ROYAL CANADIAN MARINE SEARCH & RESCUE
Saving Lives on the Water

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Lessons Learned Report
2020-01 – Towline Chaffing/Breaking

Incident:

RCMSAR station was tasked by JRCC to assist in a search for sailing vessel in distress. Vessel was disabled, had 1 POB, and RCMSAR vessel took over an astern tow from CCG asset once vessel was located. It was dark, with 5'-6' seas, scattered showers, and strong SE winds of 25 knots gusting to 35 knots. When RCMSAR arrived on scene, a SAP was performed and the deck observed when they took the CCG crew off the vessel in distress. A quick debrief was conducted, and the CCG crew member dropped off on their vessel. The RCMSAR crew then returned to the sailing vessel, observed the deck set up again, instructed the master to release the CCG tow line, and then passed their towline across with the direction to secure it the same as the CCG tow line had been secured.

While alongside the bow mounted spotlights got caught in the bowsprit rigging. The vessel was easily freed with a port maneuver, however upon later inspection the light worked but would no longer swivel. No other damage to either vessel was sustained.

Astern tow set up and continues for 7nm to nearest safe haven. Upon arrival, the Coxswain assessed that due to limited dock space, high winds, and wave height, they would not be able to safely dock the vessel, and asked the master to deploy his anchor well clear of breakwater so as not to impede traffic. The owner of the vessel advises the anchor is not capable of being deployed, even tough it has been dangling from the stb rail. With the vessel unable to set anchor and the weather conditions too severe to dock or moore the vessel safely, the Coxswain requested permission from JRCC to continue to tow to another harbour 11nm away where sheltered water and dock configuration would permit proper and safe securement. Permission granted.

Shortly after paying out about 180 feet of tow line, the tow line severs, and goes slack in the water. A crew member is put on board to assist in comms and assess towline. Examination of the towline indicates it was worn through about 1 meter from the eye loop likely from the bowsprit of the stricken vessel. Tow set up reassessed, and vessel taken under astern tow again by attaching RCMSAR towline to a heavy line provided by the stricken vessel and fed through the starboard bow hawse hole to help alleviate further chaffing. RCMSAR crew member remained on sailing vessel to assist in steering, tow watch, and comms in following seas.

With vessels out of step and shock loading on the towline an additional 50 feet of towline payed out and speed reduced. With the following seas continually changing wavelengths it was difficult to establish a standard tow length. Vessel speed was the primary factor in ensuring towline was not permitted to become overloaded.

Date: December 9, 2020

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About an hour later approximately 2 cables SE of the safe harbour, towline severs again. Examination of the towlines revealed the line parted in a similar fashion to the initial tow. As they were so close to the harbour, and alongside tow set up was completed in preparation for docking and approach to harbour. Stricken vessel secure at dock and RCMSAR crew RTB.

Red Line – Initial CCG/RCMSAR tow set-up. Pink Line – Secondary tow set up after line severed

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Issues Surrounding the Incident:

1) RCMSAR was the secondary vessel on scene, took the tow over from the CCG team, and subsequently requested the stricken vessel master to set up the tow in the same fashion the CCG team had.
2) The CCG asset instructed a transfer of their crew back to the CCG vessel, and then a release of their towline before RCMSAR taking over the tow.
3) No crew was initially placed on the vessel under tow.
4) The strong winds, heavy seas, and varying conditions proved difficult to perform the tow without experiencing shock load
5) The sea state was too rough and unsafe to attempt to use a bridle set-up after the first line severing
6) No equipment was used to mitigate line chaffing/rubbing.
7) The POB from the stricken vessel was unfit to assist in deploying an anchor/assist in tow comms
8) Both astern tow set ups resulted in the tow line severing.

Incident Factors:

There were four main factors that contributed to the incident:

1) Considering the heavy sea conditions, and being a CCG tow handoff, the towline was set up in an identical fashion to that of the CCG crew. Given the distance the tow was to be handled (7 nm) additional discussions regarding alternative tow configurations may have proved fruitful. Such discussion might include opportunities for the use of a bridle, anti-chaffing gear, drogue or other equipment available at the time.
2) A debrief was performed with the CCG crew prior to the tow handoff, however not performing their own assessment of the stricken vessel's master led to the decision not to put an RCMSAR crew member on board, or realize that the master was injured and unfit to assist and communicate appropriately as needed to operate safely.
3) Alternative tow set up and/or anti-chaffing gear were not considered/used initially. When rigging the second tow, the Coxswain decided the sea state was too unsafe to attempt a bridle set-up. Had the CCG crew on board the stricken vessel been asked to assist before crew transfer and release of the CCG towline initially, a bridle set-up could have been considered in a slightly more moderate sea state, and likely would have alleviated line chaffing/severing throughout the tow.
4) Not having an RCMSAR crew on the stricken vessel initially limited comms with the towed vessel and an opportunity to assess early signs of tow line damage/severing.

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Lessons to be Learned:

- RCMSAR crews should always perform their own initial scene and POB assessments regardless of handovers/briefings from CCG or other partners/agencies.
- It is important to take the time to do a complete tow assessment and plan for the type of vessel being towed, length of tow, and prevailing conditions. This includes tow line set-up, additional equipment required, and communications/tow watch.
- Coxswains and crew must consider vessel/POB assessments as an ongoing function throughout operations.
- RCMSAR crews should discuss/practice setting up tows on varying types of vessel platforms in order to familiarize themselves with hazards, ideal set-ups, strong points, and use of specialized equipment.
- Members should review line overload warning signs and what to watch for during a tow.
- If safe to do so, it is important to take the time to set up specialized equipment/rigging, as well as take advantage of asking for assistance from CCG or other assets on scene if needed.
- RCMSAR vessels should consider carrying anti-chaffing equipment that can be used during a tow if tow set up/conditions require. A simple idea for a line protector can be a piece if firehose as shown below.

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