

BR Mk1 TOURIST SECOND OPEN No. S 4382 converted to 4TC DRIVING TRAILER SECOND OPEN No. S76302

TSO Coach No. 4375

This was constructed by British Railways (BR) as part of Lot No. 30219 ordered on 16th March 1956 which comprised a total of 40 similar vehicles. The batch was numbered 4373 to 4412 with the last one outshopped on 17th September 1957. Design Diagram number 93 meant the underframes were built at Ashford with the bodywork and interior fittings carried out at Swindon.

S 4375 was outshopped with two vacuum braked BR 1 bogies and steam heating equipment. Seating for 64 passengers was provided with two toilet compartments at one end. These were situated one either side of the corridor connection vestibule. As built they weighed 33 tons empty.

It was released to revenue earning service from Swindon, during March 1957, painted in BR's Crimson Lake & Cream livery ready for services on various trains on Southern Region.

DTSO No. S76301

In September 1964, BR's Southern Region were authorised by the Minister of Transport, Ernest Marples MP, to commence electrification work on the Bournemouth line. This £15 million scheme comprised providing third rail and track replacement of 90 route miles and 236 track miles. The lines covered from Pirbright Junction (near Brookwood where the existing electrified Alton line diverged from the main line) through to Bournemouth and beyond to Branksome. This short extension beyond Bournemouth was to give access to a new maintenance depot to be constructed opposite the site of the Bournemouth West carriage shed.

The single track branch line from Brockenhurst to Lymington was also included in this scheme although the lines beyond Branksome to Weymouth were not. This led Southern Region to propound the unusual concept for the 'new' stock to be adapted into a modern form of 'Push Pull' working.

The stock for fast and semi-fast services was ordered on 30th April 1965 and comprised two distinct types. The first were high powered four-coach electric multiple units [REP] and the other was unpowered four coach multiple units [TC]. The latter units were designed to work with the REPs or Electro-diesel or Class 33/1 diesel locos. In order to keep costs down the majority of these vehicles were converted from existing Mark 1 loco-hauled coaches.

However, it was desired to continue through running trains from Waterloo to Weymouth and so the new stock had to be capable of running forwards from electrified territory with diesel electric locos providing the power. This led to the design of these new trains as trailer corridor sets (classed as TC units) initially composed of both three and four car formations. To provide the traction power between Waterloo and Bournemouth, four car

sets with a high installed power (3200hp) were built. These 'Tractor' units also included a restaurant car and were classed as 4REP units as mentioned earlier.

The cab end design of the TC units was similar to those of the 4 CIG /4 BIG /4 VEP units, though they were distinguishable by low-level ETH jumper cables below the driver's side buffer and receptacle on the opposite side.

Allocated diagram number 900, the 4TC Driving Trailer Second (DTS) vehicles were extensively rebuilt at the former toilet end with both the former toilet compartments stripped out and a completely new cab end installed. These cabs were identical in style to the '1963 stock' design fitted to 4CIG units and also being fitted to new 4VEP units being built at the same time.

A standard cab interior was fitted with driver's controls similar to the '1963 stock' design although they were equipped with an 'engine start' button, instead of an 'auxiliary button', to permit full control of locomotives fitted with the SR 27-way cabling.

The existing entrance vestibule immediately inboard of the former toilet area became the cab entrance vestibule, and inwards opening doors replaced the outward opening ones. Standard cab-side sliding ventilators replaced the toilet windows. As a consequence of the loss of the cab entrance vestibule to passengers, a doorway was cut each side of the first seating bay, with ¼ light windows installed each side of the new doorway.

The layout of the remainder of the coach was unchanged. From the cab end it comprised the driving cab and its entrance vestibule, a four-bay saloon (the outermost bay fitted with entrance doors), a centre entrance vestibule, a further four-bay saloon and a further entrance vestibule. A lockable sliding door divided the cab vestibule from the passenger area. A further sliding door at the opposite end of the coach divided it from the inner-end entrance vestibule. The entrance vestibule at the centre of the coach had partitions glazed with wooden frames but was not equipped with sliding doors.

Despite these changes, the driving coaches (DTS) still seated 64 second class passengers, weighed 32 tons and were 64 ft 6 ins long over bodywork. The under-floor battery boxes on these vehicles were removed during conversion works undertaken as part of BR Lot number 30764. 4TC Units were delivered at approximately one per week from June 1966 until January 1967.

S 4382 was withdrawn from passenger service during 1966 and hauled to York Carriage & Wagon Works for conversion. Substantial changes to the running gear and other areas were entailed in this job. Originally, a pair of BRI standard double bolster leaf spring bogies, limited to 90 mph, were fitted and weighed over 6 tons each. They were replaced by the more modern roller-bearing BR5(S) bogies which were of a fabricated design making them lighter and better sprung using coil springs. They gave a smoother ride up to their maximum speed of 100 mph and weighed less at around 5½ tons.

All the exterior steam heating pipes and internal radiators were removed being replaced with heavy duty wiring and heating elements. The vacuum braking equipment was also discarded in favour of Air/Electro-Pneumatic brakes.

