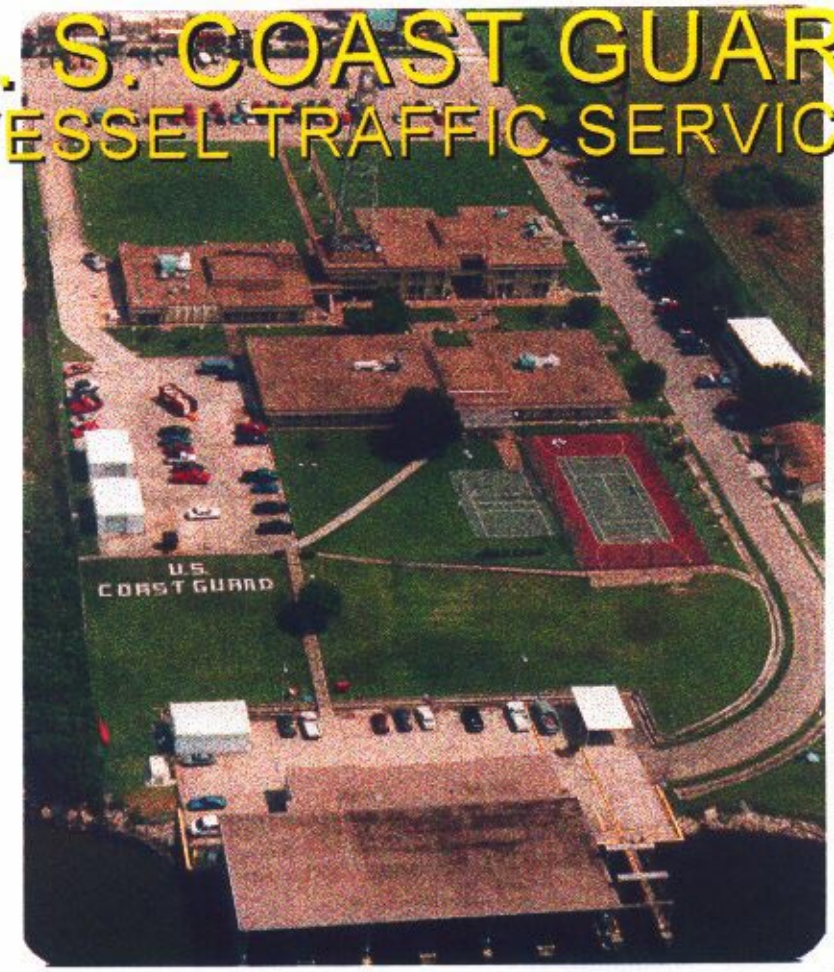
U.S. COAST GUARD
VESSEL TRAFFIC SERVICE



HOUSTON GALVESTON
USER'S MANUAL

VTS Houston/Galveston

Commanding Officer
Coast Guard Vessel Traffic Service
Houston/Galveston
P.O. Box 545
Galena Park, TX 77547-0545

Telephone: (713) 674-8488 (24 Hours)
671-5153/5103
Fax: (713) 671-5159
VHF FM CH 11/12

Local Coast Guard Contacts

Marine Safety Office (MSO) Houston	(713)671-5100 (24 Hours) VHF FM CH 81
Marine Safety Unit (MSU) Galveston	(409) 766-3819 VHF FM CH 83
Coast Guard Group Galveston	(409) 766-5620 (24 Hours) VHF FM CH 16
Coast Guard Regional Examination Center	(713) 947-0044/45
National Response Center	1-800-424-8802 (24 Hours)

Eighth Coast Guard District

Commander (m)
Eighth Coast Guard District
Hale Boggs Federal Building
501 Magazine Street
New Orleans, LA 70130-3396

INTRODUCTION

Vessel Traffic Service (VTS) Houston/Galveston is a mandatory vessel movement reporting system established under the authority of the Ports and Waterways Safety Act of 1972. The purpose of the VTS is to facilitate safe, efficient waterborne commerce. Specifically, VTS exists so that it may prevent groundings, rammings, and collisions by sharing information and implementing appropriate traffic management measures. VTS maintains a Vessel Traffic Center (VTC) on the second floor of the Marine Safety Office (MSO) in Galena Park, TX. Inside the VTC, Coast Guard military and civilian personnel operate a VHF-FM communications network 24 hours a day, 365 days a year. This communications network, coupled with an extensive radar and closed circuit television suite, is used to exchange channel information with various VTS participants. The effectiveness of the VTS depends on the ability of mariners to provide timely, accurate, and pertinent information to the VTC.

MARINERS ARE CAUTIONED THAT REPORTS PROVIDED BY THE VTC ARE BASED LARGELY UPON INFORMATION RECEIVED FROM VTS PARTICIPANTS. VTS REPORTS CAN BE NO MORE ACCURATE THAN THE INFORMATION PROVIDED.

The Coast Guard welcomes any suggestions that may improve this manual or VTS Houston/Galveston . Suggestions may be forwarded to the Commanding Officer of VTS Houston/Galveston at the address listed on the inside front cover of this manual.

