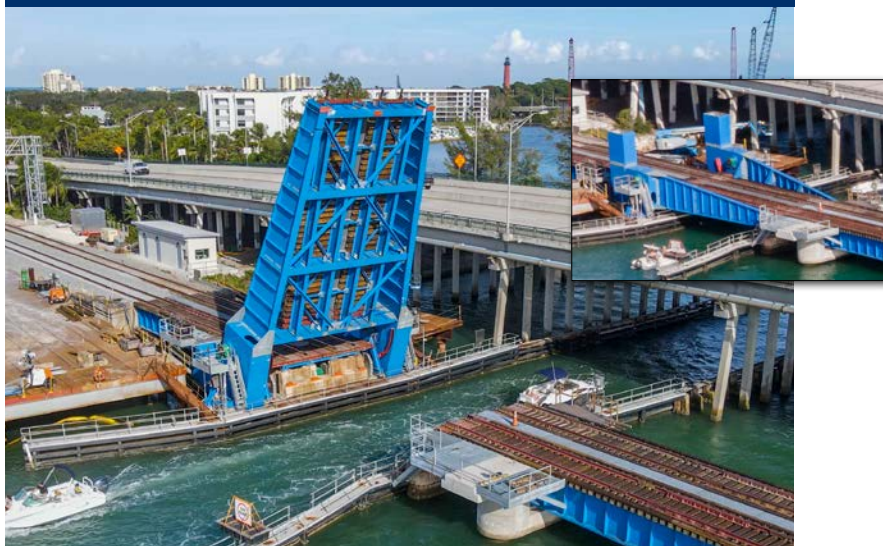


HIGHLIGHTS

- Custom-designed enclosed parallel shaft reducer with through-hardened gearing
- Fabricated steel housing
- Load testing to 150% performed in-house
- Custom emergency drive gearmotor assembly including two motors

Application Success Story



Custom-Designed Reducer and Gearmotor Rail Bascule Bridge

PROBLEM

Refurbishment of the 95-year-old Loxahatchee River rail bridge in Jupiter, Florida was recently completed. The bridge features a 55 ft. long bascule span that allows marine traffic to pass. As the bridge reached the end of its service life, trains were routinely slowed or stopped due to bascule malfunctions causing significant delays to the rail line's passenger service.

Bridge improvements included replacement of all electrical and mechanical components, all new structural steel (including a completely new bascule span), replacement of most of the bridge supports and the addition of a second track.

SOLUTION

Nuttall Gear was selected to provide the enclosed gear drives for the new bascule span. To meet the bridge's mechanical specifications, Nuttall engineers designed a custom primary reducer as well as a custom emergency drive gearmotor.

The triple-reduction, parallel shaft primary reducer had a main motor input of 25 HP @ 870 RPM and an auxiliary motor input of 3 HP @ 197 RPM with a 60:1 ratio and a service factor of 1.5. The drive features through-hardened gearing, a fabricated steel housing, and double extended input and output shafts. Per specification, steel materials were of USA origin and all welds were inspected by an Independent Certified Weld Inspector (CWI) and were subjected to 150% load tests performed in-house.

The custom emergency drive gearmotor had an input of 1750 RPM, an output of 193 RPM, a 9.069:1 ratio and a service factor of 4. The assembly included two motors (NEMA B & NEMA E designs) and a stainless steel shaft cover.

US (Application Assistance)

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