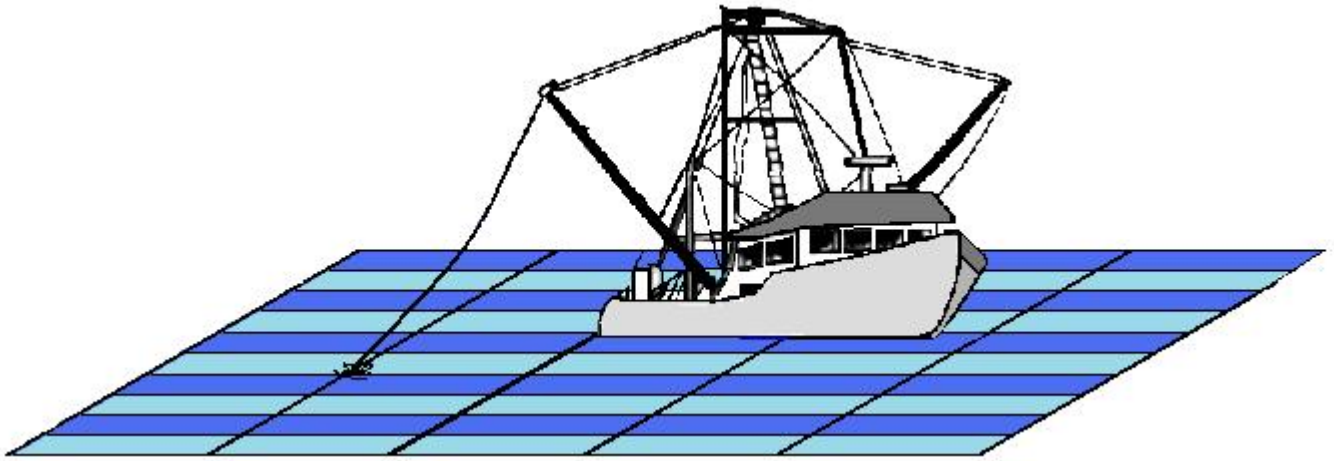
ALTERNATE SAFETY COMPLIANCE PROGRAM (ASCP)
DRAFT MATRIX of POSSIBLE REQUIREMENTS



The Matrix is a graduated list of proposed items to be considered by regional working groups to reduce risks in their particular region or with particular fleets. Only applicable items need be selected by the working groups for inclusion into an Alternate Safety Compliance Plan.

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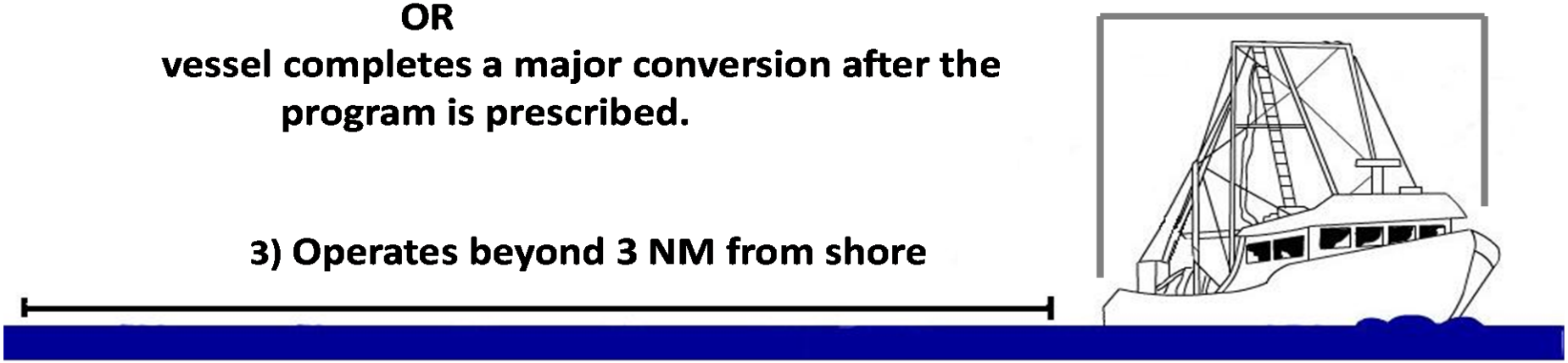
Which vessels need to enroll in Alternate Safety Compliance Programs?

1) A commercial fishing vessel, tender or processor 25 years of age or older in 2020
(see chart on next page)
OR
vessel completes a major conversion after the program is prescribed.

2) at least 50 feet overall in length



3) Operates beyond 3 NM from shore

Vessels meeting all 3 criteria will need to enroll

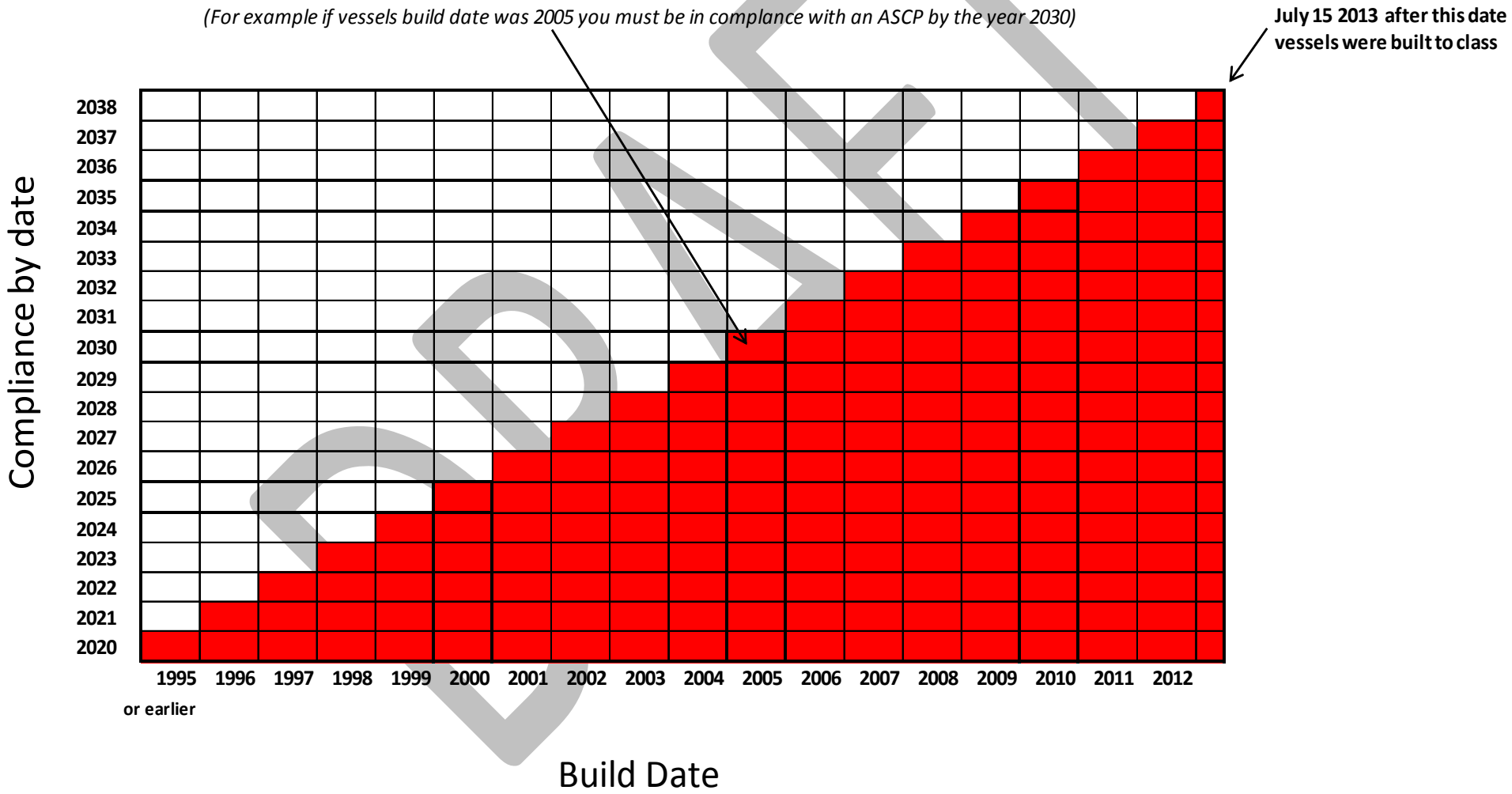
Vessels operating with more than 16 POB inside 3NM will also need to enroll