APPLICABILITY

Two levels of required participation exist in the Houston-Galveston Vessel Traffic Service Area (VTSA):

VESSEL MOVEMENT REPORTING SYSTEM (VMRS) USERS

- Every power-driven vessel of 40 meters (approx. 131 feet) or more in length, while navigating;
- Every towing vessel of 8 meters (approx. 26 feet) or more in length, while navigating;
- Every vessel certified to carry 50 or more passengers for hire, while engaged in trade.

VESSEL TRAFFIC SERVICE (VTS) USERS

- All vessels subject to the Vessel Bridge-to-Bridge Radiotelephone Act;
- All vessels required to participate in a VMRS within a VTSA.

VTS Users shall notify the VTS of any of the following;

(1) Marine Casualty as defined in 46 CFR; Part 4.05-1;
(2) Involvement in the ramming of a fixed or floating object;
(3) A pollution incident as defined in 33 CFR, Part 151.15;
(4) A defect or discrepancy in an aid to navigation;
(5) A hazardous condition as defined in 33 CFR, Part 160.203;
(6) Improper operation of vessel equipment required by 33 CFR, Part 164; and
(7) A hazardous vessel operating condition as defined in 33 CFR, Part 161.2.

VTS Users shall carry on board and maintain for ready reference a copy of these VTS rules (ie. VTS User Manual, Coast Pilot, etc.).

APPLICABILITY

INDIVIDUAL RESPONSIBILITIES

The safe operation of a vessel remains the responsibility of the vessel's master. If, in a specific circumstance, a VTS User is unable to safely comply with a measure or direction issued by the VTS, the VTS User may deviate only to the extent necessary to avoid endangering persons, property, or the environment. The deviation shall be reported to the VTS as soon as is practicable.

VTS MEASURES

The VTS may issue measures and directives to enhance navigation and vessel safety, and to protect the marine environment, such as, but not limited to:

(1) Designating temporary reporting points and procedures;
(2) Imposing vessel operating requirements; or
(3) Establishing vessel traffic routing schemes.

TRAFFIC ADVISORIES: VTS Houston/Galveston's traffic advisories at each reporting point consist of the following information:

(1) Traffic:

- All anticipated meeting situations before the next reporting point;
- All anticipated crossing situations before the next reporting point;
- All anticipated overtaking situations in which the vessel receiving the advisory may be overtaken by a vessel currently less than one reporting point astern.
- All anticipated overtaking situations in restricted visibility;

(2) AToN - all critical Aton (see GOOD THINGS TO KNOW)

(3) Channel Hazards

(4) VTS Measures

COMMUNICATIONS

VOICE CALL SIGNS

The VTC call sign is **"HOUSTON TRAFFIC"**. VTS Houston/Galveston requires captains/pilots to use the vessel's official name when calling the VTC. Houston, Galveston and Texas City pilots may use their individual identification number, in addition to the vessel's name. All communications must be in the English language.

DESIGNATED FREQUENCIES

- VHF-FM Channel 11 (156.550 MHz) for communicating with Houston Traffic inbound at Baytown Bend Light 113, or operating above that location in either direction.
- VHF-FM Channel 12 (156.600 MHz) outbound at Baytown Bend Light 113, or operating below that location in either direction.

VTS Users not maintaining a listening watch on the VTS frequency, are required to monitor VHF Channel 16 (156.800 MHz) and the vessel Bridge-to-Bridge frequency, VHF Channel 13 (156.650). Vessels which maintain a listening watch on the VTS frequency are not required to monitor VHF Channel 16.

REPORTING WAIVERS

On 02 July 1996, The Eight Coast Guard District Commander waived the 33 CFR 162.23 requirement concerning ferry Sailing Plans. VTS will continue to report how many ferries are in operation.

On 01 August 1997, the Eighth Coast Guard District Commander waived 33 CFR 161.19 requirement concerning 15 minute Sailing Plans. However, vessels shall provide sailing plans in sufficient time to allow advance traffic planning by the mariner and the VTC.

REQUIRED REPORTS FOR VMRS USERS

SAILING PLAN: VMRS Users must report the following information prior to entering the VTSA or getting underway:

- Vessel Name;
- Position;
- Destination;
- Tow Configuration (how many and # of loaded/unloaded barges)
- Vessel's Dimensions (length x beam x draft)
- Intended Speed

POSITION REPORT: VMRS Users must report its name and position;

(a) Upon point of entry into a VTS area;
(b) At designated reporting points;
(c) When directed by the VTC.

SAILING PLAN DEVIATION REPORT: VMRS Users must report;

(a) When its ETA to a destination varies significantly from a previously reported ETA;
(b) Any intention to deviate from a VTS issued measure or vessel traffic routing system; or
(c) Any significant deviation from previously reported information.

FINAL REPORT: VMRS Users must report its name and position;

(a) On arrival at its destination; or
(b) When leaving a VTS area.

