A303 Countess Roundabout

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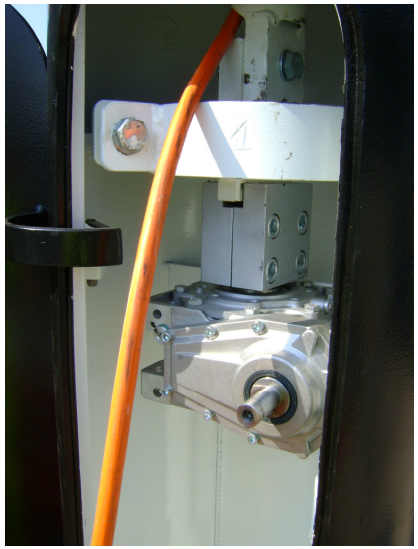
Revolving Mast-arms

As part of the signalisation of the Countess Roundabout on the A303 near Amesbury in Wiltshire, the scheme including the installation of two revolving mast-arms. The roundabout is situated on the mainline carriageway of the dual-carriageway, with three lanes on these approaches. In order to ensure visibility of the signals to approaching vehicles and to overcome the “canyon” effect suffered by drivers in the centre lane, when HGV’s are in the near-side and off-side lanes, it was decided that it was necessary to include a traffic signal mounted on a mast-arm. However, in the past, mast-arms have posed issues to the maintenance of signals, caused by the need to undertake lane closures in order to use a Mobile Elevated Work Platform (MEWP) to reach the signal head. The need to undertake maintenance on the head is normally reduced by using LED signal optics, which does not require regular lamp replacements to be carried out, although it does not completely do away with the need to be able to reach it. To book the road space to implement lane closures on the mainline carriageway of a trunk road can take several weeks, which could result in a faulty signal being off for an extended period of time. It was therefore decided to investigate alternatives to the traditional structures, to overcome these maintenance issues. Innovative mast-arms which incorporate an outreach arm that can be turned, by using a hand cranked mechanism housed behind a door aperture in the mast upright, were recently introduced to the UK. This system was incorporated into the design of the scheme, to be used in conjunction with dedicated maintenance vehicle bays, to allow MEWP access to the mast-arms, without need to implement lane closures. After the concrete foundations were poured and allowed to cure, both of the mast-arms were installed during the course of one morning. This was done in two parts, with the upright being lifted and mounted onto the foundation, followed by the outreach being installed onto the top of this, with the traffic signal head already mounted on it. This was carried out using the ‘*Hiab*’ fitted to the delivery lorry and a small MEWP. Because of the design, this did not result in the need for lane closures on the mainline carriageway approach to the roundabout. Once installed, the outreach was rotated into place using the crank mechanism. The ease with which this can be undertaken, results in maintenance activities being easily accomplished, and it is hoped will result in a significant cost benefit being achieved over the lifetime of the installation. It will also greatly contribute to safety, by removing the need to work from the carriageway and to deploy traffic management.







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