

Chapter 1 : Farewell to the Inter City - Travellers Club

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Class prototype HST at Weston-super-Mare in The prototype high-speed diesel train, which was to become the InterCity , was to be formed of a rake of passenger coaches sandwiched between two power cars, one at each end. The decision to use two power cars was taken very early in the project as design engineers had calculated that the train would need 4, horsepower to sustain the required speed of miles per hour on the routes for which it was being designed the Great Western Main Line , Midland Main Line , and the Cross Country Route , and it was quickly established that no single "off-the-shelf" diesel engine was capable of producing such power. Also a factor in the decision was that the use of two locomotives, operating in push&€"pull formation , would cause less wear on the rails than a single, much heavier, locomotive. The design of the locomotive incorporated a driving desk fitted around the driver, a sound-proofed door between the cab and the engine room, and, unusually, no side windows. The following year, high-speed testing was being undertaken on the "racing stretch" of the East Coast Main Line between York and Darlington. The set had been reduced to two power cars and five trailers, and there seems to have been a concerted attempt to see how fast the train would go. By 12 June a world diesel speed record of Production versions[edit] The first production power car, numbered , was delivered in late , with a significantly different appearance from the prototype. The streamlined front end lacked conventional buffers, and the drawgear was hidden under a cowling. There was also no driving position at the inner end. The appearance of the train is the work of British designer Kenneth Grange. Grange was initially approached just to design the livery for the train, but under his own impetus decided to redesign the body, working with aerodynamics engineers. As he put it, " It really was rather quite brutal, rather clumsy. The lighter axle loading allowed the trains to travel faster than conventional services along lines not suited to full-speed running, such as the Edinburgh to Aberdeen line. Known as HST differential speeds, coupled with superior acceleration capability over older locomotives, this allowed substantial cuts in journey times over these lines. The increased speed and rapid acceleration and deceleration of the HST made it ideal for passenger use. By the start of the summer timetable in May , the full complement of 27 Class sets &€" was in service on the Western Region, completely replacing locomotive-hauled trains on the Bristol and South Wales routes. Passenger volumes on the trains rapidly increased due to the speed and frequency of the service, an effect previously seen only when electric trains had replaced diesel or steam services. The displacement by HSTs of the Class 50 locomotives to slower services effectively finished off the last Class 52 diesel-hydraulics by early Within a year they had displaced the Deltics to lesser workings and reduced the London - Edinburgh journey time by up to an hour. Ninety-five HST sets, including Class 43 powercars, were built between and More Mark 3 trailer cars were built in the s for the Western Region Class s, making them eight-car rakes in common with those used on East Coast and Midland Main Line services. During the s only the Cross-Country sets remained as seven-car rakes, with just one first-class carriage. The prototype InterCity power cars and set the world record for diesel traction at Regions and operators[edit] South West England and South Wales[edit] On the Western Region, InterCity trains designated class were introduced initially for all services from London to Bristol and South Wales, [15] and then extended for most day-time services from London to Devon and Cornwall. However, Class 43s also replaced these services once the third batch of power cars was delivered. InterCity s continued to work the same diagrams they had under British Rail, albeit in a different livery. This was in order to provide more seats for commuters. The remainder for the routes to Swansea and the West Country included four tables per standard class coach. The refurbished coaches had new seating leather in first class , at-seat power points and a redesigned buffet bar. The ECML formation is nominally two first-class coaches, one buffet with further 1st Class seating and five later six standard-class coaches, sandwiched between the buffet and power cars. Nine trailer car units followed this formation, with the addition of a TS. The first of the HST Mallards was in service by spring As a result, the

13 sets were operated by East Coast as of late East Coast introduced a new InterCity service to Lincoln in In total, eight East Coast services per day in each direction use the InterCity While at the works being re-engined, Grand Central added the orange stripe that appears on their Class units, re-painted the front ends this making them look more like the non-buffered HSTs , and re-numbered the power cars into the four-hundreds. East Midlands Trains liveried HST at Leicester also was returned to work on the mainline after being used in an experimental programme conducted by Network Rail and Hitachi. Currently 24 are in service with East Midlands Trains. CrossCountry operates these trains on its northeast-southwest services. In the franchise passed to Arriva CrossCountry. The coaches were refurbished to a similar "Mallard" standard as GNER trains, though their interior is in burgundy and there are fewer tables. They also differ from the East Coast sets by having electronic seat reservations, and the buffet car has been removed, with all catering provided at-seat from a catering base in coach B. Most of the carriages are rebuilt from loco-hauled Mark 3s. The refurbishment was carried out by Wabtec, Doncaster Works. Four sets are now back in daily use again since December , after only two sets were used in service three on Mondays and Fridays for a while in No explanation was provided for the sudden reduction in fleet usage.