ADDITIONAL REQUIRED REPORTS

CHANNEL OBSTRUCTION:

Operations which will obstruct any portion of the navigable channel/waterway, must be approved by the Captain of the Port (COTP) 7 days prior to the operation. You may contact the VTS for a copy of the Channel Closure Permit Application. Before commencing the operation, the VTC must know the following;

- Name of vessel/s
- Location
- Reason for obstruction
- Description of obstruction
- Estimated duration
- Tugs in attendance (if applicable)

MARINE INCIDENT REPORTS:

Report any grounding, fire, loss of steering, loss of propulsion, collisions, rammings, flooding, or other circumstance that reduces the capability of a vessel to safely maneuver or that endangers another vessel. Include in your report the following information:

- Vessel name
- Location
- Nature of incident
- If Coast Guard assistance is needed
- Extent of channel restrictions
- Is there damage, pollution, or injuries as a result of the incident
- Master's intentions

ADDITIONAL REQUIRED REPORTS

DISTRESS REPORTS:

Report flare sightings, distress calls, or sightings of vessels possibly in distress to the VTC with the following;

- Location
- Nature of distress
- Description of vessel/s in distress
- If your vessel is able to assist

FERRY VESSELS:

Vessels on a published schedule or route, which has been furnished to the VTS, are exempt from providing Sailing Plans, Position Reports, and Final Reports unless deemed necessary by the vessel's master or VTC controller. Ferries, must report mechanical casualties or conditions which may affect their safe navigation; 33 CFR, Part 161.12 (c).

DREDGES AND FLOATING PLANTS:

- Name
- Location
- Description of operation
- Channel restrictions/pipeline configurations
- Frequency
- Vessel notifications
- Assist tugs
- Operating impairments
- Duration of operations
- Phone number or point of contact

VTS REPORTING POINTS

All vessels required to participate in the VTS as a Vessel Movement Reporting System user must report at the following points on the appropriate VTS frequency:

1. Galveston Bay Entrance Channel Lighted Whistle Buoy “GB”
2. Galveston Bay Entrance Channel Lighted Buoys II & 12 GCG. Galveston Coast Guard Base (vicinity of Galveston Harbor Buoy 1)

T. Texas City Channel Light 12 (for vessels inbound or outbound in Texas City Channel

E. Bolivar buoy line at ICW mile marker 349

W. Pelican Cut at ICW mile marker 351

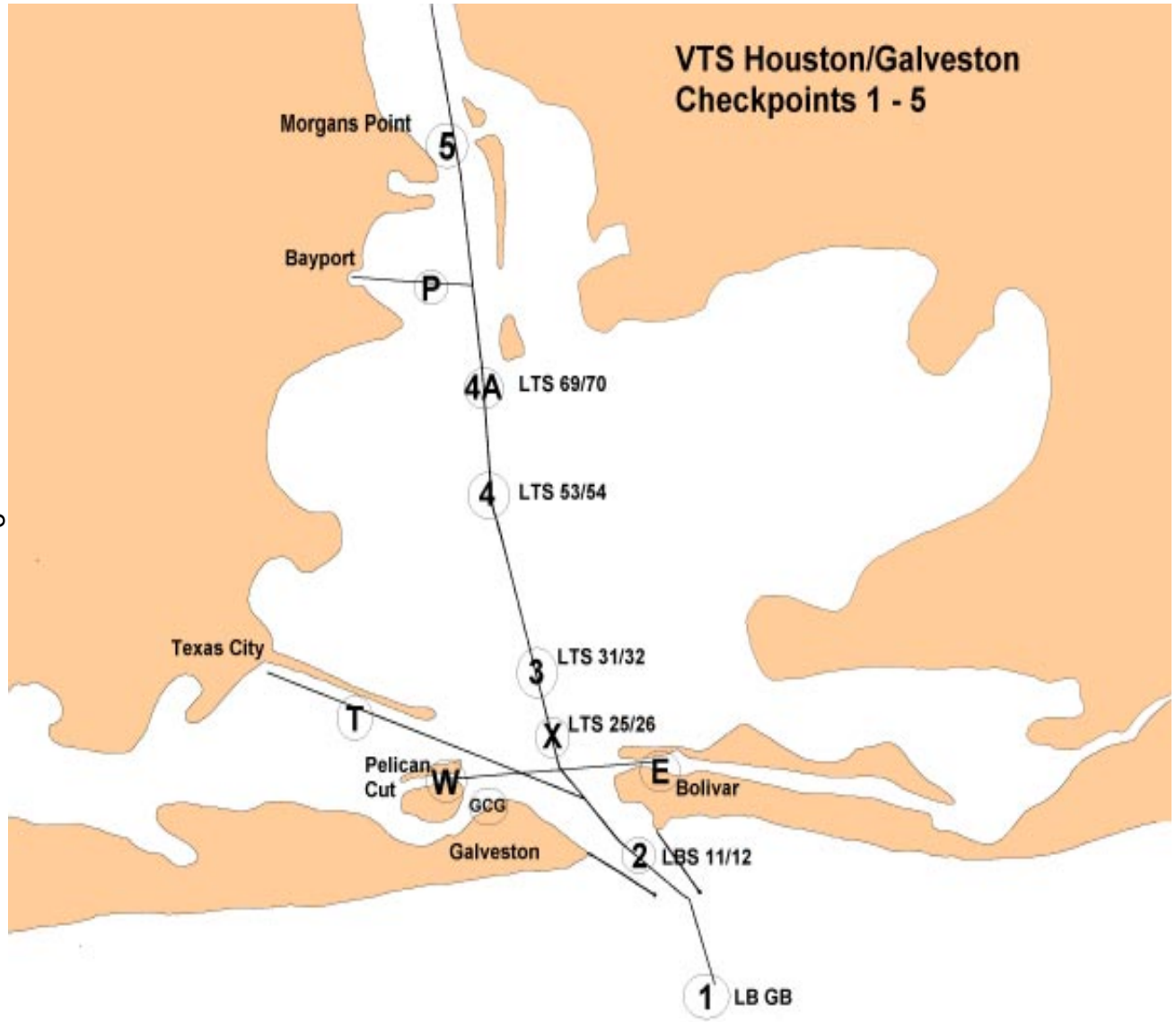
X. Houston Ship Channel Lighted Buoys 25 & 26 (for all tows inbound from Texas City or the ICW)

