

Harbor Safety Committee

of the San Francisco Bay Region

*Mandated by the California Oil Spill
Prevention and Response Act of 1990*

Harbor Safety Committee of the San Francisco Bay Region

Thursday, April 13, 2017

California Maritime Academy

Richmond Maritime Safety & Security Center

756 West Gertrude Street

Richmond, CA

John Berge (A), Pacific Merchant Shipping Association, Vice Chair of the Harbor Safety Committee (HSC); called the meeting to order at 10:02.

Alan Steinbrugge, Marine Exchange, confirmed the presence of a quorum of the HSC.

Committee members (M) and alternates (A) in attendance with a vote: **Jim Anderson** (M), CA Dungeness Crab Task Force; **John Berge** (M), Pacific Merchant Shipping Association; **Capt. Tony Ceraolo** (M), United States Coast Guard; **Chad Culberston** (M), Chevron Shipping Company; **Capt. Tom Kirsch** (M), Blue and Gold Fleet; **Jeff Ferguson** (M), NOAA; **Aaron Golbus** (M), Port of San Francisco; **Bob Gregory** (M), Foss Maritime Company; **Benjamin Huber** (M), Westar Marine Services; **Phil Kipper** (A), San Francisco Bay Keeper; **MJR Kevin McCormick** (A), US Army Corps of Engineers; **Linda Scourtis** (A), Bay Conservation and Development Commission; **Griffin Patrick** (M), Tesoro Refining and Marketing; **Chris Peterson** (M), Port of Oakland; **Jeff Robbins** (M), General Steamship Corp; **Capt. Bob Carr** (M), San Francisco Bar Pilots; **Alan Steinbrugge** (A), San Francisco Marine Exchange; **Jeff Vine** (A), Port of Stockton.

The meetings are always open to the public.

Approval of the Minutes-

A motion to accept the minutes of March 9, 2017 meeting was made and seconded. The minutes were approved without dissent.

Comments by Vice Chair- John Berge

Welcomed the committee members and audience. The Tug Work Group's SB 414 report has been completed pending HSC approval. Advised of a letter sent from the LA/LGB HSC to OSPR regarding bunkering practices which may be relevant to our region.

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Coast Guard Report- Capt. Tony Ceraolo

- Advised that recent high water events in the delta have impacted deep water shipping routes and vessels traveling up river to Stockton and Sacramento. Levee integrity was a primary concern. The mix of local, state and private levee ownership complicated response but demonstrates the importance of inter-agency cooperation. Additional high water events are possible this spring due to snow melt.
- Advised that the Port of Stockton has requested emergency dredging in the shipping channel due to shoaling caused by recent storms. Maintaining access to the Port of Stockton is vital for trade.
- Advised that more old Bay Bridge pier demolition is planned for this year. Thirteen piers will be imploded leaving six piers remaining.
- Advised that recovery of sunken vessel Spirit of Sacramento is complete and the case is closed. A crane barge recently sunk near the east span of the Bay Bridge with approximately 3,000 gallons of diesel onboard. A safety zone and unified command have been established to facilitate incident response.
- Lt. Medina read from the March- 2017 Prevention/Response Report (attached).
- A question was asked regarding current levee issues affecting the Sacramento and Stockton channels. Capt. Ceraolo advised that there are no urgent problems now that the water level has dropped. During the high water event, the issue of whether to transit ships at high or low tide was a concern of some levee engineers due to potential erosion. Ship traffic was disrupted for approximately two weeks.

Army Corps of Engineers Report- Major Kevin McCormick

- Read from the US Army Corps of Engineers, San Francisco District Report (attached). Debris removal totals are still above average after recent storms.

Clearing House Report- Alan Steinbrugge (report attached)

OSPR Report- David Mighetto

- Announced that Aaron Golbus has been re-appointed to the SF HSC as Member representing the Port of San Francisco. Term ends on January 7, 2020.
- Advised that the Tug Work Group has completed their SB 414 report.

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- Tom Cullen, OSPR Administrator, thanked the HSC for their work on the SB 414 assessment. OSPR has received a letter from the LA/LGB HSC regarding pre-booming which may be of interest to the SF HSC. John Berge suggested that the Tug Work Group monitor the issue.

NOAA Report- Brian Garcia

- Advised that acoustic surveys of the San Francisco Bay have been completed by the California Ocean Protection Council in partnership with NOAA.
- Advised that NOAA has released their National Charting Plan for review and comment.
- Advised of a multi-agency project on tsunami response planning in the Bay Area that has been developed and will be presented at an upcoming HSC meeting.
- Advised that the NWS provides localized spot forecasts to assist with SAR and recovery operations.
- Advised that storms are predicted to weaken this spring but more rain is expected. There are signs that an El Nino could develop next year. The snowpack this year is well above average.

State Lands Commission Report- Report Attached

Work Group Reports-

Tug Work Group- Bob Gregory advised that the final draft of the SB 414 mandated Assessment of Offshore Emergency Towing Capabilities in the San Francisco AOR is complete (attached). The report has been distributed to the HSC membership for review and requires approval before being sent to OSPR. A motion was made and seconded to vote on report approval. The motion passed without dissent. Bob Gregory advised that submitted changes to chart graphics and amended LOP reporting have been included in the final draft. The vote was held and the HSC unanimously approved sending the report to OSPR.

Navigation Work Group- Capt. Bob Carr advised that there was nothing to report.

Ferry Operations Work Group- Capt. Tom Kirsch advised that growth continues to be strong in the industry. The new ferry boat M/V Hydrus has arrived and will begin service soon.

Dredge Issues Work Group- Capt. Griffin Patrick advised that that a Work Group meeting is scheduled directly after today's HSC meeting to discuss Stockton dredging and deferred Richmond Outer Harbor dredging. Capt. Patrick announced that he is leaving the HSC.

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PORTS Work Group- Chris Peterson advised that there was nothing to report.

Prevention through People Work Group- Nothing to report.

Plan Update Work Group- Linda Scourtis advised that Work Group chairs will be contacted for their reports by mid-May with voting scheduled for the June HSC meeting.

PORTS Report- Alan Steinbrugge

- Advised that all PORTS stations are online after repairs to the Pier 1 weather station and South Hampton Shoal buoy mounted current sensor.
- Advised that planning continues with the Port of San Francisco to install a weather station and current sensor at Pier 27.

Public Comment-

- It was announced that a presentation by Jim Schein on Old Maps of the Early Shoreline and City Features of San Francisco will take place on May 4th.
- Alan Steinbrugge announced that the Marine Exchange Mayday party will be held on May 11th.

Old Business- None

New Business-

- Catharine Hooper, Port of San Francisco Consultant, advised that the 37th annual Fleet Week will be held in San Francisco during the first week in October. Navy ships will begin arriving on October 2nd and will dock at Pier 30/32 and Pier 35. A Canadian frigate is participating in addition to USCG vessels and the Army Corps' Dillard. Ships depart on October 10th. The Parade of Ships and airshows by the Blue Angels and Canadian Snow Birds are scheduled. A commodity distribution exercise is being planned. Capt. Ceraolo advised that the USCG will be more actively controlling vessel traffic during Fleet Week this year. Safety is a top concern after last years' capsized incident.

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Next Meeting-

1000-1200, May 11, 2017
Port of San Francisco
Pier 1 Conference Center
The Embarcadero
San Francisco, CA

Adjournment-

A motion to adjourn was made and seconded. The motion passed without dissent and the meeting adjourned at 10:55.

Respectfully submitted:



Capt. Lynn Korwatch

PREVENTION / RESPONSE - SAN FRANCISCO HARBOR SAFETY STATISTICS

March 2017

PORT SAFETY CATEGORIES*	Mar-2017	Mar-2016	**3yr Avg
Total Number of Port State Control Detentions:	0	0	0.78
SOLAS (0), STCW (0), MARPOL (0), ISM (0), ISPS (0)			
Total Number of COTP Orders:	2	3	3.78
Navigation Safety (2), Port Safety & Security (0), ANOA (0)			
Marine Casualties (reportable CG 2692) within SF Bay:	5	8	9.78
Allision (0), Collision (0), Fire (0), Capsize (0), Grounding (0), Sinking (0)			
Steering (1), Propulsion (3), Personnel (0), Other (1), Power (0)			
Total Number of (routine) Navigation Safety issues/Letters of Deviation:	1	6	4.00
Radar (0), Gyro (1), Steering (0), Echo Sounder (0), AIS (0)			
AIS-835 (0), ARPA (0), Speed Log (0), R.C. (0), Other (0)			
Reported or Verified "Rule 9" or other Navigational Rule Violations:	1	0	0.47
Significant Waterway events/Navigation related Cases:	1	0	0.36
Total Port Safety (PS) Cases opened	10	17	19.17

MARINE POLLUTION RESPONSE

Pollution Discharge Sources (Vessels)	Mar-2017	Mar-2016	**3yr Avg
U.S. Commercial Vessels	1	0	0.83
Foreign Freight Vessels	0	1	0.11
Public Vessels	0	1	0.53
Commercial Fishing Vessels	0	0	0.39
Recreational Vessels	1	1	3.81
Pollution Discharge Sources (Facilities)			
Regulated Waterfront Facilities	0	0	0.28
Regulated Waterfront Facilities - Fuel Transfer	0	0	0.00
Other Land Sources	0	1	1.25
Mystery Spills - Unknown Sources	3	5	4.47
Number of Pollution Incidents within San Francisco Bay			
Spills < 10 gallons	1	3	4.61
Spills 10 - 100 gallons	1	0	1.28
Spills 100 - 1000 gallons	0	1	0.17
Spills > 1000 gallons	0	0	0.06
Spills - Unknown Size	3	5	5.67
Total Pollution Incidents	5	9	11.78

Oil Discharge/Hazardous Materials Release Volumes by Spill Size

Estimated spill amount from U.S. Commercial Vessels	25.00	0.00	14.91
Estimated spill amount from Foreign Freight Vessels	0.00	300.00	8.42
Estimated spill amount from Public Vessels	0.00	1.00	1.57
Estimated spill amount from Commercial Fishing Vessels	0.00	0.00	9.90
Estimated spill amount from Recreational Vessels	1.00	1.00	41.11
Estimated spill amount from Regulated Waterfront Facilities	0.00	0.00	3.03
Estimated spill amount from Regulated Waterfront Facilities - Fuel Transfer	0.00	0.00	0.00
Estimated spill amount from Other Land Sources	0.00	5.00	2.09
Estimated spill amount from Unknown Sources (Mystery Sheens)	unk	unk	0.67
Total Oil Discharge and/or Hazardous Materials Release (Gallons)	26.00	307.00	81.70

Penalty Actions

Civil Penalty Cases	0	0	0.06
Notice of Violations	0	1	0.67
Letters of Warning	1	2	3.11
Total Penalty Actions	1	3	3.83

* NOTE: Values represent all cases within the HSC jurisdiction during the period. Significant cases are detailed in the narrative.

** NOTE: Values represent an average month over a 36 month period for the specified category of information.

SIGNIFICANT PORT SAFETY AND SECURITY CASES (MAR 2017)

MARINE CASUALTIES

Equipment Failure (01MAR17): A foreign flag chemical tanker experienced a loss of pilot house control for propulsion purposes, but the vessel's engines never went off line and the vessel maintained engine room control. A COTP Order was issued directing the vessel to proceed to Anchorage 9 with a two tug escort and the vessel remained there until repairs were made. Class and Coast Guard attended the vessel and witnessed satisfactory operation of the main engine control system. The COTP Order was lifted. LOP was not attributed to fuel switching. Case Closed.

Equipment Failure (03MAR17): A U.S. flag ferry vessel experienced an equipment failure of the starboard engine due to overheating. The crew secured the starboard engine and continued their normal transit route on the port engine. Marine Inspectors attended after repairs were completed and witnessed proper operation of starboard engine. Case Closed.

Equipment Failure (04MAR17): A foreign flag container vessel experienced a loss of propulsion while arriving to the berth. A COTP Order was issued requiring the vessel to remain at berth until repairs were made. The Coast Guard attended the vessel to look at repairs and witnessed satisfactory operation of the machinery and associated systems. The COTP Order was lifted. LOP was not attributed to fuel switching. Case Closed.

Equipment Failure (08MAR17): An uninspected U.S. commercial fishing vessel experienced an equipment failure in the vicinity of Drake's Bay. Vessel was towed back to port. Case Closed.

Loss of Propulsion (23MAR17): A foreign flag bulk freight vessel experienced a loss of propulsion approximately 11NM WNW of Point Reyes, CA while outbound to sea. The vessel came to an all stop and conducted repairs. The vessel's next port of call was notified. LOP was not attributed to fuel switching. Case Closed.

Equipment Failure (23MAR17): A U.S. flag ferry vessel experienced intermittent AIS transmission while carrying passengers. The vessel coordinated check in points with Vessel Traffic Service and continued its route. A deficiency was issued and a technician attended the vessel to make repairs and provided a report attesting to proper operation of the vessel's AIS. Case Closed.

Loss of Steering (27MAR17): A foreign flag tank vessel experienced a loss of steering due to a stuck rudder while transiting outbound to sea. Ship's crew conducted repairs and vessel continued outbound. Case Closed.

VESSEL SAFETY CONDITIONS

Unsafe Conditions (03MAR17): An uninspected U.S. commercial fishing vessel was issued a COTP Order to remain at berth until several discrepancies that posed a safety risk to the vessel were rectified. The conditions were identified after a Coast Guard Boarding Team and Commercial Fishing Vessel Examiner conducted a dockside exam as part of a post Search and Rescue investigation following an engine casualty on the vessel. Vessel made all required repairs to the satisfaction of the attending commercial fishing vessel examiner. The COTP Order was lifted. Case Closed.

NAVIGATIONAL SAFETY

Letter of Deviation (LOD), Inop Gyro Repeater (10MAR17): Vsl issued an inbound LOD.

SIGNIFICANT INCIDENT MANAGEMENT DIVISION CASES

24MAR17 (LOW): Recreational vessel sank near Vallejo and discharged 1 gal diesel.

25MAR17 (ENF Pending): 90ft Tour Boat discharged 25 gals diesel from bilge in Berkeley.

**Harbor Safety Committee
Of the San Francisco Bay Region**

**Report of the
U.S. Army Corps of Engineers, San Francisco District
April 13, 2017**

1. CORPS O&M DREDGING PROGRAM

The following report covers the upcoming FY 2017 dredging program for San Francisco Bay. This program is subject to change based on a number of variables including final FY 2017 appropriations and Corps Work Plan. Please refer to the Local Notice to Mariner for details of dredge operations.

FY 2017 DREDGING

- a. **SF Main Ship Channel** – Estimated start mid-May 2017, estimated completion end of May 2017, by government hopper.
- b. **Richmond Inner Harbor** – Estimated start late September 2017, estimated completion end of October 2017, by contracted clamshell.
- c. **Richmond Outer Harbor (and Richmond Long Wharf)** – Deferred due to special conditions contained in the Water Quality Certification.
- d. **Oakland Harbor** – Estimated start early August 2017, estimated completion end of November 2017, by contracted clamshell.
- e. **Redwood City Harbor** – Estimated start late September 2017, estimated completion end of October 2017, by contracted clamshell.
- f. **San Pablo Bay (Pinole Shoal)** – Estimated start mid-June 2017, estimated completion mid-June 2017, by Government hopper.
- g. **Suisun Bay Channel (and New York Slough)** – Estimated start mid-August 2017, estimated completion end of September 2017, by contracted clamshell.

2. DEBRIS REMOVAL – Debris removal for March 2017 was 112 tons. Dillard: 35 tons; Raccoon: 65 tons; other boats: 12 tons. Average for March from 2007 to 2016 is 64 tons. (Range: 11-231.5 tons).

BASEYARD DEBRIS COLLECTION TOTALS:

MONTH	RACCOON	DILLARD	MISC	TOTAL
2017	TONS	TONS	TONS	TONS
JAN	30	212	170	417
FEB	75	88	35	198
MAR	65	35	12	112
APR	0	0	0	0
MAY	0	0	0	0
JUN	0	0	0	0
JUL	0	0	0	0
AUG	0	0	0	0
SEP	0	0	0	0
OCT	0	0	0	0
NOV	0	0	0	0
DEC	0	0	0	0

YR TOTAL
727

3. UNDERWAY OR UPCOMING HARBOR IMPROVEMENTS

None to report.

4. EMERGENCY (URGENT & COMPELLING) DREDGING

No urgent dredging in 2017.

5. OTHER WORK

San Francisco Bay to Stockton – No funds were received in FY15 and FY16. However, the Tentatively Selected Plan (TSP) milestone for Phase I (Western Reach) of the project was held on 29 June 2016 utilizing FY14 carryover funds. The recommended plan is to deepen the Phase I reach of the project from a depth of -35 feet to -38 feet MLLW. The final report is scheduled to be approved in February 2019.

