machinery spaces and enclosed mud handling spaces to have _____.
remote ventilation shutdowns
See REF2459

What is best suited for fighting a fire in a ballast control room?
Carbon dioxide system

Each person on a MODU carrying immersion suits must wear the immersion suit in a boat drill, or participate in a drill which includes donning the suit and being instructed in its use at least once every _____.
month
See REF283

On offshore drilling units, the lifeboats must be lowered to the water and maneuvered at least once every _____.
3 months

What is the "holding power ratio" of an anchor?
Maximum mooring line tension divided by the anchor's weight in air

The vessel motion that can significantly affect mooring line tensions on a MODU is _____.
surge

A mat-type drilling unit tows more slowly than a jack-up unit due to _____.
the drag of the mat

The COASTAL DRILLER is in ocean transit in which the winds are not expected to exceed 70 knots. In order to meet the leg strength requirements, the tip of can (TOC) position should be at _____.
12.38 feet

The full period of motion of the DEEP DRILLER while tripping is 10 seconds and the maximum pitch angle as seen on the inclinometers is 8 degrees. From the standpoint of critical motion, the motion is _____.
unsatisfactory, deballast to survival draft

A MODU required to carry an Oil Record Book must maintain the book on board for _____.
three years
See REF529

Annual inspection of MODU cranes shall be conducted by _____.
a qualified inspector

After conducting a boat drill on a mobile offshore drilling unit, what must the Master or person in charge enter in the in the logbook?
Any inoperative equipment and the corrective action taken
See REF1594

The inspection of portable extinguishers on a MODU must be _____.
recorded by the person in charge
See REF2479

On offshore drilling units, boat drills must be conducted at least _____.
monthly

When are fore and aft draft readings required to be entered in the unofficial logbook of a MODU?
Prior to getting underway

A written report of casualty to a MODU shall be made _____.
on Form CG 2692

A report of casualty to a mobile offshore drilling unit must be made in writing to which office?
Nearest Coast Guard Marine Safety Office

A certificated lifeboatman assigned to command the lifeboat must _____.
have a list of the persons assigned to the lifeboat

What class of bulkhead is required around the galley on a MODU?
Class A
See REF2449

What is the minimum required number of fire axes that must be carried on a mobile offshore drilling unit?
2
See REF2488

Portable Halon extinguishers used on MODU's may use _____.
HALON 1211 only
See REF2502

Each emergency light on a MODU must be marked with _____.
the letter "E"

On surface type offshore drilling units, each survival craft must be capable of being launched to the water at the minimum operating draft, under unfavorable conditions of trim and with the unit listed not less than _____.
20°

A fixed CO2 system on a MODU with a capacity of over 300 lbs (136 kilograms) CO2 which protects spaces other than tanks must have _____.
an audible alarm and time delay

Size III, IV, and V extinguishers are considered _____.
semi-portable

A load line for a MODU is assigned by the _____.
A recognized classification society approved by the Coast Guard
See REF486

A simplified construction plan may be included in the MODU construction portfolio provided it adequately defines the _____.
areas where special materials are used
See REF2509

After cranes have been installed on offshore drilling units the hooks, hook block, slings, rib and other rigging must be load tested. This test must be performed once each _____.
48 months

Progressive flooding on a MODU may be indicated by _____.
a continual worsening of list or trim

A MODU is inclined at an angle of loll. In the absence of external forces, the righting arm (GZ) is _____.
zero

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers damage to the starboard center column below the waterline. Among the tanks from which you should pump is tank _____.
9S

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers damage to the starboard center column below the waterline. Pumping from tanks 2S and 9S is not sufficient to prevent increasing starboard list. You should consider counterflooding in tank _____.
C2BP

The COASTAL DRILLER is in transit at a draft of 10.5 feet. It discharges 216.43 kips of weight. What is the new draft?
10 feet 4 inches

What is the change in transverse moments for the Coastal Driller if 2.5 feet of drill water is discharged from drill water tank 23?
1,671 ft-kips

For the COASTAL DRILLER, what is the maximum rotary load that can be used when the rotary has been extended 40 feet aft of the transom?
609 kips

The COASTAL DRILLER, in transit during a severe storm while at a draft of 9 feet 6 inches, has a KGT of 39.1 feet and a KGL of 39.9 feet. The margin on the maximum allowable KG is _____.
2.6 feet

Because there is a possibility of fuel oil being discharged overboard from a full fuel oil tank, it is decided to transfer 25 kips from tank 14 to tank 13. See COASTAL DRILLER Sample Load Form Number 1 (Rig Move). What would be the change in vertical moments with this transfer?
26 ft-kips decrease

Your semisubmersible drilling unit is moving onto a location in shallow water with a very hard bottom. What is the most effective means of maintaining your position at this location during severe weather?
Piggyback all anchors and pretension to above the expected tensions

The DEEP DRILLER is loaded as shown in the Sample Load Form Number 5 (Survival) when an unexpected slowly increasing starboard list and bow down trim occurs. A leak in 1S is found. By deballasting from ballast tanks 2S and 3S, the inclination slowly decreases. The increase in the longitudinal free surface correction is _____.
0.83 foot

While drilling loaded as shown in Sample Load Form #4 (Drilling), the DEEP DRILLER suffers a sudden unexpected inclination to starboard and aft. Strong wind and high waves are on the port bow. Among the possible causes, you should consider _____.
failure of mooring lines 1 or 2

With no environmental forces on the DEEP DRILLER, the average of the forward drafts is 59.0 feet, and the average of the aft drafts is 61.0 feet. KGL is 51.13 feet. What is the value of LCG?
2.11 feet

The DEEP DRILLER, at 60.0 feet draft in sea water, has VM = 974,441 foot-long tons, LM = 40,301 foot-long tons, TM =3 foot-long tons, FSML = 30,572 foot-long tons, and FSMT = 18,732 foot-long tons. What is the metacentric height corrected for longitudinal free surface effects?
5.66 feet

A semisubmersible with displacement of 19,700 long tons and KG of 50.96 feet loads 300 long tons of barite into P-tanks located 120 feet above the keel. What is the change in KG?
1.04 feet upward

The DEEP DRILLER, at a draft of 60 feet, has a KGL of 55.4 feet and an LCG of 2.37 feet. What is the trim in feet?
4.0 feet by the head

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the shift in TCG if 100.76 long tons of ballast are added to Ballast Tank #8S to replace the discharge of all bulk materials?
0.01 foot starboard

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the new GML?
6.84 feet

A semisubmersible, with a TCG of 0.5 foot to port, displaces 20,000 long tons. Bulk, weighing 400 long tons, is loaded in P-tanks located 50 feet starboard to the centerline. What is the new TCG?
0.49 foot starboard of centerline

With no environmental forces on the DEEP DRILLER, the average of the starboard drafts is 59.0 feet, and the average of the port drafts is 61.0 feet. KGT is 52.84 feet. What is the value of TCG?
-0.16 foot

The DEEP DRILLER suffers minor flooding of the starboard pump room while in transit. If both starboard bilge pumps fail to dewater the pump room, you may use _____.
starboard drill water pump

Structural bulkheads on a MODU are usually _____.
watertight

A MODU having continuous closely spaced transverse strength members is _____.
transversely framed

The DEEP DRILLER at a draft of 60.0 feet discharges 68.94 long tons of ballast. What is the new draft?
59.5 feet

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). If the maximum permissible deck load were placed aboard at a VCG of 130 feet, what would be the new draft?
19 feet 9 inches

A semisubmersible which flops between forward and aft angles of trim is likely to have _____.
KML less than KGL

A jack-up is trimmed six inches by the bow. The moment required to change trim one inch is 1200 foot-kips. Transferring 200 kips of drill water from a tank with an LCG of 20 feet to a tank with an LCG of 140 feet results in a final trim of _____.
1 foot 2 inches by the stern

How much drill water should be transferred from tanks 23 and 24 to tank 1 to level the COASTAL DRILLER, in transit at a draft of 10 feet 6 inches, if the total longitudinal moments are 1,700,000 ft-kips?
451 kips

While in 150 feet water depth when the pitch angle of the COASTAL DRILLER is 2 degrees, the platform roll period for going on location should be longer than _____.
10.0 seconds

An inclined semisubmersible with a very short rolling period about a constant angle of list is likely to have _____.
an off-center TCG

To determine what navigation lights and day-shapes must be displayed on mobile offshore drilling units under tow, you should check the _____.
International Regulations for Preventing Collisions at Sea

During a move to a new location, a jack-up drilling unit with personnel on board is towed through a heavy rainstorm. What signal must be sounded by the drilling rig when visibility is restricted?
One prolonged and three short blasts

What is a major disadvantage of Di-Lok chain compared with Oil Rig Quality (stud link) chain in floating drilling rig operations?
Shorter fatigue life

The only type of helicopter that may be refueled with the engine running and the blades turning is _____.
a turbine-equipped helicopter

An ideal mooring system would be _____.
symmetrical and in equilibrium

Most large anchors are manufactured with a _____.
D-type shackle

What is an advantage of the 6x37 class of wire rope over the 6x19 class of wire rope of the same diameter?
Flexibility

Where would you find the "call sign" or "call letters" of the radio station on your rig?
On the Ship Station License

Lost circulation can cause a kick or blowout by _____.
reducing the mud level in the well

When filling fuel-oil tank 4S on the DEEP DRILLER, it is necessary to open valve _____.
11

On an offshore drilling rig, the pumps which circulate drilling fluid through the drill string while drilling are called the _____.
mud pumps

In MODU drilling operations, the term tripping means _____.
hoisting drill pipe out of and returning it to the wellbore

To prevent the riser system from buckling under its own weight, upward tension is provided by the _____.
riser tensioning system

To assure safe boarding and launching of a davit-launched liferaft from a MODU, preparation should include which of the following choices?
removing any side protective rails and checking that the overside and surface level are clear

Accumulations of H2S gas on a MODU can be dangerous. It is imperative that personnel know that H2S gas possesses which of the listed characteristics?
heavier than air

When preparing a MODU for heavy weather, fuel oil day tanks should be _____.
filled to ensure that sufficient fuel oil is available during a lengthy emergency

A CO2 extinguisher which has lost 10% of its charge must be _____.
recharged
See REF2448

After using a CO2 extinguisher on a MODU, it should be _____.
recharged

On a MODU, a fixed carbon dioxide or other approved system must be installed _____.
where oil or chemical drums are stored

The limit switches on a MODUs survival-craft winch system _____.
stop the winch just before the craft reaches the final stowage position

On offshore drilling units, the lifeboat motors shall be operated in the ahead and astern position at least once each _____.
week

A solution to overcome tripping defects is an arrangement of special plates on either side of the flukes, designed to set them in the correct tripping position. These special plates are called _____.
palms

The two main types of load cells used in mooring tension gauges are _____.
distortion and compression

In securing deck loads for an ocean tow, drill pipe should be _____.
provided with bulwarks at both ends of their bays

The COASTAL DRILLER, while in transit, expects the winds to increase to 75 knots. In order to meet the stability and leg strength requirements, the tip-of-can (TOC) position should be at _____.
60.50 feet

The full period of motion of the DEEP DRILLER while tripping is 8 seconds and the maximum pitch angle as seen on the inclinometers is 4 degrees. From the standpoint of critical motion, the motion is _____.
satisfactory, continue tripping

The regulations regarding Oil Record Books do not apply to MODU's that _____.
have a valid National Pollutant Discharge Elimination System permit

See REF529

You are aboard a vessel which is near a platform engaged in oil exploration. Under U.S. pollution regulations, you may NOT discharge garbage if you are within _____.
1650 feet (500 meters)

How often are fire hoses required to be tested on a mobile offshore drilling unit?
Once a year
See REF1594

Who is responsible for reporting a casualty to a mobile offshore drilling unit?
The owner
See REF2480

On a MODU, each emergency generator must be tested at least once each _____.
month

When is the density of the water required to be logged in the logbook of a MODU?
Prior to getting underway when the vessel is floating in fresh or brackish water

In the case of a casualty involving a MODU, the Master, owner, agent or person in charge shall make the records required by regulation available upon request to _____.
any Coast Guard official authorized to investigate the casualty

Injuries resulting in loss of life or incapacitation, aboard vessels, must be reported to the _____.
U.S. Coast Guard

When a survival craft drill is held, the person in charge must insure that _____.
all davits used for launching liferafts are operated

On all mobile offshore drilling units, the deckhead of each accommodation space must be located above _____.
the deepest load line
See REF2449

What is the minimum required number of ring life buoys on a MODU?
8
See REF2489

All portable fire extinguishers must be capable of being _____.
carried by hand to a fire

On a MODU, a door that is required to be marked "KEEP CLOSED" is designed to _____.
maintain watertight integrity

On surface type offshore drilling units, each survival craft must be capable of being launched to the water at the minimum operating draft, under unfavorable conditions of trim and with the unit listed not less than _____.
20°

Due to the hazards involved with Halon extinguishers on a MODU, the size II extinguisher may only be used _____.
outside

Semi-portable extinguishers used on inspected vessels are sizes _____.
III, IV, and V

Beyond the area of state ownership in the U.S. outer continental shelf, the right to drill is controlled by the _____.
Minerals Management Service

A welding procedure used for joining dissimilar metals used on a MODU would be recorded in the _____.
construction portfolio
See REF2510

The person or company, either proprietor or lessee, actually operating an oil well or lease is the _____.
operator

A continual worsening of the list or trim of any floating MODU indicates _____.
progressive flooding

In the analysis of damaged stability for the DEEP DRILLER, disregarded are the beneficial effects of moorings and _____.
countermeasures

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers damage to the port center column below the waterline. Among the tanks from which you should pump is tank _____.
9P

The most important consideration in the event the Deep Driller suffers damage is _____.
preserve reserve buoyancy

The COASTAL DRILLER is in transit at the load line draft. It discharges 279.93 kips of weight. The new draft is _____.
10 feet 8 inches

The COASTAL DRILLER, with no trim, is at a true mean draft of 10 feet and 10 inches. TM is -6,800 ft-kips. Using only tanks 1, 25, and 26, how many kips of drill water must be transferred to level the jack-up?
Transfer 100 kips from 25 to 26

On the COASTAL DRILLER, placing the rotary 34 feet aft of the transom and two feet to starboard of the centerline, limits the maximum hook load to _____.
875 kips

The COASTAL DRILLER, in transit with winds less than 70 knots, has a draft of 10 feet 8 inches. The VM are 541,257 ft-kips, FSML are 32,000 ft-kips, and FSMT are 24,000 ft-kips. The margin on the maximum allowable KG is _____.
23.7 feet

The height of the metacenter above the keel will vary depending on the _____.
draft and beam of the drilling unit

For a semisubmersible moored in heavy weather conditions, the leeward lines should be paid out, and the windward lines adjusted so that _____.
several weather lines carry about the same tension

After jacking down your liftboat you have an unexpected list. You find that the only cause of this list must be a flooded leg. Raising the flooded leg further would adversely affect the boats stability by _____.
raising the KG and increasing the draft which may put you in an unsafe operating condition

While drilling loaded as shown in Sample Load Form #4 (Drilling), the DEEP DRILLER suffers a sudden unexpected inclination to starboard and forward. Strong winds and high waves are from the port quarter. Among the possible causes, you should consider _____.
failure of mooring lines 7 or 8

The DEEP DRILLER is loaded as shown in the sample Load Form #3 (Preparing to Drill). If the liquid mud in mud pit #4 (see table 8) is dumped, what would be the new uncorrected height of the center of gravity?
51.87 feet

The DEEP DRILLER, at 60.0 feet draft in sea water, has VM = 974,441 foot-long tons, LM = 40,301 foot-long tons, TM = 3 foot-long tons, FSML = 30,572 foot-long tons, and FSMT = 18,732 foot-long tons. What is the longitudinal free surface correction to KG?
1.69 feet

While loaded as shown in the DEEP DRILLER Sample Load Form #4 (Drilling), all of the liquid mud is dumped. What is the new height of the longitudinal metacenter?
61.20 feet

The DEEP DRILLER, at a draft of 60 feet, has a KGT of 57.11 feet and TCG of 0.5 foot to port. What is the list angle?
5° port