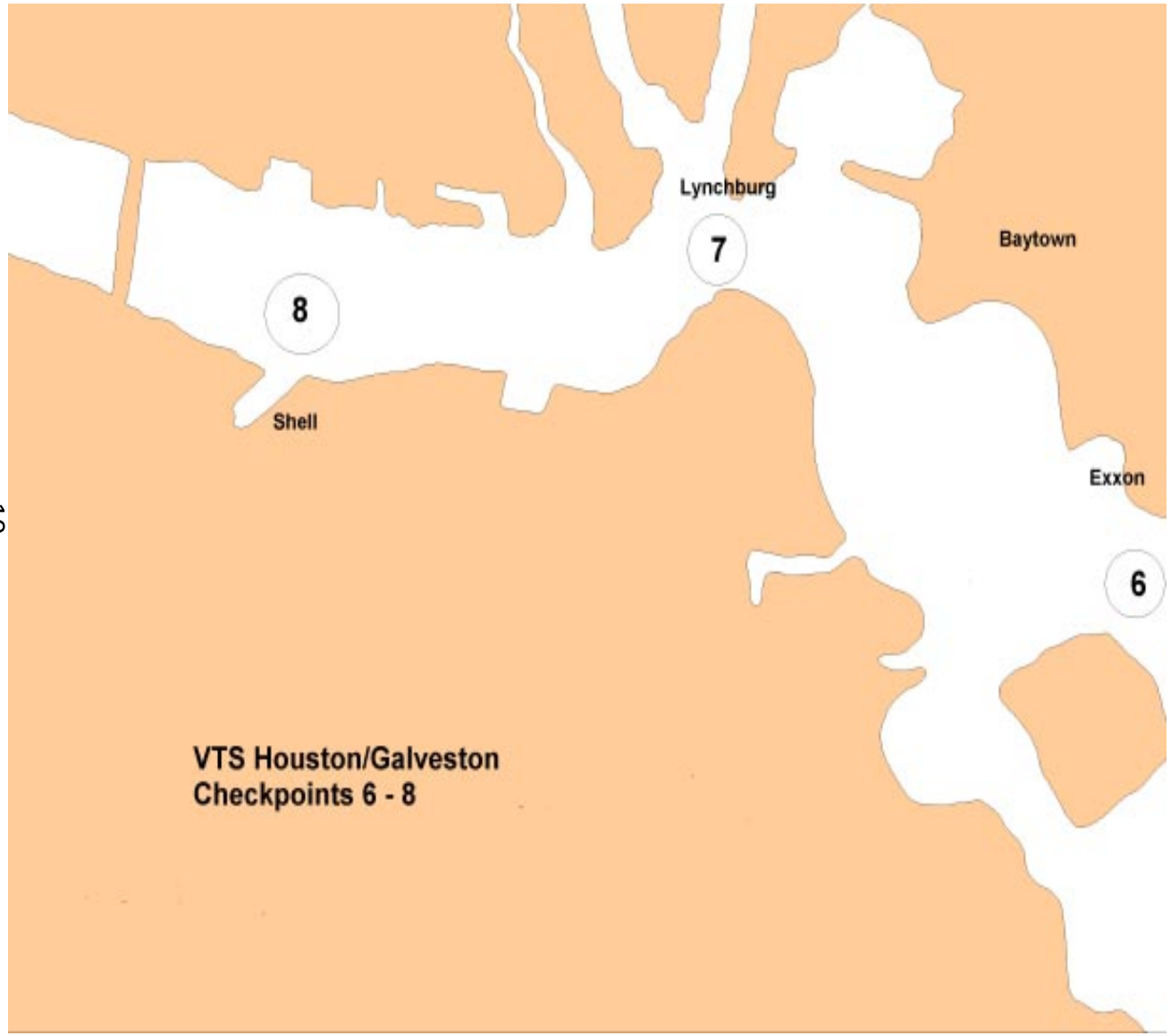
3. Houston Ship Channel Lights 31 & 32
4. Houston Ship Channel Lights 53 & 54 (Redfish Bar)