Modern Rail Inter-city 's: The Book of High Speed Trains. Book Binding:Hardback. Book Condition:GOOD. All of our paper waste is recycled within the UK and turned into corrugated cardboard.

Edited by Roger Wood. A Symposium, IA, , pp64 plus pp24 of plates. Red spine of dw slightly sunned. One of the best books dealing with the Deltics, with an impressive list of writers assembled under veteran author C J Allen, including Gerald Fiennes who was the General Manager responsible for introducing the Deltics on the East Coast Main Line. VG in a VG- dust wrapper. Wear to the dust wrapper at the head of the spine. The story of the first American diesels to be imported into Britain. Fine in a VG dust wrapper. Sectorised freight operations in the North East during the late s. A four page A4-sized publicity leaflet that folds out into a single large sheet. An illustrated history of the Deltics in the At Work Series. The Colour of British Rail Vol. The West Coast Route before the recent modernisation. An all-colour pictorial tribute. A brief class history pp , followed by a pictorial tribute. Principal photographs by Norman E. Diesel Picture Library Series. VG with very slight browning to the covers. A comprehensive guide to rail installations and stabling points. An illustrated handbook with the following sections: The rich diversity of BR in the late s is vividly portrayed in words and pictures in this portrait of a single summer Friday. A record of the inaugural John Prigmore Memorial Lecture. Dw torn with slight loss at the head of the spine. A Pictorial Appreciation, Peter Watts, , pp Glazed boards with dw. An illustrated booklet with duties for BR shunters, and stabling point data for all BR Locos, multiple units and coaching stock. An album portraying the class 50 diesels in their heyday. Westerns, IA, , pp Diesels in Depth Series. Aims to provide a detailed reference book for the railway modeller and historian. A comprehensive examination of train timing and s motive power performance. VG- with slight wear to the glazed boards. Class 37s, IA, , pp An illustrated history of the class. A well-illustrated account of the Brush built Type 4 BR Class 50 diesel locos, with emphasis on their operational performance. An illustrated account of the design, construction and operation of the Class 37s. An illustrated survey of over named modern traction units. Corners of glazed boards bumped. An all-colour diesel album from the early 80s. VG with slight rubbing to the corners of the glazed boards. The End of an Era, British Rail, , pp Includes a separate A4-sized colour poster of the Flying Scotsman headed by a Deltic. Mainline Colour Albums No. Heritage Traction in Colour Vol. Scotland, IA, , pp A pictorial tribute to the early days of diesel operation in Scotland during the period from the late s through to the early s. VG in a VG dust wrapper. A comprehensive pictorial review of the s diesel scene. Rail 17 Portfolio, IA, , pp

Chapter 3 : ScotRail HST fleet plans

*Modern Rail Inter-city 's: The Book of High Speed Trains [Keith Montague] on calendrierdelascience.com *FREE* shipping on qualifying offers.*