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the new height of the transverse metacenter if all the bulk materials are discharged?
64.30 feet

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the new TCG?
0.46 foot

What is the longitudinal shift in the center of gravity if 200 short tons is moved ten feet to port and 30 feet forward on a MODU with a displacement of 8,960 long tons?
0.67 foot

What is the value of KML for the DEEP DRILLER at a draft of 60 feet?
61.13 feet

The DEEP DRILLER suffers minor flooding of the port pump room while in transit. If both port bilge pumps fail to dewater the pump room, you may _____.
use port drill water pump

Bulkheads which form part of the tanks on a MODU are stiffened to withstand _____.
hydrostatic pressure

The heavier outboard strake of deck plating on a MODU is called the deck _____.
stringer

The DEEP DRILLER at a draft of 58.0 feet loads 68.94 long tons of ballast. What is the new draft?
58.5 feet

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the new draft if all the bulk materials are discharged?
44.27 feet

Movement of liquid in a tank when a drilling barge inclines causes an increase in _____.
natural rolling period

The draft at the forward draft mark of a jack-up is 11 feet 3 inches while the draft at the aft draft mark is 12 feet 9 inches. The value of trim is _____.
1 foot 6 inches to the stern

What is the change in longitudinal moments for the Coastal Driller if 2.0 feet of drill water is transferred from a full drill water tank 23 to an empty drill water tank 1?
15,565 foot-kips decrease

A quick and rapid motion of a MODU in a seaway is an indication of a(n) _____.
large GM

Adding the FSCL to KG yields _____.
KGL

The International Regulations for Preventing Collisions at Sea contain the requirements for _____.
lighting of mobile offshore drilling units being towed

What signal must be sounded by a vessel towing a mobile offshore drilling unit through an area of restricted visibility?
One prolonged and two short blasts

Which grade of anchor chain is generally used on floating drilling vessels?
Oil Rig Quality (stud link)

A helicopter making a round trip from a helo deck with refueling capabilities to an unmanned platform will take 45 minutes each way. The helicopter should be carrying enough fuel to last _____.
2 hours

The safest device used to secure the end of the pendant wire when it is initially passed to the anchor handling vessel is a _____.
hydraulic deck stopper

Two types of anchor shackles which are currently available are _____.
D-Type and bow shackles

Where do fatigue failures of wire rope mooring lines usually occur?
Near the socketed end fitting adjacent to the anchor

What is the international calling and distress channel found on all VHF-FM equipped drilling rigs?
Channel 16

The term "lost circulation" refers to situations when drilling fluid is lost by _____.
flowing into drilled formations

What fitting should you install in the rig piping to a pump to facilitate disconnecting the pump for servicing?
Union

A series of trays with sieves that vibrate to remove cuttings from the circulating fluid in rotary drilling operations is called the _____.
shale shaker

At the instant when a string of casing being run from a MODU is landed in the well head, _____.
the hook load (weight of the casing string) is removed from the MODU

The joint of the riser in a marine riser system that compensates for heave, the up-and-down motion of a floater, is the _____.
slip joint

What action should you take if a davit-launched liferaft aboard a MODU cannot be launched because of damage to the davit?
roll the liferaft over the side

Individuals who have consumed alcohol within 24 hours prior to exposure to H2S can tolerate which of the following?
smaller than normal concentrations of H2S
See REF2010

While in transit during heavy weather, the crew aboard a semisubmersible should be alert to repeated pounding of waves on the lower bracing. If necessary, the unit should be _____.
ballasted to survival draft

The instructions for launching lifeboats and liferafts on a MODU must be approved by the _____.
Coast Guard
See REF2449

Clean air standards referred to as "Grade D" apply to compressed air for use in _____.
filling open-circuit breathing systems

The preferred agent used in fighting a helicopter crash fire on a MODU is _____.
foam

After being launched from MODUs, totally enclosed survival craft which have been afloat over a long period require _____.
regular checks of bilge levels

A life preserver or buoyant work vest is required to be worn on a MODU when a person is _____.
working over water

Your semisubmersible drilling unit is moored on station and is experiencing winds from the north. What will be the effect if you increase the length of the anchor chains you have deployed to the north?
It will increase the holding power of those chains.

The motion that can significantly increase mooring line tension is _____.
sway

In observing rig motion while under tow, the period of roll is the time difference between _____.
full inclination on one side to the next full inclination on the same side

While in ocean transit, the COASTAL DRILLER has a roll period of four seconds. What would be the largest angle each side of vertical that does not exceed the design limit of the legs?
2.0 degrees

The full period of motion of the DEEP DRILLER while tripping is 7 seconds and the maximum pitch angle as seen on the inclinometers is 4°. From the standpoint of critical motion, the motion is _____.
unsatisfactory, deballast to survival draft

The requirement to carry an Oil Record Book does not apply to a MODU that _____.
is not equipped to discharge overboard any oil or oily mixture
See REF529

If you observe any situation which presents a safety or pollution hazard during fuel transfer operations on a MODU, what action should you take FIRST?
Shut down the transfer operation.

The person on a MODU who is responsible for maintaining the engineering spaces in a clean and sanitary condition is the _____.
Chief Engineer, or engineer in charge if no chief engineer is required
See REF2466

Each EPIRB shall be tested using the integrated test circuit and output indicator every _____.
month
See REF112

On offshore drilling units, the EPIRB on board is required to be tested _____.
monthly

When must the Master or person in charge of a MODU log the position of load line marks in relation to the surface of the water in the logbook?
Prior to getting underway

Lifeboat winches on mobile offshore drilling units are required to be inspected and an entry made in the logbook. How often should this entry be made?
Every 3 months

When a fire drill is conducted on a mobile offshore drilling unit, the designated person in charge must ensure that _____.
all personnel report to their stations

Visual inspections of survival craft on offshore drilling units, to ensure operational readiness, must be conducted at least once a _____.
week

The helicopter deck on an offshore drilling unit is required to be fitted with perimeter lights in alternating colors of _____.
yellow and blue
See REF2449

On a MODU, how many ring buoys are required to have a buoyant line attached?
One ring life buoy on each side of the MODU
See REF2490

An extinguisher with 15 lbs. of CO2 or 10 lbs. of dry chemical is a size _____.
II

On offshore drilling units when two means of escape are provided from a space above the main deck, one means of escape must be required for rapid escape to _____.
a weather deck

On surface type offshore drilling units, each survival craft must be capable of being launched to the water at the minimum operating draft, under unfavorable conditions of trim and with the unit listed not less than _____.
20°

On offshore drilling units where foam systems are installed on the heliport, the system must be able to discharge continuously for at least _____.
5 minutes

Fire extinguishers of sizes III, IV, and V are designated as _____.
semi-portable

The maximum draft to which a MODU can legally be submerged is indicated by the _____.
Load Line mark

The stamped full weight of a 100 lb. CO2 bottle is 314 lbs. What is the minimum weight of the bottle before it has to be recharged?
304 lbs.
See REF2511

The wooden plug inserted in the vent of a damaged tank of a MODU should be removed in case it is decided to _____.
pump from the damaged tank
See REF163

The best information on the nature and extent of damage on a MODU is obtained from _____.
personnel at the scene of the damage

The DEEP DRILLER, loaded as shown in Sample Load Form #5 (Survival), suffers major damage which results in flooding in tank C3S. Your best countermeasure is to _____.
pump from 8S

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers severe damage to the port aft column below the waterline. You should pump from tank _____.
10P

In the event of damage to the DEEP DRILLER which results in flooding to one of the lower-hull tanks, pump from _____.
nearby undamaged tanks containing ballast

The COASTAL DRILLER is in transit at a draft of 10.0 feet. It loads 216.43 kips of weight aboard. What is the new draft?
10 feet 2 inches

The COASTAL DRILLER, with no list, is at a true mean draft of 10 feet and 10 inches. LM is 1,699,463 ft-kips. Using only tanks 1, 25, and 26, how many kips of drill water must be transferred to level the jack-up?
Transfer 53.1 kips each from 25 and 26 forward to 1

What is the maximum permitted hook load for the COASTAL DRILLER when 450 kips are in the setback and no other loads are on the cantilever?
529 kips

While the COASTAL DRILLER is in transit at a draft of 10 feet 6 inches, a severe storm is predicted within 12 hours. VM are 541,257 ft-kips, FSML are 32,000 ft-kips and FSMT are 24,000 ft-kips. How much should the KGL be lowered to satisfy the maximum allowable KG criteria?
1.96 feet

If the metacentric height is large, a floating MODU will _____.
be stiff

During a storm, the mooring line on a MODU should be long enough so that the angle between the anchor shank and the ocean floor is _____.
0°

While drilling loaded as shown in Sample Load Form Number 4 (Drilling), the DEEP DRILLER suffers an unexpected but slowly increasing starboard and forward inclination. The wind and waves are light. This inclination could have been caused by _____.
ballast tanks equalizing into tank 1S

When extracting the legs from the soil, the hull of the COASTAL DRILLER may be pulled down until the draft is _____.
one foot deeper than calculated afloat draft

The DEEP DRILLER is loaded as shown in the Sample Load Form #3 (Preparing to Drill). If the liquid mud in mud pit #4 (see table 8) is dumped, what would be the new height of the center of gravity corrected for longitudinal free surface effects?
53.55 feet

While underway in a field move with the lower hulls awash, a semisubmersible has an allowable KG of 63.69 feet; KMT is 65.12 and KML is 64.92. The KGT is 56.13 and KGL is 55.89. What is the GML?
9.03 feet

While loaded as shown in the DEEP DRILLER Sample Load Form #4 (Drilling), all of the liquid mud is dumped. What is the new uncorrected KG?
52.20 feet

The DEEP DRILLER, at a draft of 55 feet, has a KGT of 53.05 feet and TCG of 0.5 foot to starboard. What is the list angle?
2.9°Starboard

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballasting to Survival). What is the new height of the longitudinal metacenter if all the bulk materials are discharged?
62.35 feet

The DEEP DRILLER, loaded as shown in the Sample Load Form #4 (Drilling), discharges a non-liquid load of 275.8 long tons from a position 130 feet above the keel, 40 feet forward of amidships, and 30 feet to port of the centerline. What is the new KGT?
53.65 feet

A semisubmersible displacing 17,600 long tons has an LCG 3.2 feet forward of amidships. Bulk, weighing 400 long tons, is loaded into P-tanks located 50.8 feet aft of amidships. What is the new LCG?
2.00 feet forward of amidships

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). What is the new trim angle if 500 kips of weight are shifted aft 60 feet?
0.61 degrees by the stern

How many independent bilge systems is the COASTAL DRILLER equipped with?
2

In MODU construction, a greater number of watertight bulkheads results in _____.
increased capacity to set flooding boundaries

On a MODU, the deck stringer is the outboard most deck _____.
plating

The DEEP DRILLER at a draft of 58.0 feet discharges 1,792.44 long tons of ballast. What is the new draft?
45 feet

How much non-liquid deck load can the DEEP DRILLER, loaded as shown in the sample Load Form #4 (Drilling), accept if the weight is placed at a VCG of 130 feet? Ballast added or discharged to maintain draft at 60 feet is done so at 10 feet.
457.5 long tons

A MODU with the TCG off the longitudinal centerline inclines to an angle of _____.
list

A jack-up has 8 inches of trim by the stern. Calculations show that the moment required to change trim one inch is 500 foot-kips. To level the unit, how far must a weight of 50 kips be transferred toward the bow?
80.0 feet

What is the change in longitudinal moments for the Coastal Driller if 2.0 feet of drill water is transferred from a full drill water tank 23 to an empty drill water tank 6?
7,990 foot-kips decrease

One way to increase the period of roll on a semisubmersible rig while under tow is to _____.
increase tank free surface

The jettisoning of topside weight from a MODU serves what purpose?
It lowers the center of gravity.

Where will you find the requirements for the lights that must be displayed on a mobile offshore drilling unit that is being towed?
COLREGS

Under what condition are you allowed to depart from the rules of the road?
To avoid immediate danger

Extended cyclical variations in tensions will cause an anchor chain to break due to _____.
fatigue

The hoist line primarily used for lifting personnel on MODU cranes is called the _____.
whip line

A device commonly used to secure the pendant wire when it is initially passed to an anchor handling vessel is _____.
pelican hook

The major cause of anchor buoy pendant wire failures is _____.
rough weather

In a wire rope mooring system, the fairlead sheave should be a minimum of _____.
18-36 times the diameter of the wire rope

The generators on your rig have shut down, leaving you without navigation lights. Which emergency signal would you transmit over the VHF radio to alert vessels in the area of your predicament?
Security, Security, Security

Why must the drilled hole be filled with drilling mud when tripping the drill string out of the hole?
To prevent reduction of fluid head on the formations

What does the term "head" mean when applied to a pump?
Difference between the discharge and suction pressures

The series of valves used to control the return flow in well control operations is called the _____.
choke manifold

When drilling from a MODU the weight in air of tubular goods on the racks is reduced when run into the drilled hole because of the effect of _____.
buoyancy of the mud

For the DEEP DRILLER, the maximum permissible offset which can be tolerated while drilling is _____.
6% of water depth

When should the emergency position-indicating radio beacon be activated after abandoning a MODU?
Immediately

What is the minimum concentration of H2S that will cause death with short-term exposure?
700 ppm
See REF2006

A survival craft being used to pick up a person who has fallen overboard from a MODU should approach the person _____.
against the wind

Any firefighting equipment that is carried in addition to the minimum required number on a MODU must _____.
meet the applicable standards
See REF2450

The required fireman's outfits required for MODU's are not to be used for any other purpose EXCEPT for the _____.
self-contained breathing apparatus, when used as protection from gas leaking from a refrigeration unit

What is the most vulnerable part of the fire main system on board an offshore rig?
The fire hose

When a davit-launched raft is lowered from a MODU, upon becoming waterborne, the raft is released by _____.
the effects of buoyancy removing the weight of the raft from the hook

A weight of 1,000 kips is equivalent to _____.
500 short tons
See REF471

After deploying the anchor, a permanent chain chaser is _____.
stripped back to the rig and secured

The initial tension set in the mooring system of a MODU establishes the _____.
distance the unit can be offset from the wellbore before the restoring forces oppose the environmental forces

When cargo aboard a jack-up in transit becomes adrift, the tow vessel should be asked to _____.
turn into the seas

The motions of the COASTAL DRILLER during a normal transit when wind speeds are less than 70 knots are limited by _____.
leg strength

The full period of motion of the DEEP DRILLER while tripping is 10 seconds and the maximum pitch angle as seen on the inclinometer is 4 degrees. From the standpoint of critical motion, the motion is _____.
satisfactory, continue tripping

A person on a fixed or floating platform engaged in oil exploration located 10 nautical miles from nearest land MAY discharge which of the following?
food waste
food, ground to less than 1"
paper, ground to less than 1"
None of the above
See REF2464

A small fuel spillage has occurred during helicopter refueling. After the leak has been stopped and fire-control personnel have been notified and are standing by, the next step is to _____.
wash spilled fuel away with a flood of water

How often must the emergency generator be tested on a mobile offshore drilling unit?
Once each month
See REF2467

On offshore drilling units, the Muster List ("Station Bill") must be posted in conspicuous locations and signed by the _____.
Master or person in charge
See REF198

On offshore drilling units, emergency lighting and each emergency power system must be tested at least once a _____.
week

The Master or person in charge of a MODU is required to submit a casualty report of an intentional grounding under what condition?
If it creates a hazard to navigation

On offshore drilling units, notification shall be given to the Coast Guard of a casualty if a person is injured and unable to perform routine duties for _____.
any amount of time

It is the responsibility of the person in charge to _____.
be fully aware of the provisions in the operating manual

On offshore drilling units, each inflatable liferaft must be serviced every _____.
12 months

Any firefighting equipment that is carried in addition to the minimum required must _____.
meet the applicable standards
See REF2450

Of the required ring life buoys for a MODU, how many must be equipped with a water light?
4
See REF2491

Size I and II fire extinguishers are designated as _____.
portable

On offshore drilling units, the minimum number of inclined ladders which must be fitted between each weather deck is _____.
1