Determining when a vessel must comply with an Alternate Safety Compliance Program

Step 1 Vessels 50 feet and greater that operate 3nm beyond the territorial sea base line (Go to step 2)

Step 2 Find the year of your vessel build date you must be in compliance with an ASCP.

(For example if vessels build date was 2005 you must be in complance with an ASCP by the year 2030)



Purpose:

Casualty data shows that approximately two thirds of commercial fishing vessels lost to flooding result from hull or equipment failures. Poor maintenance is often a factor. The older the vessel, the more likely it is to experience a catastrophic event. Most commercial fishing vessels have not been required to meet construction standards such as survey and classification requirements. Thus, there has been little authority or ability to enforce construction standards and material condition on commercial fishing vessels. Standards to ensure well-maintained vessels and application of safety standards on older and modified commercial fishing vessels, are needed to improve the safety of vessels.

The 2010 Coast Guard Authorization Act amended Title 46 of the United States Code, Chapter 45, to require certain fishing industry vessels to comply with an alternate safety compliance program (ASCP) developed in cooperation with the commercial fishing industry and prescribed by the Coast Guard. Vessels that must enroll in an ASCP include commercial fishing vessels that operate beyond 3 nautical miles of the Baseline, are at least 50 feet overall in length, were built before July 1, 2013, and are 25 years of age or older (in 2020); or built before July 1, 2013 and undergo a major conversion completed after July 1, 2013 or a later date established by the Coast Guard.

Alternate safety compliance programs may be developed for specific regions and fisheries. In general, these programs are to be prescribed by 2017 and vessels must be in compliance after January 1, 2020. Standards developed for ASCPs should be relevant to specific fisheries and geographic hazards. ASCP objectives should be developed to achieve reasonable and attainable reductions in vessel losses, fatalities and serious injuries.

In order to establish effective ASCPs, risks must be known and compliance criteria need to address the risks specific to operating environment, fishing vessel and gear types, and other regional and fishery specific hazards identified through casualty analysis and by fishing vessel safety organizations. There are also common risks among fisheries that can be addressed through common best practices. The draft ASCP Matrix contains recommended prevention measures. Items marked "ALL" in the applicability column are suggested as needed for a good foundation to enhance safety on these vessels. Items marked with "R" for "Risk" in the applicability column are suggested to be applied if the vessel or fishery has a high risk for the particular hazard identified in the "Risk Factors" column.

Principles:

- ASCP objectives should be developed with a goal to achieve reasonable and attainable reductions in vessel losses, fatalities, and serious injuries.
- Standards developed for an ASCP should be relevant to specific fisheries, environmental, and geographic hazards.
- ASCPs should ***not*** include criteria such that a fleet of vessels would be deemed to have met standards equivalent to those set by a classification society. Rather, they should adopt a set of measures and criteria that can be implemented to reduce risk.
- The law requires ASCPs be developed in cooperation with the commercial fishing industry. Program development will require significant outreach and cooperation with various commercial fishing associations.
- Standards should take into account the limitations that vessel owners may face regarding access to shipyards, drydock capacity, naval architect services, the availability of Coast Guard personnel to conduct compliance examinations, and other geographic and marine industry infrastructure.
- ASCPs should consider economic impacts to the fishery and vessel owners.
- ASCPs should identify/dedicate resources needed to implement and maintain the program.
- If existing "best practices" may be sufficient to raise the standards of a particular fleet, and they will meet the primary safety objectives being addressed, consideration should be given to adopting those standards.
- Phased-in requirements and graduated progress towards compliance should be encouraged to best manage workload and recognize fleet economics.
- ASCP standards should consider new technology as a means to reduce risk, such as, but not limited to, GPIRBS, PLBs, MOB devices, bilge monitoring etc.

How to determine risks:

Studies of marine casualty data show that operational risks vary widely among fleets and regions. Occupational safety studies of various fleets and regions have been published by organizations such as NIOSH and PNASH. Such information should be a primary source used in determining the risks within a particular region or fleet, and used in selecting items from the matrix to apply to Alternate Safety Compliance Programs. As ASCPs are developed, regional workgroups should conduct detailed risk assessments for particular fleets.