HYDROGRAPHIC SURVEY UPDATE

Address of Corps' web site for completed hydrographic surveys:

<http://www.spn.usace.army.mil/Missions/Surveys,StudiesStrategy/HydroSurvey.aspx>

The following surveys are posted:

Alameda Point Navigation Channel: Condition survey of November 2, 2016.
Berkeley Marina (Entrance Channel): Condition survey of September 23, 2014.
Islais Creek Channel: Condition survey of May 12, 2016.
Larkspur Ferry Channel: Condition survey of November 14, 2014.
Main Ship Channel: Condition survey of March 9 & 20, 2017.
Mare Island Strait: Condition survey of September 24, 2014.
Marinship Channel (Richardson Bay): Condition survey of December 6, 2016.
Napa River: Post-dredge survey of December 30, 2016.
Northship Channel: Condition survey of late July 29-31, 2015.
Oakland Entrance Channel: Post-dredge survey of September 28 & 30 and October 10, 2016.
Oakland Inner Harbor (Reach 2): Post-dredge survey of October 21 & 31, 2016.
Oakland Inner Harbor (Reach 3-6): Post-dredge survey of November 7, 2016.
Oakland Outer Harbor (Reach 7-8): Post-dredge survey of September 10 & 12, 2016.
Oakland Outer Harbor (Reach 9-10): Post-dredge survey of November 11 & December 12, 2016.
Petaluma River (Across-the-Flats): Condition survey of September 12-14, 2014.
Petaluma River (Main Channel): Condition survey of September 13-14, 2014.
Pinole Shoal Channel: Condition survey of February 6, 2017.
Redwood City Harbor: Condition survey of March 22-23, 2017.
Richmond Inner Harbor: Condition survey of March 14, 2017.
Richmond Inner Harbor (Santa Fe Channel): Condition survey of December 20, 2016.
Richmond Outer Harbor (Longwharf): Condition survey of April 4, 2017.
Richmond Outer Harbor (Southampton Shoal): Condition survey of April 10, 2017.
Sacramento River Deep Water Ship Channel: Condition survey of March 11-16, 2017.
San Bruno Shoal: Condition survey of March 27, 2017.
San Leandro Marina (and Channel): Condition survey of March 30 and April 1, 2015.
San Rafael (Across-the-Flats): Condition survey of May 10, 2013.
San Rafael (Creek): Condition survey of May 9, 2013.
Stockton Ship Channel: Condition survey of March 28-31 and April 1-2, 2017.
Suisun Bay Channel: Condition survey of February 16-20, 2017.
Suisun Bay Channel (Bullshead Reach): Condition survey of March 29, 2017.
Suisun Bay Channel (New York Slough): Condition survey of February 14-15, 2017.

Disposal Site Condition Surveys:

SF-08 (Main Ship Channel Disposal Site): Condition survey of March 12, 2013

SF-09 (Carquinez): Condition survey of March 2, 2015.

SF-10 (San Pablo Bay): Condition survey of March 2, 2015.

SF-11 (Alcatraz Island): Condition survey of March 17, 2017.

SF-16 (Suisun Bay Disposal Site): Condition survey of September 1, 2016.

SF-17 (Ocean Beach Disposal Site): Condition survey of March 20, 2013.

Requested Surveys:

Before (Pre) dredge surveys are scheduled to occur thru the end of August for all of San Francisco District's in-bay projects which are planned to be dredged in FY17.

NEW WEB ADDRESS – USACE WORK PLAN:

<http://www.usace.army.mil/Missions/Civil-Works/Budget/>

O&M DREDGING PLAN FOR FY 2017*

HARBOR SAFETY COMMITTEE MEETING

9 MARCH 2017

Project	2016			2017												Volume	Placement Site	Notes	
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC				
	FY 2017												FY 2018						
SF Main Ship Channel						Essayons											350kcy	OBDS/ SF-8	Gov't Hopper
Richmond Inner Harbor				**													350kcy	SF-DODS	Clamshell
Richmond Outer Harbor																	250kcy	SF-11	Gov't Hopper Deferred to FY18
Oakland Harbor				**													600kcy	SF-DODS	Clamshell, Option to (E) Contract
Redwood City Harbor				**													350kcy	SF-11	Clamshell
Pinole Shoal								ESSAYONS									150kcy	SF-10	Gov't Hopper
Suisun Bay Channel																	175kcy	SF-16	Possible Emergency Dredging Sooner than Aug 2017
Napa River				**													90kcy	Upland	Dredging Completed in Dec 2017

	Ongoing Contracts		Environmental Window
	New SPN Contract		
	Government Dredge		

* Program execution is based on the FY17 President's Budget and Federal Standard plan for each project.

Date of Update:

3/8/2017

** Window Extension.



Harbor Safety Committee of the
San Francisco Bay Region Clearing House
c/o Marine Exchange of the San Francisco Bay Region
505 Beach Street, Suite 300
San Francisco, California 94133-1131
415-441-6600 fax 415-441-3080 hsc@sfmtx.org

San Francisco Clearinghouse Report

March 9, 2017

- ✎ In March the clearinghouse did not need to contact OSPR regarding any possible escort violations.
- ✎ In March the clearinghouse did not receive any notifications of vessels arriving at the Pilot Station without escort paperwork.
- ✎ The Clearinghouse contacted OSPR 1 time in 2016 about a possible escort violations. The Clearinghouse contacted OSPR 3 time in 2015 about possible escort violations. The Clearinghouse contacted OSPR 5 times regarding possible escort violations in 2014. The Clearinghouse contacted OSPR 1 time in 2013. The Clearinghouse contacted OSPR 3 times in 2012 regarding any possible escort violations, 3 times in 2011, 6 times in 2010, 8 time 2009; 4 times 2008; 9 times in 2007; 9 times in 2006; 16 times in 2005; 24 times in 2004; twice in 2003; twice in 2002; 6 times in 2001; 5 times in 2000.
- ✎ In March there were 102 tank vessel arrivals; 13 ATB's, 4 Chemical Tankers, 17 Chemical/Oil Tankers, 25 Crude Oil Tankers, 1 LPG, 29 Product Tankers, and 13 Tugs with Barges.
- ✎ In March there were 290 total arrivals.

San Francisco Bay Clearinghouse Report For March 2017

San Francisco Bay Region Totals

	<u>2017</u>		<u>2016</u>		
Tanker arrivals to San Francisco Bay	76		66		
ATB arrivals	13		17		
Barge arrivals to San Francisco Bay	13		29		
Total Tanker and Barge Arrivals	102		112		
Tank ship movements & escorted barge movements	313		350		
Tank ship movements	198	63.26%	207	59.14%	
Escorted tank ship movements	149	47.60%	127	36.29%	
Unescorted tank ship movements	49	15.65%	80	22.86%	
Tank barge movements	115	36.74%	143	40.86%	
Escorted tank barge movements	13	4.15%	38	10.86%	
Unescorted tank barge movements	102	32.59%	105	30.00%	

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Escorts reported to OSPR 0 0

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements	206		305		0		131		642	
Unescorted movements	87	42.23%	147	48.20%	0	0.00%	58	44.27%	292	45.48%
Tank ships	65	31.55%	100	32.79%	0	0.00%	46	35.11%	211	32.87%
Tank barges	22	10.68%	47	15.41%	0	0.00%	12	9.16%	81	12.62%
Escorted movements	119	57.77%	158	51.80%	0	0.00%	73	55.73%	350	54.52%
Tank ships	116	56.31%	145	47.54%	0	0.00%	67	51.15%	328	51.09%
Tank barges	3	1.46%	13	4.26%	0	0.00%	6	4.58%	22	3.43%

Notes:

1. Information is only noted for zones where escorts are required.
2. All percentages are percent of total movements for the zone.
3. Every movement is counted in each zone transited during the movement.
4. Total movements is the total of all unescorted movements and all escorted movements.

San Francisco Bay Clearinghouse Report For 2017

San Francisco Bay Region Totals

	<u>2017</u>		<u>2016</u>	
Tanker arrivals to San Francisco Bay	202		703	
ATB arrivals	41		114	
Barge arrivals to San Francisco Bay	35		242	
Total Tanker and Barge Arrivals	237		1,059	
Tank ship movements & escorted barge movements	911		3,616	
Tank ship movements	520	57.08%	2,081	57.55%
Escorted tank ship movements	402	44.13%	1,331	36.81%
Unescorted tank ship movements	118	12.95%	686	18.97%
Tank barge movements	391	42.92%	1,535	42.45%
Escorted tank barge movements	57	6.26%	554	15.32%
Unescorted tank barge movements	334	36.66%	1,129	31.22%

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Escorts reported to OSPR 0 0

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements	559		888		0		388		1,835	
Unescorted movements	245	43.83%	438	49.32%	0	0.00%	176	45.36%	859	46.81%
Tank ships	196	35.06%	323	36.37%	0	0.00%	151	38.92%	670	36.51%
Tank barges	49	8.77%	115	12.95%	0	0.00%	25	6.44%	189	10.30%
Escorted movements	314	56.17%	450	50.68%	0	0.00%	212	54.64%	976	53.19%
Tank ships	294	52.59%	394	44.37%	0	0.00%	189	48.71%	877	47.79%
Tank barges	20	3.58%	56	6.31%	0	0.00%	23	5.93%	99	5.40%

Notes:

1. Information is only noted for zones where escorts are required.
2. All percentages are percent of total movements for the zone.
3. Every movement is counted in each zone transited during the movement.
4. Total movements is the total of all unescorted movements and all escorted movements.



CALIFORNIA STATE LANDS COMMISSION

HARBOR SAFETY COMMITTEE MONTHLY REPORT - MARCH COMPARISON

VESSEL TRANSFERS

	Total Transfers	Total Vessels Monitored	Total Transfers Percentage
MARCH 1 - 31, 2016	213	99	46.48
MARCH 1 - 31, 2017	210	97	46.19

CRUDE OIL / PRODUCT TOTALS

	Crude Oil (D)	Crude Oil (L)	Overall Product (D)	Overall Product (L)	GRAND TOTAL
MARCH 1 - 31, 2016	14,063,500	0	18,962,400	8,213,595	27,175,995
MARCH 1 - 31, 2017	15,984,000	0	20,509,110	7,867,247	28,376,357

OIL SPILL TOTAL

	TERMINAL	VESSEL	Total	Gallons Spilled
MARCH 1 - 31, 2016	0	0	0	0
MARCH 1 - 31, 2017	0	0	0	0

Disclaimer:

Please understand that the data is provided to the California State Lands Commission from a variety of sources; the Commission cannot guarantee the validity of the data provided to it.

April 13, 2017

To: Harbor Safety Committee of the San Francisco Bay Region
From: SF HSC Tug Workgroup

In response to a directive contained in California Senate Bill 414, the Tug Workgroup was assigned the task of assessing the inventory of towing resources in San Francisco Bay for vessels experiencing offshore events such as loss of propulsion.

The workgroup began in April of last year to evaluate a number of factors related to emergency offshore towing and identified the following core issues:

- Identify the geographic area of responsibility (AOR) for the assessment
- Determine the meaning of “arrest the drift or otherwise guide emergency transit”
- Gather relevant VTS incident data
- Compile information regarding the present inventory of available towing equipment
- Identify any limitations for available equipment
- Determine run-time requirements to deliver assistance within the AOR
- Analyze information from the USCG’s Port State Control Program and Marine Inspection Program to assess the condition of the tank and non-tank vessels calling on the San Francisco Bay ports
- Identify lessons learned from local tug company actual emergency towing experiences
- Review the San Francisco Ultra Large Container Vessel towing exercise
- Identify any transit areas of concern
- Assess the relevance of the extensive work the SF HSC compiled to create their “Best Maritime Practice-Emergency Offshore Towing” standard of care
- Coordinate with the Los Angeles/Long Beach and other California Harbor Safety Committees

Upon adoption of the assessment, the HSC is required to transmit its findings to the OSPR Administrator. The results of the study also shall be included with the 2017 Harbor Safety Plan update.

It should be noted that the assessment table and text detailing the number of incidents such as propulsion, steering, or other similar casualty that could result in a drifting ship requiring tug assistance will be revised to include USCG District 11 data related to non-propulsion incidents. Currently, only Loss of Propulsion incidents are reflected (see page 11 of the report).

It is the Tug Workgroup’s understanding that the total **number of emergency tows will not increase**, and that only the number of non-LOP incidents (e.g., steering or other similar casualty that could result in a drifting ship needing tug assistance) will be modified.

Therefore, the workgroup requests the HSC consider its analysis in the study provided, Assessment of Offshore Emergency Towing Capabilities, and adopt the report conclusion that **there is a very high degree of likelihood that the resources presently in place in the San Francisco Bay Region are, and will continue to be, sufficient to arrest the drift of a disabled vessel or otherwise influence its drift to prevent it from grounding in the San Francisco Area of Responsibility.**

Summary of Findings

The San Francisco Harbor Safety Committee recognizes a multitude of causes can result in a vessel losing propulsion and/or maneuverability and that each case is different; however, based on historical incidents and new information gathered in support of this study, the SF HSC has determined there is a sufficient presence and capability of tugs within the San Francisco Bay to provide emergency towing of tank and non-tank vessels to arrest their drift or otherwise guide emergency transit within the San Francisco VTS area. The large availability of response tugs in the San Francisco Bay Region allows emergency towing services to be dispatched any time of the day or night.

The quality of the vessels and crews calling at San Francisco Bay Region ports is generally very high as indicated by reliable data from the annual reports of the USCG's Port State Control Program, the Tokyo MoU, and the Paris MoU. Historically, there have been few vessel failures that necessitated a tow.

The VTS Traffic lanes route traffic in a manner that reduces grounding risk. Whenever vessels have experienced failures in the SF AOR, they typically have had sufficient sea room to drift until propulsion was restored or tug boats arrived on scene to provide assistance.

The AOR is characterized with ample opportunity to anchor due to relatively shallow waters extending well out from shore. Only one limited area of concern (to the southwest of Noonday Rock) has been identified where deeper water extends closer to shore. However, the associated grounding risk is very low due to the limited extent of the area, few vessels transit the area, and the likelihood that events would act in concert to cause a drift grounding in this area is low. Nevertheless, the SF HSC recommends the following measure to mitigate this very low-level risk:

The SF HSC recommends that steps be taken to raise awareness of the limited anchoring opportunity and the grounding risks associated with vessels over 300 gross tons transiting through our AOR on the offshore side of the Farallon Islands during southwesterly weather.

Lastly, it is essential that a disabled vessel make relevant reports promptly to the USCG, communicate with its owners/agents and the towing company, and activate its Vessel Response Plan as required. Early notification and preparation for towing can aide a successful outcome.

April 13, 2017

To: Harbor Safety Committee of the San Francisco Bay Region
From: SF HSC Tug Workgroup
Subject: **Supplement** to transmittal memo distributed March 28, 2017

Please substitute the enclosed amended page 11 in the March 2017 Draft *Assessment of Offshore Emergency Towing Capabilities in the San Francisco Area of Responsibility* distributed March 28.

As discussed in the original memo, the table and text detailing the number of incidents such as propulsion, steering, or other similar casualty that could result in a drifting ship requiring tug assistance, would be revised to include USCG District 11 data related to non-propulsion incidents.

This information has been updated, and while non-LOP incidents (e.g., steering or other similar casualty) were added, the number of emergency tows did not increase. Therefore, there is no change to the workgroup's recommendation to the Harbor Safety Committee that the HSC consider the *Assessment of Offshore Emergency Towing Capabilities*, and adopt the report conclusion that **there is a very high degree of likelihood that the resources presently in place in the San Francisco Bay Region are, and will continue to be, sufficient to arrest the drift of a disabled vessel or otherwise influence its drift to prevent it from grounding in the San Francisco Area of Responsibility.**

Please see the original memo for a summary of the report findings.



Harbor Safety Committee of the San Francisco Bay Region

Assessment of Offshore Emergency Towing Capabilities

In the San Francisco Area of Responsibility

Pursuant to California Senate Bill 414

DRAFT

March 2017

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I. Introduction

California Senate Bill 414 (SB 414) was signed into law by Governor Edmund G. Brown, Jr., and became effective January 1, 2016. Among other requirements, the bill directs the Administrator of the Office of Spill Prevention and Response (OSPR) to task the Harbor Safety Committee of the San Francisco Bay Region (SF HSC):

“...to assess the presence and capability of tugs within their respective geographic area of responsibility to provide emergency towing of tank and non-tank vessels to arrest their drift or otherwise guide emergency transit.”

The assessment must consider data from United States Coast Guard (USCG) Vessel Traffic Service (VTS), relevant incident and accident data and simulation models, transit areas where risks might be elevated, and the condition of tank and non-tank vessels calling San Francisco Bay ports, including data from the USCG’s marine inspection program and port state control program.¹ A letter from OSPR Administrator Thomas M. Cullen dated January 25, 2016 provided further guidance for this assessment.²

The SF HSC Tug Workgroup (Workgroup) met for the first time in April 2016 to review the tasking of SB 414 and to begin discussion and information gathering.³ The Workgroup identified the following core issues:

- Identify the geographic area of responsibility (AOR) for the assessment
- Determine the meaning of “arrest the drift or otherwise guide emergency transit”
- Gather relevant VTS incident data
- Compile information regarding the present inventory of available towing equipment
- Identify any limitations for available equipment
- Determine run-time requirements to deliver assistance within the AOR
- Analyze information from the USCG’s Port State Control Program and Marine Inspection Program to assess the condition of the tank and non-tank vessels calling on the San Francisco Bay ports

¹ See, Appendix A for the complete text of Senate Bill 414.

² See, Appendix C

³ See, Appendix B for the list of SF HSC Workgroup members.

- Identify lessons learned from local tug company actual emergency towing experiences
- Review the San Francisco Ultra Large Container Vessel towing exercise
- Identify any transit areas of concern
- Assess the relevance of the extensive work the SF HSC compiled to create their “Best Maritime Practice-Emergency Offshore Towing” standard of care⁴
- Coordinate with the Los Angeles/Long Beach and other California Harbor Safety Committees

The Workgroup membership is composed of a cross section of maritime professionals with expertise in a number of disciplines including vessel operations and offshore towing. Pertinent to this assessment, they evaluated numerous factors and conditions that could affect a disabled vessel and a response tug such as: historical responses, type and size of vessels that typically call in the San Francisco Bay Region, the number and dispersion and bollard pull of tugs of opportunity in the harbor and offshore waters, the availability of emergency towing equipment, the expected run-time of a response tug, the areas where response times are more critical, and deck configurations on disabled vessels taken under tow.