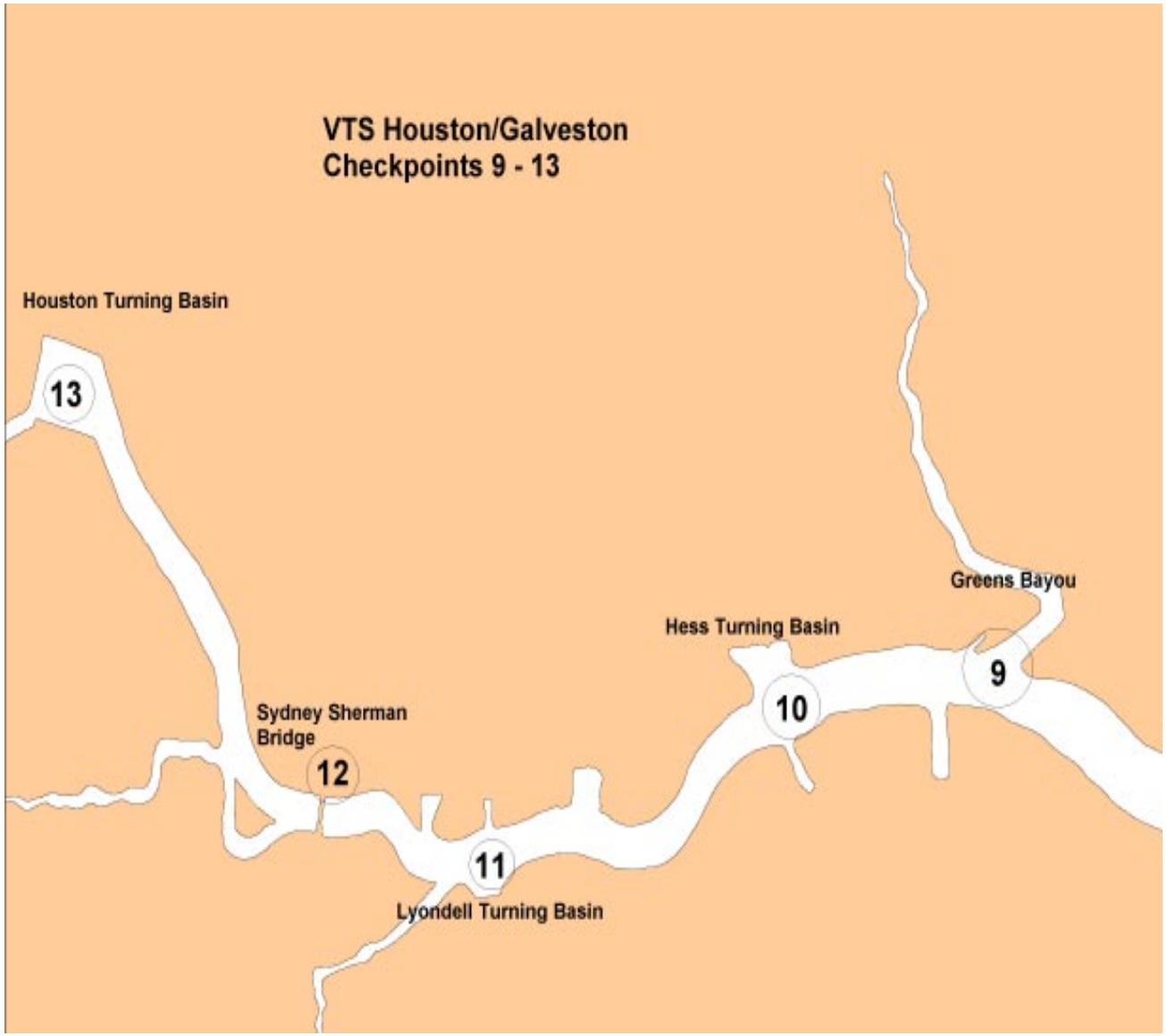
4A. Houston Ship Channel Lights 69 & 70 (for all tow vessels)

P. Bayport Ship Channel Lights 7 & 8

5. Morgans Point (vicinity of HSC LT 91)
6. Exxon Ship Dock #1 (vicinity of Baytown Bend LT 113)
7. Lynchburg Ferry Crossing
8. Shell oil Company Slip (vicinity of HSC LT 142)
9. Greens Bayou (vicinity of HSC LT 152)
10. Hess Turning Basin (vicinity HSC LT 160)
11. Lyondell Tuniing Basin
12. 1-610 (Sydney Sherman) Bridge
13. Houston Turning Basin


VTS Houston/Galveston
Checkpoints 1 - 5
Morgans Point
5
Bayport
P
4A
LTS 69/70
4
LTS 53/54
Texas City
3
LTS 31/32
T
X
LTS 25/26
Pelican
Cut
W
E
Bolivar
GCG
Galveston
2
LBS 11/12
1
LB GB