I would also expect wi-fi, comfortable seats, tables and big windows. I estimate that a fully loaded four-car train carrying passengers, will weigh about three hundred tonnes. This gives a power to weight ratio of I will also add some other power to weight ratios. New Routemaster bus weighing twenty tonnes with kW 6. Hummer H2 weighing 2. Mini One weighing 1. With the same amount of power in a train only half the length and weight, I suspect these trains could save time effortlessly, as a good driver in a sports car can on a twisting road. I looked at the actual times yesterday of the Transport Scotland talked about a fastest time of two hour forty-five minutes between the Central Belt and Inverness. When the route between Inverness and Perth has been fully modernised with passing loops, I have a feeling that times will be faster. They will not only be an iconic forty-year-old train, but a tourist attraction in their own right, like Scottish mountains, tartan food and whisky. The first train from Kings Cross to Edinburgh leaves just after There has been an aim to run services between the two capitals in under four hours for as long as I can remember. Modern in-cab signalling is being rolled out on the East Coast Main Line to enable mph running. The last ferry to the Orkneys leaves from Scrabster near Thurso at This would give a fast train on the Far North Line six hours, including transfer to move passengers between Inverness and Scrabster. They could also serve an early Scottish dinner, to prepare tourists, for what could be a breezy crossing. Two five-cars can run as a ten-car train, that can split and join as required, in under two minutes in a suitable station. So could we see a pair of five-car Class trains leave Kings Cross and run together to Edinburgh, where one train went to Dundee, Montrose, Stonehaven and Aberdeen and the other went to Stirling, Perth and Inverness. The first train from Kings Cross to Aberdeen leaves at The journey takes six hours. There are three trains per day between London and Aberdeen. The last direct train that is not a sleeper service leaves just before As with the route to Inverness, the route to Aberdeen is not electrified. I think this option has advantages There would be an early morning service to Edinburgh and many of the large towns and cities in Eastern Scotland. If traffic patterns and passenger numbers are favourable, other Aberdeen services could split and join. Running a five-car train to Inverness earlier in the day, before the main train of the day, may be a way to provide an economic service to Thurso. A five-car train would probably be more affordable to run. The train would be stabled at Thurso overnight. It would leave for Inverness, Edinburgh and London about At Edinburgh, it could join up with an Aberdeen train at around Time-tabled properly, it could result in Inverness and Aberdeen getting an extra train to and from London every day. Change At Edinburgh Plans by various rail companies for services include. TransPennine Express will run more services to Edinburgh. ScotRail will run hourly services between the seven major cities in Scotland. Edinburgh to Inverness and Inverness to Thurso should both to become three hour journeys. Edinburgh will become a very well-connected city. When trains between London and Edinburgh, are regularly achieving the four-hour journey, there will be several trains, that will give a change in Edinburgh suitable for passengers individual preferences. A single change at Edinburgh could be the preferable route for many. Conclusion Because LNER, ScotRail and other train companies now have a large fleet of very capable trains on order, there are several possibilities to create a world-class train service to connect Scotland fully both internally on the mainland and to important destinations in the islands and England. The renaissance of the HST as a train to provide high-quality services has been astounding. GWR are creating eleven similar trains for use between Penzance and Cardiff. I would be very surprised, if more HSTs are not refurbished to modern standards. Could we see them on the following routes? I suspect too, that just as engineers have found solutions to the problems in the coaches like the doors and the toilets, they will find a solution, that replaces the diesel engine in each power with some form of more eco-friendly hybrid power pack. MTU, which is a subsidiary of Rolls-Royce, are developing hybrid power packs for diesel multiple units. There is a lot of space in the engine compartment of the power car. On most routes, mph running will be sufficient. Hitachi converted a power-car to work in this way ten years ago.

The InterCity was the brand name for British Rail's fleet of High Speed Trains (HSTs) constructed from to and introduced into revenue-earning service in

Rolling Stock and Components In , Transport Scotland published the results of its rail passenger service consultation. This considered how the railway should develop and the types of passenger services required. Its results were incorporated into the specification for the ScotRail franchise which was renewed in . These will make up 17 five-coach trains and 9 four-coach trains with two power cars spare. The timetable will require 23 trains in service each day with five coach sets operating Central Belt to Aberdeen services and the four coach trains generally running to Inverness. The number of through services from Inverness to the Central Belt via Aberdeen will also be increased. Brush Traction in Loughborough will work on the power cars whilst the coaches will be transformed by Wabtec in Doncaster, which will review options to undertake a C4 or C6 overhaul whilst they are being refurbished. To ensure structural integrity of the vehicles up to , a large part of the power car work is the rectification of any corrosion or degradation of glass reinforced plastic cab exterior. Cabs are to be improved with better seats and fitted with forward facing CCTV. The GWR automatic train protection equipment will be left in place, but isolated as it is a part of the speedometer system. A new door interlock emergency override switch will be fitted to allow the driver to stop the train away from any hazards. Brush Traction will also apply a new livery to the power cars. Power-operated doors There will be four types of coaches. Of the types of standard class coaches, one has no special features TSL , one has two wheelchair spaces and a toilet for persons with reduced mobility TSD and one has a rack for two bicycles TS. Chris advises that the worldwide use of these doors with their simple electric worm drive and over-centre lock has proved to be highly reliable and that their fitment is relatively straightforward. To give train crews consistency of operation, the door controls will be similar to those on the class DMUs. Coach interiors will be completely revamped with ample luggage space provided. Business class will have leather reclining seats and the new standard class seats will be provided by Grammer. Seating will also be better aligned with windows. However, this is not a straightforward requirement, as it became apparent that such alterations would need to be validated by full-scale crash testing. Further investigation revealed that such crash testing would not be necessary if seat alterations did not change the table-to-seat distance. The coaches are to be fitted with the passenger systems that are currently being fitted to ScotRail DMUs as part of their refurbishment programme. Infodev is providing the infra-red passenger counting equipment that will download information at key base stations, and R2p the hi-definition CCTV cameras, two of which will be in each coach. These will have a remote download capability with the Wi-Fi system. The centre-saloon dot matrix passenger information system will come from TrainFX. Modern controlled emission toilets from Semvac will be fitted, providing a significant environmental improvement. Moreover, they are not the only new trains coming to Scotland. IEPs will soon be running on the east coast to Aberdeen and Inverness, Caledonian Sleepers are introducing new sleeper trains and new class electric trains will soon be running between Edinburgh and Glasgow. Chris advised that the respective project teams for these new trains are working well together to ensure that common servicing facilities are compatible for all new rolling stock, for example, by extended hoses and cabling. The most significant item of work is at Haymarket depot where the eastern end of the maintenance shed is to be extended by 39 metres to accommodate five-coach HSTs. The depot is also to get an improved external crane for power car engine changes. The maintenance of coaches at Haymarket is a first for the depot, which to date has serviced powered vehicles. Hence it needs a shunting vehicle for which alternatives to the class 08 shunter, which was introduced in , are being considered. This includes the provision of extractor fans. The facility at Perth is being upgraded to accommodate four-coach units, as anything longer is currently not possible. There are also, however, long term plans for a new maintenance facility at Perth. New trains from old The iconic HST is now over forty years old. With around ten million miles on the clock these trains are approaching retirement for long-distance services as they are about to be replaced by IEPs. However, as ScotRail is about to demonstrate with its reincarnation of these trains, there is still much life left in them. Some might think it