Each liferaft, which does not have an indicated maximum stowage height indicated on the liferaft, must be _____.
stowed not more than 59 feet above the lightest waterline

Where foam extinguishing systems are provided on a MODU, each machinery flat in the protected space must have a(n) _____.
coaming

The size of fire hydrant hose connections on a cargo vessel must be either 1-1/2 inches or _____.
2-1/2 inches

The document that certifies the correctness of the load line marks on a MODU is called the _____.
Load line certificate
See REF486

The construction portfolio may be included as part of the MODU _____.
operating manual

Progressive flooding on a MODU is controlled by securing watertight boundaries and _____.
pumping out flooded compartments

The downflooding angle for a MODU is the minimum angle at which _____.
a non-watertight opening is at still water level

The DEEP DRILLER, loaded as shown in Sample Load Form #5 (Survival), suffers major damage which results in flooding in tank C1P. Your best countermeasure is to pump from _____.
3P

The DEEP DRILLER, while loaded as shown in the Sample Load Form #4 (Drilling), suffers severe damage to the starboard aft column below the waterline. You should pump from tank _____.
9S

If the DEEP DRILLER is damaged, the unit is designed to avoid downflooding in wind speeds up to _____.
50 knots

The COASTAL DRILLER has a change of trim by the head of 2.0 feet. What is the change of draft at the forward draft marks?
1.33 feet

A semisubmersible, 200 feet in length between draft marks with the LCF 10 feet aft of amidships, records the following drafts: Port Forward 74'-09"; Port Aft 78'-09"; Starboard Forward 69'-09"; and Starboard Aft 73'-09". What is the list?
-5.0 feet

Considering the lightweight changes to the COASTAL DRILLER, what is the maximum permitted hook load permitted when 450 kips are in the setback and 200 kips are in the cantilever pipe rack?
529 kips

While the COASTAL DRILLER is in transit at a draft of 10 feet 6 inches, a severe storm is predicted within 12 hours. VM are 520,462 ft-kips, FSML are 26,000 ft-kips, and FSMT are 25,000 ft-kips. How much should the KG corrected for free surface effects be lowered to satisfy the maximum allowable KG criteria?
0.00 feet

If the metacentric height is small, a floating MODU will _____.
be tender

When the air temperature is just below 32°F, snow FIRST adheres to _____.
horizontal surfaces

After jacking down your liftboat you have an unexpected list. You find that the only cause of this list must be a flooded leg. The list caused by a flooded leg means your vessel has a(n) _____.
decrease in the GZ (righting arm)

On the COASTAL DRILLER, a noticeable increase in the level indicator while extracting the legs from the soil indicates _____.
one or two legs are stuck

The DEEP DRILLER is loaded as shown in Sample Load Form #3 (Preparing to Drill). If the liquid mud in mud pit #4 (see table 8) is dumped, what would be the new height of the center of gravity corrected for transverse free surface effects?
52.88 feet

The DEEP DRILLER, at 60.0 feet draft in sea water, has VM = 974,441 foot-long tons, LM = 40,301 foot-long tons, TM = 3 foot-long tons, FSML = 30,572 foot-long tons, and FSMT 18,732 foot-long tons. What is the KG corrected for transverse free surface effects?
54.82 feet

What is the change in the vertical moments for the DEEP DRILLER if 2.0 feet of ballast is transferred from a full ballast tank 3P to an empty ballast tank 10P?
556 ft-tons decrease

The DEEP DRILLER, at a draft of 50 feet, has a KGT of 52.12 feet and TCG of 0.5 foot to port of the longitudinal centerline. What is the list in feet?
5.4 feet to port

The DEEP DRILLER is loaded as shown in the Sample Load Form #2 (Ballast to Survival). What is the new longitudinal location of the center of buoyancy if all the bulk materials are discharged?
2.53 feet

The DEEP DRILLER, at 60.0 feet draft in sea water, has VM = 974,441 foot-long tons, LM = 40,301 foot-long tons, TM = 3 foot-long tons, FSML = 30,572 foot-long tons, and FSMT = 18,732 foot-long tons. What is TCG?
0.00 feet

What is the transverse shift in the center of gravity if 200 short tons are placed 10 feet to port of the centerline on a MODU with TCG 0.7 foot starboard of the centerline, and the displacement is 9,000 short tons?
0.23 foot

On the DEEP DRILLER, to pump bilge water out of the starboard pump room using both bilge pumps, it is necessary to open valves _____.
39, 40, 41, and 42

On the COASTAL DRILLER, the level of water in each of two pump bilge pits is monitored by hydrostatic alarm switches connected to a remote panel located in the _____.
OIM's office

Where is the keel generally located on a MODU?
Along the centerline of the lower hulls

In order to withstand fluid head pressure on a MODU, stiffeners are often attached to the bulkhead _____.
plating

The DEEP DRILLER at survival draft loads 2,068.1 long tons of ballast. What is the new draft?
60.0 feet

The DEEP DRILLER is loaded as shown in the Sample Load Form #3 (Preparing to Drill). If all the liquid mud (see table 8) is dumped, what would be the new draft?
56 feet 10.9 inches

In the DEEP DRILLER, LCG is obtained from the sum of the longitudinal moments by _____.
dividing by displacement

A jack-up 180 feet in length with the LCF at 120 feet AFO has a draft of 8 feet at the bow and 11 feet at the stern. What is the trim by the stern?
3.0 feet

What is the change in the vertical moments (excluding free surface effects) for the COASTAL DRILLER if 2.0 feet of drill water is transferred from a full drill water tank 23 to an empty drill water tank 6?
-253 foot-kips

For a floating MODU, the center of flotation is the point in the waterplane _____.
about which the MODU lists and trims

Subtracting FSCT from KGT yields _____.
KG

For the purposes of the International Rules of the Road, a non-self-propelled mobile offshore drilling unit under tow is considered to be a _____.
vessel

Prior to magnetic particle inspection of anchor chain, the chain should be _____.
sandblasted

The weight of the loaded personnel carrier, when transferring personnel from a MODU with a crane, must not exceed _____.
1/10 of the breaking strength of the hoist rope times the parts of line used

The design of a spring buoy helps _____.
to prevent chafing at the lower end of the pendant

Anchor shackles should have a breaking strength that is _____.
equal to the chains they are connecting

What happens to the pulling power of a winch when retrieving wire rope?
It decreases

You are standing a radio watch aboard the rig. A crew boat calls you on VHF channel 16. When you reply with your vessel name and call letters, you should request the crew boat to switch to which of the following channels?
10

While drilling at 4,000 feet with casing set to 2,000 feet, the well kicks with mud weight in the hole. Mud pumps are shut down and the blowout preventer is closed. Compared to the drilling situation, the pressure on the casing seat will be _____.
increased

What type of test determines the pressure at which the formation immediately below the last set casing will take fluid?
Leak-off

The platform that supports the derrick man when tripping pipe is called the _____.
monkey board

An integral part of a blowout preventer that serves as the closing element on an open hole, and whose ends do not fit around the drill pipe but seal against each other and shut off the space below completely is the _____.
blind ram

What is the weight in long tons of 180 barrels of 15 pound per gallon drilling mud?
50.63 long tons

An uncontrolled flow of gas, oil, or other well fluids into the atmosphere is called a _____.
blowout

What is the maximum concentration of H2S to which workers may be regularly exposed without adverse effects?
20 ppm

On board a mobile offshore drilling unit, the key to the most rapid and effective response to a man overboard situation is _____.
well-conducted drills

Each fire hydrant serving machinery spaces containing oil fired boilers, internal combustion machinery, or oil fuel units must be equipped with a _____.
low-velocity spray applicator
See REF2451

Each hand portable fire extinguisher on a MODU must be marked with _____.
an identification number different from other extinguishers on the unit
See REF2460

Smoking in bed on a MODU is prohibited _____.
at all times

What is the primary advantage of a davit-launched liferaft in comparison to an inflatable liferaft?
The davit-launched liferaft enables personnel to enter the raft without having to enter the water.

A permanent chain chasing system is used to _____.
run and retrieve anchors

Why should you preload a mooring system above your precalculated operating mooring tensions?
This serves as a benchmark for increasing tensions in rough weather.

The effect of ocean currents is usually more evident on a rig being towed than on a tug navigating independently because the _____.
speed of the tow is less

Curve A in the Design Limits of Legs Chart of the Coastal Driller Operating Manual, shows the operating limits during severe storm conditions during transit based on _____.
stability and leg strength

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). Weather conditions make it necessary to ballast down to survival draft. It is decided to check the stability at the intermediate draft of 32 feet. If the added ballast has an average VCG of 9.03 feet, and the sum of free surface moments is 56,244 foot-tons, what is the new KGL?
61.16 feet

A person on a fixed or floating platform engaged in oil exploration MAY discharge food waste into the sea when the distance from the nearest land is at least _____.
12 nautical miles
See REF2464

When pumping fuel between an offshore supply vessel (OSV) and a MODU, there must be direct VHF radio contact between the offshore supply vessel engineer and the _____.
person in charge of the fuel transfer

On a MODU, a fire drill shall be conducted once every _____.
week
See REF2468

An offshore drilling unit is required to carry on board an operations manual approved by the _____.
Coast Guard

Where must you record the date of each emergency training drill conducted on a MODU?
In the logbook

The Master or person in charge of a MODU is required to submit a casualty report of an intentional grounding when it _____.
creates a hazard to the vessel

On a MODU, CO2 extinguishers must be weighed _____.
annually

The person in charge of a mobile offshore drilling unit must insure that _____.
the date of each fire extinguisher test is recorded

How often is a drill on the use of the line throwing appliance required to be held on a mobile offshore drilling unit?
Once every three months

Locations on a MODU where flammable hydrocarbon gas or vapors may accumulate due to drilling operations are defined as _____.
classified locations
See REF2481

For a MODU not on an international voyage, an approved substitute for an impulse projected rocket-type line throwing appliance is a _____.
shoulder-type line throwing gun
See REF2492

What must be located on the discharge side of the pump in a fire main system?
Pressure gauge

On offshore drilling units where natural ventilation is provided, each porthole or window must be fitted with _____.
screens

An offshore drilling unit must be equipped with a first aid kit approved by the _____.
Mine Safety and Health Administration

The helicopter deck of a MODU must be marked with the units identification, appropriate aiming circles, and a continuous line on the perimeter which is _____.
16 inches wide

On inspected cargo vessels, each fire station is required to be fitted with a hose which has a nominal diameter of _____.
1-1/2 or 2-1/2 inches

Compliance with the terms of the load line certificate on a MODU is the responsibility of the _____.
Master or Offshore Installation Manager
See REF486

The requirements for special welding procedures on a MODU must be contained in the _____.
construction portfolio

To assess the potential for progressive flooding aboard a damaged MODU, you must know the _____.
integrity of the watertight boundaries

A flooded leg on a liftboat would adversely affect the vessel's stability underway by _____.
shifting the CG (center of gravity) off center
See REF763

The DEEP DRILLER, loaded as shown in Sample Load Form #4 (Drilling), suffers major damage which results in flooding in tank C3S. Pumping from tanks in the vicinity of the damage have proven ineffective. Your best countermeasure is to _____.
counterflood in 1P

While the DEEP DRILLER is operating as shown in Sample Load Form #4 (Drilling), casing is accidentally dropped over the starboard side. If the starboard forward inclination is slowly increasing, which tank is probably damaged?
1S

A floating MODU with an initial negative metacentric height _____.
may lie at an angle of loll
See REF775

For a floating MODU, true mean draft is always the _____.
draft at the center of flotation

For a MODU with list, an increase in GMT will cause the inclination to _____.
decrease

On the COASTAL DRILLER, hook load includes the weight of the _____.
drill string

While the COASTAL DRILLER is in transit at a draft of 10 feet 6 inches, a severe storm is predicted within 12 hours. VM are 546,462 ft-kips, FSML are 18,000 ft-kips, and FSMT are 32,000 ft-kips. How much should the KG corrected for free surface effects be lowered to satisfy the maximum allowable KG criteria?
2.34 feet

The natural rolling period of a drilling barge increases when _____.
ice accumulates above deck

It is proposed to moor the DEEP DRILLER in 600 feet of water in a region in which the effective wind velocity could reach 80 knots, significant wave height could reach 30 feet, and the current could be 1.5 knots. If these conditions occurred at the same time from the bow, the total environmental force would be _____.
595 kips

After jacking down your liftboat you have an unexpected list. You find that the only cause of this list must be a flooded leg. Your next course of action should be to _____.
jack the vessel back up to a safe height

Among the possible causes of unexpected constant inclination of the floating COASTAL DRILLER is _____.
miscalculation of loads

The DEEP DRILLER is loaded as shown in the Sample Load Form #3 (Preparing to Drill). If all the liquid mud (see table 8) is dumped, what would be the new height of the longitudinal metacenter?
61.19 feet

The DEEP DRILLER, at 60.0 feet draft in sea water, has VM = 974,441 foot-long tons, LM = 40,301 foot-long tons, TM = 3 foot-long tons, FSML = 30,572 foot-long tons, and FSMT = 18,732 foot-long tons. What is the KG corrected for longitudinal free surface effects?
55.47 feet

What is the change in vertical moments for the DEEP DRILLER if 103.48 long tons of ballast is discharged from a full ballast tank 1P?
1,914 foot-tons decrease

The DEEP DRILLER is loaded as shown in Sample Load Form #4 (Drilling). If port valves 24 and 2 are mistakenly opened, the change in inclination will be increasing trim by the _____.
bow with port list

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). What is the new metacentric height corrected for longitudinal free surface effects if the entire contents of salt water ballast 1anks 1P and 1S are discharged? (Use KML = 348.58)
279.37 feet

The DEEP DRILLER, at 60.0 feet draft in sea water, has VM = 974,441 foot-long tons, LM = 40,301 foot-long tons, TM = 3 foot-long tons, FSML = 30,572 foot-long tons, and FSMT = 18,732 foot-long tons, and FSMT = 18,732 foot-long tons. What is the LCG?
2.22 feet

A semisubmersible, while floating level, displaces 20,000 long tons. LCB is 3.0 feet forward of amidships. Bulk, weighing 300 long tons, is placed in P-tanks located 40 feet aft of amidships. What is the new LCG?
2.36 feet forward of amidships

To pump bilge water out of the port pump room on the DEEP DRILLER, using the number 2 bilge pump, open port-side valve _____.
42

On the COASTAL DRILLER, the level of water in each of two pump bilge pits is monitored by _____.
hydrostatic alarm switches

The central longitudinal structural hull strength member of the lower hulls of semisubmersible MODU's is called the _____.
keel

Compared to internal structural plating, the exterior hull plating on a MODU is usually _____.
stronger

The DEEP DRILLER, at a mean draft of 60 feet, has a two-foot trim by the head and a three foot list to starboard. What is the draft at the port aft draft mark?
57.5 feet

The DEEP DRILLER is loaded as shown in the Sample Load Form #3 (Preparing to Drill). If the liquid mud in mud pit #1 (see table 8) is dumped, what would be the new draft?
59 feet 2.7 inches

In the DEEP DRILLER, TCG is obtained from the sum of the transverse moments by _____.
dividing by displacement

A jack-up level at 12.5 feet draft transfers 100 kips of drill water from a tank with a TCG of -30 feet to a starboard tank with a TCG of 70 feet. The resulting starboard draft is 13 feet. The moment required to change list one inch (MCL1") is _____.
833 foot-kips

What is the increase in transverse moments for the Coastal Driller if 2.0 feet of drill water is transferred from a full drill water tank 23 to an empty drill water tank 6?
4783 foot-kips

A semisubmersible which flops between port and starboard angles of list is likely to have _____.
KMT less than KGT

What would be considered a vessel under the International Rules of the Road?
A semisubmersible drilling rig under tow
A semisubmersible drilling rig drifting after breaking a tow line
A jack-up rig under tow
All of the above.