The primary focus of this study is to assess response tug capability. At the outset, the Workgroup acknowledged that many varied factors affect this analysis. Severe weather in the offshore waters can increase overall risk by increasing a disabled vessel’s drift rate, decreasing a response tug’s speed (thus increasing its run-time), and hampering a response crew’s ability to connect towing equipment to a disabled vessel. Conversely, there are oftentimes opportunities to reduce risk by controlling or influencing the drift of a disabled vessel in a manner that affords additional time for response assets to arrive on scene. Ships’ crews can use bow thrusters or partially functioning engines to reduce their vessel’s drift rate or alter its drift direction, and, should the vessel drift nearer to shore (and into more shallow waters), in all likelihood deploy the disabled ship’s anchor(s) and arrest its drift before it goes aground.

When assessing hypothetical failure scenarios absolute conclusions are not likely. Nonetheless, a qualitative analysis of the likelihood and potential consequence related to a hypothetical occurrence can be achieved. Toward that end, clearly defining the scope for this study will focus our analysis and facilitate more reliable conclusions.

⁴ See, Appendix F.

II. Scope of Assessment

The San Francisco Harbor Safety Committee was tasked with assessing “the presence and capability of tugs within its geographic area of responsibility.” In assessing the capability of tugs to respond to a disabled vessel in the offshore waters of the San Francisco Bay Region, the Workgroup followed guidance from the OSPR Administrator and limited its study to vessels 300 gross tons and larger. This category includes vessels of the following types: Oil Tankers, Chemical Tankers, Container Ships, Passenger Ships, Vehicle Carriers, General Cargo/Multi-Purpose Ships, Bulk Carriers, Barges and Articulated Tug/Barge Units, Ro-Ro Cargo Ships, Refrigerated Cargo Carriers, and Heavy Lift Ships.

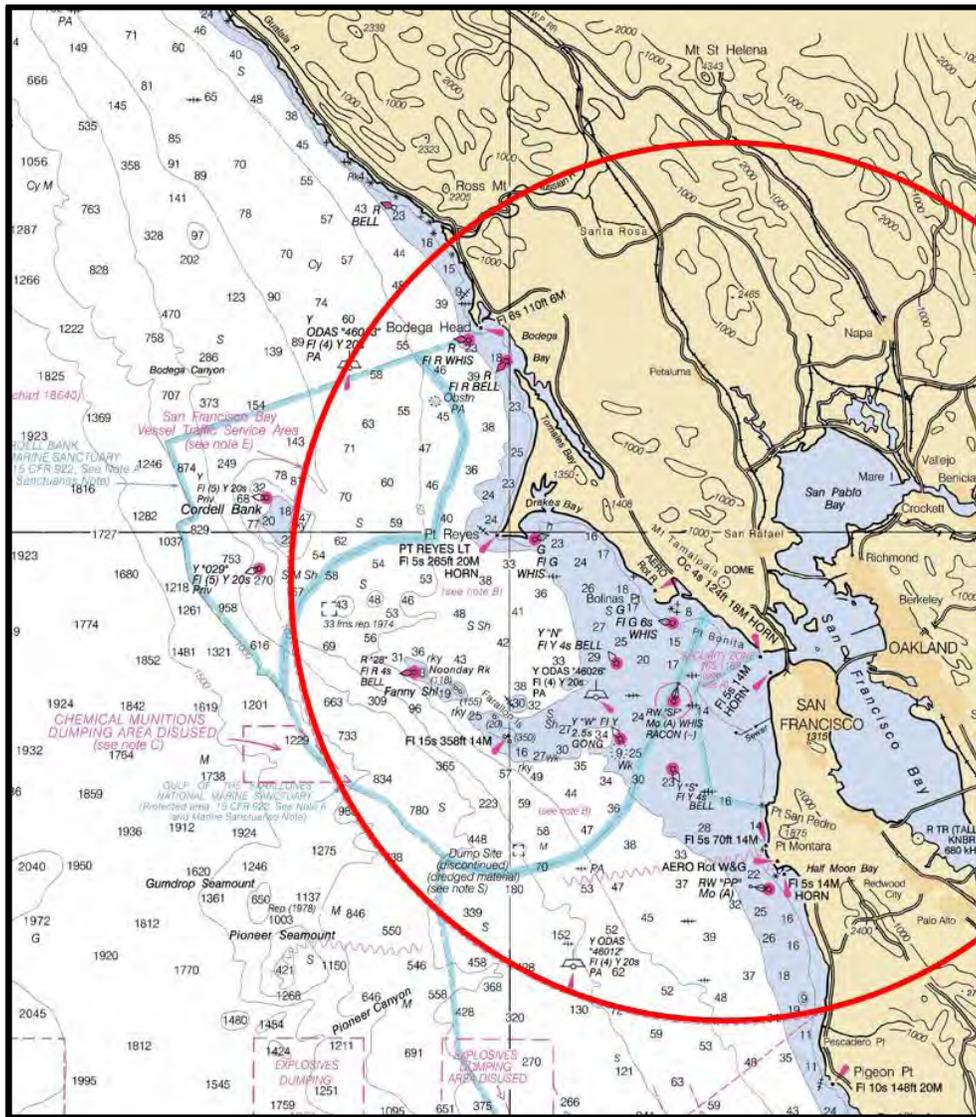
Geographic Area of Responsibility

The policies and recommendations of the San Francisco Harbor Safety Committee typically address vessel safety in the offshore waters only out to the western boundary of the San Francisco, San Pablo and Suisun Bays Harbor Safety Plan, which is described by a circle with a radius of six nautical miles (nm) centered on San Francisco Approach Lighted Horn Buoy SF (37° 45. 0’N, 122° 41.5’W) and including the San Francisco Main Ship Channel.⁵ Nevertheless, this study requires an assessment of activities farther offshore related to vessels arriving and departing from San Francisco Bay ports, thus requiring a broader scope.

The San Francisco Vessel Traffic Service (VTS) area of responsibility extends farther seaward and is bounded by an arc with a 38-mile radius from Mt. Tamalpais in Marin County (37°55.8’N 122°34.6’W). For the purpose of this study, the Workgroup adopted that same geographic Area of Responsibility (AOR), which includes the Traffic Separation Scheme traffic lanes and precautionary area.⁶ See graphic on page 5, below.

⁵ See, the San Francisco, San Pablo and Suisun Bays Harbor Safety Plan, June 9, 2016; Page 1.

⁶ SF HSC makes no claim to areas outside SF HSC AOR s as defined in the San Francisco, San Pablo and Suisun Bays Harbor Safety Plan. The VTS AOR was adopted for this study solely to meet the intent of the author of SB 414.



Geographic limit of the San Francisco SB 414 Study

Arrest Drift or otherwise Guide Emergency Transit

The SF HSC interprets “arrest their drift or otherwise guide emergency transit” of a vessel as the ability of response tugs to:

- take the disabled vessel under tow,
- stabilize the disabled vessel and maintain its position, or
- slow the drift rate or influence the drift direction of the disabled vessel until additional response tugs or other assistance can reach the scene.

The ultimate objective of “arrest drift or otherwise guide emergency transit” is to prevent a vessel from grounding. This analysis does not apply beyond the point where sufficient towing assets have arrived on scene to stabilize the emergency situation. Additional resources may be needed to safely direct the vessel to a harbor of safe refuge⁷ or safe anchorage, which is beyond the scope of this study.

III. Data Collection and Analysis

The Workgroup and its partners collected data from many sources including the USCG, OSPR, National Oceanic and Atmospheric Administration, and a representative cross section of industry representatives. The Workgroup also researched previous studies as sources of data relevant to this study. The following information was gathered and reviewed:

- West Coast Offshore Vessel Traffic Risk Management Project, Final Report, 2002
- Historical data from USCG Port State Control and Marine Inspection Programs
- USCG District 11 incident data from 2010 to 2016
- Inventory of San Francisco tugboats, including their equipment and capabilities
- The SF HSC’s “Best Maritime Practice-Emergency Offshore Towing” standard of care

The SF HSC “Best Maritime Practice-Emergency Offshore Towing” (BMP) was developed in 2013-2014 with USCG Sector San Francisco. The BMP memorializes procedures for planning and execution of an emergency tow. It is designed to protect resources by ensuring that appropriate actions are taken to prevent a drift grounding in the coastal areas near San Francisco Bay.⁸

⁷ “Harbor of Safe Refuge” means a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor. The suitability of a location as a harbor of safe refuge shall be determined by the cognizant Officer in Charge, Marine Inspection, and varies for each vessel, dependent on the vessel's size, maneuverability, and mooring gear. See, 46 CFR 175.400

⁸ See, Section IV, *infra*, for further discussion. See also, Appendix F for the full text of the BMP.

West Coast Risk Management

The West Coast Offshore Vessel Traffic Risk Management (WCOVTRM) Project studied grounding risk and made recommendations to reduce the risk of collisions or drift groundings caused by vessels transiting 3 to 200 nautical miles off the U.S. West Coast between Cook Inlet to the north and San Diego to the south. The project evaluated vessels 300 gross tons and larger, including tankers, cargo and passenger vessels, fishing vessels and tank barges. The study was co-sponsored by the Pacific States/British Columbia Oil Spill Task Force and the USCG, Pacific Area. Although the 2002 study was broader than this assessment, it contains relevant findings and information.

From 1999 to 2002, the WCOVTRM project collected and reviewed data on a number of risk factors and modeled likely tug response times under both average and severe weather conditions. To develop risk management recommendations, the WCOVTRM project ranked factors that contributed to higher risk scores by region. The WCOVTRM project was able to prioritize risk factors by recognizing that some could be mitigated. Based on their analysis the following four risk factors were found most amenable to improvement through technology advancement or policy implementations:⁹

- distance offshore: risk of grounding decreases with greater distance from shore;
- traffic density leading to collision hazard;
- tug availability: risk of grounding decreases with rescue vessel availability and capability; and
- historical casualty: risk increases for vessel types with relatively higher historical casualty rates.

Key findings of the 2002 West Coast Offshore Vessel Traffic Risk Management Project include the following:

1. The WCOVTRM project group found that it would be beneficial to enhance tug position and capability information coast-wide.

Since the study report was published, U.S. domestic requirements for AIS carriage have been established. The AIS system allows anyone to view the location of tugs as well as other vessels along the West Coast in real time. It also reduces the collision risks associated with traffic density by allowing timely exchange of important vessel information.

⁹ *West coast offshore vessel traffic risk management project* (Final Report, 2002), Pacific States/British Columbia Oil Spill Task Force and the U.S. Coast Guard, Pacific Area; p. 1. Retrieved from, <http://oilspilltaskforce.org/wp-content/uploads/2013/12/2002-Offshore-Vessels-Risk-Management-Project-Report.pdf>.

2. The WCOVTRM project group found that the risk of a grounding/collision generally increases the closer a vessel transits to shore.

The WCOVTRM project group recommended all vessels greater than 300 GRT should maintain a minimum distance of 25 miles from the coast and tank vessels should maintain a minimum distance of 50 miles from the coast. Voluntary compliance with these recommendations has been demonstrated above 90%. The recommendation has also been included in United States Coast Pilots and Canadian Sailing Directions. This tends to route vessels farther offshore, which in general increases drift distance for any vessel becoming disabled and affords more time for response vessels to arrive on scene.

3. The WCOVTRM project group found better casualty reporting data was needed.

Since the study report was published, the USCG has compiled monthly casualty reports that include all loss of propulsion (LOP) incidents. These reports are routinely presented at meetings of the SF HSC.

Moreover, implementation of the 2012 North American Emission Control Area clean fuel requirements has incentivized vessels-in-transit to remain 200 miles offshore, which, as discussed above, reduces the grounding risks associated with disabled vessels.

Based upon the actions taken by maritime industry stakeholders since the release of the WCOVTRM project findings and recommendations, the SF HSC finds that the risk of offshore incidents including the likelihood of a vessel grounding, has been significantly reduced.

Assessment of United States Coast Guard's Port State Control and Marine Inspection Programs

United States Coast Guard's Port State Control Program (Foreign Flag Vessels) – SB 414 requires the review of the USCG's Port State Control (PSC) and Marine Inspection Programs regarding risks due to a vessel's hull or engineering material deficiencies, or inadequate crew training and professionalism. The Los Angeles/Long Beach Harbor Safety Committee and the Harbor Safety Committee of the San Francisco Bay Region employed an innovative and streamlined approach to assess the condition of the United States Coast Guard's PSC program. (See Appendix E for study.) The HSCs recognized a worldwide network of PSC regimes exist with the goal to eliminate substandard shipping. The USCG holds observer status within both the Memorandum of Understanding on Port State Control in the Asia-Pacific Region (Tokyo MoU) and Paris Memorandum of Understanding on Port State Control (Paris MoU). Similarly, the Tokyo MoU and the Paris MoU has each granted observer status to the other.

The Paris MoU, Tokyo MOU and the USCG each produce an annual PSC report, which list the Vessel Detention Rate due to unsatisfactory Safety Examination results. The USCG's annual reports also list the Detention Rate for California known as District 11's Detention Rate.

The HSCs reviewed six years (2010-2015) of data published in annual reports from the Paris and Tokyo MoUs and USCG. This assessment encompassed PSC data from forty-five countries on five continents, 651,134 PSC vessel boardings, 350,943 Safety Examinations and 12,991 Detentions.

Utilizing the Detention Rate derived from PSC data, the HSCs were able to quantify the quality of vessels calling California ports by comparing the California Vessel Detention Rate (CVDR) weighted average against the combined PSC authorities' detention rate weighted average. Using the CVDR in this way enables a relative assessment of the condition, or quality, of vessels calling California ports.

As reflected in the table below, the CVDR weighted average at 0.0064% is the lowest of all surveyed PSC organizations. It indicates vessels calling California are 99.84% less likely to possess the characteristics that would warrant a PSC detention than in other parts of the world.

The HSCs find the general condition of foreign vessels calling California ports and the condition of the USCG's Port State Control program to be adequate.

PSC Authority	No. of Safety Examinations	No. of Detentions	Detention Rate %	Weighting % Based on Detentions*	Detention Rate Weighted Average** (Detention Rate % x Weight)
(A)	(B)	(C)	(D)	(E)	(F)
			(C) / (B)		(D) X (E)
Tokyo MoU	178,148	8,145	4.5720%	62.70%	2.8665%
Paris MoU	115,399	4,022	3.4853%	30.96%	1.0790%
USCG less D 11	50,619	749	1.4794%	5.77%	0.0854%
D11 (CVDR)	6,777	75	1.1067%	0.58%	0.0064%
Totals	350,943	12,991	-	100%	4.0374%
PSC Detention Rate Weighted Average (W.A)					4.0374%
CVDR W.A.					0.0064%
CVDR W.A. Below PSC Detention Rate W.A.					4.0309%
Percent CVDR W.A. is below PSC Detention Rate W.A.					-99.84%***

Notes: Table reflects all detentions; not limited to propulsion, steering and electrical incidents

* Calculation is Number of Detentions by a PSC divided by the sum of all PSC Detentions (12,991)

** Calculation is Detention Rate % multiplied by the Weighting %

*** Calculation is 4.0374% less 0.0064% divided by 4.0374%

United States Coast Guard's Marine Inspection Program (U.S. Flag Vessels) – Published each year in the Paris MoU and Tokyo MoU Annual Reports, is an updated document entitled, "White, Grey and Black (WGB) List." The WGB List represents the full spectrum, from quality flag states to flag states with a poor performance that are considered high risk. It is based on the total number of inspections and detentions and is the results from PSC inspections.¹⁰ The WGB List reflects the quality of a flag state's (marine) inspection program as well as the quality of vessels and vessel operators.

The White List contains a list of flag states found to be of higher quality and lower risk. Conversely, the Black List contains a list of flag states found to be substandard and of higher risk.¹¹ The Gray List is a list of flag states that may be simply described as average, average being considered less than ideal.

Independent third party audits, more commonly referred to as PSC inspections, over the last six consecutive years have reflected favorably upon the flag state of United States as well as the condition of the USCG's Marine Inspection Program. During the sample period (2010-2015), the flag state of

¹⁰ "White, Grey and Black List." *Paris MoU*. Paris MoU, 2016. Web. 27 December 2016.

¹¹ "White, Grey and Black List." *Paris MoU*. Paris MoU, 2016. Web. 27 December 2016.

United States attained White List, low risk status 83% of the time. Moreover, over the past four consecutive years (2012-2015), the flag state United States attained White List, low risk status 100% of the time.

Accordingly, the HSCs find the condition of United States vessels 300 GRT and greater and the condition of the USCG's Marine Inspection Program to be adequate.

United States Coast Guard Incident Data

The USCG District 11 provided the SF HSC with reportable incident data occurring over a seven-year period (from 2010 to 2016). The data include reports of propulsion losses as well as other types of incidents such as problems with navigation, electrical, or steering systems. The USCG requires a vessel to report any occurrence when critical systems fail, even if the failure is only of brief duration and the problem is resolved quickly. Moreover, reportable incident data include cases where there is a limitation rather than a complete failure. For example, engines operating at less than full power, engines capable of propelling a vessel forward but not in reverse, or two-engine ships that lose power from one of the engines are all reportable incidents. Because the threshold for a reportable incident is quite low, many reported incidents do not rise to the level of posing a drift grounding risk, which is the focus of this study.

For the most part, reported incidents are typically corrected before the vessel enters San Francisco Bay. Of the incidents that cannot be immediately corrected, most do not completely disable the vessel. Despite this, the USCG Captain of the Port will normally place restrictions on the vessel until repairs can be completed and such an order will often include a requirement for tugs to escort the vessel into port as a precautionary measure. These incidents must be distinguished from those rare incidents wherein a vessel becomes completely disabled and requires a tow into port.

The following table summarizes total *Loss of Propulsion incidents* and categorizes the data by vessel type (tank vessel and non-tank vessel) and whether a tow was needed.