odd that a train operator would wish to invest in such old, well-travelled trains. Their high power-to-weight ratio will deliver the reduction in journey times required by the franchise specification and ensure the severe gradients in the highlands are not a problem. They will be costlier to operate and maintain than current rolling stock. However, their re-vamped mark 3 coaches will generate extra business by giving passengers what they want. In , he took a three-year break as a volunteer to manage an irrigation project in Bangladesh. He retired from Network Rail in after a year railway career. At that time, he was working on the Airdrie to Bathgate project in a role that included the management of utilities and consents. Prior to that, his roles in the privatised railway included various quality, safety and environmental management posts. David was appointed Editor of Rail Engineer in January and, since , has written many articles for the magazine on a wide variety of topics including events in Scotland, rail innovation and Russian Railways. In , the latter gave him an award for being its international journalist of the year.

Chapter 5 : InterCity - WikiVisually

The Hitachi is a "modern electric train" whereas the was "something really special", a symbol of British design excellence. "When it came in in it was the second fastest in the world.

Train formation[edit] Formations of HST and push&pull train sets would always place the driving van at the London end of the train, then two or three 1st-class carriages, restaurant and buffet car, and 5 standard-class carriages; the locomotive would always be at the country end of the train. The only exception was the London to Norwich route. As Crown Point depot is to the south of Norwich station, the locomotives worked from the London end as this facilitated easier loco changing at Norwich if necessary. Operating trains in push-pull mode eliminated the requirement to attach locos at terminus stations in order to turn the trains around. This also saved maintenance costs and reduced the number of locomotives and carriages needed to operate the services. Main destinations[edit] East Coast Main Line: West Coast Main Line: Great Western Main Line: Great Eastern Main Line: London Victoria, Gatwick Airport. The basic blue colour was relieved on long-distance coaches by a light grey panel around the windows. The fronts of locomotives and multiple-unit trains were painted yellow to improve visibility, and this was often wrapped around on to the side in varying amounts. The part of the power car nearest the passenger coaches was also painted blue and grey, but most of the power car was painted yellow with a wide blue panel which lined up with the grey on the coaches. It was painted in a new livery with dark grey upper body and light grey lower body separated by wide white and red bands. The logotype on coaches was positioned as before but changed to black. The colours were unchanged although locomotives often carried less yellow than before but locomotives, carriages and advertising received a new logotype. Initial plans were for the train operating companies to co-operate to continue providing a consistent InterCity network, but disagreements meant this did not occur. The new operators replaced the InterCity branding and liveries with their own branding. Several locomotives and carriages have subsequently been repainted into InterCity livery. Abellio ScotRail announced that it is to revive the InterCity name on new services operated by refurbished High Speed Train sets, linking seven major cities in Scotland, from mid

Chapter 6 : In photos: A trip on the new GWR Intercity Express trains “ and my verdict

Template:Redirect Template:Infobox locomotive The InterCity was the brand name of British Rail's High Speed Train (HST) fleet, introduced in The InterCity train is made up of two power cars, one at each end of a fixed formation of Mark 3 carriages, and has a top speed of.