Grinding to eliminate shallow surface defects should be done _____.
parallel to the longitudinal direction of the chain

When transferring personnel with a MODU crane, the weight of the loaded personnel carrier must not exceed _____.
1/3 of the static rated load at the lift radius

A mooring system that results in a spread system without anchor buoys is called a _____.
permanent chasing system

When a combination chain and wire rope mooring line is used, the chain is deployed _____.
at the anchor end of the line

The load chart of a MODU crane enables the operator to combine the load radius with boom length to determine the _____.
allowable load

You are standing radio watch and monitoring VHF Channel 16 when you receive a call to your rig, TEXAS STAR, from a supply boat. What is the proper way to answer this call?
This is TEXAS STAR, WSR 1234, reply Channel 10.'

The test for determining the formation fracture pressure after drilling out a seat is called a _____.
leak off test

An entry of water, gas, oil, or other formation fluid into the wellbore is called a _____.
kick

A tool consisting of a handle and releasable chain used for turning pipe or fittings of a diameter larger than that which a pipe wrench would fit is called _____.
chain tongs

A frame with two, or sometimes four, arms through which are threaded the guidelines and which is used to keep the drill stem and bit in line with the center opening in the temporary guide base is the _____.
guide frame

What is the weight of 100 barrels of 17 pound per gallon drilling mud?
71.4 kips

When evacuating the DEEP DRILLER, preparations should include _____.
activating the emergency power system

If the low side bilge pump fails and the high side bilge pump has insufficient suction to dewater the low side of the COASTAL DRILLER when afloat, you should use the _____.
saltwater eductor system

What is the minimum concentration of H2S which can cause death if a person is exposed for even an instant?
1000 ppm
See REF2006

If a man falls overboard from a rig under tow, you should FIRST _____.
deploy life buoys

How many fireman's outfits are required on a MODU?
2
See REF2452

The size of fire hydrant hose connections must be either 1-1/2 inches or _____.
2-1/2 inches

The primary danger in helicopter fires on a MODU is _____.
burning jet fuel running on to quarters or other areas

Prior to boarding from a MODU, a davit-launched liferaft should be well ventilated of excess _____.
carbon dioxide gas

The holding power of an anchor increases when the _____.
amount of chain lying along the bottom increases

The most doubtful and unpredictable factor in a mooring system is the _____.
ability of the anchors to hold in a seabed

If a MODU under tow starts jumping on its tow line, the most appropriate action to alleviate the condition is to _____.
adjust tow line length

Curve B in the Design Limits of Legs Chart of the Coastal Driller Operating Manual, shows the operating limits during normal transit based on _____.
leg strength

The DEEP DRILLER is under tow at a 20 foot draft. The rig motions are close to exceeding the limits for critical pitch and roll. The rig is also experiencing occasional pounding on the horizontal braces. In this situation you should _____.
ballast down to a 45 foot draft and check vessel motions

To determine the number of portable fire extinguishers required on a mobile offshore drilling unit, you should check the _____.
Certificate of Inspection
See REF518

On the COASTAL DRILLER, when afloat, oily bilge discharge should be pumped through the _____.
skimmer tanks

At the required fire drill conducted aboard a MODU, all persons must report to their stations and demonstrate their ability to perform the duties assigned to them _____.
in the Muster List ("Station Bill")
See REF2455

Which record must be retained on board after a report of casualty to a MODU?
Storage plans

On offshore drilling units, each storage battery for emergency lighting and power systems must be tested every six months under actual connected load for a period of at least _____.
2 hours

According to regulations, a Master or person in charge of a MODU is required to submit a report of a loss of life _____.
to the nearest OCMI

Cartridge-operated dry chemical extinguishers used on MODU's should have the propellant cartridge weighed every _____.
12 months

Who is responsible for insuring that each survival craft on a mobile offshore drilling unit is cleaned and inspected once a year?
The designated person in charge of the rig

A mobile offshore drilling unit crane certificate is required to be maintained _____.
on the unit

A fire pump on a MODU requires 175 psi discharge pressure to maintain the required 50 psi pitot tube pressure at the two highest hydrants. The maximum setting for the relief valve is _____.
200 psi
See REF2482

On a MODU, a cabinet or space containing the controls or valves for the fixed firefighting system must be _____.
posted with instructions on the operation of the system
See REF2493

Multiple fire pumps may be used for other purposes provided that one pump is _____.
kept available for use on the fire main at all times

On offshore drilling units all sleeping areas, mess areas, recreational and hospital areas that are adjacent to or immediately above a storage area or machinery space, paint locker, washroom, or toilet space must be made _____.
odorproof

How many adult life jackets are required on board a MODU?
Enough for 100 percent of the persons allowed on board
One for each work station and industrial work site
Both A & B above

To enable tying down a helicopter on the landing area of a MODU, the landing deck must be fitted with _____.
recessed tie down points

A fire pump may be used for other purposes if _____.
one of the required pumps is kept available for use on the fire main system at all times

The prohibition against exceeding the load line draft may be considered temporarily not applicable when _____.
bottom supported units are being raised or lowered to the sea bed

A For MODU's operating under the U.S. flag, the construction portfolio must contain _____.
approved welding procedures and welding test procedures

Which type of hull damage on a floating MODU should be repaired first?
Damage at or just above the waterline

The downflooding angle for a MODU is the maximum angle at which _____.
intact stability curves are valid

The DEEP DRILLER, loaded as shown in Sample Load Form #4 (Drilling), suffers major damage which results in flooding in tank C1P. Pumping from tanks in the vicinity of the damage has proven ineffective. Your best countermeasure is to _____.
counterflood in 10S

While the DEEP DRILLER is operating as shown in Sample Form #4 (Drilling), casing is accidentally dropped over the starboard side. If the starboard aft inclination is slowly increasing, which tank is probably damaged?
10S

The angle to which a floating MODU, with a negative initial metacentric height, lies while at rest in still water is the angle of _____.
loll
See REF763

The number of kips necessary to change the true mean draft of a MODU one inch is known as _____.
KPI

For a MODU with transverse inclination, an increase in GMT causes _____.
list to decrease

Drilling loads on the COASTAL DRILLER are the combined loads arising from conductor tension, rotary, hook, and _____.
setback loads

While the COASTAL DRILLER is in transit at a draft of 10 feet 6 inches, a severe storm is predicted within 12 hours. GMT is 98.89 feet. How much should the KG corrected for free surface effects be lowered to satisfy the maximum allowable KG criteria?
0.00 feet

The free surface effects of a partially full liquid tank decrease with increased _____.
displacement volume of the MODU

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). Severe motion makes it necessary to ballast down to survival draft. It is decided to check stability at the intermediate draft of 32 feet. If the added ballast has an average VCG of 9.03 feet, and the sum of free surface moments is 56,244 foot-tons, what is the new GML?
4.06 feet

While drilling loaded as shown in Sample Load Form Number 4 (Drilling), the DEEP DRILLER suffers an unexpected but slowly increasing port and forward inclination. The wind and waves are light. This inclination could have been caused by _____.
ballast tanks equalizing into tank 1P

Among the possible causes of unexpected rapid increasing inclination of the floating COASTAL DRILLER is _____.
flooding due to hull damage

The DEEP DRILLER is loaded as shown in the Sample Load Form #3 (Preparing to Drill). If all the liquid mud (see table 8) is dumped, what would be the new height of the transverse metacenter?
62.94 feet

The DEEP DRILLER, at a draft of 19 feet, has a KGL of 59.91 feet and an LCG of 1.57 feet. What is the trim angle?
0.3° by the stern

Because of the presence of 75 knot winds, the DEEP DRILLER is at survival draft. KGT is 3.24 feet less than the maximum allowed. What is the value of GMT?
5.32 feet

The DEEP DRILLER suffers minor flooding of the starboard pump room. If both starboard bilge pumps fail to dewater the pump room, you should use the _____.
starboard drill water pump

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (transit). What is the new metacentric height corrected for transverse free surface effects if the entire contents of Salt Water Ballast Tanks 1P and 1S are discharged? (Use KMT = 375.38 feet)
306.79 feet

The DEEP DRILLER is loaded as shown in Sample Load Form #4 (Drilling). What would be the new sum of transverse moments for the Stores & Supplies (Table 6) if paint weighing 3.48 tons is added to the paint locker?
000 foot-tons

A semisubmersible, while floating level, displaces 18,000 long tons. Bulk, weighing 400 long tons, is placed in P-tanks located 80 feet to starboard of the centerline. What is the new TCG?
1.74 feet starboard of centerline

Aboard the DEEP DRILLER, the bilge pumps take suction from the pump rooms, cofferdam, void area, access trunk, and _____.
center column chain lockers

On the machinery deck of the COASTAL DRILLER, each watertight compartment has at least one sump valve that can be remotely operated from the _____.
bilge pit

On a MODU, the keel is the primary strength member of the lower hull form in which direction?
longitudinal

In a semisubmersible MODU, the columns contain void spaces above the waterline that are used principally for _____.
reserve buoyancy

What is the displacement of the DEEP DRILLER with a draft of 19.5 feet in fresh water?
11,932.8 long tons

While loaded as shown in the Sample Load Form #4 (Drilling), all of the liquid mud is dumped. What would be the new draft?
56.69 feet

In the DEEP DRILLER, the transverse free surface correction (FSCT) is obtained from the total of transverse free surface moments (FSMT) by _____.
dividing by displacement

A jack-up with a calculated moment to change list one inch (MCL1") of 1,350 foot-kips intends to transfer drill water from a tank with a TCG of 82 feet to a tank with a TCG of 18 feet. How much weight should be transferred to change the draft on the port side from 11.0 to 11.5 feet?
253.1 kips

What is the increase in transverse free surface moments for the COASTAL DRILLER if 2.0 feet of drill water is transferred from a full drill water tank 23 to an empty drill water tank 6?
3,914 foot-kips

On a semisubmersible drilling unit, increasing riser tension increases _____.
KG

For the purposes of the International Rules of the Road, a jack-up drilling rig under tow is considered to be a _____.
vessel

What should be done after repairing a surface crack on a link of anchor chain by grinding?
Examine the area by magnetic particle inspection

When hoisting personnel from a vessel, with the MODU cranes, the crane operator must assure that _____.
he does not swing the load until it is above the landing area

The recessed areas on a wildcat are called _____.
pockets

In a combination chain and wire rope mooring system, the anchor chain is deployed at the anchor end of the line to _____.
increase the holding power

On a MODU crane, the load chart relates the allowable load to the combination of boom length and _____.
load radius

What is the function of an air receiver in the compressed air system on a MODU?
Acts as an accumulator
See REF166

Large quantities of gas in the shale shaker area may be an indication of _____.
high formation pressure

A large valve, usually installed above the ram preventers, that forms a seal in the annular space between the pipe and wellbore or, if no pipe is present, on the wellbore itself is called the _____.
annular blowout preventer

What is a grooved pulley?
Sheave
See REF2445

At the instant when a string of casing being run from a MODU is landed in the well head, _____.
the hook load (weight of the casing string) is removed from the MODU

The sounding level of 12 lb. per gallon mud in mud pit 1S of the COASTAL DRILLER is 5.5 feet. What is the weight of the mud?
114.37 kips

Which of the following items should all MODU personnel be familiar with?
boarding and operating procedures

Failure of both port ballast pumps on the DEEP DRILLER prevents their use. To deballast from tank 1P, you may use the _____.
starboard ballast pump and the crossover system

Which of the following conditions would be the worst for the dispersion of H2S?
nearly calm, clear nights or early morning

Survival practice in the mooring system is to slack off the tensions on the leeward side and _____.
adjust as evenly as practical the windward tensions

On a MODU, the locker or space containing the self-contained breathing apparatus must _____.
be marked "SELF-CONTAINED BREATHING APPARATUS"
See REF2453

On offshore drilling units, each fire station is required to be fitted with at least one spanner and at least one _____.
hose rack

The signal to man emergency stations on MODU's is _____.
intermittent ringing of general alarm for not less than 10 seconds
See REF2461

The davit aboard a MODU is used to _____.
lower the liferaft down with its full complement

What could cause a significant difference between actual chain tension and the tension measured by the tensiometer?
The chain contacting a chock or fairlead between the tensiometer and the lower swivel fairlead

Cable tension for catenary calculations is taken at the _____.
fairlead

Given the same water depth and line tension, the holding power of a 19 pound/foot wire rope mooring system in comparison to the holding power of a 90 pound/foot chain mooring system will be _____.
weaker

With a rig in tow, there is immediate danger to the tug in the event of the _____.
tug losing power

The DEEP DRILLER is moored in 700 feet of water. The average tension on the mooring lines is 200 kips. What is the total vertical component of chain tension?
487.2 long tons

The DEEP DRILLER is being towed at a 20 foot draft. Vessel motions are within acceptable limits, but the waves begin to hit the horizontal braces. You should _____.
change course to reduce the wave impact

To determine the number of industrial personnel allowed on a mobile offshore drilling unit, you should check the _____.
Certificate of Inspection

On the COASTAL DRILLER, in case the bilge discharge is oily, the bilge water should be discharged through the _____.
skimmer tank

On a MODU, watertight doors should be operated _____.
during fire drill
See REF2469

Each hand portable, semi-portable, and fixed fire extinguishing unit on a MODU must be tested and inspected at least once every _____.
twelve months
See REF2470

Where must the Master or person in charge of a MODU record the date of each test of emergency lighting and power systems and the condition and performance of the equipment?
In either the official or unofficial log

According to regulations, a Master or person in charge of a MODU is required to submit a report of a loss of life _____.
to the nearest Marine Safety or Marine Inspection Office

During a fire drill on a MODU, what action is required?
Start each fire pump

Which casualty involving a mobile offshore drilling unit would require a report to be filed?
An occurrence materially and adversely affecting the vessel's fitness for service

On offshore drilling units, the lifeboats' fuel tanks must be emptied and the fuel changed at least once every _____.
12 months

The relief valve on a fire pump is set at 25 psi above the pressure necessary to maintain required fire streams, or _____.
125 psi
See REF2066

For use as protection from gas leaking from a refrigeration unit, each MODU must be equipped with a _____.
self-contained breathing apparatus
See REF2494

When fire pumps are used for other than firefighting service, each pipe connecting the other service (except for branch lines used for deck washing) must have a _____.
shut off valve at a manifold near the pump

Where are self-closing doors required on a MODU?
In each stair tower

Each fire hydrant must have at least one spanner and at least one _____.
hose rack or reel

How wide must the safety net be that is required on the unprotected perimeter of the helicopter landing deck on a MODU?
1.5 meters

What must be located on the discharge side of the pump in a fire main system?
Pressure gauge

Until a change to lightweight has been approved, the weights and center of gravity locations for the changes to lightweight shown in the permanent record for the Deep Driller are treated as _____.
variable load

What repair or modification to a MODU would most likely require consulting the construction portfolio?
Replacing a service pump foundation

Repairing damage to the hull of a MODU at or above the waterline reduces the threat of _____.
continued progressive flooding

The intact volume above the waterline of a floating MODU is _____.
gross tonnage
See REF024

The DEEP DRILLER, loaded as shown in Sample Load Form #4 (Drilling), suffers major damage which results in flooding in tank C3S. Your best countermeasure is to _____.
pump from 9S

While the DEEP DRILLER is operating as shown in Sample Form #4 (Drilling), casing is accidentally dropped over the port side. If the port aft inclination is slowly increasing, which tank is probably damaged?
10P

The COASTAL DRILLER is experiencing a single amplitude roll angle of 3 degrees and a roll period of 10 seconds. What is the maximum water depth that can be used for going on location?
95 feet

A jack-up, while level in transit at 10 feet draft, experiences a wind gust which results in a port draft of 11 feet. What is the new starboard draft?
9 feet

A MODU lists and trims about the _____.
center of flotation

The rotary of the COASTAL DRILLER is located 36 feet aft of the transom and 6 feet to starboard of the centerline. The hook load is 300 kips. Considering the changes to lightweight shown in the Operating Manual, the maximum amount of setback is _____.
224 kips

The existence of liquids in partially full tanks or compartments of a MODU causes a virtual rise in the height of the _____.
center of gravity

The free surface corrections depend upon the dimensions of the surface of the free liquids and the _____.
displacement of the MODU

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). Excessive motion makes it necessary to ballast down to survival draft. It is decided to check the stability at the intermediate draft of 32 feet. If the added ballast has an average VCG of 9.03 feet, and the sum of free surface moments is 56,244 foot-tons, what is the new margin on the maximum allowable KG?
4.06 feet

