All Seatrax cranes are based on the well-proven kingpost concept. This basic design consists of a stationary or fixed kingpost and a revolving superstructure, which fits over and revolves around the stationary post as shown in Figure 1. The boom, machinery house, operators cabin, hoists and slewing machinery are all fitted to the revolving superstructure.

With this design, the overturning moment is resolved by means of two vertically-spaced radial bearing assemblies. Each carries an equal and opposite horizontal (radial) load. All vertical loads (self weight of crane plus lifted load) are carried into the stationary kingpost by means of a concentric thrust bearing.

One way to visualize this concept is to consider a simple ballpoint pen with a cap as shown in Figure 2. Imagine that the pen is the kingpost and that the cap is the revolving superstructure. The cap cannot detach itself from the pen because of the application of an overturning moment and a vertical load. The bearings only provide a means of support for rotating the cap about the body of the pen. This analogy translates into the patented Seatrax mounting concept. With this design, the structural and bearing functions are distinctly separate. A bearing failure cannot result in separation of the revolving superstructure from the stationary kingpost. The kingpost mounts to the platform.
More than 1,000 kingpost cranes have been installed on offshore drilling rigs and production platforms since 1955. In more than 50 years of offshore service, no incident of a kingpost crane detaching from its mount because of an overload has occurred. This cannot be said for any other offshore crane design.

The Seatrax implementation of the kingpost design has been in continuous production since 1977 with more than 500 installed worldwide. An exclusive feature of Seatrax design is the patented non-metallic upper and lower bearing assemblies. These bearings will last several thousand hours with minimum maintenance before replacement is necessary. When replacement is required, all Seatrax slew bearings can be easily changed in place using common hand tools and without the assist of another crane. It is never necessary to dismount a Seatrax crane for bearing inspection or replacement.

Seatrax cranes are also offered in a slightly different configuration for use on liftboats or self-elevating barges. In this patented configuration, as shown in Figure 3, the barge jacking tower becomes the stationary kingpost, and the crane revolves around the jacking tower at an elevation above the jack house.

This allows the leg to pass through the center of the crane without interference. This configuration offers several advantages, including an increase in valuable deck space. The crane can also easily slew 360 degrees without fouling a leg. Other advantages of the Seatrax slew bearing arrangement include:

- The proven kingpost design ensures the crane cannot separate from its mount because of slew bearing failure.
• All bolted connections between the crane and the platform (or rig) are eliminated.

• Operators have no possibility of crane separation because of a bolt failure.

• The use of non-metallic bearings ensures the bearings cannot wear or degrade the structural integrity of the kingpost or other structures they contact.

• Slew bearings can be changed easily in place using common hand tools.

• This design is exempt from all certifying authority requirements for periodic removal and inspection of slew bearings.