Lynchburg
7
Baytown
8
Shell
Exxon
6
VTS Houston/Galveston
Checkpoints 6 - 8


VTS Houston/Galveston
Checkpoints 9 - 13
Houston Turning Basin
13
Greens Bayou
Hess Turning Basin
9
10
Sydney Sherman
Bridge
12
11
Lyondell Turning Basin

GOOD THINGS TO KNOW

AToN (Aid to Navigation): Any private, state, or federally maintained light, beacon, or buoy. VTS continuously monitors the status of all AToN within the VTSA. To avoid redundancy and unduly congested radiotelephone frequencies, VTS will normally report only critical AToN discrepancies in traffic advisories. If additional AToN information is needed, simply ask your controller. The following are considered critical AToN:

- **Galveston Bay Entrance Channel Lighted Buoys 7, 8, 9, and 10; Lighted Bell Buoy 16; and Pelican Island Spit Shoal Lighted Buoy "P"**
- **Houston Ship Channel Lighted Bell Buoy 18; Lighted Buoys 25 and 26; and Lights 51, 52, 75, and 76**
- **Texas City Channel Lights 9, 10, and 17**
- **All range lights**

Coast Guard Group Galveston broadcasts AToN discrepancy information, including AToN within the VTSA, on VHF-FM Channel 22A four times daily at 0450, 0650, 1050, and 1650 (local time).

DOT FORM 2692: Department of Transportation Form 2692; Report of Marine Accident, Injury, or Death. Vessels are required to document all marine mishaps (i.e. groundings, collisions, allisions, loss of power)

DREDGE OPERATIONS: The Army Corps of Engineers (ACOE) is responsible for permitting dredge projects within the VTSA. VTS will monitor all dredging operations, reporting the following;

- dredge location
- pipeline configurations which restrict the channel or impede the flow of traffic

This does not relieve the mariner of the responsibility to communicate with the dredge and make proper passing arrangements in accordance with the Rules of the Road.

GOOD THINGS TO KNOW ...

FERRY CROSSINGS: The following ferry crossing zones are in the VTSA:

(1) Bolivar Precautionary Area: State operated ferries transit between terminals at Bolivar Peninsula and Galveston Harbor. These ferries operate throughout the year, 24 hours each day. There may be as many as six ferries operating during peak hours, summer months, and holidays. The ferries monitor VHF-FM Channels 13 and 16.

(2) Lynchburg Precautionary Area: State operated ferries transit between the mouth of the San Jacinto River and San Jacinto State Park. These ferries also operate throughout the year and 24 hours a day. There may be as many as two ferries in operation at any one time. The ferries monitor VHF-FM Channels 13 and 16.

VESSEL MOORINGS THAT IMPACT WATERWAY NAVIGATION

To reduce the risks associated with vessel mooring and bunkering operations at critical locations within the VTSA, the Captain of the Port has established certain restrictions. These restrictions were implemented upon agreements developed within the Port community. See appendix i for restricted locations.

A clear channel shall at all times be left open to permit free and unobstructed navigation by all types of vessels and tows normally using the various waterways.

GOOD THINGS TO KNOW ...

MSO: Marine Safety Office. The Coast Guard office responsible for overseeing the safety of the port and waterway. MSO Houston/Galveston is located in Galena Park, TX.

MSU: Marine Safety Unit. A sub-unit of Marine Safety Office. Marine Safety Unit Galveston is located in the federal building on Galveston Island.

OVERSIZED TOW PERMITS: 33 CFR 162.75 regulates the size, assembly, and handling of tows on waterways 150 feet wide or less. The MSU in Galveston processes all oversize tow permits (OST) for the Gulf Intracoastal Waterway (GICW) during normal business hours (0800-1600). MSO Houston-Galveston processes all OST permits after normal working hours, weekends, and national holidays. The applicable phone numbers and VHF-FM radio frequencies are listed on the inside front cover of this manual. .

GOVERNMENT MOORINGS: The Army Corps of Engineers maintains moorings in Bolivar, Pelican Cut, and Atkinson Island for temporary mooring of barges while awaiting weather, repairs, dock space, or orders. Federal Regulations require that any vessel or tow using these areas maintain a clear and unobstructed waterway for other vessel traffic. Vessels must be properly moored, display proper signals, lights, and have a minimum of one crew member on board at all times.

REPORTING POINTS: Also refered to as “check points.” The reporting points are specifically assigned geographic positions within the VTSA where VMRS users are required to make position reports. These reports can be found in 33 CFR 161 and pages 8 - 11 of this manual.

GOOD THINGS TO KNOW

SNAKE ISLAND SAFETY ZONE: The safety zone is defined by the west and northwest shores of Snake Island, the turning basin west of Snake Island, and the area of the Texas City Channel from the north end of the turning basin to a line drawn 000 degrees true from the northwesternmost point of Snake Island. All vessels are prohibited from mooring, anchoring, or otherwise stopping in the safety zone, except in case of an emergency. Barges are prohibited from fleeting or grounding in the zone. In an emergency, vessels shall advise the Captain of the Port of the nature of the emergency via the most rapid means available (normally through VTS).