If a MODU takes a sudden severe list or trim from an unknown cause, you should FIRST _____.
determine the cause before taking countermeasures

The COASTAL DRILLER is operating with a wave clearance of about 20 feet. The out-of-level alarm sounds and the unit is found to be inclined 0.5 degree bow down. The recommended course of action is to _____.
jack the hull down on the aft two legs

The DEEP DRILLER is loaded as shown in the Sample Load form #3 (Preparing to Drill). If all the liquid mud (see table 8) is dumped, what would be the new metacentric height corrected for transverse free surface effects?
11.26 feet

The DEEP DRILLER, at 60.0 feet draft in sea water, has VM = 974,441 foot-long tons, LM = 40,301 foot-long tons, TM = 3 foot-long tons, FSML = 30,572 foot-long tons, and FSMT = 18,732 foot-long tons. What is the uncorrected height of the center of gravity?
53.78 feet

The DEEP DRILLER, at a draft of 60 feet, has VM of 942,120 ft-tons, and FSML of 36,235 ft-tons. What is the KGL?
54.0 feet

The DEEP DRILLER is planning to operate while loaded as shown in the Sample Load Form #3 (Preparing to Drill). What is the margin between KGT and maximum allowable KG?
5.24 feet

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). What is the new transverse free surface correction (FSCT) if the entire contents of Salt Water Ballast Tanks 1P and 1S are discharged?
0.46 foot

What is the new location of the transverse center of gravity if 200 short tons are placed 10 feet to port of the centerline on a MODU with TCG 0.7 foot starboard of the centerline, and displacement 9,000 short tons?
0.47 foot starboard of centerline

A semisubmersible, while floating level, displaces 25,000 long tons. LCG is 2 feet forward of amidships. Bulk, weighing 300 long tons, is placed in P-tanks located 50 feet aft of amidships. What is the new LCG?
1.38 feet forward of amidships

On the DEEP DRILLER, the drill water pump may be used to supplement the bilge pumps. Its normal pumping rate is _____.
500 gallons per minute

On the COASTAL DRILLER, in case one of the two bilge pits is flooded, the other can operate through a(n)_____.
crossover arrangement

The decks of a MODU are supported by transverse members called _____.
deck beams

On a semisubmersible MODU, reserve buoyancy is increased by the presence of void spaces above the waterline in the _____.
columns and upper structure

The DEEP DRILLER, in transit at a seawater draft of 19 feet, enters a fresh water port. What is the new draft?
19.40 feet

A semisubmersible at a draft of 19 feet 9 inches arrives on location planning to deploy eight mooring lines. Each anchor weighs 15 long tons and each mooring line consists of 3,000 feet of 3-inch chain (89.6 lbs/ft). If no ballast corrections are made, what is the expected draft if the average TPI is 60?
18 feet 3 inches

A semisubmersible with a positive GM, and TCG located starboard of the centerline, inclines to an angle of _____.
list

A jack-up with a calculated moment to change list one inch (MCL1") of 1,200 foot-kips intends to transfer 100 kips of weight in a transverse direction. How far should the weight be transferred to change the draft on the port side from 11.5 to 11.0 feet?
144 feet

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of the No.1 drill water tank are discharged, what would be the new LCG?
120.42 feet AF0

Laying down drill pipe from the derrick of a semisubmersible on location reduces the _____.
natural roll period

A jack-up drilling unit elevated on the Outer Continental Shelf must have a fog horn that will sound _____.
a 2-second blast every 20 seconds

For the purposes of the International Rules of the Road, a non-self-propelled, semisubmersible drilling unit under tow is considered to be a _____.
vessel

The American Petroleum Institute recommends magnetic particle inspection for _____.
connecting links

When may a personnel net be used to bring heavy equipment aboard an offshore drilling unit?
Never

The machinery associated with heaving in and running out anchor chain is the _____.
windlass
See REF799

In a combination chain and wire rope mooring system, the chain is deployed at the anchor end of the line to _____.
increase the catenary

On a MODU crane, the boom indicator tells the operator what the boom angle is compared to the _____.
horizontal position

A hydraulic accumulator aboard a MODU is designed to _____.
store fluid under pressure
See REF166

The main function of the drawworks on a MODU is to _____.
lower and hoist the drill string into and out of the drilled hole

A low pressure annular preventer which is used to direct flow of kick fluids away from the rig floor is called a _____.
diverter

A set of clamps that are latched onto the drill pipe to allow the driller to raise or lower the drill string out of or into the hole are the _____.
elevators

A large valve, usually installed above the ram preventers, that forms a seal in the annular space between the pipe and wellbore or, if no pipe is present, on the wellbore itself is called the _____.
annular blowout preventer

The sounding level of 17 lb. per gallon mud in mud pit 2S of the COASTAL DRILLER is 7.75 feet. What is the weight of the mud?
194.77 kips

The plans, for use during emergencies aboard the DEEP DRILLER, are readily available in the _____.
ballast control room

The DEEP DRILLER, loaded as shown in Sample Load Form #1 (Transit), suffers minor damage which results in flooding in tank 1S. You may pump from _____.
1S

What is the effect of high concentrations of H2S gas on personnel?
paralyze your breathing system
See REF2006

While the COASTAL DRILLER is elevated, the out-of-level alarm indicates that hull inclination exceeds 0.3°. What should you do?
Confirm operation of out-of-level alarm.

On a MODU, when may a work vest be substituted for a required life preserver?
At no time
See REF2454

On offshore drilling units, each fire station is required to be fitted with a hose which has a nominal diameter of _____.
1-1/2 or 2-1/2 inches

Which information MUST be entered on the muster list?
Duties and station of each person during emergencies
See REF198

An offshore drilling unit must have enough inflatable liferafts to accommodate at least what percentage of the persons allowed?
100 (%)

What determines the minimum size of an anchor buoy?
Water depth

The tension on an anchor cable increases so that the angle of the catenary to the seabed at the anchor reaches 10 degrees. How will this affect the anchor in sandy soil?
It will reduce the holding power.

Given the same water depth and mooring tension, the length of the ground cable of a 19 pound/foot wire rope mooring line in comparison to a 90 pound/foot mooring chain will be _____.
shorter

In selecting a tug for moving a MODU, consideration should be given to its _____.
bollard pull, displacement, and maneuverability
See REF795

The DEEP DRILLER is moored in 600 feet of water. The average line tension is 190 kips. What is the total vertical component of chain tension?
442.4 long tons

The full period of motion of the DEEP DRILLER while in transit is 7 seconds and the maximum pitch angle as seen on the inclinometers is 4 degrees. From the standpoint of critical motion, the motion is _____.
satisfactory, continue transit

To determine the number of inflatable liferafts required on a mobile offshore drilling unit, you should check the _____.
Certificate of Inspection

A CO2 extinguisher on a MODU which has lost 10% of its charge must be _____.
recharged
See REF2448

On a MODU, firefighting equipment must be inspected once every _____.
twelve months
See REF2470

After a report of casualty to a mobile offshore drilling unit, what record must be kept on board?
The crane record book

Each emergency generator on a mobile offshore drilling unit, when tested, must be run under a full load for at least _____.
two hours
See REF2467

Regulations require that line throwing equipment on mobile offshore drilling units be tested at regular intervals. What entry should be made in the logbook?
Only the date of the test

In the case of an injury causing a person to be incapacitated, the Master or person in charge of a mobile offshore drilling unit must submit a report to the _____.
nearest Marine Safety or Marine Inspection Office

The person in charge of a mobile offshore drilling unit must insure that _____.
the date and hour of each fire drill is recorded in the log

A CO2 portable extinguisher is annually checked by _____.
weighing the extinguisher

Each fire pump on a MODU must have a pressure gauge located at _____.
the pump discharge
See REF130

A MODU must have a self-contained breathing apparatus to be used as protection from gas leaking from a refrigeration unit. To meet this requirement, you may use _____.
the same self-contained breathing apparatus required with the fireman's outfit
See REF2495

A fire main system must have enough fire hydrants so that each accessible space may be sprayed with _____.
at least two spray patterns of water

On offshore drilling units, sleeping spaces for the regular personnel employed on board may not berth more than _____.
four persons

Control valves of a CO2 system may be located within the protected space when _____.
the CO2 cylinders are also in the space

A MODU helicopter landing deck on which fueling operations are conducted must have a fire protection system that is capable of discharging at 100 psi pressure a foam spray of at least _____.
50 gallons per minute

Your fireman's outfit includes a(n) _____.
self-contained breathing apparatus

Under the regulations implementing MARPOL, a mobile offshore drilling unit is required to have an International Oil Pollution Prevention (IOPP) Certificate when the unit _____.
engages in a voyage to a port of another country which is a party of MARPOL
See REF2462

A In the MODU construction portfolio, materials which do not conform to ASTM or ABS specifications must also include the _____.
chemical and physical properties of the material

Repair of vital machinery and services on a MODU should be accomplished _____.
after control of fire, flooding, and structural repairs

When the wave period and the apparent rolling period of the MODU are the same _____.
synchronous rolling occurs
See REF558

The DEEP DRILLER, loaded as shown in Sample Load Form #4 (Drilling), suffers major damage which results in flooding in tank C1P. Your best countermeasure is to _____.
pump from 2P

While the DEEP DRILLER is loaded as shown in Sample Form #4 (Drilling), casing is accidentally dropped on the starboard side. Because the sounding level and starboard aft inclination are slowly increasing, you decide that tank 10S has minor damage. Among the possible corrective actions is _____.
place a wooden plug into the vent of tank 10S

While going on location in 250 feet water depth when the pitch angle of the COASTAL DRILLER is 2 degrees, the single amplitude pitch period should be longer than _____.
13.9 seconds

A jack-up, while level in transit at 10 feet draft, experiences a wind gust which results in a port draft of 11 feet. What is the heel?
2 feet to port

In the COASTAL DRILLER, TCG is obtained from the sum of the transverse moments by _____.
dividing by the sum of the weights

When the COASTAL DRILLER is loaded as shown in the sample load form Number 3 (drilling), the hook load is placed in the pipe racks. What would be the new variable load?
3,658.8 kips

The COASTAL DRILLER is loaded as shown in Sample Load Form Number 3 (Rig Move). What would be the new sum of vertical moments for the liquid variables if the entire contents of tank 20 are transferred to tank 13?
2,244 ft-kips

A slow and easy motion of a MODU in a seaway is an indication of a _____.
small GM

The time required to ballast the DEEP DRILLER to survival draft, when threatened with heavy weather, while under tow, is about _____.
2 hours

While drilling loaded as shown in Sample Load Form Number 4 (Drilling), the DEEP DRILLER suffers an unexpected but slowly increasing port and aft inclination. The wind and waves are light. This inclination could have been caused by _____.
ballast tanks equalizing into tank 10P

The COASTAL DRILLER, while operating with minimal wave clearance, is inclined 0.5 degrees bow down. Lowering the stern may place the hull in the wave action. The recommended course of action is to _____.
jack the hull up on the bow leg

The DEEP DRILLER is loaded as shown in the Sample Load form #3 (Preparing to Drill). If the liquid mud in mud pit #4 (see table 8) is dumped, what would be the new metacentric height corrected for longitudinal free surface effects?
7.59 feet

The DEEP DRILLER is loaded as shown in Sample Load Form #4 (Drilling). What would be the new sum of vertical moments for the Stores & Supplies if paint weighing 3.48 tons is added to the paint locker?
13,346 foot-tons

The DEEP DRILLER, at a draft of 58 feet, has VM of 900,000 ft-tons, and FSMT of 20,000 ft-tons. What is the KGT?
51.6 feet

What is the shift in KG if all the liquid mud is dumped when the DEEP DRILLER is loaded as shown in the Sample Load #3 (Preparing to Drill)?
1.51 feet downward

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). What is the new longitudinal free surface correction (FSCL) if the entire contents of Salt Water Ballast Tanks 1P and 1S are discharged?
1.09 feet

What is the new location of the longitudinal center of gravity if 200 short tons are discharged from 30 feet forward of amidships on a MODU with LCG 1.5 feet forward of amidships, and displacement 9,000 short tons?
0.85 foot forward of amidships

While loaded as shown in the DEEP DRILLER Sample Load Form #4 (Drilling), all of the liquid mud is dumped. What is the new location of the longitudinal center of gravity?
1.71 feet

While at operating draft, the DEEP DRILLER suffers flooding in the port pump room. Both port bilge pumps are inadequate to dewater the pump room. You may supplement the bilge pumps with the _____.
port drill water pump

On the COASTAL DRILLER, the start/stop station for the bilge pumps is located _____.
near the bilge pits

Between the side frames on a MODU, support for the deck beams is provided by _____.
stanchions

Horizontal subdivision decks forming watertight compartments in the columns of a semisubmersible MODU increase the unit's _____.
stability in the event of damage

The DEEP DRILLER departs a fresh water port at a draft of 20.5 feet. What will be the draft in sea water?
19.7 feet

A semisubmersible in transit is at a draft of 19 feet. The depth of the lower hulls is 21 feet. How much bunker fuel at 54.0 lbs/cu ft could be taken on and still provide one foot of freeboard if the TPI is 52.3?
627.6 long tons

A jack-up with displacement of 10,000 kips has its LCG 100 feet aft of frame zero (AFO). If 200 kips are loaded at 60 feet AFO and 100 kips are discharged from 20 feet AFO, what is the new LCG?
100.0 feet

A jack-up 210 feet in length is level during transit. The LCF is 140 feet aft of the bow. How much weight should be applied at the stern to re-level the jack-up if 75 kips is applied at the bow?
150 kips

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of the No.7 drill water tank are discharged, what would be the new TCG?
0.15 foot

A semisubmersible which will not remain upright and will assume a list either to port or starboard is likely to have _____.
a negative GM

Obstruction lights on mobile offshore drilling units on the waters of the U.S. Outer Continental Shelf must be displayed _____.
between sunset and sunrise

When would a jack-up drilling rig be considered "underway" under the International Rules of the Road?
When it is being towed to a new location

A link on an anchor chain should be replaced when wear or grinding of surface cracks has reduced the cross section area by _____.
10 (%)

Before personnel are lifted from a vessel in a personnel basket, the vessel should be _____?
directly under the boom

A common means of connecting shots of anchor chain in the field is to use a(an) _____.
kenter link

Which two components pass through the shank of an LWT anchor?
Anchor shackle and stock

The boom stops are installed on an offshore crane to _____.
prevent the boom from being raised too high

A hydraulic accumulator aboard a MODU is designed to _____.
store fluid under pressure
See REF166

In MODU operations, hoisting and lowering pipe in and out of the drilled hole is the main function of the _____.
drawworks

The retrievable subsea units that contain the pilot valves and regulators for operating the subsea blowout preventers are called _____.
control pods

The wire ropes of the riser tensioning system are attached to the _____.
outer barrel of the telescoping joint

The connected joints of pipe, usually made of three joints of pipe approximately 90 feet long, racked in the derrick when making a trip are called a _____.
stand

Apparent wind speed blowing across a MODU under tow can be measured by a(n) _____.
anemometer
See REF968

When abandoning a MODU, after launching the survival craft which of the following choices is your best action to take?
stay in the immediate area

The DEEP DRILLER is loaded as shown in Sample Load Form #4. While the unit is deballasting, port valve 5 fails in the closed position. You may deballast from tank 2P by pumping from tank 9P by also opening valves 6 and _____.
20

Why can a person's sense of smell not be depended upon to detect H2S?
the sense of smell is deadened by the gas

The object of plugging holes below the waterline on a MODU should be to _____.
reduce the entry of water as much as possible

The muster list must be posted in conspicuous locations and signed by the _____.
Master
See REF2094

Each part of the fire-main system located on an exposed deck must be _____.
protected against freezing

A MODU must have on board a first-aid kit that is approved by the _____.
Mine Safety and Health Administration

In how many locations must lifeboats be installed on a mobile offshore drilling unit?
2

The length of chain between the anchor and the end of the pendant line is called the _____.
crown chain

When dragging of an anchor occurs, you must back it up with a piggyback (backing) anchor or _____.
reposition it at a greater range

Given the same water depth and line tension, the catenary length of a 19 pound/foot wire rope mooring line in comparison to the catenary length of a 90 pound/foot mooring chain will be _____.
longer