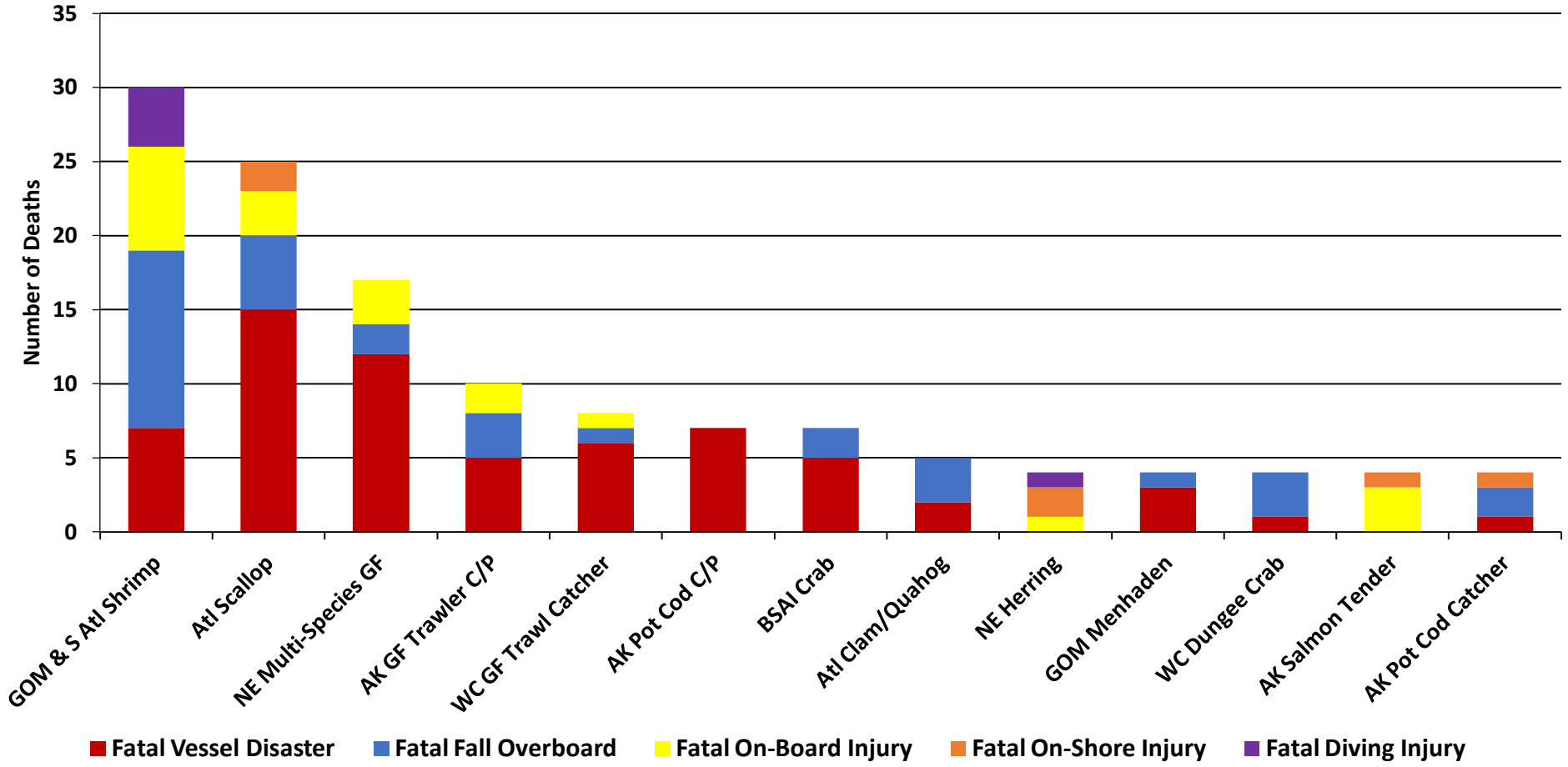
Perceived risks should also be considered. Perceived risks differ from evidence-based, data-derived assessment of risks; i.e. risks that are believed to exist, but little empirical evidence exists to support such belief. This does not mean that perceived risks don't actually exist, but rather they haven't been measured. An example of a perceived risk is fatigue. Fishermen (and others) may believe that fatigue is a risk factor contributing to casualties, but it has never been measured so no data exists, or the available data has not been fully analyzed to fully support that perceived risk.

It is important to consider both evidence-based and perceived risks, because not all risks can be assessed empirically with limited resources, time and data. Yet fishermen's perceived risks may well be valid and important to address in ASCPs. If vessel owners or operators in the workgroups want to do something to address a perceived risk, even though the available data may not support it as a risk, it should still be addressed. At the same time, if risk and casualty studies show a problem for a certain fleet, it should be addressed even if some do not perceive it to be a risk.

When a risk is identified, but not addressed by one of the suggested interventions in the matrix, regional workgroups should propose an intervention measure to mitigate such risk. The matrix is designed to be a starting point and is not all inclusive. It is desired to keep programs as standard as possible while allowing flexibility to address regional and fishery-specific risks, as well as considering regional limitations. Intervention measures suggested in the matrix can be modified to fit best practices within a region or fleet.

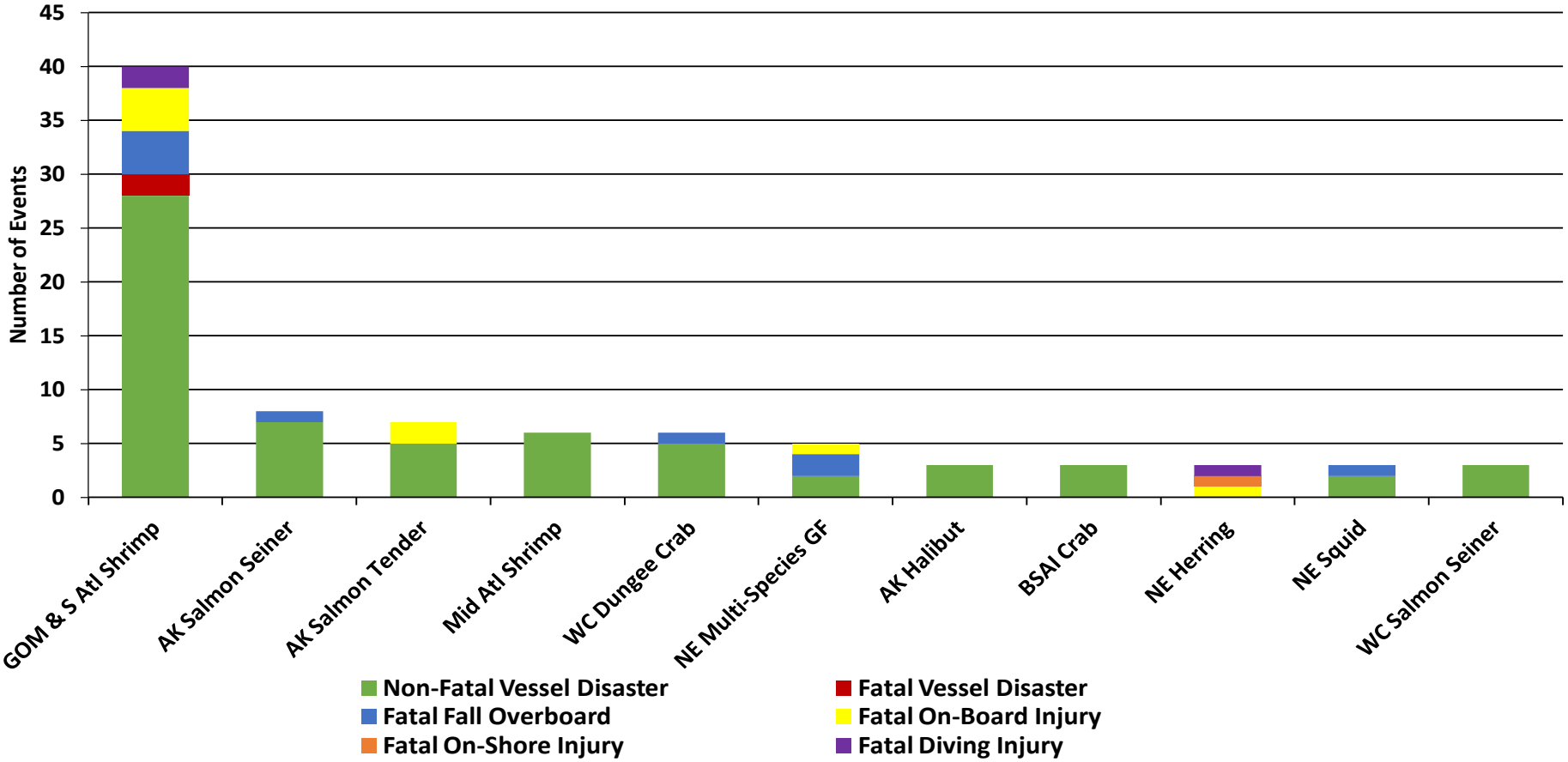
The following casualty data and recommendations may be used in evaluating the proposed safety criteria for an ASCP.

