

**Profile 45**

**'Clam', 'Rudd' and 'Tope' Ballast Wagon Rebuilds**



**Build Details:**  
**Numbering:**  
**Bogies / Suspension:**  
**Dimensions:**  
**Published Drawings:**  
**Areas of operation:**  
**Main liveries:**

Converted 1985-1991 at various works  
 B42xxxx plus DB970000-DB973449 range (see text for details)  
 24ft 6in over buffers, 12ft wheelbase  
 DEMU Update issue 0  
 Nationwide  
 grey/yellow

**Summary:**

The Clam, Rudd and Tope wagons were all rebuilds of HTV coal hoppers for use by the Civil Engineers. The Clam and Rudd conversions both involved the fitting of a new box body, the Rudds having dropside doors and air brakes. The Tope was a simpler job, merely having the original hopper body cut down in height and a solid floor fitted. The programme started in 1984 and, although scaled back, still involved over 2000 wagons, the vast majority of which appeared in the attractive grey and yellow livery. The vacuum braked Clam and Tope fleets were fairly rapidly withdrawn in the early 2000s, but the Rudds lasted longer, with over 200 still in use at the start of 2008.

**History:**



DB970052 ZCV TOPE 21t ex rebodied welded hopper Roller Bearing BR brake  
 RFS Engineering 11/03/1988  
 Perth 01/08/99 © Paul Bartlett  
 ZCV Tope DB970052 at Perth, 1st August 1989.  
 Paul Bartlett



ZBA Rudd DB972297 at Bescot, 23rd April 2004.  
 Martyn Read



DB973174 Clam  
 ZCV Clam DB973174 at Peterborough, 5th May 1990.  
 Paul Bartlett

By the mid-1980s the civil engineers ballast and spoil wagon fleet was in need of renewal, comprising large numbers of elderly Grampus opens and second-hand 16-ton minerals. A single prototype replacement was built in 1983 as DB988600 (Carp), but the prospect of constructing a whole fleet of new wagons was not economically viable. However, at the same time, large numbers of HTV coal hoppers were being withdrawn from use. With a rebodding programme in mind, several thousand of these wagons were put into storage at a variety of locations. Although not used as such, many were transferred to the departmental fleet as ZDVs (to design code ZD152B) for accounting purposes.

Tope was the first of the new fishkind names to be allocated, this taking place in late 1984. Lot number 4051 was issued for the conversion of three wagons at Doncaster, these retaining their existing stock numbers of DB425994, DB426194 and DB423760. On each wagon, the top 460mm of the hopper was cut off and a new top capping added. Inside the hopper, a solid floor was fitted although the former hopper chutes were left in place. Repainted in grey with a yellow band around the top, the wagons were coded ZDV-Y to design code ZD151A.

At about the same time, the name Rudd first appeared, initially on Grampus wagons modified with new ends and air brakes. Such conversions retained their existing stock numbers but were recoded ZBA to design codes ZB501U and ZB501Y.

A production batch of 60 Topes was authorised in 1987 and the first of these appeared just before the end of the year. Converted at RFS Doncaster, the batch was allocated new numbers in the series DB970000-DB970059, and deliveries ran until March 1988. Compared to the prototypes, the main differences were the fitting of spill-plates at each end of the hopper and the painting of the Tope name on the yellow band. The ZDV code (and ZD151A design code) was applied to most of the first

batch but the decision was then made to recode the conversions as ZCVs. New design codes in the ZC003, ZC004 and ZC005 series were allocated along with the full TOPS code ZCV-Y.

In early 1989, contracts were placed for many more conversions. Powell Duffryn started work on 300 Topes numbered from DB970100 upwards, while at the same time RFS Doncaster commenced converting 450 similar wagons numbered DB970400 upwards. Conversions were to a range of design codes in the ZC003, ZC004 and ZC005 series, presumably to reflect differences between the source wagons, and also perhaps variations such as whether the hopper chutes were left in place. The livery was slightly changed from the earlier batches in that it now included two vertical white stripes on each side. The Tope was designed to be unloaded by mechanical grab and these stripes, placed at the limits of the flat floor, were perhaps to guide the operators of these, to avoid damage to the sloping hopper ends.

An additional order for six Topes was placed on behalf of the Electrification Engineer's, these appearing as LDB970850-LDB970855. These wagons wore olive green livery and were lettered ELECTRIFICATION ENGINEER (CONSTRUCTION). The spill plates found on most Tope conversions were omitted. Initial use was on the East Coast Main Line electrification project. It is curious that the ZYV TOPS code was not used, most vehicles belonging to this department being allocated xYx codes.