These are external links and will open in a new window Close share panel Image copyright Hitachi A new Japanese train is arriving on British shores to replace the much loved InterCity Will people take it to their hearts in the way they did its veteran predecessor? Pendolino probably, perhaps a Javelin, possibly even a Voyager. Not many modern trains are household names in the manner of a Rocket or a Mallard. A new train is arriving from Japan with big shoes to fill. A test version of the Hitachi Class Super Express has been unloaded at Southampton docks as a first step to replacing the familiar InterCity Over the next few years, of these hi-tech trains will be assembled at a new plant in County Durham. All will be electric and almost half will be able to switch between running on overhead wires or - where a line has not been electrified - as diesels. The first trains will run on the Great Western main line from and the East Coast main line from Rail writer Christian Wolmar says the new Hitachi will be the standard UK train over the coming decades. Image caption Top speed here refers to optimum service speed Wolmar is critical of the way the trains have been paid for. Wolmar is a fan of the trains themselves. Modern trains are smoother and have more acceleration and Hitachi has a good reputation. The new Hitachi will reach mph, the same service speed as the British Rail warhorse it is replacing. The maximum recorded speed for the was mph - a world record for a diesel. The Hitachi train is capable of mph but will only be able to reach this speed if Network Rail performs an upgrade on the track. But the Department for Transport says it will cut journey times, increase the number of seats and services, and be more comfortable. Average journey times will be cut by "up to 15 minutes" on routes from London to cities such as Cardiff, Swansea, Bristol, Leeds, Newcastle and Edinburgh. There will be better access for disabled travellers. And it will have the biggest toilet of any train, according to Hitachi, with the doorway It is expected to create jobs in the North East. It means that a London to Inverness train could travel up to Edinburgh on the electric wires and continue on to Inverness using diesel. At the moment a diesel would have to be used for the entire mile journey. It seems unlikely the new train is suitable for High Speed 2 HS2. Its top speed of mph is a long way short of the mph needed. Passengers might mistake it for the sleek-nosed Javelin, another Hitachi train that runs on High Speed 1 between Kent and London St Pancras, and ran a shuttle service to the Olympic Park during London The carriages of the new train will be longer than the Javelin as it runs on longer straighter routes, Hitachi says. The Pendolino is used on the West Coast main line, which has lots of curves, and the trains have to tilt. And a lot more modern. The InterCity had a diesel locomotive at each end of the train, whereas all the kit needed to power the new Hitachi is under the floor - there is no need for a locomotive, he says. Is this the end of the InterCity ? Virgin East Coast says the Hitachi will replace its 14 s, as well as some older electric trains. First Great Western has 53 of the s - the most of any train company. But the s will stay on the Paddington-Cornwall service. The almost venerable will continue on other lines such as the East Midlands service and between Scottish cities. Ford thinks they are incomparable. The Hitachi is a "modern electric train" whereas the was "something really special", a symbol of British design excellence. It was something to be proud of. With its familiar sloping nose, the symbolised a new era of clean lines and high technology on a network that had been underfunded and getting tatty for decades.

Chapter 7 : InterCity v Hitachi: What are the UK's new trains like? - BBC News

InterCity s for parcels traffic Discussion in 'UK There are many services that a modern, nationwide railway company could deliver. Need a massive shift in.