Work-Related Fatalities on *Vessels at Least 50'* in *Fleets with >3 deaths* during 2004-2013, by Incident Type (n=129)



This chart shows the number of deaths to workers on vessels at least 50' during the decade 2004-2013. Fleets with less than 4 fatalities during the decade are not included in the chart.

Fatal and Non-Fatal Events on *Vessels at Least 50'* in *Fleets with >2 Incidents* during 2010-2013 (n=87*)



*For ALL fleets during 2010-2013, there were 131 total incidents on vessels at least 50'. 47 incidents were fatal resulting in 55 total fatalities

This chart shows the number of major casualty incidents that occurred during the 4-year period 2010-2013 on vessels at least 50'. Fleets with less than 3 incidents are not included in the chart. The majority of incidents were non-fatal vessel disasters, which are essentially vessel losses where the entire crew survives. It is important to understand that this chart is showing the number of incidents, not fatalities. Each incident in this chart can have more than one fatality or survivor involved.

Recommendations for grouping fleets into ASCPs

Casualty data should be used to help guide the development of ASCPs, including determining which fleets to focus on. The bar chart from NIOSH is particularly useful because it shows which fleets had the highest number of fatalities during the decade 2004-2013.

ASCPs should target fleets experiencing a high number of fatalities and vessel losses. Regional-based ASCPs are probably preferable to a single national ASCP because risks vary significantly by region and fleet. For example, each district could have a base ASCP with best practices relevant to that region. Then, there could be additional requirements for specific fleets that have special hazards and/or higher risks. Risk analyses will provide a manageable number of fleets to engage under the Plan.

In the table below as an example, each district may have a base ASCP with which all vessels at least 50' LOA and meeting the other criteria could comply, regardless of fishery. These would be the "ALL" requirements in the draft ASCP matrix, but they could vary somewhat by district. Then, in addition to each district's base ASCP, there could be specific requirements in the plan for fleets that have identified safety problems or risks, indicated by "RISK" items from the matrix.

Using the findings depicted on the NIOSH chart below, there is an example of how ASCPs could be organized:

	DISTRICT							
ASCP	D1	D5	D7	D8	D11	D13	D17	D14
District/Region Plan	X	X	X	X	X	X	X	X
Northeast Multi-Species Groundfish	X							
Atlantic Scallop	X	X						
Gulf and Atlantic Menhaden		X		X				
Gulf & Atlantic Shrimp		X	X	X				
AK Salmon Seine						X	X	
AK Tender						X	X	
BSAI Crab						X	X	

= Shared plans, each district will have representation during development

The example above would allow each district's base ASCP to vary based on regional differences, or allow for targeted ASCP criteria to be developed for specific high-risk fleets. Vessels in those targeted fleets would need to meet all the requirements of the base ASCP as well as any additional risk-based requirements added on to address their specific safety issues. Vessels not in the targeted fleets would simply meet the requirements of the base ASCP for the district in which they operate.

Applicability Legend ("ALL" column)
All – recommended for all ASCP vessels
R= Risk - Applies if Coast Guard determines vessel/fleet to be "high risk".

REQUIREMENT	ALL?	RISK FACTORS & OTHER APPLICABILITY	EXAM INTERVAL
RISK EVALUATION AND CASUALTY REVIEW			
Utilize NIOSH, Coast Guard, and other data to assess regional and fisheries Risk Factors 1. Evaluate marine casualties (vessel and personnel) based on gear type/fishery/geographic region 2. Evaluate risks (both evidence-based risks measured in studies and also risks perceived by industry that have not been measured) 3. Prioritize job hazards	ALL	This is the process used to determine regional and fishery specific program requirements	Initial program development and ongoing
ADMINISTRATION			
1. Valid CFVS Decal or Certificate of Compliance (COC)	ALL	Requirement	Verify during Dockside Exam (every 2 years)
2. ASCP Endorsement on COC	ALL	ASCP Admin requirement	Dockside Exam
3. Vessels participating in multiple fisheries must comply with the highest standard applicable to the fisheries the vessel participates in.	R	ASCP Requirement	Dockside Exam
4. Company random drug & alcohol tests Not the formal DOT program but rather a simple process developed by the vessel owners using acceptable test kits available from local sources.	R	When casualty review shows drugs & alcohol are frequent contributing factors to marine casualties such as falls overboard, sinking, groundings… (Determined by Regional Workgroup & USCG)	Dockside Exam

METHODS TO REDUCE FATALITIES FROM FALLS OVERBOARD			
1. Vessel has a written policy for the use of PFDs (floatation devices) and the prevention of falls overboard. Complete a PFD Evaluation to find comfortable & effective PFDs to be worn on deck by the vessel's crew. This information will be used to develop the vessel's PFD policy.	ALL	The policy needs to be written for each fleet by choosing elements in the "pick list" (items 2-9) based on risks. Sample PFD Policy (click here) NIOSH PFD Study (click here)	Verify during Dockside Exam (every 2 years)
2. Fishing company administrative controls _ Company policy to never go on deck alone unless you are visible, wearing a PFD & have communications with the wheelhouse. _ Ban the use of alcohol prior to departure _ Captain ensures PFDs are worn when working on out-riggers or when working on deck alone	R	Risk analysis shows fatality rate is high when someone was alone and fell overboard and/or alcohol impaired judgment, reactions, abilities.(Determined by Regional Workgroup & USCG)	Dockside Exam
3. Increase the effectiveness of MOB drills & training. Drills are to be conducted satisfactorily in the presence of the USCG Examiner as part of the dockside safety exam.	R	Fleets with a high occurrence of falls overboard. (Determined by Regional Workgroup & USCG)	Dockside Exam
4. Man overboard recovery devices Such as a Life Sling, cradle or basket	R	During MOB drills assess methods to retrieve a weak or unconscious person from the water. Often a recovery device is needed.	Dockside Exam
5. Safe means of embarking/disembarking	R	Insufficient gangways and ladders at locations for embarking/ disembarking. History of accidents while embarking/disembarking	Verify during dockside exams
6. Raise railing and bulwark height to a minimum of 39 inches .	R	PFDs are not worn on deck. Methods above are not practical or did not have the intended effect of reducing fatalities from falls overboard.	Verified during 1st dry-dock exam after measure has been implemented.
7. Slip Prevention, Gratings and deck coatings	R		Dockside Exam

