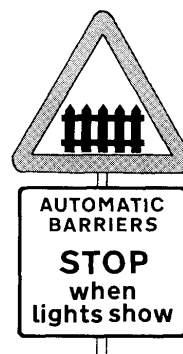


Modified auto half barriers are commissioned

The Hixon recommendations embodied at existing barrier crossings



The first fully modified automatic half-barrier level crossings, embodying the proposals of Mr F. B. Gibbens QC in his report into the Hixon level crossing accident in 1968, are now being commissioned in a variety of locations on BR. The report endorsed the value of AHBs, but criticised a number of details both in use and operation. Particularly vague were instructions to drivers of slow moving heavy vehicles to telephone the supervising signal box for permission to cross. Recommendations included new road signs on approaches to the crossings and increasing the time cycles for barrier operations. The road signs and signals and their siting at the crossings, were adopted after consultation between officers of the Ministry of Transport, BRB and Mr David Mellor, the design consultant appointed to consider the layout and presentation of these crossings.

Regulations for the new traffic signs and signals were made last autumn and the signs have now been put up at virtually all half-barrier crossings. The sign "Level Crossing with automatic half-barriers ahead", shown in the current Highway Code, has been withdrawn in favour of the internationally-recognised gate symbol already used for other level crossings with gates or barriers. This is supplemented by a plate saying "Automatic Barriers - Stop when lights show". A new mandatory sign makes it clear that drivers of large or slow-moving vehicles must telephone the signalman and obtain permission to cross. Failure to do so will be a totting up offence leading to automatic disqualification, as is failure to stop when the red lights flash or crossing the double white lines to zig-zag round the barriers.

BR is extending the operating cycle for the first train; as recommended in the Hixon report this will give road users 32sec warning of the approach of the fastest train and more for slower trains. The barrier operating cycle is being re-timed to give more warning of a second or subsequent train approaching. This means that where a second or subsequent train travelling at the maximum permitted speed is within 52sec travelling time of the crossing when the preceding train clears, the barriers will remain down and the red lights continue to flash. Thus from the time the barriers start to rise there will be at least 15sec interval before the amber light signals the approach of another train.

Signals at the half-barrier crossings are being modified so that a steady amber light precedes the twin flashing red lights. The amber shows a steady light for five seconds before the 32sec cycle starts, thus increasing to 37sec the total warning period before the fastest train can reach the crossing. These measures will mean 13sec longer warning for the fastest train than previously. The amber light has the same meaning as that on normal three-light road traffic signals: "Stop, unless it is unsafe to do so". The twin flashing red lights mean "stop". At crossings where the "Another Train Coming" cycle applies. BR has also begun fitting below the signal on the right-hand side of each approach a sign which will light up only when the barriers are remaining down for the passage of a second or subsequent train. At such times only, the sign will display in red the words "Another Train Coming".



Fig 1. Traffic waits at Glynde crossing on the A27 near Lewes on July 29 during a demonstration of the improved automatic half-barrier equipment

At virtually all the existing crossings, the recommended "yellow box" markings and double white lines have now been laid. Wherever there is any risk of a very low-slung vehicle grounding on the crossing, signs reading "Uneven Crossing Risk of Grounding" have been placed at the approaches to the crossing and also far enough in advance to allow choice of an alternative route. Work is also going ahead where practicable to

improve the road profile over crossings where this is below standard. Signs have also been put up where necessary to give similar advance warning where overhead electric power lines at the crossing limit headroom. A broken white line has been painted on the right hand side of the road on approaches to the crossings to show pedestrians where to stop. This is in line with the traffic signal on the right hand side of the road.



Fig 2: The new standard signs at modified AHB crossings.

A recommendation of the design consultant was that the telephone by which permission to cross must be sought should be located at or near the mandatory traffic sign, and that telephones for emergency use should be located at the crossing.

Installation of these new telephones-connected only to the supervising signal box and for free use by crossing users has now begun. It necessitates fitting additional complicated circuitry into the existing BR communications

system. It is also important that the circuitry and equipment used should provide completely reliable communication between the crossing users and the signal box. BR intends to carry out this work quickly, but until the new telephones are installed at any particular crossing the existing telephones in the barrier posts will remain available for use by drivers of long, wide, heavy or slow-moving vehicles, by all drivers in emergencies and by any other member of the public who needs to contact the signalman.

The cost of modifications to AHBs has seriously affected the viability of further conversions. The total outlay of between £13,000 and £20,000, depending on the complexity of the rail approach controls, is markedly less attractive than the £7,000-£8,000 of the pre-Hixon crossings. Apart from the basic cost of the new equipment at the crossing itself, particularly telephones, most of the additional expenditure arises from the longer timing sequence and especially the second train approaching controls, which must be placed at 52sec travelling time from the crossing for the fastest train. With a line speed of 100mph this means that some track equipment is about 1½ miles from the crossing and extends the controlling track circuits and treadles in many instances beyond signals sited in the crossing approach area.

Thus equipment must be provided to prevent the initiation of the barrier sequence if the signal is at danger, and to ensure that sufficient time is available for the barriers to fall when conditions ahead can allow the signal to clear. Indeed at some locations, the barrier timing sequence must be triggered off before the signal itself clears.

At present there are 204 existing half-barrier installations throughout BR, most of which will be modified to the new standards by the end of this year, although a few, will not be complete before 1971.

The Ministry and BR are not committing themselves on further conversions to AHBs from the swing gates and proposals for further AHB crossings frozen after the Hixon accident will be closely reassessed financially. Some on lines near complex junctions may well prove cheaper to leave as manned installations or possibly with full barriers remotely controlled with TV supervision. BR receives a grant for the alterations being carried out as part of the Hixon recommendations, but the cost of all new crossing conversions is borne entirely by the BRB.

A nation-wide campaign is being launched to publicise automatic half-barriers. Two million leaflets are being circulated to local authorities, drivers, haulage companies, transport organisations, ports and other interested parties. More than 350,000 posters are to be displayed throughout the country and wall charts sent to schools which have automatic half-barriers in their neighbourhood. A distribution of interim posters and leaflets was made at the end of 1969 when new road signs were being installed. Short films aimed at drivers and pedestrians have also been shown on television.