A semisubmersible rig under tow should be ballasted down if _____.
motion begins to be excessive

The DEEP DRILLER is moored in 700 feet of water. The tension on anchor line #3 is 200 kips. What is the vertical component of chain tension for that line?
60.9 long tons

Among the possible causes of unexpected rapidly increasing inclination of the DEEP DRILLER while in transit is _____.
flooding due to lower-hull damage

On offshore drilling units, the number of industrial personnel permitted to be on board during drilling operations is found on the _____.
U.S. Coast Guard Certificate of Inspection

The Muster List ("Station Bill") of a MODU must be signed by the _____.
person in charge
See REF2094

Lifeboat winches on a MODU are required to be inspected and an entry made in the logbook. What should this entry include?
The date of inspection and condition of the winch
See REF2471

The person responsible for maintaining clean and sanitary conditions in the accommodation spaces of a MODU is the _____.
Master or person in charge

Prior to burning or welding on a fuel tank on a MODU, regulations require that an inspection be made. An entry in the unofficial logbook is required if this inspection is made by _____.
the Master or person in charge of the MODU

When a MODU is involved in a casualty, the cost of property damage includes _____.
the cost of labor and material to restore the property to the service condition which existed prior to the casualty

It is the responsibility of the Master or person in charge of a MODU to ensure that _____.
temporary personnel and visitors are advised of emergency stations

Who is responsible for maintaining the logbook on a mobile offshore drilling unit?
The person in charge

The required portable radio apparatus on an international voyage must be stowed in _____.
the radio room, bridge, or protected location

The discharge side of every fire pump must be equipped with a _____.
pressure gauge
See REF2067

The litter on a MODU must be able to _____.
be used on the types of helicopters serving the unit

See REF2496

The factor of safety, based on the elastic limit of the material, for the forks used on power operated industrial trucks aboard a MODU must be at least _____.
3 to 1

Each ventilation system for an enclosed classified location on a MODU must provide a complete change of air every _____.
5 minutes

On a MODU, size III, IV, and V extinguishers are considered _____.
semi-portable
See REF2500

For means of abandonment of a MODU, which type of embarkation does not require prior approval by the Coast Guard?
Fixed ladders

Each emergency light must be marked with _____.
the letter "E"

The International Oil Pollution Prevention Certificate on a MODU is valid for a period of _____.
four years from the date of issue
See REF2463

When testing fire hoses on offshore drilling units, each hose must be subjected to a test pressure of at least _____.
100 psi

Control of flooding on a MODU should be addressed _____.
following control of fire

The jettisoning of topside weight from a MODU serves what purpose?
It lowers the center of gravity.

The DEEP DRILLER, loaded as shown in Sample Load Form #2 (Ballast to Survival), suffers major damage which results in flooding in tank C3S. Pumping from tanks in the vicinity of the damage have proven ineffective. Your best countermeasure is to _____.
counterflood in 1P

The DEEP DRILLER suffers minor flooding of the port pump room. If both port bilge pumps fail to dewater the pump room, you should use the _____.
port drill water pump

While in 150 feet water depth when the pitch angle of the COASTAL DRILLER is 1 degree, the platform pitch period for going on location should be longer than _____.
7.0 seconds

A jack-up, while level in transit at 10 feet draft, experiences a wind gust which results in a starboard draft of 11 feet 6 inches. What is the heel?
3 feet to starboard

Forces within a drilling unit have caused a difference between the starboard and port drafts. This difference is _____.
list

The maximum allowable KG for the COASTAL DRILLER in normal transit at a draft of 10.5 feet is _____.
65 feet

The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of 6 and 7 drill water tanks are discharged, what would be the new VCG?
49.16 feet

On a semisubmersible drilling unit, increasing riser tension reduces _____.
GM

In case of damage to the DEEP DRILLER on location, the immediate objective is to reduce the unexpected inclination and return the unit to _____.
near its original draft

While drilling loaded as shown in Sample Load Form Number 4 (Drilling), the DEEP DRILLER suffers an unexpected but slowly increasing starboard and aft inclination. The wind and waves are light. This inclination could have been caused by _____.
ballast tanks equalizing into tank 10S

The DEEP DRILLER, at a draft of 60 feet, has 35,000 ft-tons of longitudinal moments. How much ballast should be transferred between tanks 1P and 10P to level the unit longitudinally?
165.3 long tons

The DEEP DRILLER is loaded as shown is Sample Load Form #4 (Drilling). What would be the change in vertical moments for Fresh Water if the entire contents of Drill Water Tank 5P are transferred to Drill Water Tank 5S?
2,689 ft-tons

The DEEP DRILLER is loaded as shown in Sample Load Form #4 (Drilling). What would be the new sum of longitudinal moments for the Stores & Supplies (Table 6) if paint weighing 3.48 tons is added to the paint locker?
1,688 foot-tons

While in transit at a draft of 20.5 feet, the DEEP DRILLER has a KGL of 65.00 feet. What is the GML?
5.10 feet

While loaded as shown in the DEEP DRILLER Sample Load Form #3 (Preparing to Drill), all of the casing is discharged. What is the change in LCG?
-0.45 foot

The DEEP DRILLER is loaded as shown in the Sample Load Form #1 (Transit). What are the new vertical moments if the entire contents of Salt Water Ballast Tanks 1P and 1S are discharged?
794,346 ft-tons

What is the shift in the longitudinal center of gravity if 200 short tons are discharged from 30 feet forward of amidships on a MODU with LCG 1.5 feet forward of amidships, and displacement 9,000 short tons?
0.65 foot aft

While loaded as shown in the DEEP DRILLER Sample Load Form #4 (Drilling), all of the liquid mud is dumped. What is the new position of the longitudinal center of buoyancy?
2.29 feet

While in transit, the DEEP DRILLER suffers flooding in the starboard pump room. Both starboard bilge pumps are inadequate to dewater the pump room. You may supplement the performance of the bilge pumps by using the _____.
starboard drill water pump

On the COASTAL DRILLER, the bilge discharge is normally through the _____.
overboard discharge

In MODU construction, beams are transverse girders which provide support to _____.
decks

The stability of a semisubmersible MODU would be seriously reduced if flooding occurred in the _____.
column void spaces

The DEEP DRILLER departs a fresh water port at a draft of 19.5 feet. What will be the draft in sea water?
19.1 feet

A semisubmersible, 200 feet in length between draft marks with the LCF 10 feet aft of amidships, records the following drafts: Port Forward 64'-09"; Port Aft 68'-09"; Starboard Forward 59'-09"; and Starboard Aft 63'-09". What is the list?
5 feet to port

An elevated jack-up weighs 14,000 kips. Its TCG is located 1.0 foot to starboard of the centerline. What would be the new TCG for the jack-up if the drill floor, weighing 700 kips, is skidded 10 feet to port?
0.50 foot starboard

A jack-up displacing 350,000 cubic feet while floating in sea water (64 pounds per cubic foot) weighs _____.
22,400 kips

What is the change in longitudinal moments for the Coastal Driller if 2.5 feet of drill water is discharged from drill water tank 23?
-20,052 ft-kips

Semisubmersibles A and B are identical. However, "A" is more tender than "B". This means that "A" relative to "B" has a _____.
smaller GM

What agency is responsible for enforcing the rules for obstruction lights on mobile offshore drilling units?
U.S. Coast Guard

Where will you find the requirements for the signals that must be sounded by a mobile offshore drilling unit that is being towed through an area of restricted visibility?
COLREGS

REF024

Tonnage is a measure of the size or cargo carrying capacity of a ship. The term derives from the taxation paid on tons or casks of wine, and was later used in reference to the weight of a ship's cargo; however, in modern maritime usage, "tonnage" specifically refers to a calculation of the volume or cargo volume of a ship. Tonnage should not be confused with Displacement which refers to the loaded or empty weight of the vessel itself. Gross tonnage (often abbreviated as GT, G.T. or gt) is a unit less index related to a ship's overall internal volume. Gross tonnage is different from gross register tonnage.[1] Neither gross tonnage nor gross register tonnage is a measure of the ship's displacement (mass) and should not be confused with terms such as deadweight tonnage or displacement. Gross tonnage, along with net tonnage, was defined by The International Convention on Tonnage Measurement of Ships, 1969, adopted by the International Maritime Organization in 1969, and came into force on July 18, 1982. These two measurements replaced gross register tonnage (GRT) and net register tonnage (NRT). Gross tonnage is calculated based on "the moulded volume of all enclosed spaces of the ship" and is used to determine things such as a ship's manning regulations, safety rules, registration fees, and port dues, whereas the older gross register tonnage is a measure of the volume of certain enclosed spaces. Net tonnage (often abbreviated as NT, N.T. or nt) is a dimensionless index calculated from the total moulded volume of the ship's cargo spaces by using a mathematical formula. Defined in The International Convention on Tonnage Measurement of Ships that was adopted by the International Maritime Organization in 1969, the net tonnage replaced the earlier net register tonnage (NRT) which denoted the volume of the ship's revenue-earning spaces in "register tons", units of volume equal to 100 cubic feet (2.83 m3).[1] Net tonnage is used to calculate the port duties and should not be taken as less than 30 per cent of the ship's gross tonnage.[2] Net tonnage is not a measure of the weight of the ship or its cargo, and should not be confused with terms such as deadweight tonnage or displacement. Also, unlike the net register tonnage, the net tonnage is unit less and thus can not be defined as "tons" or "net tons". Gross register tonnage (GRT, grt, g.r.t.) a ship's total internal volume expressed in "register tons", one of which equals a volume of 100 cubic feet (2.83 m3). It is calculated from the total permanently enclosed capacity of the vessel. The ship's net register tonnage is obtained by reducing the volume of non-revenue-earning spaces i.e. spaces not available for carrying cargo, for example engine rooms, fuel tanks and crew quarters, from its gross register tonnage.[1][2] Gross register tonnage is not a measure of the ship's weight or displacement and should not be confused with terms such as deadweight tonnage or displacement. Gross register tonnage was defined by the Moorsom Commission in 1854. Gross and net register tonnages were replaced by gross tonnage and net tonnage, respectively, when the International Maritime Organization (IMO) adopted The International Convention on Tonnage Measurement of Ships on 23 June 1969. The new tonnage regulations entered into force for all new ships on 18 July 1982, but easting vessels were given a migration period of 12 years to ensure that ships were given reasonable economic safeguards, since port and other dues are charged according to ship's tonnage. Since 18 July 1994 the gross and net tonnages, dimensionless indices calculated from the total moulded volume of the ship and its cargo spaces by mathematical formulae, have been the only official measures of the ship's tonnage.[3] However, the gross and net register tonnages are still widely used in describing older ships. Deadweight tonnage (also known as deadweight abbreviated to DWT, D.W.T., d.w.t., or dwt) is a measure of how much weight a ship is carrying or can safely carry.[1][2][3] It is the sum of the weights of cargo, fuel, fresh water, ballast water, provisions, passengers, and crew.[1] The term is often used to specify a ship's maximum permissible deadweight, the DWT when the ship is fully loaded so that its Plimsoll line is at the point of submersion, although it may also denote the actual DWT of a ship not loaded to capacity. Deadweight tonnage was historically expressed in long tons but is now usually given internationally in tonnes.[4] Deadweight tonnage is not a measure of the ship's displacement and should not be confused with gross tonnage or net tonnage (or their more archaic forms gross register tonnage or net register tonnage). A ship's displacement or displacement tonnage is the weight of the water that a ship displaces when it is floating; the term is defined ordinarily such that the ship's fuel tanks are full and all stores are aboard. The term is applied usually to naval vessels. Displacement is the actual weight of the ship, since a floating body displaces its own weight in water (Archimedes' principle).[1][2] Another way of thinking about displacement is the weight of the water that would spill out of a completely filled container were the ship placed into it. A number of synonymous terms exist for this maximum weight, such as loaded displacement, full load displacement and designated displacement.[3] As a measurement of weight, displacement should not be confused with similarly named measurements of volume or capacity such as net tonnage, gross tonnage, or deadweight tonnage. The density (weight per unit of volume) of water can vary. For example, the average density of seawater at the surface of the ocean is 1025 kg/m³ (10.25 lb/ga, 8.55 lb/US gallon); fresh water on the other hand has a density of about 1000 kg/m³ (10.00 lb/ga, 8.35 lb/US gallon).[3] Consider a 100-ton ship passing from a saltwater sea into a freshwater river. It always displaces exactly 100 tons of water, but it has to displace a greater volume of fresh water to amount to 100 tons. Therefore it would sit slightly lower in the water in the freshwater river than it would in the saltwater sea. It can be useful to know a ship's displacement when it is unloaded or loaded partially. Terms for these measurements include light displacement, standard displacement, and normal displacement. These terms are defined below.

REF097

Fires are divided into five different "classes"- A, B, C, D, and LFG. These classes indicate either the type of fuel involved or special dangers. The class also indicates the type of extinguishing agent to use and certain techniques that should or should not be used on that fire. Ordinary combustibles Class A fires consist of ordinary combustibles such as wood, paper, fabric, and most kinds of trash. They may be extinguished by water, wet chemical suppression, or dry powder. Flammable liquid and gas These are fires whose fuel is flammable or combustible liquid or gas. The US system designates all such fires "Class B". These fires follow the same basic fire tetrahedron (heat, fuel, oxygen, chemical reaction) as ordinary combustible fires, except that the fuel in question is a flammable liquid such as gasoline, or gas such as natural gas. A solid stream of water should never be used to extinguish this type because it can cause the fuel to scatter, spreading the flames. The most effective way to extinguish a liquid or gas fueled fire is by inhibiting the chemical chain reaction of the fire, which is done by dry chemical and Halon extinguishing agents, although smothering with CO2 or, for liquids, foam is also effective. Halon has fallen out of favor in recent times (except for aircraft fire extinguishment systems) because it is an ozone-depleting material; the Montreal Protocol declares that Halon should no longer be used. Chemicals such as FM-200 are now the recommended halogenated suppressant. Electrical Electrical fires are fires involving potentially energized electrical equipment. The US system designates these "Class C". This sort of fire may be caused by short-circuiting machinery or overloaded electrical cables. These fires can be a severe hazard to firefighters using water or other conductive agents, as electricity may be conducted from the fire, through water, to the firefighter's body, and then earth. Electrical shocks have caused many firefighter deaths. Electrical fire may be fought in the same way as an ordinary combustible fire, but water, foam, and other conductive agents are not to be used. While the fire is or possibly could be electrically energized, it can be fought with any extinguishing agent rated for electrical fire. Carbon dioxide CO2, NOVEC 1230, FM-200 and dry chemical powder extinguishers such as PKP and even baking soda are especially suited to extinguishing this sort of fire. PKP should be a last resort solution to extinguishing the fire due to its corrosive tendencies. Once electricity is shut off to the equipment involved, it will generally become an ordinary combustible fire. Metal Class D fires involve combustible metals - especially alkali metals like lithium and potassium, alkaline earth metals such as magnesium, and group 4 elements such as titanium and zirconium. Metal fires represent a unique hazard because people are often not aware of the characteristics of these fires and are not properly prepared to fight them. Therefore, even a small metal fire can spread and become a larger fire in the surrounding ordinary combustible materials. Certain metals burn in contact with air or water (for example, sodium), which exacerbates this risk. Masses of combustible metals do not usually represent great fire risks because heat is conducted away from hot spots so efficiently that the heat of combustion cannot be maintained. In consequence, significant heat energy is required to ignite a contiguous mass of combustible metal. Generally, metal fires are a hazard when the metal is in the form of sawdust, machine shavings or other metal "fines", which combust more rapidly than larger blocks. Metal fires can be ignited by the same ignition sources that wo uld start other common fires. Care must be taken when extinguishing metal fires. Water and other common firefighting agents can excite metal fires and make them worse. The National Fire Protection Association recommends that metal fires be fought with dry powder extinguishing agents that work by smothering and heat absorption. Different metals require different agents and for a particular metal agents cannot necessarily be substituted for one another. The most common agents are sodium chloride granules and graphite powder. In recent years, powdered copper has also come into use. These dry powder extinguishers should not be confused with those that contain dry chemical agents. The two are not the same, and only dry powder should be used to extinguish a metal fire. Using a dry chemical extinguisher in error, in place of dry powder, can be ineffective or actually increase the intensity of a metal fire. Cooking oils and fats (kitchen fires) Class K fires involve unsaturated cooking oils in well-insulated cooking appliances located in commercial kitchens. Fires that involve cooking oils or fats are designated "Class K" under the American system. Though such fires are technically a subclass of the flammable liquid/gas class, the special characteristics of these types of fires, namely the higher flash point, are considered important enough to recognize separately. A special class K extinguisher will safely smother the fire by turning the oil into a foam. A water mist can also be used to extinguish such fires. As with Class B fires, a solid stream of water should never be used to extinguish this type because it can cause the fuel to scatter, spreading the flames. Appropriate fire extinguishers may also have hoods over them that help extinguish the fire. Sometimes fire blankets are used to stop a fire in a kitchen or on a stove. Flammable liquids give off flammable vapors at or below a temperature of 80°F. Within this class, there are three grades, based on their Reid Vapor Pressure and flash point. All liquids that burn may be grouped into these five grades. It is apparent that flammable liquids are those that may be ignited at temperatures below 80°F whereas the combustible liquids must be heated to above 80°F before they will flash. Class IA flammable liquids have a flash point below 73 °F (22.8 °C) (the upper end of the common range of room temperature) and a boiling point below 100 °F Class IB flammable liquids have a flash point below 73 °F (22.8 °C) and a boiling point greater than or equal to 100 °F (37.8 °C) Class IC flammable liquids have a flash point greater than or equal to 73 °F (22.8 °C) and below 100 °F (37.8 °C) Class II combustible liquids have a flash point greater than or equal to 100 °F (37.8 °C) and below 140 °F (60 °C) Class IIIA combustible liquids have a flash point greater than or equal to 140 °F (60 °C) and below 200 °F (93.3 °C) Class IIIB combustible liquids have a flash point greater than or equal to 200 °F (93.3 °C) Grade A refers to a flammable liquid with Reid vapor pressure of 14 pounds per square inch absolute (psia) or more. Think of a Grade A cargo as a very volatile liquid that gives off lots of vapor even at relatively low temperatures...so much vapor, in fact, that the vapor can