8. Evaluate Personal Locator Beacons or MOB alarm system	R	Solo fishing. Frequently work on deck alone	Dockside Exam
9. Tethering and other methods of man overboard prevention	R	If the MOB data shows that tethering could have prevented fatal falls in the fleet then consider tethering for certain positions. For example, on a longliner, the rollerman is the individual on board at risk of falling overboard. So perhaps they can be tethered.	Dockside Exam
10. Self-Rescue _PFD _Re-boarding ladder _Propulsion auto shut-down	R	Solo operations	Dockside Exam
STABILITY			
1. No significant changes to vessel weight distribution, dimensions or deck loads since last stability review. If significant changes have occurred stability verification is required. . Stability Review: Not greater than 5 -7-10 years (as determined by Risk Evaluation for Fishery/vessel) since last inclining or verification of stability by deadweight survey. **Or** Substantial alteration per 46 cfr.28.501 **Or** as determined and agreed to by the US Coast Guard and Naval Architects/PEs Evaluating the needs for Stability Review**.** *If it can be determined with certainty that no significant changes have occurred to the vessel, e.g. load marks, loading conditions were documented during incline and verified to be the same under the same conditions, at a later date; then there is no need to complete an additional incline test or deadweight survey.*	R	Apply to vessels with a high risk of capsizing e.g. crosses hazardous bars, carries large deck loads, operates in heavy weather. (Determined by Regional Workgroup & USCG)	Verify every 2 years in conjunction with the dockside exam.
2. Stability Instructions:	R	Apply to vessels with a high risk of capsizing	

_ Examine Stability Letter and Any Addendum. _ Instructions must identify the location of loading mark or draft marks. _ Instructions must list the location of each watertight bulkhead, watertight closure, weathertight closure _ Ensure the Master is trained & familiar with stability instructions. _ Ensure the Master is Familiar with any stability software possibly provided. _ Ensure Stability Instructions and Loading and Rigging Practices are part of the crew's training/instructions.		(Determined by Regional Workgroup & USCG)	During dockside exam
3. Stability instructions compliance: _ Drainage, scuppers and freeing ports clear _ Solid ballast verification (when applicable) _ Load marks or draft marks are clearly legible to verify loading conditions	R	In accordance with stability letter or instructions	During dockside exam
4. Establish operational limitations, note on the Certificate of Compliance: Establish minimal allowable freeboard, prohibit operations in severe sea and bar conditions, or limit the vessels range to protected or partially protected waters. Also limit deck loads.	R	Consider this measure when the risk of capsizing is high and stability testing or the establishment of a watertight envelope is not practicable.	At 1st COC exam
5. Install high capacity automatic bilge pumps with audio & visual alarms in areas subject to down flooding.	R	May be based on operating area	At 1st dry-dock period. Verify operation at dockside exams
6. Require posting of best practices for vessel stability in the wheelhouse at a minimum the following should be considered: _ keep weight low _ minimize the free surface effect by keeping tanks empty or topped off whenever possible _ avoid overloading _ keep scuppers/freeing ports clear of gear, cargo & debris _ secure your load	R	Consider this measure when the risk of capsizing is high and stability testing or the establishment of a watertight envelope is not practicable.	Verify every 2 years in conjunction with the dockside exam.

_ use bin boards _ do not allow ice build-up _ any open hatches (such as fish holds) must be attended when open _ keep weathertight and watertight doors & hatched closed at sea _ immediately report and repair flooding even if it is small (rudder, shaft, pin holes) slow leaks are dangerous (automatic pumps clog or fail, people forget to check the space due to fatigue….) _ investigate unusual vessel list and slow roll periods			
7. Establish administrative controls that prohibit vessel operations in weather conditions favorable to heavy icing.	R	Consider this measure when risk analysis determines loss or probable risk of instability due to icing.	At 1st COC exam verify at dockside exams
WATERTIGHT & WEATHERTIGHT INTEGRITY			
1. General: _ All vessels that are not inherently buoyant should have a watertight/weathertight envelope surrounding the main buoyant chamber of the vessel. The hull, deck, exterior bulkheads and closing appliances would be maintained so that water will not penetrate into the vessel under any sea conditions _ Openings to spaces below freeboard deck, or to other spaces included as buoyancy in stability calculations, shall be fitted with watertight or weathertight closing appliances as applicable. Small openings for wire, chain, scuppers etc., will be considered as closed if submerged at angle of heel larger than 30º	ALL	Good marine practice In general steel hull vessels are designed to be watertight and should be maintained as watertight. Aluminum vessels should be maintained as built watertight/weathertight Wood and FRP vessels are generally designed as weathertight and should be maintained with good weathertight closures. .	Thorough Exam during each dry-dock. Check during each dockside exam
2. Personnel access doors located on the main deck and opening to the vessel's interior and other locations that pose a particular risk to down flooding: _ Minimum coaming height 12 inches _ **Weathertight doors** must be built with same strength as the surrounding structure and be arranged to provide safety against sea impact _ **Weathertight doors** must include at least two closing devices in addition to hinges _	ALL	Good marine practice	Thorough Exam during each dry-dock. Check during each dockside exam

_ Watertight doors must be quick acting type (such as wheel) for ease and speed of closure. This prevents doors from being closed using only one dog _ Watertight doors and hatches will not allow water in under any sea condition _ If the door is not visible from the operating station, evaluate and consider indicator/ monitoring system for watertight closures (i.e. NIOSH model) *For doors located at least 15 inches above freeboard deck, a reduced height of coaming may be accepted, but normally not less than 6 in.*			
3. All weathertight/watertight closures: _ Labeled "Opening authorized for transit only – keep closed at sea" _ All dogs/closing devices operable _ Tested for fit and weathertight/watertight integrity _ Gasket not painted, badly cracked or deteriorated _ Examine sealing edge of closure frame	ALL	Good marine practice	Thorough Exam during each dry-dock. Check during each dockside exam.
4. Hatches penetrating the watertight/weathertight envelope: _ Capable of being rapidly closed and battened down _ Covers are weather or watertight, with gaskets and securing devices _ The coaming to a **fish hold** that is under constant attention when the closure is not in place need only be 6 inches in height. _ The coaming of a **hatch fitted with a quick-acting watertight closure** need only be of sufficient height to accommodate the device. If fitted with a weathertight closure the coaming height must be at least 12 inches in height. **Or** Where justified by operating experience, and subject to special consideration, the height of the hatch coamings may be reduced or the coamings omitted provided that the safety of the vessel is not impaired. Flush deck hatches used for catch of fish should normally be led to a tank or a watertight fish bin. The hatchway openings shall be kept as small as practicable	ALL	Good marine practice	Thorough Exam during each dry-dock. Check during each dockside exam.