The converted S 4382 became S76302 which was outshopped as part of 4TC unit 417 being delivered to Southern Region on 9th November 1966. Initially the unit was outshopped in plain matt or 'eggshell' finish BR Blue but the livery did not last well. On 24th September 1969, Unit 417 was released to re-enter passenger service again after

being repainted into BR Blue/Grey two-pack gloss livery.

Under the 1972 BR Total Operations Processing System (TOPS) classification the 4TC designation was replaced with Class 422/2 numbers. These were revised again in 1975 so that they became classified as Class 491.

S76302 was removed from Unit 417 to be placed 'spare' and was replaced by S76331 (formerly 'spare') on 12th August 1973. This lasted until 14th March 1974 when S76302 reverted back to Unit 417 and DTSO S76331 was transferred to Stewarts Lane on 21st March 1974. It returned to Bournemouth on 15th August 1974 and again exchanged with S76331 from 16th August 1974 with S76302 once again becoming the spare DTSO. S76331 became 'spare' again from December 1975 and replaced by S76302 which moved from Eastleigh to Bournemouth Depot on 23rd December 1975.

DTSO S76302 was transferred to damaged Unit 430 during February 1977 and replaced by S76331, though this coach became spare again and S76302 came back to Unit 417 during July 1977. However, S76331 came back to 417 during September 1977 with S76302 becoming spare once more. DTSO S76331 was again exchanged with spare DTSO S76302 between December 1984 until April 1986 when the Unit formation was made 'permanent' and S76331 was once again the spare DTS.

During October 1986, the unit was again renumbered to 8017 as part of another general renumbering scheme. On 16th November 1988, it was repainted into the later Network South East livery with a darker shade of blue being used and having revised curved upsweeps at the outer ends rather than the earlier shallower curved upsweeps. During October 1991, the unit was renumbered back to 417 again.

For most of its working life, Unit 417 comprised DTSO S76301; Trailer Compartment First (TFK) S70860; Trailer Brake Compartment Second (TBSK) S70828 and DTSO S76302.

In the early years of their service life, 4TC units worked solely on Bournemouth line services between Waterloo and Weymouth. Later they were allocated to a number of workings between Basingstoke and Salisbury, including one each way where the 4TC & Class 33/1 locomotive combination attached at Basingstoke to an 8VEP electric multiple unit train which had worked up from Bournemouth or Eastleigh. The flexibility of this stock enabling the loco to be controlled from the leading 4VEP unit, and vice versa in the evening when the loco was leading. On occasions the locomotive ended up being marshalled between the 4TC and 8VEP units which looked somewhat incongruous.

4TC units could be hauled by non-push-pull fitted locos as long as they were fitted with suitable equipment to provide an Electrical Train Supply (ETS) to heat the unit and charge the batteries under the Trailer Brake Corridor Second (TBSK) coach. However, without high-level SR 27-way jumper cables, non-Southern Region locos could not be controlled from the 4TC set and would have to run round at each end of the journey.

In exceptional circumstances, 4TC stock could also work in multiple with other conventional electric units from the '1951 type' onwards. However, these units did not have low level ETS power jumpers so they could not supply heat and light to the 4TC stock. Because of this restriction, such workings were unusual and certainly only rarely with passengers on board.

4TC units were also diagrammed for a time on Sundays, with Class 33/1 locomotives, between Portsmouth and Reading. Later in their lives they were worked sometimes as far as Exeter, hauled by Class 50 locomotives but they were not capable of push-pull operations.

The Branksome - Weymouth electrification scheme was authorised from 28th January 1986 and this project included the provision of 24 new five-car air-conditioned EMUs (5WES) based on BR's Mark 3 coach bodyshell design. The existing Bournemouth line fleet of thirty-four 4TC units had been renumbered into new number series from May 1986 following reclassification into Class 438. Units being renumbered [43]8001 to 8034).

A number of 4TCs continued in service, in original condition, through 1988 although withdrawals started from as early as May 1988 as the new 5WES units entered traffic. Some 4TC units still received overhauls at this time, being outshopped in NSE livery and fitted with public address equipment, fluorescent lighting and new moquette seat covers. Several also had one compartment in the Trailer First Corridor (TFK) rebuilt as a standard class compartment seating 8. This altered the Unit capacity totals to 36 first class and 168 standard.

The 4TC fleet remained broadly the same up before extensive reforming took place. As mentioned earlier, Unit 8017 was reclassified as Class 438/4 so reverted to 417 again in 30th September 1991. This was in connection with restoration to all over blue livery and 'near 1967 condition'. It was used principally for charter train work being fitted throughout with carpets as well as tables and curtains.

On Saturday 3rd April 1993, 4TC Units 419 and 417 were coupled together to be hauled from Bournemouth to Weymouth by 33109 with Electro-diesel 73109 coupled at the rear. This was part of Hertfordshire Rail Tours four "Weymouth Quay Shuttles". The scheduled empty stock was converted into forming an additional service from/to Bournemouth before and after the shuttle trips. Normal BR tickets were valid on the morning and evening runs from/to Bournemouth - but with a £2 supplement being collected for donation to Weymouth area charities.