build up considerable measurable pressure inside a closed test container. Grade B refers to a flammable liquid with a Reid vapor pressure of more than 814 pounds (psia) but less than 14 pounds Grade C refers to a flammable liquid with a Reid vapor pressure of 814 pounds (psia) or less and a flash point of 80°F or below. Gasoline with a Reid vapor pressure of 7.4 pounds (psia) and a flash point of -40°F is an example of a grade C cargo. Since gasoline's primary hazard is its flammability it is a Subchapter D cargo rather than a Subchapter O cargo where properties other than or in addition to flammability are regulated. Grade D refers to a combustible liquid with a flash point above 80°F, but below 150°F. One example is Diesel oil that is either a Grade D or a Grade E liquid depending upon its flash point, which can vary between 110°F and 190°F. Grade E refers to a combustible liquid with a flash point of 150°F or above. "Bunker C," or heavy industrial fuel oil, is an example of a Grade E liquid. Liquefied flammable gas (LFG): Any flammable gas with a Reid Vapor Pressure (RVP) above 40 pounds and that has been changed from a gas to a liquid state. 46 CFR 30.10-39. Liquefied natural gas (LNG): C■ and C■ hydrocarbons that can be liquefied either by refrigeration or by pressurization at ambient temperatures. Reid Vapor Pressure is the pressure exerted by the vapor of a liquid as determined by laboratory tests in a Reid Apparatus at a standard temperature of 100°F, expressed in pounds per square inch (absolute) (psia) according to standards established by the American Society for Testing Materials (ASTM). It is now government policy to accept meaningful civilian standards, such as this ASTM standard, wherever possible rather than to develop and enforce separate government standards.

REF112
An EPIRB is an emergency locating radio beacon that transmits a radio signal. You must stow an EPIRB so that it will float free if the vessel sinks. Keep it easily accessible for testing and use.

REF130
46 CFR 108.417(b)

REF1594
46 CFR 109

REF163
Plugging a tank vent with a wooden plug may prevent the tank from filling completely.

REF164
Flooding boundaries are the bulkheads and decks restricting the partially flooded area from the flooding boundary.If partially flooded compartments become completely flooded, the flooding boundaries may not hold. There may be hidden cracks or leaky stuffing tubes or the bulkheads may not be able to withstand the pressure put on them.In other words, just because a flooding boundary seams safe one minute is no sign that it will besafe the next.Therefore,repair party personnel should keep on reinspecting and should make sure the boundaries holds (even so for as to add shoring if bulkhead or overhead strength is in question.)

REF166
An "accumulator" contains hydraulic oil under pressure and is ready to do "work". An accumulator is an "unfired pressure vessel" (i.e., one that does not use an outside source of heat) in which energy is stored at high pressure in the form of a gas or a gas and hydraulic fluid. An example of an accumulator would be a tank that stores hydraulic fluid under pressure that, when released, can be used to start a lifeboat engine. Such an accumulator can be designed to recharge itself as the engine runs (assuming that the engine will run) or can be recharged manually by using a hand pump.

REF1694
—INTERNATIONAL— Lights and Shapes RULE 24 Towing and Pushing (a) A power-driven vessel when towing shall exhibit: (i) instead of the light prescribed in Rule 23(a)(i) or (a)(ii), two masthead lights in a vertical line. When the length of the tow, measuring from the stern of the towing vessel to the after end of the tow exceeds 200 meters, three such lights in a vertical line; (ii) sidelights; (iii) a sternlight; (iv) a towing light in a vertical line above the sternlight; and (v) when the length of the tow exceeds 200 meters, a diamond shape where it can best be seen. —INLAND— Lights and Shapes RULE 24 Towing and Pushing (a) A power-driven vessel when towing astern shall exhibit: (i) instead of the light prescribed either in Rule 23(a)(i) or 23(a)(ii), two masthead lights in a vertical line. When the length of the tow, measuring from the stern of the towing vessel to the after end of the tow exceeds 200 meters, three such lights in a vertical line; (ii) sidelights; (iii) a sternlight; (iv) a towing light in a vertical line above the sternlight; and (v) when the length of the tow exceeds 200 meters, a diamond shape where it can best be seen.

REF180

If you see a man fall overboard shout "man overboard" in a loud voice: quickly pass the word to the bridge. Throw the man overboard a ring life buoy as a data marker. Quick turn: The quick turn is the traditional response to a man overboard emergency on a sailboat. Despite many new approaches, it is still a robust strategy and often the best method. Certainly when the crew is shorthanded, or when the vessel is in heavy weather, the quick turn method has a lot of merit because it avoids a jibe. The quick turn is essentially a figure eight. On a sailboat it consists of the following steps:

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Change course to a beam reach and hold for 15 seconds
    Head into the wind and tack, leave the jib fluttering
    Veer off until the boat is at a broad reach
    Turn upwind until the vessel is pointing at the victim; at this point the vessel should be
    Slacken the mainsail until the vessel comes to a stop with the victim in the lee side of t
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Anderson turn: The Anderson turn is a maneuver used to bring a ship or boat back to a point it previously passed through, often for the purpose of recovering a man overboard, an emergency situation in almost all circumstances. The Anderson turn is most appropriate when the point to be reached remains clearly visible. For other situations, a Scharnow turn or a Williamson turn might be more appropriate. Both will require more time before returning to the point in question.

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If the turn is in response to a man overboard, stop the engines.
    Put the rudder over full. If in response to a man overboard, put the rudder toward the per
    When clear of the person, go all ahead full, still using full rudder.
    After deviating from the original course by about 240 degrees (about 2/3 of a complete ci
    Stop the engines when the target point is 15 degrees off the bow. Ease the rudder and back
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If dealing with a man overboard, always bring the vessel upwind of the person. Stop the vessel in the water with the person well forward of the propellers. Williamson turn: The Williamson turn is a maneuver used to bring a ship or boat under power back to a point it previously passed through, often for the purpose of recovering a man overboard. It was named for John Williamson, USNR, who used it in 1943 to pick up Tim Williamson (USMMA 2002) who had fallen overboard. However, according to Uncommon Carriers by John McPhee, the maneuver was originally called the Butakov pipe and was used in the Russo-Japanese War as a way of keeping guns at the same distance from an enemy. The Williamson turn is most appropriate at night or in reduced visibility, or if the point can be allowed to go (or already has gone) out of sight, but is still relatively near. For other situations, an Anderson turn (quickest method) or a Scharnow turn might be more appropriate. The choice will in large part depend on prevailing wind and weather conditions. It was also used by U.S. Navy nuclear submarines to clear their sonar dead zones.

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Put the rudder over full.
    If in response to a man overboard, put the rudder toward the person (e.g., if the person f
    After deviating from the original course by about 60 degrees, shift the rudder full to the
    When heading about 20 degrees short of the reciprocal, put the rudder amidships so that ve
    Bring the vessel upwind of the person, stop the vessel in the water with the person alongs
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If dealing with a man overboard, always bring the vessel upwind of the person. Stop the vessel in the water with the person well forward of the propellers. Scharnow turn: The Scharnow turn is a maneuver used to bring a ship or boat back to a point it previously passed through, often for the purpose of recovering a man overboard. It was developed by and named for Ulrich Scharnow. The Scharnow turn is most appropriate when the point to be reached is significantly further astern than the vessel's turning radius. For other situations, an Anderson turn or a Williamson turn might be more appropriate.

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Put the rudder over hard. If in response to a man overboard, put the rudder toward the person
    After deviating from the original course by about 240 degrees, shift the rudder hard to th
    When heading about 20 degrees short of the reciprocal course, put the rudder amidships so
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If dealing with a man overboard, always bring the vessel upwind of the person. Stop the vessel in the water with the person well forward of the propellers.

REF198

The Station Bill 46 CFR 199.80 46 CFR 108.901 The Station Bill (now called a Muster List) lists your emergency station and also which lifeboat or life raft you are assigned to. You are required to read the Muster List as soon as you report aboard ship . The signal for "boat stations" (i.e., preparing to launch lifeboats and inflatable life rafts to abandon ship) is more than six short blasts and one long blast on the whistle followed by the same signal on the general alarm bells. When you hear this signal. go to your assigned station. A continuous blast of the whistle for at least 10 seconds and the same signal on the General Alarm bells is the fire and emergency signal. When you hear this signal, go to your fire station. If you are on watch in the engineroom, start the fire pump and supply water under pressure to the fire main . During drills, one short blast of the whistle signals the crew to lower the boats. Two short blasts means to stop lowering the boats. Three short blasts is the signal to dismiss the crew from the drill. Additional emergency signals are assigned by the Master. Emergency duties must be comparable to regular duties.

REF1999

Threshold Limit Values (TLVs®) refer to airborne concentrations of chemical substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, over a working lifetime, without adverse effects.

REF2006
Hydrogen sulfide (H2S) is a gas that causes dizziness. asphyxiation (i.e., suffocation), and death. H2S can paralyze your breathing system. It smells like rotten eggs but very quickly deadens your sense of smell. It is often produced by spilled sewage and is often found in crude petroleum (i.e., "sour" crude). Sewage produces deadly gases, such as hydrogen sulfide and methane. When sewage decomposes it also removes oxygen from the air .

REF2010
Correct answer. “Among the conditions which may compromise a person’s tolerance to H2S are any pulmonary, respiratory, bronchial, or heart problems. Other medical considerations include an eye infection, diabetes, epilepsy, hypertension, and alcoholism (or persons who have consumed alcohol within 24 hours of exposure).”

REF2066
46 CFR 108.417(a) 46 cfr part 95 fire protection equipment.pdf.10-5(d)

REF2067
46 CFR 108.417(b) 46 cfr part 95 fire protection equipment.pdf.10-5(e)

REF2094
46 CFR 108.901, 46 CFR 109 (b) (2)

REF215
46 CFR 108.455(a) 46 cfr part 95 fire protection equipment.pdf.15-35(a)

REF243
If you have to abandon ship, jump feet first from the windward side. Remain in the area where the vessel sank.

REF2445
A sheave or pulley wheel is a grooved wheel often used for holding a belt, wire rope, or rope and incorporated into a pulley. The sheave spins on an axle or bearing inside the frame of the pulley. This allows the wire or rope to move freely, minimizing friction and wear on the cable. Sheaves can be used to redirect a cable or rope, lift loads, and transmit power. The words sheave and pulley are sometimes used interchangeably.

REF2446
By composition, dry air contains approximately 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.04% carbon dioxide, and small amounts of other gases. Oxygen is approximated to be 21% because it's actual value leans closer to 21%.

REF2447
“Acceptable ceiling concentrations. An employee’s exposure to a substance listed in Table Z-2 shall not exceed at any time during an 8-hour shift the acceptable ceiling concentration limit given for the substance in the table, except for a time period, and up to a concentration not exceeding the maximum duration and concentration allowed in the column under “acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift.”

REF2448
46 CFR 107.235(B)(1)

REF2449
46 CFR 108

REF2450
46 CFR 108.103

REF2451
46 CFR 108.423(d) 46 cfr part 95 fire protection equipment.pdf.10-10(g)

REF2452
46 CFR 108.497

REF2453
46 CFR 108.635

REF2454
46 CFR 108.699

REF2455
46 CFR 109.213(f)(2)(i)

REF2456
46 CFR 109.337(b)

REF2457
46 CFR 109.435

REF2458
46 CFR Table 107.235

REF2459
SDC 46 CFR 108.181(c)

REF2460
46 CFR 108.637(a)

REF2461
§ 109.503 Emergency signals. (1) The signal to man emergency stations is a rapid succession of short soundings of both the general alarm bell and the whistle, if a whistle is installed, for a period of not less than 10 seconds.

REF2462
33 CFR 151.19(a)

REF2463
33 CFR 151.19(c)

REF2464
33 CFR 151.53(b)(2)

REF2465
46 CFR 108.901(b)(2)

REF2466
46 CFR 109.203(b)

REF2467
46 CFR 109.211(a)(2)

REF2468
46 CFR 109.213(c)(2)

REF2469
46 CFR 109.213(f)(2)(v)

REF2470
46 CFR 109.223

REF2471
46 CFR 109.301(e)

REF2472
46 CFR 109.323(c)

REF2473
46 CFR 109.323(c)(2)

REF2474
46 CFR 109.331(E)

REF2475
46 CFR 109.339 46 CFR 108.633

REF2476
46 CFR 109.414(a)

REF2477
46 CFR 109.415(a)

REF2478
46 CFR 109.433(b)

REF2479
46 CFR 109.435(a)

REF2480
46 CFR 4.05-1(a)

REF2481
46 CFR 108.170(a)

REF2482
46 CFR 108.417(a)

REF2483
46 CFR 108.417(c)

REF2484
46 CFR 108.425(b)(1)

REF2485
46 CFR 108.445(a) 46 cfr part 95 fire protection equipment.pdf.15-30(a)

REF2486
46 CFR 108.495(a)

REF2487
46 CFR 108.495(b)

REF2488
46 CFR 108.499

REF2489
46 CFR 108.580(a)

REF2490

46 CFR 108.580(a)(2)(i)

REF2491
46 CFR 108.580(a)(2)(ii)

REF2492
46 CFR 108.597(A) 46 CFR 160.031

REF2493
46 CFR 108.631(b)

REF2494
46 CFR 108.703(a)

REF2495
46 CFR 108.703(b)

REF2496
46 CFR 108.709

REF2497
46 CFR 108.901(b)(6)

REF2498
46 CFR 108Table 495(b)

REF2499
46 CFR 133.90

REF2500
46 CFR Table 108.495(a)

REF2501
46 CFR Table 108.495(b)

REF2502
46 CFR TABLE 108.495(b)

REF2503
108.239 Fuel transfer equipment

REF2504
46 CFR 107

REF2505
46 CFR 107.111

REF2506
46 CFR 107.211(d)

REF2507
46 CFR 107.235(B)(2)(iii)

REF2508
46 CFR 107.257

REF2509
46 CFR 107.305(hh)

REF2510
46 CFR 107.305(hh)(3)

REF2511
46 CFR Table 91.25-20(A)(1): Note: If the stamped full weight of a 100-lb. CO2 cylinder is 314 lbs., 314 lbs. represents the gross weight of the cylinder (cylinder plus contents). 100 lbs. represents the net weight (contents), and the difference is the tare weight (empty cylinder), which in this case is 214 lbs. The CO2 cylinder is required to be recharged when inspection reveals that 10 percent of the charge weight has been lost. 10 percent of 100 lbs. is 10 lbs. 314 lbs. minus 10 lbs. equals 304 lbs. Therefore, 304 lbs. is the minimum weight of the cylinder before it must be recharged. 282 lbs. Incorrect answer.: 282 lbs. minus 214 lbs. equals 68 lbs., which means 32 percent of the original 100-lb. charge weight has been lost. 294 lbs. Incorrect answer. : 294 lbs. minus 214 lbs. equals 80 lbs., which means 20 percent of the original 100-lb. charge weight has been lost. 300 lbs. Incorrect answer. : 300 lbs. minus 214 lbs. equals 86 lbs., which means 14 percent of the original 100-lb. charge weight has been lost. 304 lbs. Correct answer. : 304 lbs. minus 214 lbs. equals 90 lbs., which means 10 percent of the original 100-lb. charge weight has been lost. This represents the minimum total (gross) weight of the cylinder before recharging is required.