5. Down Flooding Points; Regional ASCP Development groups must identify down flooding issues within the fleets and address them: _Identify while vessel is afloat and operating _Address down-flooding issues during dry-dock through consultation with Naval Architect _ Vessels that were not designed with a watertight or weathertight envelope should be given special consideration using a phased in approach. Priority should be given to preventing down flooding of the engine room & steering compartment.	ALL	Each vessel should identify likely down flooding scenarios, identify down-flooding points and ways to eliminate the possibility of down-flooding.	During program implementation
6. Vents: _ Ensure vent heights are min 24 inches above the freeboard deck and 18 inches above the forecastle deck. _ Examine condition of closures _ Examine vent balls and seats (if fitted)	ALL	Reduced vent heights may be allowed on well protected vents if gooseneck & ball valves are installed	Thorough Exam during each dry-dock. check during each dockside exam
7. Below deck watertight doors, hatches and bulkheads: Existing internal watertight subdivision shall be maintained or restored to as built/original condition _ Watertight bulkheads _ Bulkhead penetrations, small openings for penetrating pipes and electrical cables shall be sealed _ Watertight doors maintained	ALL	Good marine practice	Thorough Exam during each dry-dock. Spot check during each dockside exam
8. Sea and Overboard Valves: _All discharge and intake piping below the freeboard deck must be fitted with valves located as close as possible to the side shell plating _Be constructed of steel, bronze or other approved material	ALL	Good marine practice	Thorough Exam during each dry-dock. Check during each dockside exam
9. Written instructions for all watertight/weather-tight closures _ At –sea policy for maintaining watertight/weathertight integrity by keeping doors and hatches closed when not in use	R	High risk vessels, e.g. Vessels crossing hazardous bars Vessels operating in cold water. (Determined by Regional	Thorough Exam during each dry-dock. Check during each

_ At-sea watches to verify closure _ Preventive maintenance schedule for each of the closures		Workgroup & USCG)	dockside exam
10. Complete and log pre-departure checks prior to each voyage. The checklist must include at a minimum: _Evaluation of weather & bar conditions _Test of high water alarms _Gear, catch & hatches secured _Vessel is not overloaded _Scuppers & feeing ports clear _Shafts & rudder posts checked for no or minimal leakage _Bilge pump is in working condition _Vessel tanked to reduce free surface (fuel, water & catch not freely moving in tank	R	Applies to fleets with a high risk of flooding and capsizing. Also applies to all vessels that lack a watertight/weathertight envelope.	Check log book every 2 year exam to see if the pre-departure checks have become part of normal operations.
LIFESAVING EQUIPMENT & ARRANGEMENTS			
1. EPIRBs upgraded to GPIRBs	ALL	Applies to all vessels upon expiration of EPIRB battery/servicing.	Verify 1st dockside exam after upgrade
2. Liferafts: _Liferafts approved under 46 CFR 160.151. (SOLAS Rafts) _Mounted so can be manually launched by one person _Mounted in a location that minimizes the accumulation of ice	R	Vessels operating in cold water.	Every 2 years in conjunction with the dockside exam
3. Immersion Suits lights: _Each immersion suit is required to be fitted with a Coast Guard approved strobe type PML	R	Applies to vessels operating in Cold Water	“ “
DRYDOCK AND INTERNAL STRUCTURAL EXAM Dry-dock exams will be completed by Marine Surveyors experienced with the hull material and fishing vessel type. Repairs and modifications to wooden vessels must be approved by a wooden boat Shipwright. Dry-dock and Internal Structural Exam reports will be submitted to the USCG ASCP Coordinator.		Dry-dock& internal structural exam requirements will only apply to fisheries that have a high occurrence of vessel loss and/or fatalities due to flooding. (Determined by Regional	Dry-dock period is. to be determined by the regional workgroup but should not exceed 3 years between dry-

When available, USCG Marine Inspectors trained and qualified in the hull type may perform the exam.		Workgroup & USCG)	dockings
1. Hull examination - There is no requirement or expectation that existing hull construction will comply with the standards for inspected vessels. Visually examine the condition of all hull areas which constitute the watertight/ weathertight envelope for damage, improper repairs, integrity and defects. Steel and FRP repairs should be in accordance with the applicable USCG NVIC for Steel or FRP. Wood boat repairs must be approved by a wood boat Shipwright. Dependent on circumstances, audio gauging may be required at determined intervals with 5 years being a potential standard. _Doublers – not recommended but if used, follow best practices _Zinc, Sacrificial Anodes, Bonding Straps and Cathodic Protection systems should be examined and maintained. _ Steel Hull -Visually examine condition of all welds for (1)Washed out welds, (2)Cracking, (3)Excess pitting/corrosion **Wood hulls**: When dry-docking is required. X-ray technology may be used at the discretion of the attending Shipwright or Examiner in order to determine the condition of fasteners. Refer to CG Research & Development Center report # CG-D-02-98 "Improved inspection of wood hull passenger vessels" for additional information on non-destructive testing of wood hull fasteners.	R	" " Unique vessel construction methods such as Ferro-cement, FRP over a wooden planked vessel…. must be completed by a Marine Surveyor with experience in the particular construction and repair methods.	" "
2. Examine: _Propeller(s) _Stern bushing(s) _Thru-hull fittings/Sea connections	R	" "	" "
3. Sea Chests: _Open for examination _Check all welds, plating and thru -hull penetrations	R	" "	" "
4. Sea and Overboard Valves:	R	" "	" "

_All valves below the freeboard deck must be opened for examination and examined: (1) Seats (2) Guides (3) Body (4) Stem _Valves located as close as possible to the side shell plating _Valves are steel, bronze or other approved material for marine service. **Wood Hulls:** In addition to the disassembly of the valves on wooden boats the through hulls should be removed and the wood inspected around the penetration point one time early on (1st or 2nd inspection) and every 10 years afterward.			
5. Sea Strainers: _Open for examination and clean	R	" "	" "
6. Valves for emergency bilge suction (if equipped): _Open for examination and ensure operation	R	" "	" "
7. Visual examination of tail-shaft and rudder. Examiner may require pulling if bearings are worn or defects are found. _Rubber water lubricated bearings must be refurbished when any water groove is worn ½ or more of the original depth.	R	" "	" "
MACHINERY SYSTEMS			Examine when vessel is in Dry-dock. Twice in a 5 year period. Not to exceed 3 years
1. Piping & valves: _Diagram of vital systems piping _ Label or color code valves and piping	ALL	Good marine practice	" "