PLEASE NOTE: USCG District 11 will soon provide the number of non-LOP incidents (“Relevant Incidents”), at which time the table and associated text (italicized) below will be revised to reflect the updated information. **It is the Tug Workgroup’s understanding that the number of tows will not increase, and that only the number of non-LOP incidents (e.g., steering, or other similar casualty that could result in a drifting ship needing tug assistance) will be modified.**

US Coast Guard Sector San Francisco Incident Data							
Summary of Loss of Propulsion Incidents <i>and Relevant Incidents</i>							
2010 – 2016							
Reported to US Coast Guard District 11, Alameda, CA							
YEAR	TOTAL LOP INCIDENTS (NOTE 1)	TOTAL TANKER INCIDENTS (NOTE 2)	TOTAL SHIPS NEEDING TOW (NOTE 3)	TANKERS	CONTAINER AND BULK SHIPS	TOTAL SHIP TRANSITS	TOTAL LOP INCIDENT RATE (NOTE 4)
2010	4	0	0	0	0	6,700	0.06%
2011	11	6	0	0	0	7,338	0.15%
2012	10	7	1	0	1	6,920	0.14%
2013	8	4	0	0	0	8,214	0.10%
2014	16	5	0	0	0	7,496	0.21%
2015	8	3	0	0	0	7,450	0.11%
2016	5	1	1	0	1	8,868	0.06%
TOTAL	62	26	2	0	2	52,986	0.12%
			0.004%	PERCENTAGE OF VESSELS NEEDING TOW			
<p>NOTE 1: Loss of Propulsion incidents on deep draft ocean-going vessels over 300 gross tons OUTSIDE THE COLREGS DEMARCATION LINE.</p> <p>NOTE 2: Loss of Propulsion incidents on deep draft ocean-going TANKERS over 300 gross tons OUTSIDE COLREGS DEMARCATION LINE (Included in TOTAL INCIDENTS).</p> <p>NOTE 3: Total ships needing tow that were OUTSIDE THE COLREGS DEMARCATION LINE.</p> <p>NOTE 4: <i>The SF HSC did not include failures other than failures that compromised propulsion in this data.</i> A ship has a strong propensity to back to weather (move upwind/swell) while running its engines astern. For this reason, ships can be maneuvered away from a lee shore using their engines alone. Thus, even though other failures, such as a steering casualty, might necessitate a tow to safely conduct the ship into port, such failures would not prevent a ship from using her engines to eliminate the risk of a drift grounding.</p>							

The overall total of “Relevant Incidents” (propulsion, steering, or other similar casualty that did or could result in a drifting ship needing tug assistance) as reported 2010-2016 by vessels 300 GRT or larger in the SF AOR was **XX**. Of these, the data reveal that there were 62 LOP casualties. Cases involving fishing and pleasure boats, search and rescue cases, medical evacuations, rules of the road and VTS procedures violations are not included in this data. Of the XX incidents reported, only two vessels required emergency tows. During the same period there were 52,986 transits in the study area. As shown in the table above, the two incidents requiring a tow comprised 0.004% of the total ship transits through the Golden Gate during the reporting period.

Based on the incident rate, the SF HSC finds the risk of vessel failure requiring a tow within the offshore study area to be extremely low.¹²

¹² See Appendix D for details regarding incidents requiring a vessel tow.

San Francisco Bay Tug Inventory and Capability

The tug inventory shown in the table below was provided by the local tug companies in October and November 2016. This data quantifies the tugs assigned to the San Francisco Bay Region at that time. It is important to note that this inventory is a "snapshot in time," and homeport assignments for tugs can change. Nonetheless, it provides a current summary distribution of tugs with ocean going towing capabilities within the region.

Tug	Bollard Pull (Tons) ¹³	Range (days)	Tow Winch (on Stern)	Wire on drum	Arrest	Tow	Availability
DELTA BILLIE	93	21	✓		✓		Crewed
DELTA CATHRYN	93	21	✓	✓	✓		Crewed
VALOR	93	21	✓		✓		Crewed
VETERAN	93	21	✓	✓	✓	✓	Crewed
AHBRAFRANCO	90	17	✓	✓	✓	✓	Crewed
ROBERT FRANCO	90	17	✓	✓	✓	✓	Crewed
PACIFIC STAR	87	7			✓		Crewed
AMERICA	85	7			✓		Crewed
LYNN MARIE	75	7			✓		Callout
KEEGAN FOSS	73	11			✓		Callout
PATRICIA ANN	70	4			✓		Crewed
SANDRA HUGH	68	4			✓		Crewed
REVOLUTION	66	4			✓		Crewed
LIBERTY	50	12	✓	✓	✓	✓	Crewed
Z-FIVE	50	8	✓		✓		Crewed
Z-FOUR	50	8	✓		✓		Crewed
Z-THREE	50	8	✓		✓		Crewed
SCORPIUS	38	29	✓	✓	✓	✓	Callout
POINT FERMIN	36	16			✓		Crewed
POINT VICENTE	35	16			✓		Callout
PATRIOT	33						Crewed
ORION	22	12	✓		✓	✓	Callout
SAGITTARIAN	22	12	✓		✓	✓	Callout
ROYAL MELBOURNE	20	25			✓		Crewed
TAURUS	13	20	✓	✓	✓	✓	Callout
BEARCAT	9	14	✓	✓	✓	✓	Callout

Current Tug Inventory in The San Francisco Bay Region

¹³ Bollard pull is a measure of a tug's maximum pulling power measured in tons.

The Workgroup compared the current inventory to an older inventory contained in the 2002 WCOVTRM project report¹⁴ that compiled similar data. The comparison shows that the current tug inventory in San Francisco Bay is more robust today; larger and more capable tugs are currently available.

Per the 2002 WCOVTRM project, tugs with 40 tons of bollard pull or more meet the criteria for a rescue from the Golden Gate south, and for the area north of the Gate, 60 tons or more. At the time of the project, ten tugs operating in the San Francisco Harbor had bollard pull capability of 40 tons or greater of which seven tugs had bollard pull capability of at least 60 tons. The most powerful two tugs both had a bollard pull capability of 71 tons.

In 2016, the number of tugs operating in the harbor with a bollard pull capability of 40 tons or greater has increased by seventy percent to seventeen tugs, of which thirteen tugs have a bollard pull capability of 60 tons or more. Moreover, two tugs have bollard pull capabilities in the mid 80s (85 tons and 87 tons) and in the most dramatic difference from the 2002 WCOVTRM project to 2016, six tugs have a bollard pull of 90 tons or more. All of the tug companies with tugs capable of pulling more than 40 tons have emergency offshore towing packages available. In summary, today there is a larger and more powerful cadre of tugs ready and available to respond to offshore emergencies.

Based on the investigation by the Workgroup, the majority of the relevant San Francisco Bay tugs are crewed twenty-four hours a day and the remaining have crews readily available on short notice. While the tugs are primarily dedicated to work within the San Francisco Bay, they can be dispatched for rescue work at any time. Local stakeholders understand the importance of rendering aid to a vessel in distress, and local tug operators are prepared to give emergency response the highest priority. While rarely necessitated, the regional stakeholders, specifically tug operators, have demonstrated their ability to respond quickly during the few cases when offshore emergencies have arisen.

Additionally, continual improvement and towing capability readiness is maintained through regular exercises.¹⁵ Some of these exercises are described in more detail on page 19.

¹⁴ *West coast offshore vessel traffic risk management project* (Final Report, 2002), Pacific States/British Columbia Oil Spill Task Force and the U.S. Coast Guard, Pacific Area; p.34. Retrieved from, <http://oilspilltaskforce.org/wp-content/uploads/2013/12/2002-Offshore-Vessels-Risk-Management-Project-Report.pdf>.

¹⁵ See, requirements contained in the “Bay Region Best Maritime Practice-Emergency Offshore Towing,” a standard of care developed by the SF HSC.

The SF HSC finds there is a high likelihood that tugs will be readily available and equipped to respond to a disabled vessel in the San Francisco AOR.

IV. Harbor Safety Committee of the San Francisco Bay Region: Best Maritime Practice- Emergency Offshore Towing

Recognizing the need to advance best offshore emergency towing practices for the San Francisco Bay Region, beginning in January 2013 the SF HSC Tug Workgroup worked with USCG Sector San Francisco to develop the “Best Maritime Practice-Offshore Emergency Towing” (BMP), a standard of care that has been included in the SF Harbor Safety Plan.¹⁶ The SF HSC adopted the BMP in April 2014. The document guides the deployment of the best towing assets with the most appropriate equipment and properly trained crews during an emergency.

The “Typical Decision/Action Matrix for Emergency Offshore Towing,” shown below on page 17, depicts the risk-based priority for dispatching tugs to emergencies in the offshore waters outside of the Golden Gate. The matrix is a tool designed to assist the Coast Guard, vessel operators and towing companies to identify higher risk areas and to inform vessel operators of USCG expectations and potential actions that might be required depending on the disabled vessel’s distance from shore. The matrix does not definitively dictate the boundaries between the areas of high, medium and low risk; rather it is a tool to enhance risk assessment and decision-making.

The BMP chart that follows the matrix, shown below on page 16, shows the drift distances to shore and the run-time of tug boats traveling at 10 knots (11.4 m.p.h.), which is a relatively conservative response speed that was assumed for planning purposes. At the time the diagram was constructed, the Tug Workgroup concluded the drift rate toward shore would not exceed 2 knots in most circumstances. The dark red zone triggers USCG Captain of the Port jurisdiction where, regardless of drift, the Coast Guard will likely take action given the close proximity to shore. The light red zone represents the nearest risk to that zone, with the yellow and green zones being areas where there is more time for planning.

Additional factors such as prevailing weather, vessel traffic conditions, actual drift rate, and vessel material condition also impact risk assessment and associated response posture. The goal of any response should be preventing a vessel from grounding. That being said, a vessel becoming disabled in

¹⁶ See, Appendix F for full text of the “Best Maritime Practice-Offshore Emergency Towing.”

or near the highest risk (red) areas without adequate tugs on station to stabilize and control the situation requires the most rapid response. But when an incident occurs farther offshore, the risk of drifting into danger near shore is reduced and may afford additional time to prepare a response and tow plan. As previously stated, the BMP standard of care is predicated upon a two-knot drift rate, which should provide a good basis for analysis in most circumstances. However, actual worst case scenario drift rates could be greater, and are discussed in more detail below.

Under normal circumstances, the Coast Guard will direct that response tugs adequate to control the situation be in place before a disabled vessel drifts within 12 nautical miles from shore. The matrix is designed to prompt action to assist this outcome.

The BMP also includes IMO guidelines on emergency towing procedures, including preparation of an Emergency Towing Booklet in accordance with SOLAS Ch. II-1, Reg. 3-4, a sample of which is contained in the BMP. A communications checklist, ship rescue requirement checklist and example tow configurations also are provided.

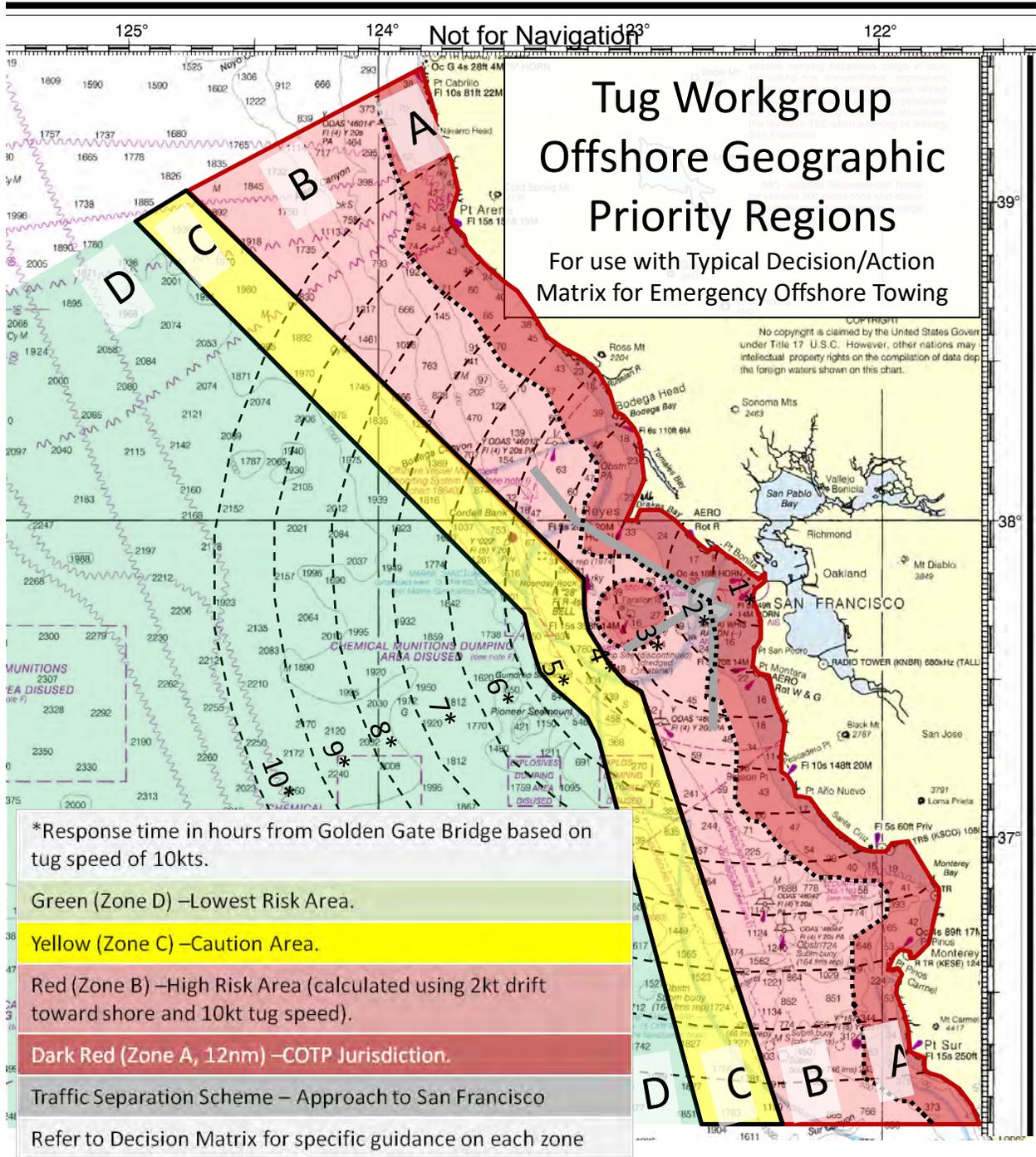
Typical Decision/Action Matrix for Emergency Offshore Towing*

Response of USCG, OGAs and Port Partners will depend on the position of the vessel in distress in relation to Figure 1: Safety Risk Associated with Vessel Position Offshore. Below are general guidelines for each zone:

Green Zone "C"	Yellow Zone "B"	Red Zone "A" (Vsl > 12NM)	Red Zone "A" (Vsl < 12NM)
<ol style="list-style-type: none"> 1. Vessel provides casualty notification to USCG. 2. USCG contacts vessel agent/ representative (who should establish communications with the operator/owner). 3. USCG transmits Alert Warning System (AWS) notification as an early warning of the potential need for tug assistance. 4. Vessel/company to effect repairs, notify the USCG of intentions, and request permission to enter port, if applicable. 	<ol style="list-style-type: none"> 1. Vessel provides casualty notification to USCG. 2. USCG contacts vessel agent/ representative (who should establish communications with the operator/owner). 3. USCG transmits Alert Warning System (AWS) notification as an early warning of the potential need for tug assistance. 4. USCG determines if vessel has an approved VRP/SMFF or emergency response system, complying with the International Safety Management Code (SOLAS IX, Reg. 3) and 33 CFR 155. 5. Vessel company to effect repairs, notify the USCG of intentions, and request permission to enter port, if applicable. 	<ol style="list-style-type: none"> 1. Vessel provides casualty notification to USCG. 2. USCG contacts vessel agent/ representative (who should establish communications with the operator/owner). 3. USCG transmits Alert Warning System (AWS) notification as an early warning of the potential need for tug assistance. 4. Vessel should activate VRP/SMFF or emergency response system. 5. USCG review vessel particulars and weather patterns and assess the safety/security risks associated with the vessel. 6. USCG discuss tug assist; ID available tug assets in the area (see VRP/SMFF) 7. Determine set & drift (SAROPS/NOAA) 8. USCG may issue a COTP Order requiring vessel to: <ol style="list-style-type: none"> a. Activate VRP/SMFF. b. Develop and submit a tow plan, and/or salvage plan, with a schedule of operational intention to ensure tugs on-scene at 12nm. c. Effect repairs and notify the USCG of intentions. 	<ol style="list-style-type: none"> 1. Vessel provides casualty notification to USCG. 2. USCG contacts vessel agent/representative. 3. USCG transmits Alert Warning System (AWS) notification as an early warning of the potential need for tug assistance. 4. Vessel should activate VRP/SMFF or emergency response system. 5. USCG reviews vessel particulars and weather patterns and assess the safety/security risks associated with the vessel. 6. USCG discuss tug assist; ID available tug assets in the area (see VRP/SMFF). 7. Determine set & drift (SAROPS/NOAA) 8. USCG will typically issue a COTP Order requiring vessel to: <ol style="list-style-type: none"> a. Activate VRP/SMFF. b. Develop and submit a tow plan, and/or salvage plan. c. Effect repairs and notify the USCG of intentions.

Considerations:

- Evaluate ANOA- crew, cargoes, fuel, casualty history etc.
- Determine potential impact based on vessel particulars, cargo, fuel on board.
- Establish comms schedule w/ vessel (VTS/SCC)
- Discuss Admin Order (EEZ) and/or COTP Order
- ID environmentally sensitive areas (ACP)
- Does vessel have approved SMFF or VRP?
- Request copy of Emergency Towing Booklet (ETB)
- Engage pilots, CA stakeholders etc.
- Monitor weather & sea state, tides
- ID Potential Places of Refuge
- Potential to federalize response if RP fails to act.



