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News from a Cruising Member

Shift Cable Replacement

Ralph Yost 3366
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During our Great Loop trip, just as we were pulling into Covered Portage anchorage (near Killarney, Ontario), the shift cable on the fly bridge broke. We have a 1982 Defever 41 with a fly bridge. We were pulling into the inner anchorage, the water was shallow (about 6ft) and we were proceeding slowly and carefully. Celeste had the anchor ready to drop. The boat was in neutral and I just needed to move up another boat length or so to drop the anchor. I put it into forward gear and I could feel the "snap" - the gear shift lever became completely free. I pulled back into neutral but still could not feel any linkage connection to the handle. Then I tried reverse. Ah, the transmission went into reverse and I felt the normal pressure on the gear shift lever in the reverse direction. Now the boat is in reverse and I don't have a way to go into neutral or forward from the fly bridge. So we quickly removed the sun screen from the main cabin window and I ran to the lower helm to complete the anchoring.

Once the hook was set, I had to find out where the shift cable broke, or validate that it was indeed broken. I thought it might be possible that the linkage could have come undone and the cable was still in tact. For as long as I have been working on boats I never had the need to work on the shift or throttle cable sets so I had some learning ahead.

I disassembled the gear shift and throttle set on the fly

bridge. I could feel the cable disconnect and then hit the rest of it inside the sheath not far from the handle mechanism.

Next I disassembled the lower helm's gear shift and throttle set. This was more difficult and complex. The cable sets run through the electrical closet so of course all the clothes in the hanging locker had to be removed, as was the doors to the electrical closet and the hanging locker. I had to disconnect the shift cable from the transmission in order to get enough freedom to pull up the gear shift set far enough to be able to take it apart.

Now some explanation of how these gear shift sets work with dual helms. Figure 2 shows the inside of the lower

Figure 2

helm gear shift set. The cables are attached to one end of a fulcrum (pivoting) bar. Think of how a see-saw works in the playground. In the photo the gear shift is in the NEUTRAL position, which makes the pivot bar horizontal. The gear shift cable on the fly bridge is attached to the rear of its pivot bar. There is nothing attached to the front of the pivot bar. When the gear shift on the fly bridge is pushed into FORWARD, it pulls the shift cable up. At the same time, the gear shift handle on the lower helm must also travel FORWARD. This can only happen when the cable from the fly bridge is attached to the front of its pivot bar. Now the back (aft) connection of the pivot bar pulls a separate cable up. This is the cable that is connected to the transmission horizontally such that when the inner cable is pulled, the transmission lever moved FORWARD. It all works the same way in reverse but each in the opposite direction.

The term "cable" is technically incorrect in this discussion. These are Morse cables, very standard items found in many different kinds and makes of boats. But they don't use "cable." It's actually a stiff steel rod that moves inside a stiff outer sheath (think of it as a tube). At the ends, the inner steel rod is machine crimped to an adapter that transitions to a threaded rod. Photo 3 shows the broken "cable" and the crimped end of the threaded adaptor. In Photo 3, the sleeve in the top of the photo is normally covering the crimp and attaches to the outer sheath.

If you look carefully at the photos you can see the threaded rod and lock nut that goes into the bottom of a pivoting swivel cam that attaches to the end of the shift (or throttle) pivot bar previously mentioned. It hangs on a greased pin that is compressed between two of these pivot bars. If you remove the two screws in the middle top of the bar you can remove this cam, which must be done to remove the old cable and connect it to the new cable.

The outer sheaths are clamped to the case as can be seen in Photo 2. You should know that these screws can

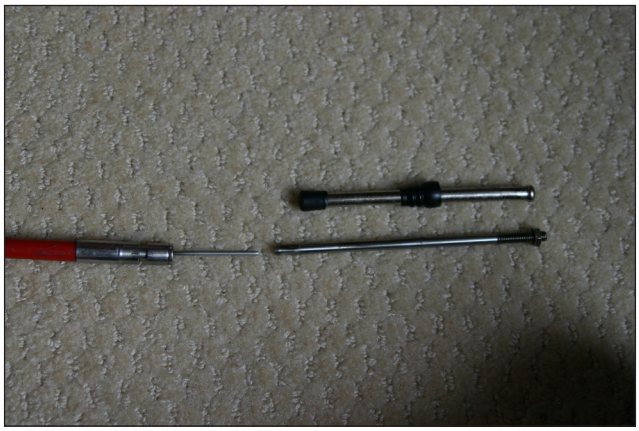

Photo 2

come loose with vibration over time. If they loosen too much, it releases the outer sheath and then the inner cable rod will not move through it to make the shift or throttle movement you expect. Don't ask me how I know this……. So it's a good idea to check the tightness of these clamp screws any time you take these shifters apart. Its also a good idea to add some more grease to the mechanism inside since it's the perfect opportunity to do so.

In our case, when the cable rod broke, we were very fortunate to find out from a boater in Covered Portage that a marina 20 miles away might have these Morse cables in stock. I called the marina and learned that they had many of various lengths in stock. I purchased the one needed to replace the broken one, then another as a spare. The cost from Harbor Vu Marina in Little Current was about $61 each including the Canadian sales tax. You may be able to get these cheaper on line but when traveling, I thought it was reasonable.

Remember the definition of cruising: repairing your boat in exotic places.

Ralph Yost 3366
Aboard SAY GOOD-BYE: 41' Defever 1982

Skye Castle Refrigerator Upgrade

Bill Stults #3236
June, 2012

Skye Castle had a custom built-in refrigerator. We loved the look of it but it wasn't very efficient. The design was a custom built stainless steel box with four inches fairly inefficient insulation and an older external 12 volt Alder Barbour compressor. Try as we might, improving the seals on the door and the seams was never enough to reduce the condensation and we always had a pool of water accumulating at the bottom.

Before

We were thinking of replacing it next winter anyway but the decision was made for us a couple weeks ago when it stopped working all together. It wasn't a simple matter of the electrical feed or a loss of compression so we decided to bite the bullet and do something now. By now I mean we wanted to have a new refer in place within three weeks.

We knew we wanted to stick with an external 12 volt compressor and had already decided on buying a Danfoss BD-35. These efficient compressors are made in Denmark and are one of the most popular for this application. We also had decided to switch to a flat evaporator plate. We have a separate freezer so we did not need to include any freezer space. That was the easy decision.

It was harder to decide what to do about the refer box. Keep it and continue to live with the condensation, keep the box for now and build a new one myself next winter or have one built for us now. Messing with the cabinet was not an option for us so an off-the-shelf unit was not a consideration.

I had previously talked to the owner of a Seafreeze of America http://www.seafreezeinc.com/ in Bellingham Washington at the Seattle Boat Show. They build custom refrigerators for a number of applications but a large part of their business is building custom refers for the marine industry. I was impressed with what I saw at the boat show and there is no way I could build a unit of the same quality. I sent photos of the cabinet space and a detailed drawing. After a couple of phone calls I gave them the go ahead.