

# Near miss at Worlingham user worked crossing, Suffolk, 8 June 2020

## Important safety messages

This incident demonstrates the importance of:

- Network Rail continuing to focus management attention on reducing the risk from signaller errors at user worked crossings, in particular those controlled from Saxmundham signal box
- ensuring that signallers are briefed when changes are made to safety related information affecting them
- not relying on a perception of elapsed time when making safety critical decisions, because of the potential for this to be affected by distractions.

## Summary of the incident

At 13:18 hrs, the driver of train 2D83, the 13:07 hrs Greater Anglia service from Lowestoft to Ipswich, applied the train's emergency brake after observing a vehicle towing a trailer cross Worlingham user worked crossing (UWC) ahead of the train. The crossing is located near Beccles, Suffolk. The train was about 350 metres from the crossing and was travelling at 55 mph (89 km/h), equivalent to 14 seconds running time. A second road vehicle was about to drive across behind the first but reversed away from the railway as the train approached. No collision occurred and there were no injuries.

The signaller at Saxmundham signal box had given permission by telephone for the two vehicles to cross the railway, on the understanding that this would take less than two minutes. This call ended 77 seconds before the train would have reached the crossing if the driver had not applied the emergency brake.

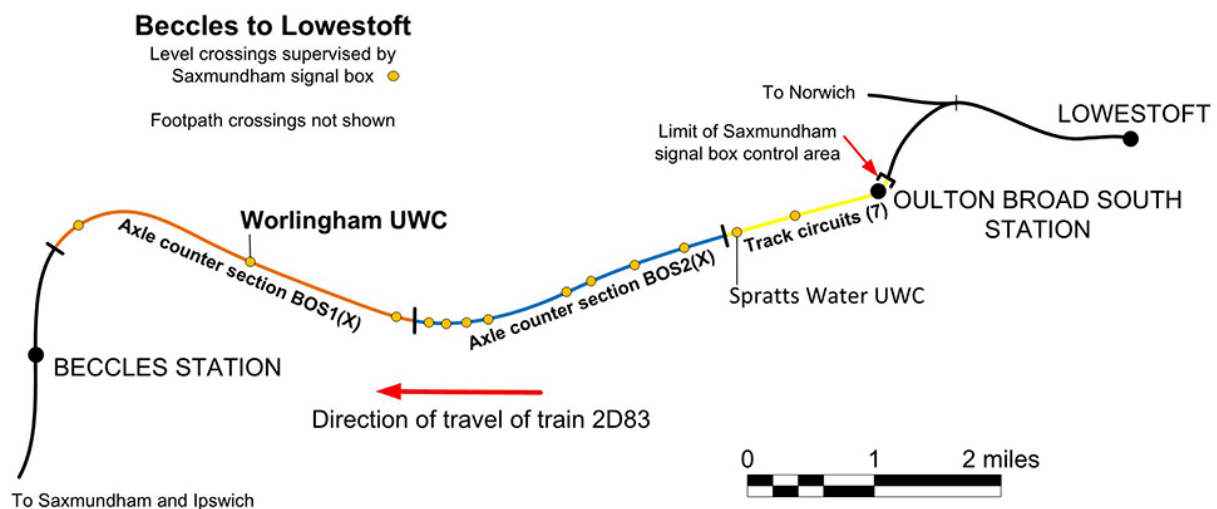


Forward facing CCTV from train 2D83, showing the first vehicle crossing the railway (courtesy of Greater Anglia)

## Cause of the incident

Following previous events at UWCs (see below), the Office of Rail and Road (ORR) served an improvement notice on Network Rail on 30 March 2017. This identified that, at some signal boxes in Anglia Route, signallers had no means of consistently and reliably determining train movements in the area of a UWC before authorising a person to cross. It also identified that Network Rail had not made an assessment of ergonomic factors, including demands of workload, affecting signallers' ability to undertake this task. The improvement notice required Network Rail to carry out a risk assessment and identify reasonably practicable measures to control the risk at UWCs. ORR issued a second improvement notice on 23 January 2018, with a compliance date of 31 March 2021, which stated that Network Rail should implement the preventative and protective measures it had identified in its risk assessment (carried out in response to the first improvement notice). These were defined in an attached schedule that included additional axle counters, to enable the position of trains to be determined more precisely, in the area controlled by Saxmundham signal box.

In May 2020, Network Rail introduced additional axle counters to subdivide some of the long signal sections controlled by Saxmundham signal box, in response to the second improvement notice. It had briefed signallers that the aim of the project was to provide them with 'more confidence when telling level crossing users if it is safe to cross'. The changes included subdividing signal section BOS(X) in the vicinity of Worlingham UWC into axle counter sections BOS1(X) and BOS2(X).



**Simplified track diagram showing signal section BOS(X), divided into two axle counter sections: BOS1(X) and BOS2(X)**

Prior to the installation of the additional axle counter sections, the usual practice was that permission to cross at Worlingham UWC would be denied if a westbound train had already occupied signal section BOS(X), which starts near Spratt's Water UWC, 3.5 miles (5.6 km) to the east of Worlingham UWC. However, signallers would sometimes give users permission to cross after trains had passed this point if they judged there was sufficient time.