On-water Exercise. In May 2014, the Tug Workgroup tested provisions of the BMP when it joined with tug operators and the Navigation Workgroup in Central San Francisco Bay to conduct an on-water emergency tow of an Ultra Large Container Vessel. With a goal of testing command and control emergency towing operations, the scenario involved the 1,190-foot, 128,550 deadweight tonnage (DWT) Containership CMA CGM CENTAURUS operating without power.

Three different tow companies participated in the exercise and successfully demonstrated the ability of a single tug to tow a vessel experiencing a LOP as well as a tandem tow utilizing two tugs. The San Francisco Bar Pilots stationed a pilot on board the ship to monitor the drill. The tugs' towing capabilities were tested with one tug able to tow the ship at 4.3 kts and two tugs together at 6 kts. Synthetic towlines were used during the drill whereas longer towing chains would normally be used in offshore conditions.

Lessons learned include the importance of having a tug at the stern of the ship to assist with steering, the importance of direct communication between the tugs, the importance of familiarity with the Emergency Towing Booklet, and the importance of effective command and control.

Included in development and implementation of the "Best Maritime Practice-Offshore Emergency Towing," described above, local maritime stakeholders conducted a tabletop exercise for a simulated incident and After Action Review (AAR) for both simulated and actual incidents to assess readiness to provide emergency towing of a disabled vessel in the offshore AOR. The process tests and evaluates response asset availability and response time based on real-time vessel traffic and tug inventory.

After Action Review. In July 2016, the Tug Workgroup and the SF VTS conducted an AAR to debrief stakeholders of an actual offshore incident involving the 590-foot, 37,429 DWT bulk carrier, MV ULTRA LASCAR. On May 20, 2016, MV ULTRA LASCAR experienced a loss of propulsion while transiting in the Northern Traffic Lane en route to Stockton, California. The vessel was unable to restart her engine and subsequently, drifted toward the coast. When the vessel reached a position approximately 5 miles from shore off Daly City, California, per US Coast Guard direction, it safely deployed its anchor to arrest its drift. Shortly thereafter, response assets arrived on scene including a San Francisco Bar Pilot (who boarded the vessel) and three emergency response tugs as well as equipment to tow the vessel to port. The USCG, the towing company and the vessel agent participated in the AAR as well as other governmental agencies and key maritime stakeholders. Lessons learned included, the following:

- Thorough communication between all parties was a key factor contributing to the successful outcome of this incident,
- The communication/notification process was identified as an area in need of improvement.

The incident also highlighted and reconfirmed that deploying the ship's anchor(s) is a key mitigation measure available to a vessel to reduce, or even eliminate, the risk of drift grounding in the offshore marine environment.

V. Measures to prevent a disabled vessel from drifting ashore

A cursory inspection of the "Tug Workgroup Offshore Geographic Priority Regions" graphic on page 18 reveals that there are areas within the SF AOR where a vessel could lose power and drift toward shore at a rate that might not afford sufficient response time – meaning the ship could run ashore. For example, if a ship were to lose power in the Northbound Traffic Lane due southwest of Point Reyes, it would be set adrift within about 4 miles of the shore at Point Reyes. If strong southwesterly winds caused the disabled vessel to drift at 2 knots¹⁷ in a northeasterly direction, it would drift ashore in two hours. But the response time (according to the matrix) is three hours. Therefore, there may not be sufficient time for response assets to reach the drifting vessel in this particular hypothetical scenario.

Indeed, many more hypothetical scenarios could be imagined wherein there might not be sufficient response time to prevent a drift grounding. This is particularly true when one considers worst case drift rates. The 2002 WCOVTRM project group found the following drift rates applied in the waters off San Francisco:

- The drift speed during average onshore wind conditions is 1.3 knots.
- The drift speed during worst case onshore wind conditions is 3.3 knots.¹⁸

¹⁷ The "Tug Workgroup Offshore Geographic Priority Regions" graphic contained in the BMP assumes a two-knot drift rate.

¹⁸ *West coast offshore vessel traffic risk management project* (Final Report, 2002), Pacific States/British Columbia Oil Spill Task Force and the U.S. Coast Guard, Pacific Area; Appendix F. Retrieved from, <http://oilspilltaskforce.org/wp-content/uploads/2013/12/2002-Offshore-Vessels-Risk-Management-Project-Report.pdf>.

As discussed above, the planning tools in the SF HSC “Best Maritime Practice-Offshore Emergency Towing” assume a 2-knot drift rate. This drift rate should be consistent with the actual drift of a disabled vessel in most circumstances and it forms a perfectly valid preliminary assumption for analysis of actual emergency events. However, SB 414 requires the current assessment to consider worst case drift scenarios, and the 2002 WCOVTRM findings are instructional. Using the project’s higher worst case drift rate (3.3 knots), the time available for response tugs to arrive on scene is further diminished, which elevates the grounding risk.

However, there are mitigation measures available to reduce, or even eliminate that increased grounding risk. In those circumstances wherein a disabled vessel is drifting into shallow water before response tugs arrive on scene, it can deploy its anchors to arrest its drift. Emergency anchoring under these circumstances alleviates the exigency by stopping the vessel drift and affording additional time for the response tugs to arrive on scene, as demonstrated by the recent ULTRA LASCAR incident. It should be noted that anchoring a drifting vessel close inshore is not in and of itself a solution to the emergency. A disabled vessel anchored on a lee shore remains exposed to elevated risk. Nevertheless, there is an extremely high likelihood that this mitigation measure will arrest the vessel’s drift until response assets arrive.

Yet, a disabled vessel does not necessarily need to wait until it drifts into shallow water to deploy its anchors to arrest its drift. Deep water anchoring is a proven methodology that has long been used to arrest a disabled vessel’s drift. For example, in October of 1978, off the coast of California, a 35,000 deadweight ton coastwise tanker used this approach when it became disabled just north of Point Reyes and began drifting toward shore. According to the vessel master, the ship was southbound off Point Reyes when it lost propulsion. The ship initially drifted northeasterly with the current and then easterly with the wind. There was a 50-fathom (300-foot) spot two to three miles off the beach. The crew lowered the port anchor under power as the ship neared the 50-fathom curve.¹⁹ When the anchor started to bump on the bottom, they paid out the anchor slowly until it stopped the vessel’s drift. With the anchor down, the ship awaited assistance in a stabilized condition. Subsequently, a response tug from nearby San Francisco Bay arrived on the scene and towed the ship to port.²⁰

¹⁹ Ships are fitted with emergency diesel generators to provide power to anchoring equipment independent of a ship’s propulsion system.

²⁰ Recollections of Captain John C. Porter during interview, March 2016.

The practice is also recognized in various maritime treatises. According to the Oil Companies International Marine Forum (OCIMF), the foremost authority on the safe and environmentally responsible operation of oil tankers, anchoring is an accepted methodology to stop a disabled ship from drifting, even in waters deeper than one would normally anchor a ship. The OCIMF recommends the anchors be walked out under power to about 3 shackles (270 feet or 45 meters) in the water and then the brake and chain stopper applied.²¹ As the vessel drifts into shallower water the anchors will start to drag along the seabed and more chain can be paid out. This action will bring the ship's head into the weather, slow her speed over the ground, and eventually stop her drift. As demonstrated in the example above, this practice can be used in waters deeper than 45 meters.

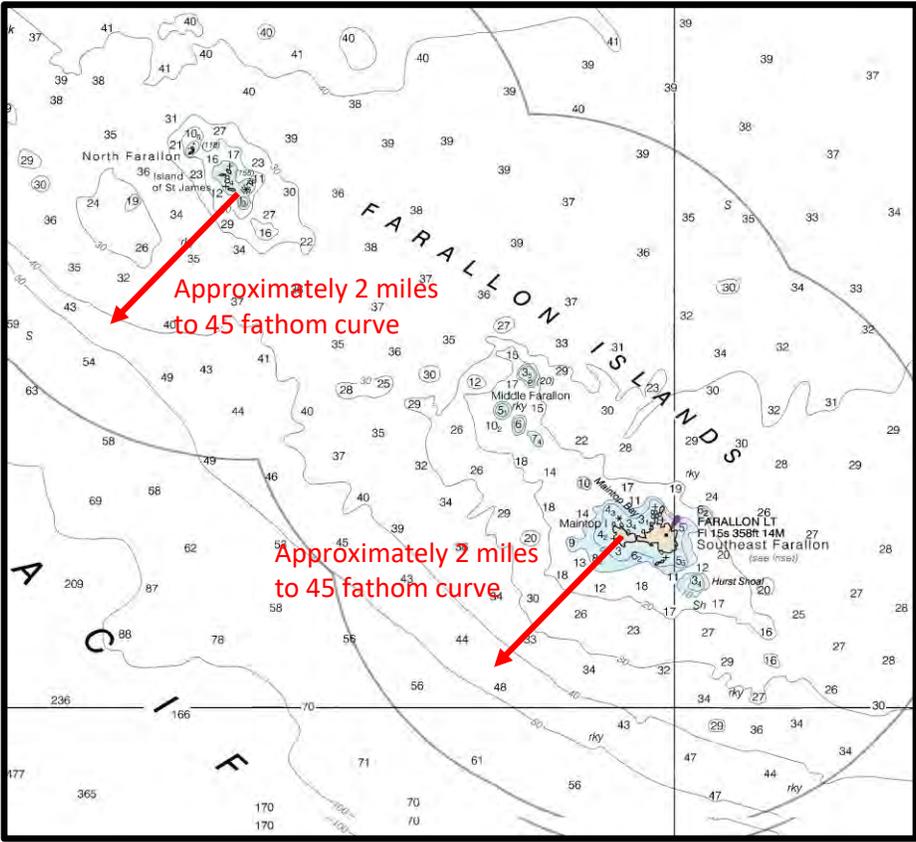
Generally accepted practice for deep water anchoring is to avoid anchoring in depths greater than 60 fathoms (360 feet). Class rules require a ship's anchor windlass to lift the weight of the anchor and three free-hanging shackles of chain, which is 45 fathoms or 270 feet.²² Although some ships may be able to anchor in depths over 45 fathoms, all ships should be able to deploy their anchors in an emergency in any depth up to 45 fathoms, and many ships should be able to anchor in greater depths. Anchoring in this manner becomes problematic only in areas where very deep water (greater than 50 fathoms) extends to within close proximity of the shore.

An inspection of the SF AOR reveals that depths are sufficient to anchor a vessel (less than 45 meters deep) well offshore (more than three miles) throughout the area, and a disabled vessel would be able to arrest its drift simply by lowering its anchor(s). There is only one limited area where deep water extends to within close proximity to shore. That area is to the southwest of the Farallon Islands, and in particular, southwest of Noonday Rock and Fanny Shoal.

²¹ Oil Companies International Marine Forum, & Witherby Seamanship International. (2010). *Anchoring systems and procedures*. Livingston, UK: Witherby Pub. Group; page 58.

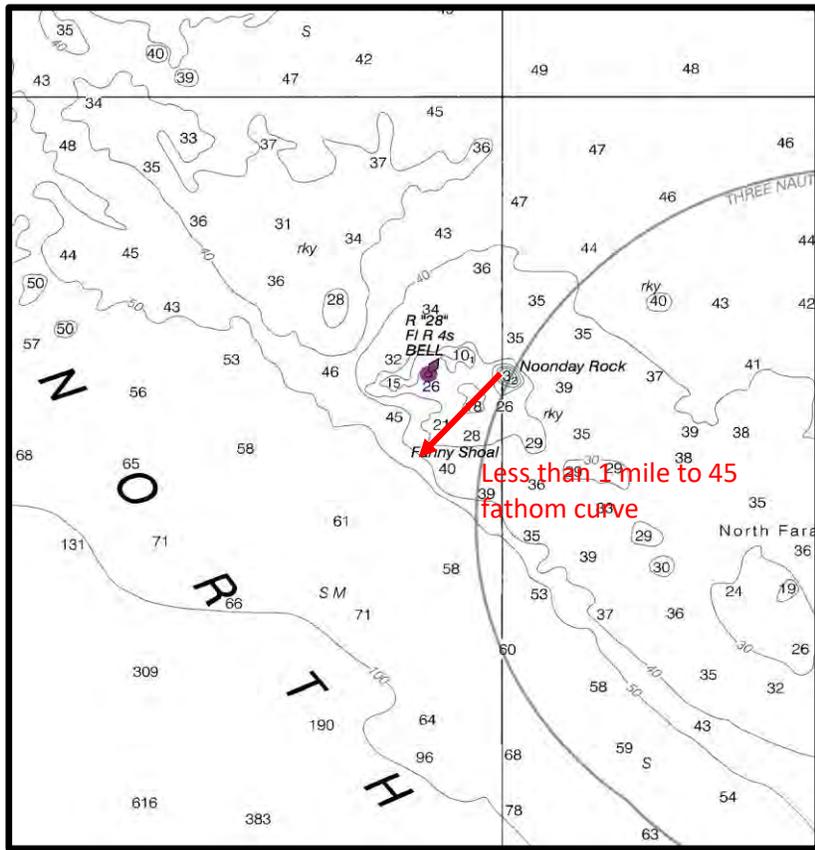
²² Id. At 40.

To the southwest of the Farallon Islands, the 45 Fathom curve is approximately 2 miles offshore from the islands and rocks. Although less than ideal, two miles should be enough distance offshore for most disabled vessels to get their anchor(s) down, pay out enough chain, and stop their drift prior to standing into danger. Of course this assumes timely and appropriate action on the part of the ship's crew. Even though the bottom in this area is comprised primarily of rock (which is not ideal holding ground) most vessels should be able to safely anchor during large swells and strong winds using one or two anchors, provided they deploy a sufficient scope (length) of anchor chain. Nevertheless, this area poses moderate concern, because the 45 Fathom curve lies only 2 miles from shore.



Farallon Islands

To the southwest of Noonday Rock, the 45 Fathom curve is slightly less than 1 mile offshore from the islands and rocks. A one-mile safety margin between the water depth where any ship should be able to deploy its anchor(s) and the grounding line²³ may not be sufficient in all circumstances, particularly if strong winds and large swells are present. Because of deep water in close proximity to the southwest of Noonday Rock, the Workgroup identified this as an area of concern. Some vessels in some weather conditions could have difficulty deploying anchors prior to grounding. However, this limited area only poses a danger during weather from the Southwest quadrant (which could cause a vessel to drift toward the southwest side of Noonday Rock). Coupled with the fact that this isolated area is located far from the Traffic Separation Scheme, and very few vessels over 300 gross tons transit through these waters, the likelihood of a drift grounding event occurring in this location is extremely low.



Noonday Rock

²³ The “grounding line” is the point separating those waters where a ship will float from the waters where it will not. It is the point where a ship’s hull comes into contact with the seabed.

The SF HSC finds that the area southwest of Noonday Rock is an area of concern. The Workgroup's concern would only attach to vessels transiting to the southwest of the Farallon Islands and becoming disabled, then drifting to the northeast toward Noonday Rock. It should be noted that the area is of very limited extent and vessels over 300 gross tons rarely if ever travel this route. The likelihood of an occurrence in this area is extremely low.

VI. Summary of Findings and Conclusion

The San Francisco Harbor Safety Committee recognizes a multitude of causes can result in a vessel losing propulsion and/or maneuverability and that each case is different; however, based on historical incidents and new information gathered in support of this study, the SF HSC has determined there is a sufficient presence and capability of tugs within the San Francisco Bay to provide emergency towing of tank and non-tank vessels to arrest their drift or otherwise guide emergency transit within the San Francisco VTS area. The large availability of response tugs in the San Francisco Bay Region allows emergency towing services to be dispatched any time day or night.

The quality of the vessels and crews calling at San Francisco Bay Region ports is generally very high as indicated by reliable data from the annual reports of the USCG's Port State Control Program, the Tokyo MoU, and the Paris MoU. Historically, there have been few vessel failures that necessitated a tow.

The VTS Traffic lanes route traffic in a manner that reduces grounding risk. Whenever vessels have experienced failures in the SF AOR, they have typically had sufficient sea room to drift until propulsion was restored or tug boats arrived on scene to provide assistance.

The AOR is characterized with ample opportunity to anchor due to relatively shallow waters extending well out from shore. Only one limited area of concern (to the southwest of Noonday Rock) has been identified where deeper water extends closer to shore. However, the associated grounding risk is very low due to the limited extent of the area, few vessels transit the area, and the likelihood that events would act in concert to cause a drift grounding in this area is low. Nevertheless, the SF HSC recommends the following measure to mitigate this very low-level risk:

The SF HSC recommends that steps be taken to raise awareness of the limited anchoring opportunity and the grounding risks associated with vessels over 300 gross tons transiting through our AOR on the offshore side of the Farallon Islands during southwesterly weather.

Lastly, it is essential that any disabled vessel make relevant reports promptly to the USCG, communicate with its owners/agents and the towing company, and activate its Vessel Response Plan as required. Early notification and preparation for towing can aide a successful outcome.

Conclusion: The Harbor Safety Committee of the San Francisco Bay Region finds that there is a very high degree of likelihood that the resources presently in place in the San Francisco Bay Region are, and will continue to be, sufficient to arrest the drift of a disabled vessel or otherwise influence its drift to prevent it from grounding in the San Francisco Area of Responsibility.

Senate Bill No. 414

CHAPTER 609

An act to amend Sections 8670.12, 8670.13, 8670.28, and 8670.67.5 of, and to add Sections 8670.11, 8670.13.3, and 8670.55.1 to, the Government Code, relating to oil spill response.