ICW TRAFFIC: Because of the strong current and narrow channel width, VTS Houston-Galveston recommends all west bound tows avoid meeting east bound tows between Bolivar Peninsula Buoy 15 and Lighted Buoy 20.

TOWING ON A HAWSER (above Morgans Point): It is the policy of the COTP Houston/Galveston that all tows towing a barge astern on a hawser above Morgans Point must have an assist tug on the stern of the barge being towed.

ROCKS AT MORGANS POINT: Because of the submerged rocks, tow vessels are directed not to push in on the green side between Barbours Cut and Morgans Point.

GEORGIA GULF: Whenever a ship is moored at the Georgia Gulf Facility, ships, seagoing barges, tows in excess of 800 feet long and/or 100 feet wide are recommended not to meet or overtake any vessel within 500 yards of the facility.

NOTES

USER MANUAL
APPENDIX

Appendix i - INSHORE ANCHORAGE MOORING RESTRICTIONS

Appendix ii - FACILITY WORKING FREQUENCIES

Appendix iii - VTSA DISTANCE CHART

Appendix i

INSHORE ANCHORAGE

The Bolivar Roads Anchorage is defined by Galveston Bay Entrance Channel Lighted Bell Buoys 10, 12, and 16; Anchorage “A” is the “deep water” anchorage, restricted to vessels with a draft greater than 22 feet. Anchorage “A” can be used for temporary anchoring (not to exceed 48 hours). Vessels with a draft of 22 feet or less are prohibited from anchoring in this anchorage without approval. Anchorage “B” is the “shallow” anchorage for vessels with a draft of 22 feet or less.

(1) Vessels shall not anchor so as to obstruct the passage of other vessels proceeding to or from available anchorage spaces.

(2) Anchors shall not be placed in the channel and no portion of the hull or rigging of any anchored vessel shall extend outside the limits of the anchorage area.

(3) Vessels using spuds for anchors shall anchor as close to shore as practical, having due regard for the provisions stated above.

(4) Fixed moorings, piles, or stakes, and floats or buoys, for marking anchorages or moorings in place, are prohibited.

(5) Whenever the maritime or commercial interests of the United States so require, the COTP or authorized representatives are empowered to direct the movement of any vessel anchored or moored within the anchorage area.

Appendix i

MOORING RESTRICTIONS: This section outlines the restricted mooring locations and their specific requirements within the VTSA. Recent changes or modifications may be received by calling the VTC.

Port of Houston City Docks 01, 02, 13, 14, 16, 17, 41, 42, Lyondell C, Pak Tank Galena Park, Adams 8 & 9:

Prior VTS approval required, No unattended transfers, Active wheelhouse watch, Monitor VHF-FM Channels 13/16, Must be able to move within 30 minutes.

Port of Houston City Docks 03, 04, 27, 28, 32, Old Manchester Docks, New Manchester Dock A, Georgia Gulf, Houston Ammonia:

No unattended transfers, Active wheelhouse watch, Monitor VHF-FM Channels13 & 16.

Valero at Manchester Dock 4, Tra-Week, Gatx Pasadena 1/2 Barge Docks, Gatx Pasadena Ship Dock:

No Transfer Operations, Double Ups.

Mobil :

No Transfer Operations, Double Ups in excess of 90 foot beam.

Crown:

No Transfer Operations, Double Ups in excess of 95 foot beam.

North Texas Cement, Hess 3 Barge Dock, Hess 1/2 Barge Docks (If ship at Mobile):

No Double Ups.

Gatx Pasadena Ship Dock:

No mooring of vessels in excess of 750 foot length or 108 foot beam. No Transfer Operations, Double Ups.

Appendix ii

WORKING FREQUENCIES

FACILITY	MONITOR	WORK-ING
AMERICAN HOESCHT/CELANESE	16/18	474-4915
AMOCO CHEMICAL	16/18	18
ARCO	16	
BARBOURS CUT SECURITY	14	14
BAYTANK	16	
BLUDWORTH BOND	16	06
BOATMAN	14	14
BOLIVAR BARGE TERMINAL	10	10
BUFFALO MARINE	16	18
CHANNEL SHIPYARD	10	10
CROWN REFINERY		472-2465
EXXON REFINERY	16	09/19A
G & H TOWING	7A	09/14
GALVESTON CAUSEWAY BRIDGE	16	14
GALVESTON MARINE OPERATOR		24/28
GALVESTON/TEXAS CITY PILOTS	14	14/73
GATX GALENA PARK	8/14/16	
HALTERMANS	9	9
HESS OIL	10	
HOLLYWOOD FLEET	16	79A
HOUSTON FUEL OIL	16	
HOUSTON MARINE OPERATOR		26
HOUSTON MARINE SERVICES	16	80
HOUSTON PILOTS	13/14	14/74
HOUSTON PORT AUTHORITY	14	14
INTERCONTINENTAL TERMINALS	16	68
JOHNNY BLUDWORTH MARINE		473-5561
LOST LAKE FLEET	80	80
MEGA BACON FLEET	13/16	18
NATIONAL MARINE	18	
NEWPARK SHIPYARD	18	18
OCCIDENTAL CHEMICAL		476-2378
OILTANKING	16	06
OLD RIVER FLEET	16	19
PAKTANK DEER PARK	16	
PARKER BROTHERS	6/16	18

