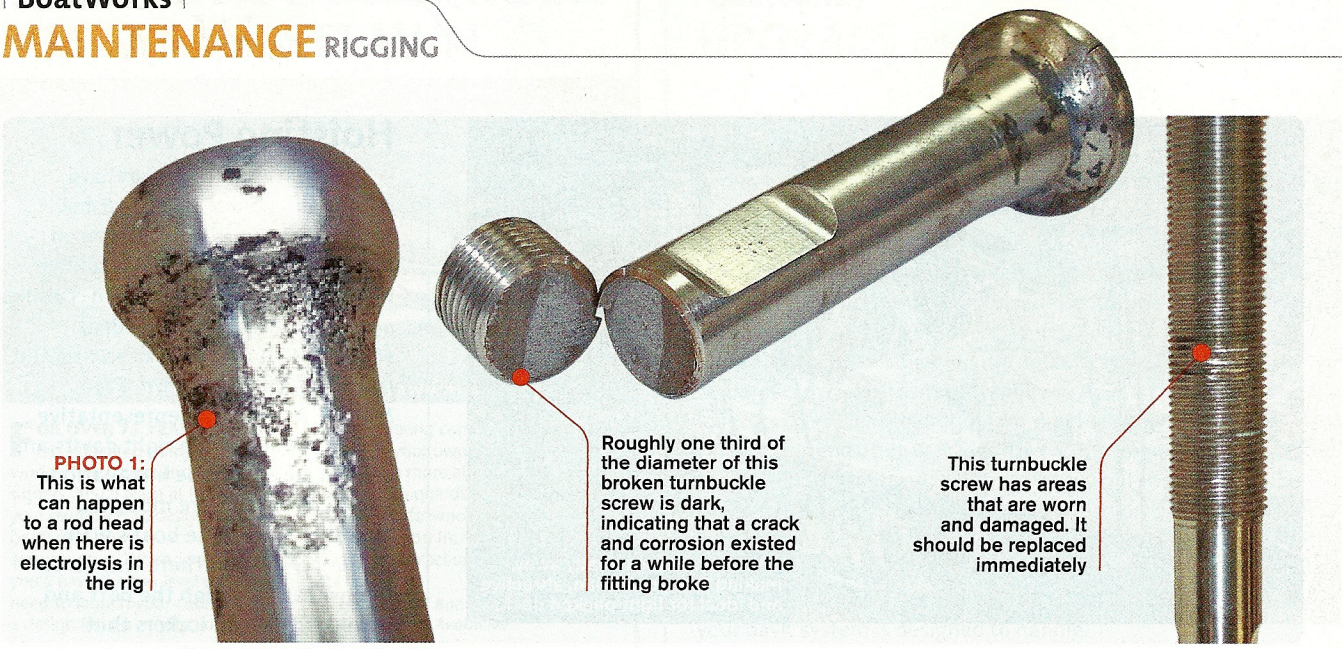


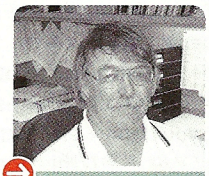
PHOTO 1: This is what can happen to a rod head when there is electrolysis in the rig

Roughly one third of the diameter of this broken turnbuckle screw is dark, indicating that a crack and corrosion existed for a while before the fitting broke

This turnbuckle screw has areas that are worn and damaged. It should be replaced immediately

# Rod Rigging Rules

## Knowing what to look for is the key to an accident-free sailing experience | BY TY GOSS



Ty Goss has been in the rigging business for more than 30 years and with Navtec/Lewmar's custom sales for 14 years

Sailors often ask me how long I think their rod rigging will last. My answer is always that there is no definitive answer, because many different factors are involved. These include the rigging size compared to the actual loads experienced; how long the rig has been in service; the sailing conditions; the environment and climate; and, finally, how well the rig has been maintained during its working life.

### SAILING CONDITIONS

A boat that sails in heavier conditions needs to have its rig serviced more often than a boat that mostly sails in light air. Warmer climates are also often more corrosive because of the increased salinity of the water. Alternatively, a rig on a boat that sails in fresh water usually lasts longer than that of a boat sailed on salt water.

The more use a boat gets the sooner its rig will need to be serviced. One good rule of thumb is to completely disassemble a rig and have a qualified rigger inspect the mast and all components at least once every six years or 40,000 sailing miles, whichever occurs first. A regular cleaning and lubrication schedule will help keep the rig in top condition between inspections.

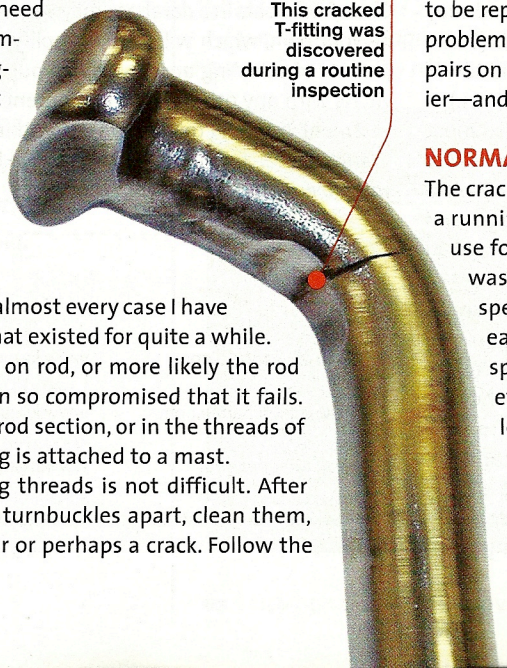


PHOTO 2: This cracked T-fitting was discovered during a routine inspection

### FAILURE

When rod rigging fails, it does so suddenly. But in almost every case I have seen, failure has occurred because of a problem that existed for quite a while. Corrosion or oxidation, for example, can be seen on rod, or more likely the rod terminal, long before the part's strength has been so compromised that it fails. Most failures occur either at the head or end of a rod section, or in the threads of a turnbuckle, or at a tang, where a piece of rigging is attached to a mast.

When turnbuckles are at deck level, inspecting threads is not difficult. After safely securing the mast with halyards, take the turnbuckles apart, clean them, and check the threads for signs of corrosion, wear or perhaps a crack. Follow the same procedure with a rod head. Usually you can see a crack in the head with your naked eye well before the head breaks away from the rod. However, it is harder to access a rod head because of the way it is often mated with other parts.

### ELECTROLYSIS

Discharged electrical current from a poor cable attachment, a frayed cable or a faulty ground can cause rigging corrosion, often in an area you might not think would be susceptible. For example, the rod in **Photo 1** came off a boat that was only two years old. But the boat had an electrolysis problem and stray current was arcing from the rod to the boat. Inevitably, this arcing began to eat the rod heads and eventually all the heads in the rig had to be renewed; some rods had to be replaced completely. If the electrolysis problem had been discovered earlier the repairs on the rig would have been much easier—and a lot less expensive.

### NORMAL WEAR AND TEAR

The cracked T-fitting in **Photo 2** was part of a running backstay system. It had been in use for almost 10 years before the crack was discovered during a routine inspection. Fortunately the part was easy to replace, but absent the inspection the backstay would have eventually failed and might have led to a dismasting.

In many cases, a cracked part or rod head can be fixed. T-fittings or turnbuckle screws, for example, are easy to replace. In most

PHOTOS BY TY GOSS

PHOTOS BY TY GOSS (BOTTOM); BY PETER NIELSEN (TOP)