[Approved by Governor October 08, 2015. Filed with Secretary of State October 08, 2015.]

LEGISLATIVE COUNSEL'S DIGEST

SB 414, Jackson. Oil spill response.

(1) The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act generally requires the administrator for oil spill response, acting at the direction of the Governor, to implement activities relating to oil spill response, including emergency drills and preparedness, and oil spill containment and cleanup. The act authorizes the administrator to use volunteer workers in response, containment, restoration, wildlife rehabilitation, and cleanup efforts for oil spills in waters of the state. Existing law requires the administrator to evaluate the feasibility of using commercial fishermen and other mariners for oil spill containment and cleanup.

This bill would require the administrator, in cooperation with the United States Coast Guard, to establish a schedule of drills and exercises that are required under the federal Salvage and Marine Firefighting regulations. The bill would require the administrator, on or before January 1, 2017, to submit to the Legislature a report assessing the best achievable technology of equipment for oil spill prevention, preparedness, and response and to update regulations governing the adequacy of oil spill contingency plans before July 1, 2018. The bill would require the administrator to direct the Harbor Safety Committees for various regions to assess, among other things, the presence and capability of tugs within their respective regions of responsibility to provide emergency towing of tank and nontank vessels to arrest their drift or guide emergency transit.

(2) The act requires the administrator to study the use and effects of methods used to respond to oil spills and to periodically update the study to ensure the best achievable protection from the use of those methods.

This bill would require the administrator, in conducting the study and updates, to consult current peer-reviewed published scientific literature. The bill would require the administrator, by May 1, 2016, to request that the federal California Dispersant Plan be updated, as provided, and to provide support and assistance in that regard.

(3) The act requires the administrator to license oil spill cleanup agents for use in response to oil spills.

This bill would require the administrator, if dispersants are used in response to an oil spill, to submit to the Legislature a written notification of, and a written justification for, the use of dispersants and a report on the effectiveness of the dispersants used, as provided.

(4) Existing law establishes the Oil Spill Technical Advisory Committee and requires the committee to provide recommendations to, among other entities, the administrator on the implementation of the act.

Appendix A – Senate Bill 414; Complete Text

This bill would require the committee to convene a taskforce to evaluate the feasibility of using vessels of opportunity for oil spill response. The bill would require the taskforce to provide recommendations to the administrator and the Legislature on whether vessels of opportunity should be included in oil spill response planning.

(5) The act makes a person who causes or permits a spill or inland spill strictly liable for specified penalties for the spill on a per-gallon-released basis. The act provides that the amount of penalty is reduced by the amount of released oil that is recovered and properly disposed of.

This bill would eliminate that reduction in the penalty by the amount of oil recovered and properly disposed of.

DIGEST KEY

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: no

BILL TEXT

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 8670.11 is added to the Government Code, to read:

8670.11. In addition to Section 8670.10, the administrator, in cooperation with the United States Coast Guard, shall establish a schedule of drills and exercises required pursuant to Section 155.4052 of Title 33 of the Code of Federal Regulations. The administrator shall make publicly available the established schedule.

SEC. 2. Section 8670.12 of the Government Code is amended to read:

8670.12. (a) The administrator shall conduct studies and evaluations necessary for improving oil spill response, containment, and cleanup and oil spill wildlife rehabilitation in waters of the state and oil transportation systems. The administrator may expend moneys from the Oil Spill Prevention and Administration Fund created pursuant to Section 8670.38, enter into consultation agreements, and acquire necessary equipment and services for the purpose of carrying out these studies and evaluations.

(b) The administrator shall, consulting current peer-reviewed published scientific literature, study the use and effects of dispersants, incineration, bioremediation, and any other methods used to respond to a spill and, by May 1, 2016, request that the federal California Dispersant Plan be updated pursuant to subdivision (d). The study shall periodically be updated by the administrator, consulting current peer-reviewed published scientific literature, to ensure the best achievable protection from the use of those methods. Based upon substantial evidence in the record, the administrator may determine in individual cases that best achievable protection is provided by establishing requirements that provide the greatest degree of protection achievable without imposing costs that significantly outweigh the incremental protection that would otherwise be provided. The studies shall do all of the following:

(1) Evaluate the effectiveness of dispersants and other chemical, bioremediation, and biological agents in oil spill response under varying environmental conditions.

Appendix A – Senate Bill 414; Complete Text

(2) Evaluate potential adverse impacts on the environment and public health including, but not limited to, adverse toxic impacts on water quality, fisheries, and wildlife with consideration to bioaccumulation and synergistic impacts, and the potential for human exposure, including skin contact and consumption of contaminated seafood.

(3) Recommend appropriate uses and limitations on the use of dispersants and other chemical, bioremediation, and biological agents to ensure they are used only in situations where the administrator determines they are effective and safe.

(c) The studies shall be performed with consideration of current peer-reviewed published scientific literature and any studies performed by federal, state, and international entities. The administrator may enter into contracts for the studies.

(d) The administrator shall support the federal Regional Response Team, as described in Section 300.115 of Title 40 of the Code of Federal Regulations, in the development, and shall request regular updates, of plans and procedures for use of dispersants and other chemical agents in California. The administrator's assistance may include, but is not limited to, providing the federal Regional Response Team with current peer-reviewed published scientific literature, and risk and consequence analysis.

SEC. 3. Section 8670.13 of the Government Code is amended to read:

8670.13. (a) The administrator shall periodically evaluate the feasibility of requiring new technologies to aid prevention, response, containment, cleanup, and wildlife rehabilitation.

(b) (1) On or before January 1, 2017, the administrator shall submit a report to the Legislature, pursuant to Section 9795, assessing the best achievable technology of equipment for oil spill prevention, preparedness, and response.

(2) The report shall evaluate studies of estimated recovery system potential as a methodology for rating equipment in comparison to effective daily recovery capacity.

(3) Pursuant to Section 10231.5, this subdivision is inoperative on July 1, 2020.

(c) (1) Including, but not limited to, the report prepared pursuant to subdivision (b), the administrator shall update regulations governing the adequacy of oil spill contingency plans for best achievable technologies for oil spill prevention and response no later than July 1, 2018.

(2) The updated regulations shall enhance the capabilities for prevention, response, containment, cleanup, and wildlife rehabilitation.

(d) (1) The administrator shall direct the Harbor Safety Committees, established pursuant to Section 8670.23, to assess the presence and capability of tugs within their respective geographic areas of responsibility to provide emergency towing of tank vessels and nontank vessels to arrest their drift or otherwise guide emergency transit.

(2) The assessments for harbors in the San Francisco Bay area and in Los Angeles-Long Beach area shall be initiated by May 1, 2016. The assessments for the other harbors shall be initiated by January 1, 2020.

(3) The assessment shall consider, but not be limited to, data from available United States Coast Guard Vessel Traffic Systems, relevant incident and accident data, any relevant simulation models, and identification of any transit areas where risks are higher.

(4) The assessment shall consider the condition of tank and nontank vessels calling on harbors, including

the United States Coast Guard’s marine inspection program and port state control program regarding risks due to a vessel’s hull or engineering material deficiencies, or inadequate crew training and professionalism.

SEC. 4. Section 8670.13.3 is added to the Government Code, to read:

8670.13.3. If dispersants are used in response to an oil spill in state waters, the administrator shall provide written notification of their use to the Legislature within three days of the use. The administrator shall provide the Legislature with written justification of their use, including copies of key supporting documentation used by the federal on-scene coordinator and the federal Regional Response Team as soon as those material are released. Within two months of the use of dispersants in state waters, the administrator shall also provide a report to the Legislature on the effectiveness of the dispersants used, including, but not limited to, results of any available monitoring data to determine whether the dispersant use resulted in overall environmental benefit or harm. The written notification, justification, and report shall be submitted pursuant to Section 9795.

SEC. 5. Section 8670.28 of the Government Code is amended to read:

8670.28. (a) The administrator, taking into consideration the facility or vessel contingency plan requirements of the State Lands Commission, the Office of the State Fire Marshal, the California Coastal Commission, and other state and federal agencies, shall adopt and implement regulations governing the adequacy of oil spill contingency plans to be prepared and implemented under this article. All regulations shall be developed in consultation with the Oil Spill Technical Advisory Committee, and shall be consistent with the California oil spill contingency plan and not in conflict with the National Contingency Plan. The regulations shall provide for the best achievable protection of waters and natural resources of the state. The regulations shall permit the development, application, and use of an oil spill contingency plan for similar vessels, pipelines, terminals, and facilities within a single company or organization, and across companies and organizations. The regulations shall, at a minimum, ensure all of the following:

- (1) All areas of state waters are at all times protected by prevention, response, containment, and cleanup equipment and operations.
- (2) Standards set for response, containment, and cleanup equipment and operations are maintained and regularly improved to protect the resources of the state.
- (3) All appropriate personnel employed by operators required to have a contingency plan receive training in oil spill response and cleanup equipment usage and operations.
- (4) Each oil spill contingency plan provides for appropriate financial or contractual arrangements for all necessary equipment and services for the response, containment, and cleanup of a reasonable worst case oil spill scenario for each area the plan addresses.
- (5) Each oil spill contingency plan demonstrates that all protection measures are being taken to reduce the possibility of an oil spill occurring as a result of the operation of the facility or vessel. The protection measures shall include, but not be limited to, response to disabled vessels and an identification of those measures taken to comply with requirements of Division 7.8 (commencing with Section 8750) of the

Public Resources Code.

(6) Each oil spill contingency plan identifies the types of equipment that can be used, the location of the equipment, and the time taken to deliver the equipment.

(7) Each facility, as determined by the administrator, conducts a hazard and operability study to identify the hazards associated with the operation of the facility, including the use of the facility by vessels, due to operating error, equipment failure, and external events. For the hazards identified in the hazard and operability studies, the facility shall conduct an offsite consequence analysis that, for the most likely hazards, assumes pessimistic water and air dispersion and other adverse environmental conditions.

(8) Each oil spill contingency plan contains a list of contacts to call in the event of a drill, threatened discharge of oil, or discharge of oil.

(9) Each oil spill contingency plan identifies the measures to be taken to protect the recreational and environmentally sensitive areas that would be threatened by a reasonable worst case oil spill scenario.

(10) Standards for determining a reasonable worst case oil spill. However, for a nontank vessel, the reasonable worst case is a spill of the total volume of the largest fuel tank on the nontank vessel.

(11) Each oil spill contingency plan specifies an agent for service of process. The agent shall be located in this state.

(b) The regulations and guidelines adopted pursuant to this section shall also include provisions to provide public review and comment on submitted oil spill contingency plans.

(c) The regulations adopted pursuant to this section shall specifically address the types of equipment that will be necessary, the maximum time that will be allowed for deployment, the maximum distance to cooperating response entities, the amounts of dispersant, and the maximum time required for application, should the use of dispersants be approved. Upon a determination by the administrator that booming is appropriate at the site and necessary to provide best achievable protection, the regulations shall require that vessels engaged in lightering operations be boomed prior to the commencement of operations.

(d) The administrator shall adopt regulations and guidelines for oil spill contingency plans with regard to mobile transfer units, small marine fueling facilities, and vessels carrying oil as secondary cargo that acknowledge the reduced risk of damage from oil spills from those units, facilities, and vessels while maintaining the best achievable protection for the public health and safety and the environment.

SEC. 6. Section 8670.55.1 is added to the Government Code, to read:

8670.55.1. (a) The committee shall convene a taskforce, including appropriate state and federal governmental representatives, nongovernmental organizations, oil spill response organizations, and commercial fishing and other potential vessels of opportunity, to evaluate and make recommendations regarding the feasibility of using vessels of opportunity for oil spill response in marine waters. The evaluation shall examine the following:

(1) Appropriate functions of vessels of opportunity during an oil spill.

(2) Appropriate management of a vessel's of opportunity spill response program.

(3) Vessels of opportunity equipment, training, and technology needs.

Appendix A – Senate Bill 414; Complete Text

(4) Liability and insurance.

(5) Compensation.

(b) As part of the evaluation, the taskforce shall hold two public meetings, one in southern California and one in northern California, prior to making final recommendations.

(c) (1) On or before January 1, 2017, the committee shall provide to the administrator and to the Legislature final recommendations on whether vessels of opportunity should be included in oil spill response planning.

(2) The recommendations provided to the Legislature shall be provided pursuant to Section 9795.

(d) If appropriate, the administrator, by January 1, 2018, shall update regulations to provide for inclusion of vessels of opportunity in the oil spill prevention, response, and preparedness program.

SEC. 7. Section 8670.67.5 of the Government Code is amended to read:

8670.67.5. (a) Regardless of intent or negligence, any person who causes or permits a spill shall be strictly liable civilly in accordance with subdivision (b) or (c).

(b) A penalty may be administratively imposed by the administrator in accordance with Section 8670.68 in an amount not to exceed twenty dollars (\$20) per gallon for a spill.

(c) Whenever the release of oil resulted from gross negligence or reckless conduct, the administrator shall, in accordance with Section 8670.68, impose a penalty in an amount not to exceed sixty dollars (\$60) per gallon for a spill.

Appendix B – Harbor Safety Committee of the San Francisco Bay Region Senate Bill 414 Workgroup Membership

Name	Organization
Bob Gregory, Chair	Foss Maritime
Shawn Bennett	BayDelta Maritime
John Berge	Pacific Merchant Shipping Association
Ted Blankenburg	AMNAV Maritime Services
Bob Blomerth	USCG District 11
Bob Carr	San Francisco Bar Pilots
William Fairchild	Starlight Marine Services
Sean Kelley	Vessel Traffic Service, USCG
Lynn Korwatch	San Francisco Marine Exchange
Darin Mathis	Sector San Francisco, USCG
Daniel Morrison	Starlight Marine Services
Griffin Patrick	Tesoro Corporation
Jeff Robbins	General Steamship Corp

Appendix C – Office of Spill Prevention and Response Administrator’s Letter to Harbor Safety Committee of the San Francisco Bay Region



State of California - The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Office of Spill Prevention and Response
1700 K Street, Suite 250
Sacramento, California 95811
Telephone: (916) 445-9338
www.wildlife.ca.gov/ospr

EDMUND G. BROWN, JR., Governor
CHARLTON H. BONHAM, Director



January 25, 2016

Captain Lynn Korwath
Chair
Harbor Safety Committee of the San Francisco Bay Region
505 Beach Street, Suite 300
San Francisco, California 94133

Dear Captain Korwath:

Senate Bill 414 was recently signed into law by Governor Edmund G. Brown, Jr. and became effective January 1, 2016. This bill requires me to exercise my authority pursuant to Government Code 8670.13(d) and 8670.23.1(g), and to task your Harbor Safety Committee (HSC) with the following:

- Assess the presence and capability of tugs within your respective geographic areas of responsibility to provide emergency towing of vessels over 300 GRT to arrest their drift or otherwise guide emergency transit.
- The assessment for the San Francisco Bay area shall be initiated by May 1, 2016.
- The assessment shall consider, but not be limited to, data from available United States Coast Guard Vessel Traffic Systems, relevant incident and accident data, any relevant simulation models, and identification of any transit areas where risks are higher.
- The assessment shall consider the condition of tank and non-tank vessels calling on the harbor, including the United States Coast Guard’s marine inspection program and port state control program regarding risks due to a vessel’s hull or engineering material deficiencies, or inadequate crew training and professionalism.

My project officer for this assessment is Oil Spill Prevention Specialist Michael Coyne who may be contacted by e-mail at Mike.Coyne@wildlife.ca.gov or by phone at (916) 324-5659. Questions regarding the appropriateness of any assessment model or report format may be directed to Mr. Coyne or to my Prevention Branch Chief, Ted Mar, who may be contacted by e-mail at Ted.Mar@wildlife.ca.gov or by phone at (916) 323-6281.

Conserving California’s Wildlife Since 1870

Appendix D – Historic Casualty Data Collected (2010-2016)

Appendix D Vessels needing Tow reported to USCG District 11

SECTOR SAN FRANCISCO												
DETAILS OF SHIPS NEEDING TOW OUTSIDE COLREGS DEMARCATION LINE												
2010 - 2016												
Incidents reported to Coast Guard District 11, Alameda, CA												
DATE	VESSEL TYPE		NATURE OF CASUALTY (NOTE 1)			COMMENT	POSITION		DIRECTION	PILOT ABOARD	WEATHER	DISPOSITION
	TANKERS	OTHER VESSELS	PROPULSION	STEERING	ELECTRICAL							
4/22/2012		Freight Ship	1			Loss of propulsion 24NM North West of Pt Reyes due to air in the fuel lines and clogged fuel filters. During tow, the main engine fuel oil system was flushed with MDO and filters cleaned, although the main engine was eventually started it was not run continuously prior to arrival.	38 08.3 N	123 31.5 W	INBOUND	Y/W		Towed into port.
5/20/2016		Freight Ship	1			Lost propulsion while testing its backing bell and was then unable to restart due to low starting air and possible computer problems. Found it was material failure of the TGA shaft encoder on the main engine, which subsequently sent incorrect electrical signals to the alarm panel, shutting down the engine.	37 40.2 N	122 39.2 W	INBOUND			Towed into port with the assistance of two tugs and moored in Anchorage 9.
TOTAL			2									

NOTE 1: Loss of propulsion incidents on deep draft ocean-going vessels over 300 gross tons OUTSIDE COLREGS DEMARCATION LINE.

Appendix E – United States Coast Guard Marine Inspection/Port State Control Program Data and Report

Overview

California Senate Bill 414 (SB 414) requires Harbor Safety Committees to assess the condition of vessels over 300 GRT calling on California (CA) ports. Additionally, assess the condition of the United States Coast Guard's (USCG) marine inspection program and port state control (PSC) program regarding risks due to hull or engineering material deficiencies, or inadequate crew training and professionalism.