2. Fuel System, fuel supply piping on the pressure side must be: _Seamless piping of steel, annealed copper or brass or tubing or nickel copper meeting the requirements for materials and for thickness _Non-metallic flexible hose, under 10 PSI allowed only where flexibility is required to prevent damage from vibration. Fuel / hydraulic hoses meet J-1942 or SAE J-1942-1. _Hose fittings meet SAE J-1475. _Approved fire sleeve material as listed in the SAE qualified hose list installed over approved hose.	R	Fire risk factors to be determined. Owner will be given sufficient time to replace applicable fuel piping and non-metallic flexible hoses during dry-dock or down-time using an agreed upon schedule. Replacements must use approved fuel piping.	" "
3. Remote fuel shutoffs: _Accessed from outside the Engine room/compartment _Witness operation _Made of fireproof material	R	Fleet has a history of fuel fires or uncontrolled engine acceleration	" "
4. Sight gauges on tanks: _Must be welded or brazed to the tank _Must be heat resistant material _Protected from mechanical damage _Both ends of sight gauge must be fitted with devices that will automatically close should the gauge break or fitted with closures & posted "keep closed, open only when checking fuel level.	R	Fire risk factors to be determined. Owner will be given sufficient time to replace sight gauges & closures during dry-dock or down-time using an agreed upon schedule. (Determined by Regional Workgroup & USCG)	" "
5. Preventative Maintenance log: _At the request of the examiner the owner/operator will show the preventive maintenance log for propulsion and electrical generation machinery. Entries must be sufficient to demonstrate the systems have been maintained in accordance with manufactures requirements.	R	Did the lack of maintenance significantly contribute to casualties? (Determined by Regional Workgroup & USCG) Link to sample preventive maintenance log	" "
6. Visual examination of Vital System Piping: _Examine fuel oil for main propulsion / emergency generator _Examine lubricating oil system	R	Did the lack of maintenance significantly contribute to casualties?(Determined by Regional	" "

_Examine cooling water for main propulsion / emergency generators _Examine bilge and ballast systems _Examine starting and control air systems		Workgroup & USCG)	
7. Electrical Systems: Discovery of unsafe conditions will be a cause for modifications to such equipment at the discretion of the Marine Inspector. All new wiring installations and fixtures must be marine grade. New exterior outlets must be covered and GFCI. _Ensure over-current protection is installed _Install inverters to replace battery chargers _Consider thermal imaging inspections to identify excessive loads _Minimize electrical heater hazards _Electrical system drawings should be complete and up to date	R	Are electrical problems significant contributing factors in marine casualties. Do not require replacement of electrical cabling and wiring without cause. Electrical REPAIRS should be in compliance with ABYC standards.	" "
FIRE PREVENTION and MITIGATION			
1. Fire safety hazard survey, conduct survey of machinery spaces to identify fire safety hazards: _bilge is clean _examine insulation for oil absorption _visual exam of electrical wiring for ignition sources _oil soaked rags are kept in a fireproof container _debris removed from machinery spaces _flammable solids (such as cardboard), flammable liquids and gas are segregated from ignition sources _hazardous and flammable material storage containers (separate ventilation, condition, firefighting) _consider thermal imaging inspections to identify hot spots	ALL	Good marine practice	Complete Fire Hazard Survey during each dockside exam
2. Where Applicable and Appropriate -There must be a closure on the machinery space hatch.	ALL	e.g. fixed firefighting system installed, fire boundary required	Check at 1st exam. Require at dry-dock

3. Non-combustible insulation: _ Any insulation replaced in hidden spaces must be of non-combustible material IAW 46CFR Subchapter Q _ If foam insulation is replaced it must be USCG or ABS approved material	ALL	Best practice adopted from ACSA	Dry-dock
4. Guards and Exposed Hazards: _ Each exhaust pipe within internal spaces must be insulated or otherwise guarded to prevent ignition or contact _ Electrical heaters guarded to prevent accidental contact with flammables	ALL	Fire risk factors to be determined by Regional Workgroup & USCG	Check during dockside exams
5. Fuel tank vents: _ Inspect flame screen (minimum 30 X 30 mesh)	ALL	Good marine practice	Check during dockside exams
6. Smoke Detectors for accommodation spaces. Acceptable detectors include: _ Independent modular smoke detector: Must meet UL-217 standards _ Smoke actuated fire detecting unit: Must be installed IAW 46CFR76.33 _ When smoking at the galley table is common practice, a heat detector may substitute	ALL	Best practice adopted from ACSA	Install during ASC implementation. Test during dockside exams
7. Deck water/fire pump if installed: _ Sufficient hose to reach any part of the vessel _ Hose(s) fitted with nozzle of corrosion resistant material capable of providing solid or straight stream, and spray pattern	ALL	Good marine practice	Verify & test during dockside exams
8. Portable fire/dewatering pump: _ Must be stowed outside the engine room _ Sufficient suction hose w/foot valve to reach water from highest lift _ Sufficient hose to reach any part of the vessel _ Hose(s) fitted with nozzle of corrosion resistant material capable of providing solid or straight stream, and spray pattern	R	Portable pumps help mitigate both fire and flooding. When fire and/or flooding is high risk for the fleet and vessels are sufficient size to have a storage location protected from the weather/corrosion, Regional workgroups should consider the carriage of a portable pump aboard	Verify & test during dockside exams

9. When determined applicable the following spaces should require a fixed fire fighting system. Any space containing: (a) Internal combustion engine greater than 50 hp (b) An incinerator (c) Gasoline storage tank(s) or other flammable materials (d) Paint lockers over 60 cubic feet in volume _Consider new technology such as Dry Aerosols (DSPA-5 for example) or foam systems _Consider systems for galley hoods	R	Regional workgroups will determine when fixed firefighting systems should be required and specifications for those fixed firefighting systems. If the need is determined to exist,: Rules for Eng/Vent shutdowns, etc must be included in decision by the regional workgroup.	Make this determination prior to 1st dry-dock period. Examine installation during dry-dock then verify system is maintained during dockside exams.
10. Minimum requirements for fixed firefighting: _Manual Activation _Heat detector (rate of rise / maximum temperature) must be installed in each space protected by a fixed gas fire extinguishing system _Must be able to close vents & isolate the compartment _If the fixed firefighting activation station is not adjacent to the wheelhouse; the vessel must have an effective means of communication between the wheelhouse and the activation point. Emergency handheld radios may be used to meet this requirement. If used, must be tested prior to each voyage and batteries charged or replaced. _Directions must be posted at the operating and activation stations to include ensuring no one is in the space and procedures for engine & vent shutdowns. _Operation of the fixed systems should be included in the training of the vessel crew _Asphyxiant Systems should include and alarm and a time delay	R	When fixed firefighting is applicable.	" "
11. Best Practices for fire prevention and control. When it has been determined that fire in machinery spaces is a substantial risk within a fleet and the installation of fixed extinguishing systems is impractical or cost prohibitive then regional workgroups will develop mandatory best practices.	R	Fixed firefighting is not installed and consequence of fire is high (e.g. wood & fiberglass hulls)	Verify best practices are being followed during dockside exams