Appendix ii

WORKING FREQUENCIES

FACILITY	MONITOR	WORK-ING
PELICAN ISLAND BRIDGE	13/16	13/16
PETRO UNITED	16	
SHELL GALVESTON	16	
SHELL DEER PARK	16	
STERLING CHEMICAL	16	
SOUTHWESTERN FLEET	16	10
TEXAS CITY HARBOR MASTER	16	14
TEXAS PETRO CHEMICALS	08	
TESORO MARINE	16	
CG GROUP GALVESTON	16	22A
MSU GALVESTON	83	83
MSO HOUSTON/GALVESTON	81	81
VTS HOUSTON/GALVESTON	11/12/13	11/12
WARREN TERMINAL	16	04/07
WESTERN FLEET	10/16	05/10
VALERO TEXAS CITY	16	19

Appendix iii

	GBEC GB	LB 11&12	PIB	GICW	LB 25&26	LT 31&32	CAR	LT 45&46	I 53
GBEC GB	0.0	6.6	11.6	10.1	10.4	12.4	16.7	17.0	
LB 11&12	6.6	0.0	5.0	3.5	3.8	5.8	10.1	10.4	
PIB	11.6	5.0	0.0	5.7	6.1	8.0	12.3	12.6	
GICW	10.1	3.5	5.7	0.0	0.4	2.3	6.6	6.9	
LB 25&26	10.4	3.8	6.1	0.4	0.0	2.0	8.0	6.6	
LT 31&32	12.4	5.8	8.0	2.3	2.0	0.0	8.9	4.6	
CAR	16.7	10.1	12.3	6.6	8.0	8.9	0.0	13.5	
LT 45&46	17.0	10.4	12.6	6.9	6.6	4.6	13.5	0.0	
LT 53&54	19.5	12.9	15.1	9.4	9.1	7.1	16.0	2.3	
LT 69&70	24.7	18.1	20.4	14.7	14.3	12.4	21.3	7.8	
BAYP TB	31.0	24.3	26.6	20.9	20.5	18.5	27.5	14.0	
LT 75&76	27.0	20.4	22.7	17.0	16.6	14.7	23.6	10.1	
LT 91	31.7	25.1	27.4	21.7	21.3	19.4	28.3	14.8	
LT 113	35.3	28.7	31.0	25.3	24.9	23.0	31.9	18.4	
LYNCH	39.3	32.7	35.0	29.3	28.9	27.0	35.9	22.4	
CARP	40.3	33.7	36.0	30.3	29.9	28.0	36.9	23.4	
LT 142	42.3	35.7	38.0	32.3	31.9	30.0	38.9	25.4	
LT 152	44.8	38.2	40.5	34.8	34.4	32.5	41.4	27.9	
HESS TB	46.7	40.1	42.4	36.7	36.3	34.4	43.3	29.8	
LYON TB	49.2	42.6	44.9	39.2	38.8	36.9	45.8	32.3	
SSB	50.8	44.2	46.5	40.8	40.4	38.5	47.4	33.9	
HOU TB	52.8	46.2	48.5	42.8	42.4	40.5	49.4	35.9	

Appendix iii

LT113	LYNCH	CARP	LT142	LT152	HESS TB	LYO TB
35.3	39.3	40.3	42.3	44.8	46.7	49.
28.7	32.7	33.7	35.7	38.2	40.1	42.
31.0	35.0	36.0	38.0	40.5	42.4	44.
25.3	29.3	30.3	32.3	34.8	36.7	39.
24.9	28.9	29.9	31.9	34.4	36.3	38.
23.0	27.0	28.0	30.0	32.5	34.4	36.
31.9	35.9	36.9	38.9	41.4	43.3	45
18.4	22.4	23.4	25.4	27.9	29.8	32
15.9	19.9	20.9	22.9	25.4	27.3	29
10.6	14.6	15.6	17.6	20.1	22.0	24
12.2	16.2	17.2	19.2	21.7	23.6	26
8.3	12.3	13.3	15.3	17.8	19.7	22
3.6	7.6	8.6	10.6	13.1	15.0	17
0.0	4.0	5.0	7.0	9.5	11.4	13
4.0	0.0	1.0	3.0	5.5	7.4	9
5.0	1.0	0.0	2.0	4.5	6.4	8
7.0	3.0	2.0	0.0	2.5	4.4	6
9.5	5.5	4.5	2.5	0.0	1.9	4
11.4	7.4	6.4	4.4	1.9	0.0	2
13.9	9.9	8.9	6.9	4.4	2.5	0
15.5	11.5	10.5	8.5	6.0	4.1	
17.5	13.5	12.5	10.5	8.0	6.1	1