Background

A Harbor Safety Committee is comprised of a diverse group of port stakeholders including both commercial and recreational waterway users, regulatory authorities, organized labor, and non-governmental environmental organizations. Though the Harbor Safety Committee is arguably the most comprehensive organization on a wide range of maritime related topics, many committee members believe assessing the condition of vessel's calling on California ports, and to assess the condition of the USCG's marine inspection and port state control programs, is beyond the level of the committee's expertise.

Few organizations possess the resources, and maritime expertise to properly conduct an assessment of federal programs as required by SB 414. In matters relating to the effectiveness of federal programs, the United States Governmental Accountability Office is often the organization called upon to objectively assess a federal agency. However, the Los Angeles-Long Beach and the Harbor Safety Committee of the San Francisco Bay Region (HSCs) employed an innovative and streamlined approach to systematically meet the SB 414 mandates by comparing PSC regimes' data.

Assessment – USCG Port State Control Program and Foreign Flag Vessels

Currently, a worldwide network of regional co-operation PSC ministries exists with the objective to eliminate substandard shipping. There are a total of nine regional PSC agreements / Memorandum of Understandings (MoUs) to include: Abuja MoU, Black Sea MoU, Caribbean MoU, Indian Ocean MoU, Mediterranean MoU, Paris MoU, Riyadh MoU, Tokyo MoU, and Vina del Mar Agreement.²⁴

The Memorandum of Understanding on Port State Control in the Asia-Pacific Region (Tokyo MoU) and Paris Memorandum of Understanding on Port State Control (Paris MoU) established and maintain effective and close co-operation both at the administrative and technical levels. Representatives of the two Secretariats attend the Port State Control Committee meetings of each MoU on a regular basis and the USCG holds observer status within both of these two organizations.²⁵

For this assessment, the Tokyo MoU, Paris MoU and United States Coast Guard, will be referred to as PSC regimes and only data provided from these three organizations will be referenced. The close cooperative relationship between the USCG, the Tokyo MoU and the Paris MoU facilitates uniform and trackable data values.

²⁴ Tokyo MoU, "Annual Report on Port State Control in the Asia-Pacific Region 2015", 2016, p 9.

²⁵ Ibid.

Appendix E – United States Coast Guard Marine Inspection/Port State Control Program Data and Report

PSC regimes including the USCG have established a vessel targeting matrix to rationally and systematically determine the probable risk posed by foreign flag ships. In developing their risk assessment methodology, the PSC regimes recognize there are key, trackable and quantifiable data points that are often a reflection of a vessel's operational condition and compliance with international safety and environmental protection standards.²⁶

Three primary factors or data points a PSC's targeting matrix utilize include: Ship Management Company, Recognized Organizations (Classification Societies), and the Flag State of a ship. Secondary trackable and quantifiable data points include ship type, ship age as well as a PSC's previous experience/issues with a particular ship.^{27 28}

If a PSC's targeting matrix identifies a ship of potential higher risk, and a subsequent Safety Examination determined the ship is substandard, a detention of the ship may be ordered by the PSC. "Ships are detained when the condition of the ship or its crew does not correspond substantially with the applicable conventions. Such strong action is to ensure that the ship cannot sail until it can proceed to sea without presenting a danger to the ship or persons on board, or without presenting an unreasonable threat of harm to the marine environment."²⁹

Amongst the list of PSC detainable deficiencies are hull and engineering material deficiencies, inadequate crew training, and professionalism. Vessel detentions thus provide for a key and universal trackable data point to meet the requirements of SB 414.

Methodology

The HSCs sought to determine the quality of vessels calling on California ports by identifying the rate that vessels were being detained by the USCG. Additionally, determine if the detention rate in California was higher or lower than the rate of all vessels being detained in other parts of the United States/world.

The HSCs reviewed six years of data published in the PSC regimes' annual reports from 2010 to 2015. This assessment will show the California Vessel Detention Rate (CVDR) as compared with the combined six year average Detention Rate as detailed the annual reports produced by each PSC authority to include:

- PSC data from forty-five countries on five continents
- 651,134 PSC vessel boardings
- 350,943 Safety Examinations
- 12,991 Detentions

The PSC Average Detention Rate is an average for all three surveyed PSC regimes. It is based upon total number of Safety Examinations and Detentions from each PSC authority, over a six year period.

If the CVDR is above the PSC Average Detention Rate, the CVDR is considered undesirable. A CVDR percent above (or leads) PSCs Detention Rate suggests the qualities of vessels inspected in California on

²⁶ "PSC Safety Targeting Matrix – Safety Policy." *United States Coast Guard (USCG)*. USCG, 12 January 2016. Web. 6 July 2016.

²⁷ Ibid.

²⁸ "Ship Risk Calculator – Ship Risk Profile." *Paris MoU*. Paris MoU, 2016. Web. 6 July 2016.

²⁹ Tokyo MoU, "Annual Report on Port State Control in the Asia-Pacific Region 2015", 2016, p 11.

Appendix E – United States Coast Guard Marine Inspection/Port State Control Program Data and Report

average are substandard compared to vessels inspected in other parts of the United States/world and thus require more vessels to be detained.

Conversely, if the CVDR is below the PSC Average Detention Rate, the CVDR is considered desirable. A CVDR percent below PSCs Detention Rate suggests the quality of vessels inspected in California on average are of a higher standard than vessels inspected in other parts of the United States/world and thus require fewer vessels to be detained.

Findings

A review of the USCG's electronic notice of arrival data for the calendar year 2015 revealed that 1,888 individual foreign vessels intended to call on California ports in 2015.³⁰ Referencing the USCG's 2015 PSC Annual Report, the USCG's District 11 conducted 1,083 Safety Examination in California. Accordingly, the District 11's vessel targeting matrix led to a PSC Safety Examination rate of 57.36% of all foreign flag vessels arriving in California.

The below table references Attachment 1 and shows six years of cumulative safety examination and detention data per PSC authority. The Detention Rate can be derived by dividing Detentions by Safety Examinations. "Detention rates are expressed as a percentage of the number of Safety Examinations, rather than the number of individual ships inspected to take account for the fact that some ships may be inspected more than once in a calendar year."³¹

³⁰ All ships arriving from a foreign port are required to give ninety-six (96) hours advanced notice of their arrival to the USCG.

³¹ Paris MoU, "Paris MoU on Port State Control, Annual Report 2015", 2016, p 16.

Appendix E – United States Coast Guard Marine Inspection/Port State Control Program Data and Report

Table 1: Six Year Cumulative Inspection and Detention Data per PSC Authority

PSC Authority	Vessel Boardings	Safety Examinations	Detentions	PSC Average Detention Rate
Tokyo MoU	97,637	178,148	8,145	4.5720%
Paris MoU	89,407	115,399	4,022	3.4853%
USCG less District 11	417,038	50,619	749	1.4794%
USCG District 11	47,052	6,777	75	1.1067%*

Note: * 1.1067% represents the California Vessel Detention Rate (CVDR)

Table 1 reveals that the California Vessel Detention Rate or CVDR is 1.1067%. The CVDR is equal to the USCG District 11 Detention Rate due to fact that all vessel Safety Examinations were conducted in or adjacent to California waters.

Additionally, Table 1 reveals that the CVDR is below the Detention Rate of the other PSCs. A CVDR below the PSC Average Detention Rate is a desirable situation. It indicates the quality of vessels inspected in California on average are of a higher standard than vessels inspected in other parts of the United States/world.

Appendix E – United States Coast Guard Marine Inspection/Port State Control Program Data and Report

Table 2 compares the California Vessel Detention Rate weighted average against both the domestic and international PSC regimes' weighted average detention rates. Using the California Vessel Detention Rate in this way allows for comparing PSC regimes detention rate both domestically and internationally and enables for the relative assessment as to the condition/quality of vessels calling on California ports.

Table 2: Six Years Weighted Average Detention Rate Computation

PSC Authority	No. of Safety Examinations	No. of Detentions	Detention Rate %	Weighting % Based on Detentions*	Detention Rate Weighted Average** (Detention Rate % x Weight)
(A)	(B)	(C)	(D)	(E)	(F)
			(C) / (B)		(D) X (E)
Tokyo MoU	178,148	8,145	4.5720%	62.70%	2.8665%
Paris MoU	115,399	4,022	3.4853%	30.96%	1.0790%
USCG less D 11	50,619	749	1.4794%	5.77%	0.0854%
D11 (CVDR)	6,777	75	1.1067%	0.58%	0.0064%
Totals	350,943	12,991	-	100%	4.0374%
PSC Detention Rate Weighted Average (W.A)					4.0374%
CVDR W.A.					0.0064%
CVDR W.A. Below PSC Detention Rate W.A.					4.0309%
Percent CVDR W.A. is below PSC Detention Rate W.A.					-99.84%***

Notes:

* Calculation is Number of Detentions by a PSC divided by the sum of all PSC Detentions (12,991)

** Calculation is Detention Rate % multiplied by the Weighting %

*** Calculation is 4.0374% less 0.0064% divided by 4.0374%

Assessment - Marine Inspection Program and U.S. Flag Vessels

Much like the USCG's PSC program has been established to inspect and enforce safety and environmental standards on foreign ships calling on ports in the United States; the USCG's Marine Inspection Program (MIP) inspects and enforces safety and environmental standards on United States vessels. Though the standards of the PSC program and the MIP may vary in scope, each program functions to meet the same overarching need. That is, to determine that both foreign and domestic vessels comply with the all applicable laws, rules, and regulations relating to safe construction,

Appendix E – United States Coast Guard Marine Inspection/Port State Control Program Data and Report

equipment, manning, and operation and that they are in a seaworthy condition for the services in which they are operate (33 CFR § 1.01-20).

Methodology

Essentially, Port State Control authorities that makeup the Paris and Tokyo MoUs act as third party auditors. A PSC inspection (or audit) is an attempt to verify that a vessel, its operator and flag state (the country in which a vessel is registered) meet applicable conventions, safety and environmental standards; thus provides for an independent, unbiased and creditable means to access United States vessels and speaks to the quality and effectiveness of the USCG's MIP.

Published each year in the Paris MoU and Tokyo MoU Annual Reports, is an updated document entitled, "White, Grey and Black (WGB) List". The WGB List represents the full spectrum, from quality flag states to flag states with a poor performance that are considered high risk. It is based on the total number of inspections and detentions and is the results from PSC inspections.³² The WGB List reflects the quality of a flag state's (marine) inspection programs as well as the quality of vessels, and vessel operators.

The White List contains a list of flag states found to be of higher quality and lower risk. Conversely, the Black List contains a list of flag states found to be substandard. Black List flag states are deemed to be of high risk.³³ The Gray List is a list of flag states that may be simply described as average, average being considered less than ideal.

From 2010 to 2015 the flag state United States has appeared on the Tokyo MoU's White List for the past six consecutive years and on Paris MoU for the past four consecutive years. Note, in 2010 and 2011 the flag state United States appeared on Paris MoU's Gray List.

Expressed differently, from to 2010 to 2015, out of a possible twelve trials³⁴ (six trials in the Tokyo MoU and six trials in the Paris MoU), the flag state United States attained White List, low risk status ten out of twelve trials or 83% of the sample period. From 2012 to 2015 out of a possible eight trials (four trials in the Tokyo MoU and for trials in the Paris MoU) the flag state United States attained White List, low risk status eight out of eight trials or 100% of the sample period.

Conclusion

Many committee members expressed reservations as to the ability of a Harbor Safety Committee to properly conduct an assessment of a federal program such as required by California Senate Bill 414. Yet, The Los Angeles-Long Beach Harbor Safety Committee and the Harbor Safety Committee of the San

³² "White, Grey and Black List." *Paris MoU*. Paris MoU, 2016. Web. 27 December 2016.

³³ Ibid.

³⁴ According to StatTrek.com, a binomial experiment is a statistical experiment. The experiment consists of set number of repeated trials. Each trial can result in just two possible outcomes, "success" and "failure". The trials are independent; meaning the outcome on one trial does not affect the outcome on other trials. In the case, "success" defined as a flag state listed on the White List and "failure" defined as flag state not listed on the White List.

Appendix E – United States Coast Guard Marine Inspection/Port State Control Program Data and Report

Francisco Bay Region employed an innovative and streamlined approach to assess the condition of the United States Coast Guard's port state control program and marine inspection program.

The HSCs utilizing the Detention Rate derived from PSC regimes data was able to quantify the quality of vessels calling on California ports by comparing the California Vessel Detention Rate weighted average against the combined PSC regimes' detention rate weighted average. Using the California Vessel Detention Rate in this way enables for the relative assessment as to the condition/quality of vessels calling on California ports.

The assessments results were definitive and conclusive. Table 2 shows the California Vessel Detention Rate weighted average at 0.0064% is the lowest of all surveyed PSC organizations. Table 2 also indicates that vessels calling on California are 99.84% less likely to possess the characteristics that would warrant a PSC detention than other parts of the world.

Independent third party audits more commonly referred to as PSC inspections over the last six consecutive years have reflected favorably upon the flag state of United States as well as the condition of the USCG's Marine Inspection Program. During the sample period (2010-2015), the flag state of United States attained White List, low risk status 83% of the time. Moreover, over the past four consecutive years (2012-2015), the flag state United States attained White List, low risk status 100% of the time.

After conscientious and thorough review of the of data presented in this study, including PSC data from forty-five countries on five continents; 651,134 PSC vessel boardings; 350,943 Safety Examinations, 12,991 Detentions the HSCs find the following: The condition of United States vessels 300 GRT and greater, the condition of foreign vessels calling on California ports, the condition of the United States Coast Guard's Marine Inspection Program and Port State Control program to be adequate.

Appendix E – United States Coast Guard Marine Inspection/Port State Control Program Data and Report

Six Years of PSC Data

Attachment 1

Tokyo MoU PSC Data				
Year	Ship Boardings	Safety Examination	Detentions	Detention %
2015	17,269	31,407	1,153	3.6712%
2014	16,761	30,405	1,203	3.9566%
2013	16,861	31,018	1,395	4.4974%
2012	16,439	30,929	1,421	4.5944%
2011	15,771	28,627	1,562	5.4564%
2010	14,536	25,762	1,411	5.4771%
Total	97,637	178,148	8,145	4.5720%

Paris MoU PSC Data				
Year	Ship Boardings	Safety Examination	Detentions	Detention %
2015	15,246	17,858	595	3.3318%
2014	15,377	18,430	612	3.3207%
2013	14,108	17,687	668	3.7768%
2012	14,646	18,308	669	3.6541%
2011	15,268	19,058	688	3.6100%
2010	14,762	24,058	790	3.2837%
Total	89,407	115,399	4,022	3.4853%

USCG (All Districts) PSC Data				
Year	Ship Boardings	Safety Examination	Detentions	Detention %
2015	73,752	9,265	202	2.1802%
2014	79,091	9,232	143	1.5490%
2013	83,535	9,394	121	1.2881%
2012	72,309	9,469	105	1.1089%
2011	79,031	10,129	97	0.9576%
2010	76,372	9,907	156	1.5746%
Total	464,090	57,396	824	1.4356%

USCG District 11 PSC Data				
Year	Ship Boardings	Safety Examination	Detentions	Detention %
2015	7,570	1,083	24	2.2161%
2014	8,113	1,020	12	1.1765%
2013	8,529	1,185	7	0.5907%
2012	7,491	1,163	14	1.2038%
2011	8,212	1,211	9	0.7432%
2010	7,137	1,115	9	.8072%
Total	47,052	6,777	75	1.1067%

Appendix F – Harbor Safety Committee of the San Francisco Bay Region: Best Maritime Practice- Emergency Offshore Towing

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- Appendix A: Offshore Towing Risk Matrix
- Appendix B: SF Bay Tug List (See <http://www.sfm.org/support/hsc/kipsratings/KIPSRatings.htm>)
- Appendix C: Emergency Tow Vessel Capability Matrix
- Appendix D: SOLAS regulation II-1/3-4
- Appendix E: Sample Emergency Tow Booklet (ETB)
- Appendix F: Communication Checklist
- Appendix G: Ship Rescue Requirement Checklist
- Appendix H: Tow Configuration Examples

1. OVERVIEW

The objective of this Best Maritime Practice is to set forth the Harbor Safety Committee's expectations regarding the planning and execution of emergency towing operations. This BMP provides guidance to ensure that the best towing assets with the most appropriate equipment and properly trained crews are deployed from San Francisco Bay for emergency towing. This BMP has been compiled so that the assigned tug(s) and vessel in distress have a common understanding of what is likely to occur in the event an emergency towing operation is necessary.

The following entities have a role in executing this Best Maritime Practice:

- 1) The San Francisco Harbor Safety Committee – With representatives from within the Maritime Industry, Regulators, Environmentalists, and the general public this organization has proven to be a valuable team to insure all stakeholder interests are represented.
- 2) Vessel Owners/Operators – The companies that operate the vessels that provide the resources to keep our economy moving.
- 3) San Francisco Bay Area-based Tug Companies – The companies that conduct various towing operations on San Francisco Bay and are capable of performing offshore Emergency Ship Towing.

2. GEOGRAPHIC SCOPE

The jurisdiction of the Harbor Safety Committee of the San Francisco Bay includes all of the inland Bay waters and extends to the "SF" buoy and the sea approaches to San Francisco Bay east of that point. This BMP is intended to protect the resources within the San Francisco Bay by ensuring that appropriate actions are taken to prevent a drift grounding along the CA coast and the consequent environmental damage, which would ensue both to the coast and possibly to the Bay. The tenets of this BMP apply to emergencies within the Bay, and those outside of San Francisco Bay, which may require the deployment of the organic tug assets normally available in San Francisco Bay. The anchorages and dock spaces which may be the final destination for any vessel experiencing a loss of propulsion whether offshore or within the Bay are located within San Francisco Bay, as are many of the Potential Places of Refuge (PPOR). The decision on the final destination for an emergency tow will be made by a Unified Command, defined in Section 3 below.