A table provided to the signallers as part of the project to introduce additional axle counters indicated that permission should not be given for Worlingham crossing to be used after a train approaching from the direction of Oulton Broad South had occupied axle counter section 'BOS2(X)'. This meant that although additional information on train position was provided on the display of the signaller's workstation, this did not give them any new information about the location of the train in this particular case.

Data from the telephone call management system at Saxmundham signal box and the data recorder on train 2D83, indicate the train had occupied axle counter section BOS2(X) 130 seconds before the driver of the road vehicle telephoned to request permission to cross.

The signaller involved in the incident on 8 June had not been trained in the use of the additional information provided on the display, or the associated table. Had he been trained and assessed as competent, it is possible that he would have chosen not to give permission for the use of the crossing when train 2D83 was already occupying axle counter section BOS2(X).

In the ten minutes before giving permission to the driver of the road vehicle at Worlingham crossing at 13:17 hrs, the signaller had taken six telephone calls from other UWCs; two of these had been after the departure of train 2D83 from Oulton Broad South station at 13:13 hrs. When giving permission to the driver of the road vehicle to use Worlingham crossing, the signaller did not realise how much time had passed since train 2D83 had left Oulton Broad South station.

In June 2019, Network Rail issued a procedure requiring operational workload assessments to be carried out at operational locations such as signal boxes, to manage 'the risk of operator error due to workload arising from changes in operational demand'. Assessments should be carried out every 12 months for every location and/or workstation, or within six months for locations or workstations affected by infrastructure projects. In the case of the project to introduce additional axle counters in the Saxmundham area, no signaller workload assessment was carried out as Network Rail deemed that the project was not altering the call volumes or adding additional work for the signaller.

## Previous similar occurrences

A train collided with an agricultural tractor and trailer at Hockham Road UWC on 10 April 2016 ([RAIB report 04/2017](#)). The train did not derail, but its driving cab was damaged, and the driver and four passengers suffered minor injuries. The tractor was destroyed, and its driver was seriously injured. About one minute before the collision, the tractor driver had obtained permission to cross from a signaller at the Network Rail signal box at Cambridge. The signaller had given him permission to cross when there was insufficient time before the train arrived at the crossing. RAIB found that this was because the signaller had lost his awareness of the position of the train, possibly because his levels of concentration had lapsed, and his competence to operate the workstation safely and effectively had not been adequately monitored.

RAIB recommended that Network Rail should undertake a review of its measures for the protection of user worked crossings with the objective of identifying means of reducing the likelihood that an accident would be caused by signaller error. ORR has advised that it considers Network Rail has implemented this recommendation by committing to the introduction of active warnings at more level crossings.



On 14 June 2016, a near miss occurred between a train and a level crossing user at Dock Lane, Melton, Suffolk ([RAIB report 08/2017](#)). The signaller at Saxmundham signal box had given permission for the car to cross the line after the car driver had telephoned from the crossing. The signaller knew the train's approximate location before the call and was aware of its proximity to Dock Lane user worked crossing. However, he did not use this information to decide to refuse permission to cross.

Evidence provided to RAIB as part of its investigation included an ergonomics assessment of the signaller's workload at Saxmundham. This stated that the 'number of level crossings and UWCs in this control area is substantial and drives the workload for this signal box. It is the unpredictable demand from the crossing requests that keeps the signaller occupied on the phone and with paperwork to record each call. The large number of UWCs under the signaller's control presents an operational risk.'

RAIB recommended that Network Rail should reassess the risks associated with the work demand on the signaller at Saxmundham signal box, using all the relevant assessment tools that it had available, to ensure that the number of permissions to cross given when it is not safe to cross was being managed to an acceptable level. It also recommended that Network Rail should review, and revise as necessary, its risk management processes so that the risk of signallers making errors when controlling telephone operated level crossings was taken into account when identifying appropriate improvement options. ORR has advised that Network Rail has not yet demonstrated it has implemented these recommendations.

A further recommendation was that Network Rail should define criteria for when it would be appropriate to either assess or reassess the workload demands on signallers, and implement processes to ensure that the criteria are adhered to. ORR has advised that this recommendation has been addressed by the procedure requiring operational workload assessments (see above).

RAIB's report into the near miss at Dock Lane in June 2016 also recorded two incidents where a signaller at Saxmundham had erroneously given users permission to cross when trains were approaching user worked crossings (at Maltings UWC on 22 November 2016 and at Dock Lane UWC on 3 April 2017).

Following the incident at Dock Lane UWC in April 2017, Network Rail introduced a second person to Saxmundham signal box, to allow the signaller to take breaks during the later part of their shift (the company had identified that most irregularities occurred after signallers had been on duty for a few hours). It has advised RAIB that the presence of this second person appeared to have been effective in reducing the pressure experienced by signallers at Saxmundham.

Further reductions in the workload at Saxmundham signal box are expected to result from the planned closure or upgrade of the existing Dock Lane, Bloss and Jetty Avenue UWCs, such that crossing users do not require authorisation from the signaller to cross the railway. This work is due to be completed before the compliance date for ORR's second improvement notice of 31 March 2021 (see above).