12. Fire and Safety Plan: _Draw one and keep it up to date	R	Link to on-line tool-kit	Draw during ASC implementation. Verify during dockside exams
13. Structural fire protection: _A-0 boundaries must CONSIDER isolating all internal combustion machinery spaces wherever practical _Additional structural fire protection should be implemented wherever practicable	R	Steel & Aluminum vessels Additional structural fire protection; large crew quarters, laundry room….	Dry-dock
CREW and DECK SAFETY			
1. Deck safety concerns specific to fishery and gear type If hazard analysis reveals deck safety risks not addressed below, specific prevention measures will be developed in the regional work groups.	ALL	Review hazards specific to the fishery or gear type & evaluate/develop safety methods to mitigate the risk.	Verify during dockside exams
2. New Crew Orientation & Training: _All crew members need to be taken through crew orientation and emergency instructions prior to initial departure	ALL	Good marine practice	Verify during dockside exams
3. Freon & refrigerant detectors: _Installed in spaces containing main receiver and compressors _Portable Freon & Refrigerant detectors shall also be on board _Must be calibrated within the manufacture's specifications _Is refrigeration system isolated from engine room and other spaces? _Is refrigeration exhaust system ventilation adequate? (Adequate ventilation should be discussed/defined in the work groups)	R	Vessels using refrigerants (other than domestic use) in quantities that would be dangerous if released (e.g. used for cooling cargo/fish hold). Exception when main receiver, compressor, evaporator & safety relief valve are installed in well ventilated area on deck.	Install during ASC implementation. Test during dockside exams
4. CO2/Halon detection system: _Installed in any accommodation space where gas cylinders are stored _Test the function of the gas detection system	R	When cylinders are stored in accommodation spaces	Install during ASC implementation. Test during dockside exams
5. Confined Space Entry Procedures may include:		Risk assessment identifies confined	

_Vessel has a written procedure for confined space entry & rescue _Vessel personnel are proficient in the procedure _Vessel has portable equipment to detect oxygen deficiency _Equipment to detect the presence of hazardous gas such as H_2S Carbon Monoxide, Freon	R	space entry as a hazard. Common hazardous gas in the fleet should be identified (Determined by Regional Workgroup & USCG)	Verify & test during dockside exams
6. Self Contained Breathing Apparatus (SCBA): _Minimum of 2 SCBAs _MSHA and NIOSH approved _Minimum of 30 minutes air supply each _At least one spare bottle for each SCBA _Full face pieces _Maintained per manufacturer's instructions	R	Confined Space entry for rescue is likely to be done by vessel's crew. Note: Requires further physicals, fit testing and training. (Determined by Regional Workgroup & USCG)	Verify & test during dockside exams
7. Slip/Trip/Fall Prevention and Protection: _Housekeeping issues _Maintaining ladders _Non-slip deck surfaces on work deck and other exterior decks _Protecting open hatches/holds _Etc.	R	Risk assessment should include injuries from falls. Interventions can be recommended by regional ASC development teams.	Verify during dockside exams
8. Winch/drum protection: a. Eliminate the need for the winch b. Eliminate the need to manually guide cables onto drums c. Require controls for winches, drums, and other powered systems to automatically return to STOP if released d. Require sufficient guides & machinery guards e. Install emergency-stop devices f. Move controls or add extensions to eliminate the need to reach over drum/winch when controlling the device.	R	Applies to Trawlers and Seiners that have an elevated risk of injuries due to winches Instructions that at-risk fleets improve upon their winch/drum protections.	Install during Dry-dock Verify during dockside Exams

<table>
<tr><td>9. Crane and boom safety:
_Inspection checklist
_Inspections current
_Fall Preventers for booms
_Inspections completed by a trained/certified person</td><td>R</td><td>Risk assessment identifies crane, rigging or boom hazards in fleet. (Determined by Regional Workgroup & USCG)</td><td>Verify during dockside exams</td></tr>
<tr><td>10. AED, Medical Oxygen & Training</td><td>R</td><td>Consider based on number of personnel aboard and proximity to advanced medical care</td><td>Verify during dockside exams</td></tr>
<tr><td>11. Lock Out Tag Out procedures</td><td>R</td><td>Assessment identifies the unintended release of energy as being a high risk.</td><td>Verify during dockside exams</td></tr>
<tr><td>DIVING SAFETY</td><td></td><td></td><td></td></tr>
<tr><td>1. Diving safety during vessel repairs and dive harvesting:
_Following accepted safety procedures
_Dive tenders
_Must have training & certifications
_LO tags plus</td><td>R</td><td>If loss review or risk assessment reveals diving hazards within the fleet.(Determined by Regional Workgroup & USCG)</td><td>Verify during dockside exams</td></tr>
<tr><td>EMERGENCY DRILLS AND TRAINING</td><td></td><td></td><td></td></tr>
<tr><td>1. Required number of qualified drill conductors in crew complement
<table>
<tr><th>Persons on board</th><th>Certified Drill Conductors</th></tr>
<tr><td>Less than 6</td><td>1</td></tr>
<tr><td>6-12</td><td>2</td></tr>
<tr><td>13 or more</td><td>Min. 3</td></tr>
</table></td><td>ALL</td><td>As designated by chart

But not less than 1 for every 8 crew/persons on board.</td><td>Verify during dockside exams</td></tr>
<tr><td>2. Record keeping of emergency drills and training logged by the master:</td><td>ALL</td><td>Good marine practice</td><td>Verify during</td></tr>
</table>

_Must provide name of certified Drill Conductor. Where/when trained. _Includes date and participants of each drill _Conducted prior to initial departure (beginning season) and not more than 30 days from previous drill when vessel is in operation _Log should indicate those that did not participate and why _Must be maintained on board for 1 year and in the main office for 3 years Conduct and record drills and crew instruction. Include at least the following contingencies: _Abandon ship _Launching survival craft _Donning immersion suits or PFDs _Making voice radio distress calls/using visual distress signals _Recover person overboard _Activating general alarm _Reporting inoperative alarm & fire detection systems _Minimizing effects of accidental flooding _Fighting a fire _Donning Fireman's outfits / SCBAs if equipped			dockside exams
3. Communications among crew: _Vessel instruction must be in a language understood by the crew members.	R	When non-English speaking crew are employed or multiple languages are used onboard	Verify during dockside exams
METHODS TO COMBAT FATIGUE			
1. Crew Endurance Plan & training, to ensure crewmembers are aware of the hazards posed by chronic fatigue and how to be rested for watch standing. The Person-in-Charge training includes fatigue, this requirement builds upon that requiring all who stand bridge watch to have onboard training and follow a vessel specific Crew Endurance Plan.	R	When analysis of collisions, allisions & groundings shows fatigue as a common initiating event or factor. (Determined by Regional Workgroup & USCG)	Write plan during ASC implementation, verify during dockside exams
2. Install watch alarms	R	Falling asleep at the wheel is a contributing factor to vessel	Install during ASC implementation,

		groundings and collisions.	test during dockside exam
COLLISION AVOIDANCE			
1. Blind sectors shall be as few and as small as possible, and not adversely affect the keeping of a safe lookout from the operating station.	ALL	Navigation Rule 5 Good marine practice	Verify during dockside exams
2. Radar Proximity Alarms _Learn them - Use them	R	High risk of collision (Determined by Regional Workgroup & USCG)	Install during ASC implementation, test during dockside exam
3. AIS	R	High risk of collision (Determined by Regional Workgroup & USCG)	Install during ASC implementation, test during dockside exam