Appendix F – Harbor Safety Committee of the San Francisco Bay Region: Best Maritime Practice- Emergency Offshore Towing

3. GENERAL GUIDELINES / COMMUNITY RESPONSIBILITIES

EARLY NOTIFICATION

The USCG has developed a Homeport Alert Warning System for early notification to tug companies of potential offshore emergencies that may require the use of tugs. This early notification is for informational purposes only and allows the industry to begin to assess their equipment and crew capabilities and timelines for an organized potential response. The tug company can greatly reduce the risk to its crews and be more productive preparing the tug while it is in the harbor rather than having crews do the prep work on deck at sea. Once a company is selected by the Responsible Party, response time will be dependent on the urgency of the situation. All tug companies with interest in and capabilities of responding to Emergency Ship Towing situations offshore are encouraged to sign up for and enroll in the Home Port Alert Warning System, which may be done by contacting the Coast Guard.

RESPONSE PRIORITY

The Harbor Safety Committee has established the following priority actions for emergency towing situations. Parties should consult closely with the Coast Guard to collaboratively establish specific priorities for each emergency towing incident:

- Triage – assess the situation and send appropriate assets to address the highest concern situation (eg, drift grounding)
- Stabilize – initially stabilize the drifting vessel and isolate it from immediate danger. If adequate assets are not initially available to begin a towing evolution, it may be necessary to send smaller / less powerful assets to temporarily stabilize and hold the vessel.
- Tow – once the highest risk situations have been avoided and the situation is stable, commence tow to gain full control of the situation.
- Identify Destination – Identify a destination for the towed vessel (if applicable). Should the situation warrant use of the PPOR process (as determined by the Coast Guard and/or appropriate Unified Command), begin vetting process for PPOR within the Bay. Note: the typical emergency ship towing scenario will not require use of the PPOR process.

For incidents that occur within the San Francisco Bay, available tug assets will be immediately dispatched to respond to the situation. Due to the traffic density within the Bay, most casualties which result in the need for such assistance occur where adequate tug assistance is immediately available. This BMP outlines the procedures and practices to ensure timely and appropriate response to incidents in the offshore environment.

The Typical Decision/Action Matrix for Emergency Offshore Towing (Appendix A) graphically depicts the risk-based priority for getting tugs underway and on scene outside of the Golden Gate. The Matrix is a tool designed to assist the Coast Guard, vessel operators and towing companies in determining the highest risk areas, and to inform vessel operators of potential actions and expectations of the Coast Guard given the distance offshore. The Matrix does not definitively dictate the boundaries between the areas of highest, medium and low risk, but rather is a tool to enhance risk assessment and decision making. Other factors such as prevailing weather, vessel traffic conditions, and vessel material condition also impact assessment of risk and associated response posture. The goal of any response should be to prevent a vessel from drifting into the highest risk (red) areas without the assistance of adequate tugs to stabilize and control the situation. When an incident occurs further off the coast, where the risk of the vessel drifting near shore is reduced, it is possible and prudent to spend more time preparing a response and tow plan.

Under normal circumstances, the Coast Guard will direct the RP to ensure that adequate tugs to control the situation are in place at the 12nm line. The matrix is designed to prompt action in such a manner as to ensure this safeguard is in place and actionable. The Coast Guard will typically require a minimum two tug escort for vessels entering San Francisco Bay following a loss of propulsion.

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AVAILABLE TOW VESSELS AND RECOMMENDED TOWING EQUIPMENT

An inventory of towing vessels in the San Francisco Bay that may assist a vessel offshore can be found in (Appendix B). The inventory is also available on the San Francisco Marine Exchange web site in the Harbor Safety Committee pages, <http://www.sfmex.org/support/hsc/kipsratings/KIPSRatings.htm>. This list identifies tugs which may be available for dispatch to an offshore emergency. The list is for guidance and reference only, since at any given time an individual tug on the list may not be available for various reasons. Specific guidance regarding the appropriate equipment to be carried on a towing vessel is outlined in Section 5 below. The Ship Rescue Requirement Checklist template (Appendix G) is recommended to ensure that preparation is thorough.

EMERGENCY TOW VESSEL CAPABILITY MATRIX

Parties involved in dispatching a rescue tug should refer to the “Emergency Tow Vessel Capability Matrix” (Appendix C) in this document as a guide with the understanding that circumstances may warrant the need for additional resources. The matching of rescue tugs to a vessel depends on a multitude of variables. Multiple studies have been completed on this subject and there are many variables which determine a suitable matching of tug quantities and power. The Matrix in Appendix C was compiled by the West Coast Offshore Vessel Traffic Risk Management Project which was cosponsored by the Pacific States/British Columbia Oil Spill Task Force and the Coast Guard, Pacific Area. Information was evaluated from five studies from separate sources to develop this Matrix.

INCIDENT MANAGEMENT/UNIFIED COMMAND

The RP should refer to their applicable emergency response plans to determine their responsibilities and needs. For certain incidents, the Coast Guard may determine the need for a Coast Guard Unified Command (UC) and Incident Command Post (ICP). In the event that either the Vessel Response Plan (VRP) indicates the stand-up of a UC or if the Coast Guard determines the need for a UC, the following personnel, at a minimum, should be represented and present within the ICP:

- USCG Federal On Scene Coordinator (USCG FOSC)
- State On Scene Coordinator (SOSC)
- Vessel Representative (RP)
- Applicable Towing Company representative
- Salvage Representative (as applicable under Salvage and Marine Fire Fighting Plan)

TOW DESTINATION

The vessel owner will work with Federal regulators (and in some cases State regulators and other stakeholders via Unified Command) to gain approval for the destination, taking into consideration the nature of the vessel’s casualty and repair needs. The vessel operator, Pilots, or regulators may require additional tugs to be dispatched as the vessel approaches the San Francisco Bay and certain points within the Bay to ensure safe transit.

CONTINUAL IMPROVEMENT / EXERCISE FREQUENCY

The San Francisco Harbor Safety Committee is committed to partnering for the greater public trust of California shorelines and is committed to conducting drills and exercises to maintain proficiency and to improve best practices. These exercises will provide the Harbor Safety Committee with a sound feedback mechanism on the applicability of this best practice and will allow the best practice an efficient means for continual improvement.

- a. The Tug Work group will organize and execute periodic drilling of Emergency Towing Situations.
- i. The Tug Workgroup should hold a tabletop exercise testing the incident response, incident management and response resources no less than twice in 3 years.
- ii. The Tug Workgroup should also perform a field exercise involving an actual ship with the objective

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of testing tow gear, techniques and communication, and sharing lessons learned across the local maritime community, no less than once every 3 years.

- iii. An actual Emergency Ship Tow may count towards drill credit if the towing company involved is willing to present to the Workgroup a review of the actual tow.

4. VESSEL/OWNER/OPERATOR (RP) RESPONSIBILITIES

GENERAL

This Best Maritime Practice is intended to assist owners/operators in preparing their ship for an emergency towing incident. Every Ship Master calling upon San Francisco Bay should review this best practice in its entirety prior to his/her first arrival in San Francisco Bay. Owners, operators and crews should take into consideration that the nature of an emergency does not allow much time for deliberation. Accordingly, emergency procedures should be developed and practiced beforehand. The International Maritime Organization has developed Guidelines for owners/operators on preparing emergency towing procedures (MSC.1/Circ.1255) and Guidelines on emergency towing arrangement for tankers (MSC.35(63), as amended) to assist vessels with meeting the requirements of SOLAS regulation II-1/3-4 (Appendix D). The IMO has also developed Guidelines for Safe Ocean Towing (MSC/Circ884), which does not apply to salvage or rescue towing services but provides additional guidance which may be useful for towing vessels.

SHIP EVALUATION

The Master/Crew/Owner/Operator of a vessel should prepare an evaluation to identify their ship's towing capabilities and limitations under various towing configurations. This evaluation/inspection should take into consideration the structure of the ship, the safe working loads of the mooring and ground tackle aboard the ship, the ability to use powered equipment under various causalities, and the equipment aboard the vessel that could be used in an emergency towing situation. Consult SOLAS regulation II-1/3-4 (Appendix D) for further details.

PROCEDURES

In conjunction with the Ship Evaluation, the vessel owner/operator shall develop procedures for making up to a rescue tug. Procedures should be developed for various emergency scenarios taking into consideration scenarios involving an immediate threat of grounding, weather conditions (mild & severe), and non-availability of onboard power. Procedures should be specific to facilitate proper execution by crew members. Diagrams of possible rigging scenarios could be developed into a matrix to allow for rapid identification of a tow plan once a ship finds itself in a specific situation.

TRAINING

As with any casualty the possibility of a successful outcome is increased if the crew is trained in dealing with such a situation. The ship-specific procedures should be shared with the crew and Emergency Towing Drills should be incorporated into the ship's drill schedule. Through regular drills and post-drill critiques the ship-specific procedures can be updated and improved from lessons learned during training which will further increase the chance of a successful outcome in an emergency situation.

EMERGENCY TOW BOOK

The inventory gathered during the evaluation process and the resulting procedures should then be documented in a ship-specific Emergency Tow Book (ETB). A sample template of an ETB developed by the IMO is included as Appendix E. Vessel Owner/Operators/Agents should have access to this information and be able to immediately distribute it via email to the towing company and to other industry parties participating in the response. Receipt of a copy of the ETB prior to departure on to the distressed vessel will assist the towing companies to more efficiently prepare for the job and is a key factor in the success of the emergency tow.

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NOTIFICATION

Early notification to the Coast Guard of a vessel casualty is a key element of initiating an effective response. Vessel owners and operators are required to provide notifications to the Coast Guard in accordance with 46CFR4 and 33 CFR 161 (when within the VTS Area).

COMMUNICATION

In the event of a casualty that may require an emergency tow, time is critical. Early activation of a response by the vessel will decrease the severity of the casualty. Most vessels will never encounter the need to activate such a response, but, if required, the complexity of the situation will be hectic and difficult to relay. The checklist contained in (Appendix F) is included in this BMP to serve as a reference for the timely and accurate communication of key information needed to begin a response.

Owners/Operators/Brokers should expedite the decision of which tug company to use so that the tug company can activate its plan.

VRP ACTIVATION

The RP shall activate their Vessel Response Plan (VRP); and/or their Salvage and Marine Firefighting Plan (SMFFP) as applicable under 33CFR155. The provisions of this BMP are non-regulatory in nature and are complementary guidance to VRPs and SMFFPs. The goal of this BMP is to prevent a drift grounding situation by ensuring that appropriately sized and equipped tugs are dispatched to enact the Emergency Towing requirement of the SMFFP in a timely manner. In the event that either the Vessel Response Plan (VRP) indicates the stand-up of a UC or if the Coast Guard determines that a UC is needed, the RP must have a representative present in the UC.

5.TUG COMPANY’S RESPONSIBILITIES

GENERAL

This Best Maritime Practice is also intended to provide towing companies who may be called upon to respond with guidance to ensure that their tug is prepared to respond safely and effectively. Tug companies intending to engage in emergency ship towing operations are encouraged to review and ensure that their Safety Management System is inclusive of control measures that are applicable to such towing operations.

Each tug company offering emergency towing services should have specific procedures contained in their Safety Management System (SMS), or equivalent Operations Manual. The procedures should include specific requirements for what information, equipment, and crew complement is required for various emergency towing scenarios. The Ship Rescue Requirement Checklist template (Appendix G) can be a useful tool in ensuring that preparation is thorough. Making up the vessel to the tug is the largest variable in the towing operation; therefore the tug operators’ procedures need to address various possible makeups. Appendix H shows examples of possible towing configurations that could be used for an emergency towing operation. Procedures should be divided up, separating tasks that should be completed prior to departure, while underway to the vessel, on scene arrival, and during the tow to the final destination. Job safety should be the number one priority and safety meetings with the crew should be held prior to departure and frequently during the operation, specifically including prior to making up to the vessel and after and an on scene risk assessment has been completed.

TRAINING

It is important not only to have procedures, but also to incorporate those procedures into the tug company’s training regimen. Not all the mariners working on tugs regularly handle the gear required to accomplish an emergency tow so it is critical that drills and exercises be held to simulate offshore towing operations. Drills should include a review of procedures for deploying an Orville Hook, use of a line throwing apparatus, deployment of an Emergency Ship Towing System (ESTS), a review of various kinds of ground tackle used in connecting a vessel tow. Tug companies offering Emergency Ship Towing

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services should participate in the Periodic HSC Emergency Towing Exercises. Tug companies should also attempt to hold training with their customers to incorporate ships into the training to more closely simulate actual responses.

COMMUNICATION

The USCG Home Port Alert Warning System alerts tug companies of the possibility of an emergency tow and allows them to begin the process of preparation. Swift and timely preparation can save valuable time in the overall response and significantly reduce risk. The USCG Home Port Alert Warning System message is for information purposes only; it does not award the job to a specific tug company. To the maximum extent possible, Owners/Operators/Brokers should expedite the decision of which tug company to use so that company can begin its preparations accordingly.

As soon as a tug company has been selected, it should be sent a copy of the ship's Emergency Tow Book (ETB). After an initial review of the ETB, the tug company should make direct contact with the vessel to discuss the specifics of the casualty using the communication checklist (Appendix F) as a reference to ensure that all pertinent information is gathered. A preliminary tow plan should be agreed upon during this communication, such that the vessel and the tug can begin preparations.

This first communication should also establish the primary and back up methods of communication, as well as a schedule of communications between the vessel and the lead tug.

RISK ASSESSMENT

Tug Companies should conduct a full Risk Assessment prior to getting underway. The Risk Assessment should be conducted with the objective of identifying and implementing any necessary control measures that will reduce the risk to personnel and equipment during the upcoming operation. If the company does not have an official Risk Assessment process in place, the local Coast Guard Sector has several tools available that may assist in this process.

MANNING

It is the sole responsibility of the tug company to ensure that their tug is crewed adequately. In addition to the minimum manning requirements of 46CFR15, the tug company should ensure that a suitable number of crew, with appropriate training to fulfill their roles on the voyage, are aboard the tug to safely execute the emergency towing operation.

EQUIPMENT

It is up to the towing company to ensure that suitable rescue towing equipment is inventoried, maintained in good working order and is readily available to be deployed. Since the various tug companies employ various equipment packages, a specific equipment list will not be included in the BMP. However, the Ship Rescue Requirement Checklist template (Appendix G) can be a useful guide for ensuring that preparation is thorough.

DEVELOPING THE TOW PLAN

The towing company should develop a tow plan consistent with its Safety Management System/Operations Manual and the ship's Emergency Towing Booklet. The tow plan should incorporate the tenets of the Best Practices of Dead Ship Towing as applicable to the situation. Tow plans are intended to be dynamic, allowing for deviations and adjustments as dictated by the changing conditions. Where conditions permit, the tow plan should be drafted and available for review prior to the tug departing for the Emergency Ship Tow.

ARRIVING ON SCENE/EVALUATION OF SHIP

When the tug arrives at the vessel's location the tug Master should circle the ship to check its condition, drafts and trim. Once that is done the Master should stop the tug and lay ahead and then astern of the

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ship to see how the ship and tug will drift and lay relative to each other when at each location. Keep in mind that different ships will lay to weather, seas and current differently and will drift to the lee side at different rates. If the Master determines that the actual conditions are significantly different than what was identified in the initial risk assessment, the Master should conduct an additional risk assessment and take necessary action to mitigate those risks. .

COMMUNICATING THE TOW PLAN

Once the tug Master establishes his final operational plan for taking the ship under tow, he should provide the ship with a copy so the vessel understands the rigging and what is expected of them in the operation. A final pre-job conference must be held between the Master of the lead tug and the vessel's Master once the vessels are in close proximity to one another. Close radio communications between the tug and ship are crucial to executing a successful tow. Often ships have communication procedures routing all external coms (from the tug) through the ship's bridge and then on to the working deck crew. This can be very challenging. If possible, the Master of the lead tug should request direct communications with the working deck supervisor.

EXECUTING THE TOW PLAN

Once the final tow plan has been communicated to the satisfaction of both Masters, the Tug Master should proceed with the tow connection, ensuring that personnel safety remains the priority. The Tug Master should now be able to pick the best orientation of his tug relative to the ship and position the tug to make the tow connection. In most cases this will end up being in the lee of the ship's bow, but it depends on the connection method to be used and the sea conditions. If the ship has severe bow damage, then a stern first tow will have to be considered. The Master should choose the position of the tug which reduces maneuvering and holds the tug at a constant safe distance to the vessel. If the weather is heavy, the disabled vessel is not in immediate danger of going aground on a lee shore, and it is in the interest of safety, the Master may choose to delay the tow connection until weather and sea conditions improve. Any such decision should be communicated to the Unified Command.

TOW ARRANGEMENTS, CONNECTION METHODS AND GEAR

The ship's connection to the tug's tow gear will depend on the arrangement set forth in the Ship's Emergency Tow Book (ETB). Preferably prior to departure, the tug should obtain a copy of the ship's ETB and talk to the vessel master in order to ensure that the tug's gear is ready to be deployed. (Since every Emergency Ship Tow varies, it is not possible to outline exactly how a tug should connect to a ship. That being said, it is important for Tug Companies to utilize all resources available to them to execute a successful tow.

TOWING DESTINATION

The Tow Plan should include a destination for the ship well before the tug and ship are made up. The vessel owner must work with Federal (and State regulators and other stakeholders as required) to gain approval of the destination taking into consideration the nature of the vessel's casualty and associated repair needs. Vessel owners, Pilots, and/or regulators may require additional tugs or other operational controls as the vessel approaches its destination. Parties should reference the existing Best Maritime Practice for Dead Ship Towing in San Francisco Bay.

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