REF2512
Stringer: A term applied to a fore-and-aft girder running along the side of a ship and also to the outboard strake of plating on any deck. The side pieces of a ladder or staircase into which the treads and risers are fastened. Stringer Plates: A term applied to the outboard plates on any deck, or to the plates attached to the top flanges of a tier of beams at the side of a vessel.

REF283
46 CFR 108.580(C)(1), 46 CFR 133.80, 46 CFR 199

REF304
A ship at sea moves in six degrees of motion: heave, sway, surge, roll, pitch and yaw. The first three are linear motions. Heaving is the linear motion along the vertical Z-axis, swaying is the motion along the transverse Y-axis, and surging is the motion along the longitudinal X-axis. Rolling is a rotation around a longitudinal axis, pitching is a rotation around the transverse axis and yawing is a rotation around the vertical axis. HEAVE: The alternate rising and falling of a vessel in a seaway. SWAY: A vessel's motion from side to side. SURGE: A vessel's transient motion along her fore and aft axis. ROLL : Motion of the ship from side to side, alternately raising and lowering each side of the deck. The oscillating motion of a vessel from side to side due to ground swell, heavy sea, or other causes. PITCHING: The alternate rising and falling motion of a vessel's bow in a nearly vertical plane as she meets the crests and troughs of the waves. YAWING: To turn from side to side on an uneven course.

REF305
A catenary is the curve or dip in a line caused either by the lines own weight or by weight attached to the line. If a towline is stretched taught between two vessels any shock loading is transmitted directly through to both vessels.

REF307
46 CFR 109.301(f)(4)

REF456
Stiffener: An angle bar, T-bar, channel, etc., used to stiffen plating of a bulkhead, etc.

REF471
In the United States, a kip is a non-SI unit of force that equals 1,000 pounds-force, used primarily by architects and engineers to measure engineering loads. It is equivalent to one half of a U.S. ton. Although uncommon, it is occasionally also considered a unit of mass, equal to 1,000 pounds, i.e. one half of a U.S. ton. One use is as a unit of deadweight to compute shipping charges. 1 kip = 4448.222 newtons = 4.448222 kilonewtons (kN) The name comes from combining the words "kilo" and "pound"; it is occasionally called a kilopound. Its symbol is kip, or less frequently, klb. When it is necessary to clearly distinguish it as a unit of force rather than mass, it is sometimes called the kip-force (symbol kipf or klbf). Note that the symbol kp usually stands for a different unit of force, the kilopond or kilogram-force.

REF486

46 CFR 31.25; 46 CFR Parts 42, 44, and 45. 31.25–1 Load lines required—TB/ OCL. All tank vessels of 150 gross tons or over, or 79 feet in length or greater, navigating the oceans, coastwise waters, and Great Lakes are subject to the regulations in parts 42 to 45, inclusive, subchapter E (Load Lines), of this chapter, as applicable.

REF487
46 CFR 42.07-45(d)(1)

REF490
46 CFR 42

REF518
PETEX V 46 CFR 107.231

REF529
33 CFR 151.25 Oil Record Book. (a) Each oil tanker of 150 gross tons and above, ship of 400 gross tons and above other than an oil tanker, and manned fixed or floating drilling rig or other platform shall maintain an Oil Record Book Part I (Machinery Space Operations). An oil tanker of 150 gross tons and above or a non oil tanker that carries 200 cubic meters or more of oil in bulk, shall also maintain an Oil Record Book Part II (Cargo/Ballast Operations). (b) An Oil Record Book printed by the U.S. Government is available to the masters or operators of all U.S. ships subject to this section, from any Coast Guard Sector Office, Marine Inspection Office, or Captain of the Port Office. (c) The ownership of the Oil Record Book of all U.S. ships remains with the U.S. Government. (d) Entries shall be made in the Oil Record Book on each occasion, on a tank to tank basis if appropriate, whenever any of the following machinery space operations take place on any ship to which this section applies— (1) Ballasting or cleaning of fuel oil tanks; (2) Discharge of ballast containing an oily mixture or cleaning water from fuel oil tanks; (3) Disposal of oil residue; and (4) Discharge overboard or disposal otherwise of bilge water that has accumulated in machinery spaces. (e) Entries shall be made in the Oil Record Book on each occasion, on a tank to tank basis if appropriate, whenever any of the following cargo/ ballast operations take place on any oil tanker to which this section applies— (1) Loading of oil cargo; (2) Internal transfer of oil cargo during voyage; (3) Unloading of oil cargo; (4) Ballasting of cargo tanks and dedicated clean ballast tanks; (5) Cleaning of cargo tanks including crude oil washing; (6) Discharge of ballast except from segregated ballast tanks; (7) Discharge of water from slop tanks; (8) Closing of all applicable valves or similar devices after slop tank discharge operations; (9) Closing of valves necessary for isolation of dedicated clean ballast tanks from cargo and stripping lines after slop tank discharge operations; and (10) Disposal of oil residue. (f) Entries shall be made in the Oil Record Book on each occasion, on a tank-to-tank basis if appropriate, whenever any of the following operations take place on a fixed or floating drilling rig or other platform to which this section applies— (1) Discharge of ballast or cleaning water from fuel oil tanks; and (2) Discharge overboard of platform machinery space bilge water. (g) In the event of an emergency, accidental or other exceptional discharge of oil or oily mixture, a statement shall be made in the Oil Record Book of the circumstances of, and the reasons for, the discharge. (h) Each operation described in paragraphs (d), (e) and (f) of this section shall be fully recorded without delay in the Oil Record Book so that all the entries in the book appropriate to that operation are completed. Each completed operation shall be signed by the person or persons in charge of the operations concerned and each completed page shall be signed by the master or other person having charge of the ship. (i) The Oil Record Book shall be kept in such a place as to be readily available for inspection at all reasonable times and shall be kept on board the ship. (j) The master or other person having charge of a ship required to keep an Oil Record Book shall be responsible for the maintenance of such record. (k) The Oil Record Book for a U.S. ship shall be maintained on board for not less than three years. (l) This section does not apply to a barge or a fixed or floating drilling rig or other platform that is not equipped to discharge overboard any oil or oily mixture. (m) This section does not apply to a fixed or floating drilling rig or other platform that is operating in compliance with a valid National Pollutant Discharge Elimination System (NPDES) permit. (Approved by the Office of Management and Budget under control number 1625–0009) [CGD 75–124a, 48 FR 45709, Oct. 6, 1983; 48 FR 54977, Dec. 8, 1983, as amended by CGD 88– 002A, 55 FR 18582, May 2, 1990; USCG–2000– 7641, 66 FR 55571, Nov. 2, 2001; USCG–2006–25150, 71 FR 39209, July 12, 2006; USCG–2006–25556, 72 FR 36328, July 2, 2007]

REF558
Synchronous rolling is caused by the ship's rolling period becoming synchronous or resonant with the wave period. When this occurs, the ship heels over and, in exceptional circumstances, is rolled further over by the action of the wave. ... It causes a twisting along the ship, leading to extra rolling motions

REF763
Metacenter: The highest point to which G may rise and still permit the vessel to have positive stability. Found at the intersection of the line of action of B when the ship is erect with the line of action of B when the ship is given a small

inclination. Center of Gravity: That point at which all the vertically downward forces of weight are considered to be concentrated; the center of the mass of the vessel.

REF775
Angle of loll is the state of a ship that is unstable when upright (i.e. has a negative metacentric height) and therefore takes on an angle of heel to either port or starboard. When a vessel has negative metacentric height (GM) i.e., is in unstable equilibrium, any external force applied to the vessel will cause it to start heeling. As it heels, the moment of inertia of the vessel's waterplane (a plane intersecting the hull at the water's surface) increases, which increases the vessel's BM (distance from the centre of Buoyancy to the Metacenter). Since there is relatively little change in KB (distance from the Keel to the centre of Buoyancy) of the vessel, the KM (distance from Keel to the Metacentre) of the vessel increases. At some angle of heel (say 10°), KM will increase sufficiently equal to KG (distance from the keel to the centre of gravity), thus making GM of vessel equal to zero. When this occurs, the vessel goes to neutral equilibrium, and the angle of heel at which it happens is called angle of loll. In other words, when an unstable vessel heels over towards a progressively increasing angle of heel, at a certain angle of heel, the centre of buoyancy (B) may fall vertically below the centre of gravity (G). Angle of list should not be confused with angle of loll. Angle of list is caused by unequal loading on either side of centre line of vessel. Although a vessel at angle of loll does display features of stable equilibrium, this is a dangerous situation and rapid remedial action is required to prevent the vessel from capsizing. It is often caused by the influence of a large free surface or the loss of stability due to damaged compartments. It is different from list in that the vessel is not induced to heel to one side or the other by the distribution of weight, it is merely incapable of maintaining a zero heel attitude.

REF777
When the object is lifted, the center of gravity of the object shifts to the head of the boom, causing a rise in the center of gravity and loss of stability.

REF783
The life raft on board ship are released or launched in to the water by three different methods: 1) Auto release with Hydrostatic Release Unit (HRU). 2) Manually launching. 3) Launching by Davits. Auto Release with Hydrostatic Release Unit (HRU): The life raft HRU plays an important role when it comes to saving life during abandon ship situation. SOLAS 74 clearly specify the requirements for construction and positioning of the HRU at the life raft. The Working of HRU: ■HRU acts as a connecting media between life raft container and ship deck, where it is stored. ■The HRU comes in action under the pressure of water exerted on HRU when the ship sinks below 4m of water level. ■The HRU consists of a sharp knife or chisel which is used to cut the strap lashed over the container carrying life raft, but it still holds the painter at the weak link. ■The HRU is connected to the container through a lashing arrangement which can be disengaged quickly by means of slip hook when launching the raft manually. ■The HRU is connected to a strong point on deck through a weak link. ■When vessel sinks, the HRU cuts the rope and the container floats to the surface of water. ■As vessel sinks further, the tension in the painter causes the life raft to inflate out of the container. ■The tension acting on the weak link will cause it to break making the life raft free from the ship. ■When vessel sinks, the HRU cuts the rope and the container floats to the surface of water. Manual Launching Procedure of Life raft: ■Check that one end of the painter of the raft is well secured to a strong point on ship’s deck or structure. ■Remove the lashing from the container of the raft and open the way to portable rail if available. ■Check the ship side where the raft to be launched is clear. ■Two people should lift the container from both sides horizontally and throw the container. ■Make sure the painter is still fixed at a strong point so that the raft should not be waved away by waters. ■Pull the painter with a hard jerk to fire the gas bottle to inflate the raft. ■ The life raft will take 20-30 sec to inflate. ■Board the life raft one by one using ladder or rope. ■Avoid sharp objects like knives, shoes and other sharp objects etc which may damage the raft surface. ■When everybody is aboard, after a headcount, cut the painter with a sharp knife. Launching Raft by Davit: ■Open the lashing and remove the raft container from HRU by opening the manual slip hook or bottle screw arrangement. ■Tie up the one end of the painter of raft into a strong point at deck. ■Keep the container in the open and attach the davit hook to the given eye in the canister/ container ■Take up the raft load by davit and keep the container hanging at embarkation deck area. ■Pull the painter and inflate the raft. Have a thorough check on the inflated raft. ■Start boarding the raft without the shoes and other sharp object. ■After the boarding is completed, check the bottom is clear and release the securing lines, if any. ■Someone inside the raft will detach the hook of the davit from the raft when the raft is just above the water. ■The davit operating person will board the raft either by jumping in to the sea, raft or by other boarding means if provided. ■Cut the painter and cast away the raft from ship.

REF785
Hydrostatic Release Unit (H.R.U.) is designed for E.P.I.R.B’s and Liferafts. The H.R.U. is a mechanical device that will operate automatically when immersed to a certain depth in water, to release a liferaft, or any other device requiring liberation under these conditions. The H.R.U is installed as part of the liferaft stowage lashing system, (on the INBOARD

SIDE of the liferaft), being fitted between a deck plate, or liferaft cradle, and the lashing. The liferaft painter is secured to a WEAK LINK (breaking strength 2.2 +/- 0.4 kN) and this in turn is fitted at the deck attachment of the H.R.U. Liferafts that have not been launched in the usual manner are taken down with the sinking vessel. At a depth of between 1.5 to 4 meters (or 5 to 12 feet), the water pressure is sufficient to depress an internal diaphragm in the HRUand operate the release mechanism. Once released, the liferaft container will then float free of the sinking vessel and rise towards the surface, with the painter line paying out as the vessel continues to sink. When all the free length of the painter line is paid out, the inflation mechanism of the liferaft is activated, the liferaft inflates, bursting open the container, and continues to rise to the surface. At this point of inflation, the WEAK LINK parts and allows the liferaft to continue to float to the surface ready for boarding by survivors.

REF795
Bollard pull

REF799
GROUND TACKLE COLOR MARKINGS Note: 1 fathom = 6 feet. There are 15 fathoms (90 feet) in a shot of anchor chain. The tools that are required for color marking an anchor chain are a wire brush, paint brush, rags, and paint (red, white, blue, and yellow enamel paint). • 15 fathoms (1 shot). The detachable link is painted red, and one link on each side is painted white. • 30 fathoms (2 shots). The detachable link is painted white, and two links on each side are painted white. • 45 fathoms (3 shots). The detachable link is painted blue, and three links on each side are painted white. • 60 fathoms (4 shots). The detachable link is painted red, and four links on each side are painted white. • 75 fathoms (5 shots). The detachable link is painted white, and five links on each side are painted white. Paint each link in the net to last shot yellow. The yellow alerts you that you are running out of chain. Paint each link in the last shot red. This method is used through the entire marking procedure alternating red, white, and blue for detachable links as appropriate. WIRE MARKINGS In addition to color markings, wire markings may also be used. The purpose of the wire marking is to let you count the shots by feel during blackout conditions or if the markings on the chain are worn off or rusted over. • 1st shot. One turn of wire on the first stud from each side of the detachable link. • 2d shot. Two turns of wire on the second stud from each side of the detachable link. • 3d shot. Three turns of wire on the third stud from each side of the detachable link. • 4th shot. Four turns of wire on the fourth stud on each side of the detachable link. • 5th shot. Five turns of wire on the fifth stud on each side of the detachable link. • 6th shot. Si turns of wire on the sixth stud on each side of the detachable link.

REF818
WILDCAT : A special type of drum whose faces are so formed as to fit the links of a chain of given size.

REF968
An anemometer is a device for measuring wind speed, and is a common weather station instrument. The term is derived from the Greek word anemos, meaning wind, and is used to describe any airspeed measurement instrument used in meteorology or aerodynamics. The first known description of an anemometer was given by Leon Battista Alberti around 1450. Anemometers can be divided into two classes: those that measure the wind's speed, and those that measure the wind's pressure; but as there is a close connection between the pressure and the speed, an anemometer designed for one will give information about both.