SAFETY ADVISORY BULLETIN 97-3

Washington State Board of Pilotage Commissioners

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A recent incident in Puget Sound involving the grounding of a ship against the bank of a dredged channel while departing a port while under the control of a Puget Sound Pilot offers an opportunity to review some "lessons learned". Fortunately, there was no significant damage as a result of the incident.

Causes of the Incident:

Each one of the following situations could have individually led to the occurrence of the incident. Taken together, the probability of the incident occurring was increased dramatically. The situations described should be studied and reflected upon by each Washington state pilot, to help avoid a reoccurrence of these situations. The situations contributing to the incident were:

- ❖ *Radio orders from the pilot to the tug were not being properly received, understood, and carried out.*

In this particular incident there were at least two identifiable instances where one of the tugs did not receive the radio orders from the pilot and, therefore, did not perform the actions intended. The pilot gave commands to the tug which were not heard, and he failed to recognize this fact in a timely manner where corrective action could have been immediately taken.

- ❖ *The inability of a single propeller, low horsepower tug to remain positioned adequately alongside the ship while moving astern in a channel and recovering anchor chain.*

The single propeller low horsepower tug that was used had been used successfully on similar ship jobs in the past in good weather by acting as a steering tug on the bow. The ship must maintain sternway for this use of the tug as a steering tug on the bow to be successful. If the ship stops the astern motion or moves ahead, the bow tug must quickly react and reposition itself to be able to successfully continue assisting the ship and to avoid damage to the tug, something the single propeller tug cannot normally be expected to accomplish in a reasonable period of time. In this particular incident, the weather was less than perfect, and the ship was required to recover anchor chain, which involved a certain amount of maneuvering. A twin propeller tug of greater horsepower could have been expected to be better able to maintain position and would have offered the pilot more options for its use, especially where the ship was required to perform additional maneuvers to recover a substantial amount of anchor chain.

The federal tanker escort rules placed in effect a couple of years ago require that two relatively high horsepower tugs be assigned to each single hull tanker movement for escort while in Puget Sound. This has apparently had the undesirable effect of sometimes creating a shortage of adequate tugs within a particular company for other non-tanker ship assist assignments. At times, because of a shortage of tugs or for other reasons, a tug company may dispatch a tug or tugs to a ship assignment that ordinarily would not be used for such ship assignment. Apparently, unavailability of other tugs due to other commitments was the reason that this particular tug, normally used for log towing and other related assignments, was assigned to this job.

- ❖ *The significant amount of anchor chain left payed out from the docking maneuver some days previous.*

Considering the fact that two tugs normally would have been used for docking at this particular terminal, it was very unusual that the anchor had been used. It was even more unusual that such a large amount of chain, possibly as much as four shackles, had been used. The chain had been left out and not recovered during the docking

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maneuvers. The pilot was required to recover the large amount of chain during the undocking maneuver, driving the

ship astern at a relatively rapid pace due to the speed of the winch and requiring constant correction from the tugs and the ship's engines, which diverted the pilot's attention from other situations developing.

The shiphandling course manual of the highly regarded Port Revel Shiphandling and Training Center at St. Pierre de Bressieux, France, currently attended by Puget Sound Pilots, describes the use of an anchor for dredging purposes to assist in the docking maneuver. There they use a ratio where the anchor chain would ordinarily be dropped or backed out a distance equal to about 1½ to 2 times the distance from the hawse pipe to the channel bottom, depending on the type of soil material on the bottom. The amount of chain used in this incident was substantially in excess of what is recommended by the above ratio.

- ❖ *The actions of the master of the ship in ordering rudder and engine commands without the pilot's knowledge.*

In this particular incident, the foreign master of the ship apparently decided on his own initiative to use engines and rudder to straighten the vessel without the pilot's knowledge or agreement. The subsequent distraction of the pilot in having to convince the master that his actions were aggravating the situation rather than helping it and then getting him to stop the ship's engines diverted the pilot's attention. Had the master communicated with the pilot any concerns he may have had and what he was about to do with the ship's engines, the pilot would have at least been made aware of what was about to happen. The resulting thrust of the ship's engines against the rudder was another reason that the stern section of the ship and the stern tug, which had adequate power to hold the stern of the ship if it had had time to react, moved out of the channel towards the mud.

Lessons Learned:

- It is the pilot's responsibility to assure himself that his orders to the tugs by radio or other means are received, understood, and are correctly carried out and that the intended results are being realized. Had it been realized by the pilot in a timely manner that radio orders had not been understood by the bow tug, alternative measures, such as using the ship's whistle for signals to control the tugs or to get the tug's attention or dropping the anchor to the bottom again, might have been taken which may have minimized or avoided the grounding entirely.

- It is the pilot's responsibility to assure himself that the tug or tugs provided to do the intended assignment are capable of doing the entire assignment in a safe and reasonable manner, taking into account the location of the ship, the size and shape of the ship, the prevailing wind and weather, the height of the tide, the force of any tidal currents, and any other conditions that may be pertinent. The pilot must keep in mind that unusual circumstances requiring maximum tug performance can arise very quickly. Tug companies may assign tugs to assignments to which they ordinarily would not be assigned because of dispatch conflicts and/or a shortage of tugs. The pilot must make a determination for himself if a particular tug or tug combination is suitable for the intended assignment. If the pilot determines that the tug or tug combination is not suitable, he should notify the tug company as soon as possible of this determination, and the assignment should not be continued until the situation is remedied to the pilot's satisfaction.

- The pilot must constantly be aware of what is taking place on board the ship relative to the safe navigation of the ship. It is sometimes difficult to establish effective lines of communication between the master and pilot, especially where the English language is limited. However, this line of communication is essential in avoiding surprises by actions of the ship's crew. A pre-departure conference between the pilot and master where the undocking maneuver can be discussed and agreed to can be helpful in establishing this communication.