Specialist Lifting Engineering company Modulift, were recently engaged by Swanage Railway to assist with a project to safely lift an old steam locomotive, The Southern Railway U Class 31806 needed to be lifted free of its wheels in a workshop to allow replacement of the main bearings that had become worn over time. The 1926 train, a showpiece at the Dorset-based tourist attraction, is 40 ft. long, and 12.6 ft. high; its working weight with a full boiler and tender (or coal-car) is 100t.

Jordan Sibley, mechanical design engineer at Modulift, said: “There were no ideal points for the [20t capacity] jacks to lift from directly so we chose to bridge the buffers with a lifting beam. The sloped bases of the jacks prevented them from getting close to the loco. Further, the jaws of the jack were significantly off the ground, which prevented us from sitting a beam directly on top of them as the height would be too great to fit under the buffers.”

The 3.5m-long beams offered a 2.8m operating span and weighed 585kg each. They were single part weldments so no assembly was required. The end plates, with an inverted L-shape, allowed the beam to sit upon the locomotive jacks in a dropped
Graham Froud, workshop manager at Swanage Railway, said: "This is the first time this train, which we brought into the workshop on a low-loader, has been lifted this way; all other lifts would have been done from above. The loco will do approx. 10,000 miles a year. It can run for 28 days at a time, at which point it would be due a boiler exam. It is also able to undertake mainline work all over the country, if and when required. There are only a small number of locos that can do this. Modulift’s management of the whole project was first rate from start to finish”.

Modulift design, manufacture and supply fully certified custom lifting beams, frames and attachments will working load limits from 100kg to 5000t.