On arrival at Weymouth (Town) Station the Class 73 was uncoupled and shunted to be stabled. DTSO 76302 was at the end of Unit 410 attached to 33109. The 33 pushed the four shuttle trains out of Weymouth and then hauled the two 4TCs to Weymouth Quay station. The Bournemouth end DTSO of Unit 417 then controlled the entire train on the return journeys from the Quay. Such was the flexibility of the Southern Region 27 way electrical control system. 73109 was re-attached to the front of the train on it's return to Bournemouth. Timings are shown on:<https://www.sixbellsjunction.co.uk/90s/930403hr.htm>

Southern Region's 'rail-tour-twins', Units 410 and 417, were hauled by 33116 on Hertfordshire Rail Tours "The Kinky Newt" rail tour on 10th October 1993. It visited Southampton Eastern and Western Docks plus Brockenhurst. Also in the early 1990s, the Bournemouth Rail Travel group organised a trip to Welshpool. BR provided the same units 410 and 417 with 33116 propelling them to Welshpool. It called at Weymouth before heading off, via Yeovil Pen Mill, to Bristol and Shrewsbury.

Unit 417 remained in use on special duties until 22nd January 1994 being finally withdrawn during week beginning 24th January 1994. On privatisation of British Railways, Unit 417 was allocated to the Porterbrook Leasing fleet from 1st April 1994 though not in passenger use.

Porterbrook had Unit 417, with another (unknown) set, removed from storage at Ludgershall on 7th April 1995, and taken to the Railway Technical Centre at Derby by Type 3 Number 37377 for the removal of the trailer seconds. Now formed as 3TCs, they were subsequently worked by 33109, in top-and-tail formation with 33116, for filming duties on the former GSWR line between Annan and Dumfries plus Dumfries and New Cumnock in Scotland. This was for sequences in the feature film *Mission Impossible* film starring Tom Cruise.

They were hauled to Ayr on 13th April 1995 (5Z58) and used for various action sequences although these were a Continuity Manager's nightmare, unfortunately. A "TGV" was (seemingly) running without OHLE and the double track Channel Tunnel was seen with only a single portal. Of course the OHLE would have got in the way of the 'ridiculous' scenario where a helicopter flies into the tunnel pursuing the train. The two diesel locos and two 3TCs returned South on 9th May 1995 being moved subsequently to London Waterloo for more scenes in the film.

Vehicles were later moved to store at MoD Kineton. DTS 76301 was then hauled to Eastleigh on 2nd August 1996 followed by road transport to Wimbledon Park on 17th July 1997 but no reason has been ascertained for this series of moves.

Unit 417 was sold to Rolltrack Trains Ltd on 18th December 1997 for restoration and use with preserved 33/1 loco 33103 based at Tyseley. DTSSO S76301 was moved from Wimbledon Park by road with the remaining three coaches being towed from Kineton. All four were de-registered by Railtrack during January 1998.

During the following year, three coaches, DTS S76301 + TBSK S70826 + DTS S76302 were overhauled and returned to Railtrack registration. The 3TC was used with 33103 for three days (23rd to 25th August 1999) on Silverlink's Gospel Oak to Barking service. For these duties, Unit 417 was again restored to all-blue livery as can be seen on You Tube: <https://www.youtube.com/watch?v=QInROW7hjLM>

After this brief spell of main line operation, the TFK was added so that all four coaches in Unit 417 could be stored at MoD Kineton again along with S70812 (ex- Unit 410) and 4BIG buffet car S69332 (ex-Unit 2203) during 2000. Later, Unit 417 was moved to the Dartmoor Railway at Meldon Quarry around February 2001. The Unit was used on the Dartmoor Railway in 2006 but both DTSSO coaches [S76301 and S76302] were then sold to the Aln Valley Railway Project.

The two coaches were moved by road to the Bellingham Heritage Centre in Northumberland. DTSSO S76302 left Meldon on 13th April 2011 with DTSSO S76301 travelling on 18th April. Here they were adapted over time for use as the Centre's 'Tea on the Train' facility. This opened to the public on Saturday 5th March 2022 serving tea/coffee, home made cakes and light refreshments.

Since then the people running the Bellingham Heritage Centre decided to dispose of both 4TC vehicles as they wished to obtain a more modern coach. They obtained 11023 which was built as a loco hauled Mk 3a Open First but was later converted into an HST Trailer First. They believed it would better serve their needs.

As a result, they offered both DTSSO coaches 'for free' with the 'purchaser' paying for transport of course. The Swanage Railway Trust's 4TC Group took up the offer and

arrangements were put in place to transport the first coach [76301] by road to Swanage. 76301 arrived at Arne Road sidings near Norden on Monday 31st May 2023.

76302, however, remained at the Bellingham Heritage Centre until their Mk III coach had been converted and opened for its new use. Eventually, 76302 arrived at the Swanage Railway on Monday 13th November 2023.

ACKNOWLEDGEMENTS

<https://www.bloodandcustard.com/bournemouth1966.html#PushPull>

<https://www.sixbellsjunction.co.uk/90s/930403hr.htm>

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