Powell Duffryn and RFS were also awarded contracts to produce a second variant, given the fishkind name of Clam. Again using HTV coal hoppers as the source, this was to take wagons with damaged bodywork, the conversion involving complete removal of the hopper and chutes and replacement with a sturdy open box body. About the same height as a traditional Grampus wagon, the body was fixed (i.e. no opening sections) and featured 13 prominent vertical ribs on each side. The new floor was mounted clear of the existing solebars, and the side ribs were connected beneath, leaving visible gaps. The body ends had four vertical ribs and one horizontal one, plus a square section top capping, noticeably larger than that on the sides. Unlike the Topes, the vacuum cylinders had to be moved from their position at the end of the wagon to beneath the floor. TOPS code of ZCV-M was applied, the design codes being in the ZC006, ZC007 and ZC009 ranges. Powell Duffryn produced 150 wagons numbered DB973000-DB973149 while RFS Doncaster built 300 (DB973150-DB973449), delivery of both commencing in May 1989. The livery was standard grey/yellow and the number and TOPS code were applied either to the solebars (RFS conversions) or on plates mounted to the body-side ribs (Powell Duffryn conversions).

The third type to appear was the ZBA Rudd, re-using the fishkind name already applied to overhauled Grampus wagons. Contracts were placed (for the conversion of 400 wagons each) with Marcroft Engineering (Stoke) and C C Crump (Connah's Quay). As with the Clams, the original wagon hopper was completely removed but the underframe was then modified with air-brakes in place of the original vacuum ones. A new box body was fitted, this having similar ends to the Clam type, but sides made up of three, externally braced dropside doors each. The use of door controllers obviated the need for bangers on the underframe, while the stanchions between each door may have been removable. Delivery commenced in

autumn 1989 and the wagons were numbered DB972000-DB972399 (Marcroft) and DB972400-DB972799 (Crump). Most conversions were to design code ZB001A but other codes were issued (ZB001B, ZB002A, ZB003 and ZB003B) to cover minor variations. The full TOPS code was ZBA-F.

In service, all three types quickly found use across the country conveying spoil and new ballast. Wagons replaced by the new arrivals were mainly unfitted Grampus (ZBO) and former 16-ton mineral (ZHV) wagons. The Clam orders were completed in 1990, and the last Tope and Rudd conversions appeared during 1991. By that time, the departmental fleet was receiving Sea Urchins, comprising new fixed box bodies mounted on reconditioned long-wheelbase, air-braked underframes. The many stored ZDV (ex HTV) wagons that were no longer needed for the rebodding programme, were gradually sent for scrap.

By 1994, some of the Tope conversions had been withdrawn, probably as a result of damage to their hopper bodies. The type was not particularly suitable to the grab method of unloading. Many of the remaining wagons had Mainline branding added, this being the new name for the former Trainload Freight South East company. Grey and yellow livery was retained on all except one wagon, this being a ZBA Rudd that was repainted in Loadhaul black and orange. Transrail gave six of their Tope wagons T prefixes in place of the original DB.

In 1999 the three fleets were still largely intact, withdrawals having claimed 107 Topes, 18 Clams and 5 Rudds. More Topes were in storage but there were active pools on all regions except Anglia and Southern. The Clams were even more widespread but also avoided the Southern due to their vacuum brakes. The Rudds were to be found on the Southern but conversely not on the Western. The arrival of growing numbers of air-brake only class 66 locomotives, and corresponding withdrawal of older types, meant that the Clams and Topes were targeted for replacement. Over the next few years, many hundreds were withdrawn and scrapped, mainly at the Stockton yard of T J Thomson. However, there was to be one final development. Starting in early 2000, many of the ZCV Clam wagons were recoded as MGV. This new TOPS code, along with design codes MG002A and MG002B, was classified as Mineral – Open but was more to do with the elimination of so-called departmental codes than with a change of usage. The wagons had their DB prefixes painted out, giving the impression that the numbers were in the air-braked series.

By the end of 2005, just two Topes remained in stock, including one of the LDB-prefixed examples. The Clam fleet was down to just three wagons, one of which had been recoded MGV, although none had been used since about 2002. A healthy 278 ZBA Rudds survived and were to remain in use for another couple of years before a concerted effort to withdraw and scrap them in 2008.

## Updates