Motorways spread their tentacles and bypasses cleared bottlenecks; by , car ownership had increased by five times since A step change was needed if long distance train travel was to survive into the s “ but without the funds or political will to build new express lines like France and Japan, the new trains had to deliver accelerated performance on existing infrastructure, and around existing slower passenger and freight traffic. Disregarding the gas turbine, which was not intended for series production, the great innovation was the ability to tilt, to allow the train to take corners more quickly than a conventional train without the need to realign curves. Using tilt and hydrokinetic brakes, the APT-E could reach up to mph on existing lines but still stop in the same distance as conventional trains. It clearly showed that the ideas behind it had potential once it emerged in , after several years in development, but was far from a practical or affordable option for mass production. But that was the least of its problems, as perhaps predictably, it was too advanced and expensive for the real world. The concept has numerous advantages “ it reduces the weight of the power car to something that virtually every line in Britain can accept without expensive strengthening of the track and bridges an HST power car is just 70 tons “ barely half the weight of existing 2,4hp diesels ; it maximises flexibility “ no need to run the engine round the coaches, just drive from the other end; and reliability, by having in effect two separate locomotives “ and one was enough to propel the HST at mph; unlike conventional diesel multiple units, there are no engines under the floor of the coaches, so no noise or vibration for passengers; and it allowed for the train to styled in a cohesive and dramatic way, with power cars and coaches sharing the same profile and livery. The chosen engine was the Valenta, produced by the Paxman engineering and diesel engine company. The Valenta is a V12 four stroke turbo-charged and intercooled diesel, with a capacity of 79 litres 4, 6 cu in. As installed in the HST, the engine in each power car produced 2, 400 hp 1,500 kw. Power is passed to the four traction motors on each power car through a Brush Traction generator. The Mark 3 was the first British coach to feature such things as double glazing, full air-conditioning and air based suspension. Crucially, they were fitted with disc brakes, not the clasp brakes of older stock, which enabled the HST to be brought to a halt from mph in the same distance as a Deltic from mph. This meant no need to replace the lineside signalling. The meticulously developed and tested suspension and bogie American “ truck design gives a very smooth ride on even indifferent track, and the spacious seats are an indictment of virtually every train built since. Truth be told, the looks of the prototype power unit were not its best feature. This, plus crash protection, meant a heavy looking frame around the central window, exacerbated by the mandatory bright yellow paint. But the performance was stunning. Pretty much straight out of the box, it demonstrated that a sustained mph was possible on existing track, safely, smoothly and comfortably, and with impressive acceleration and braking. Considering he was better known for such classics as the Kenwood food mixer, the angle poise light and the standard British parking meter, picking him for the HST was a gamble “ but one that paid off brilliantly. The production HST looks fast and modern, even now. Conventional railway couplings were replaced by an emergency coupling hidden behind the smoothed front panel. And just in case you were in any doubt, the new name Inter-City was prominent on the side of the power car and on each coach. Passengers could see they were being invited aboard something new and special “ but without paying a premium fare “ the HST has always been a standard fare train. The big acceleration on that route came in , when almost an hour was cut from London “ Edinburgh times and the service frequency increased. Ultimately, 95 sets of Mark 3 coaches and power cars were built, and both the East Coast and Western mainlines strengthened trains to 9 coaches. HSTs have always been intensively worked “ most run 1, 000 miles every day, and on the East Coast, one diagram runs from Leeds in Yorkshire to London, to Aberdeen in north east Scotland, back to London and then back to Leeds “ something over 1, 000 miles of high speed work in 18 hours! The Cross Country network, centred on Birmingham, is also a key user and they remain as the second string on the East Coast. Not bad for something designed as a stopgap 40 years ago! Inevitably, there have

been reliability issues over the years, most notably with overheating in the exceptional summer of , but these were largely resolved by tightening inspection and maintenance procedures. Other issues have been caused by the hard life the engines get – constantly cycling from full power to coasting and back, as frequently as every 5 minutes on some routes. And by the early s, it was apparent that while the train had a long life left in it, the Valenta was past its peak – too noisy, dirty and fuel-hungry for the 21st century, and increasingly hard to maintain. So re-engining became the game, with the first trial of a new Paxman engine, the VP, in leading to a programme to re-engine the Midland Mainline fleet of 24 power cars. Operators elsewhere preferred the MTU V16 engines, and there are now power cars using that engine. The last Valenta was replaced in .

The HST does have two basic problems, which both date it and show that, ultimately, it was built to a budget. And the toilet discharges direct onto the tracks beneath. Yes, in the mph masterpiece, you still cannot flush when the train is stationary. Both these need to be fixed if the trains are to fulfil their potential to last another 20 years – and can be. After all, Hitachi turned one into a diesel-electric demonstration prototype. Since privatisation in the s, HSTs have appeared in the liveries of at least twelve private operators at various times, some better than others – a bewildering kaleidoscope to the ordinary observer. There is even an all-over yellow one today, used by the infrastructure owner Network Rail as a track measurement train; it covers all the mainlines of Britain every 13 weeks, checking and recording track geometry at high speed. It also made sure that periodically a new high speed record would be set, usually to promote new services. In September , the new Tyne-Tees Pullman covered the miles from Newcastle to London in minutes at an average speed of . An 18 mile stretch near Peterborough was covered at an average of . And in November , power cars City of Wakefield and with three coaches set a new world speed record for diesel traction of mph between York and Northallerton – a record that has yet to be verifiably broken. Diligent online hunting for advance fares made first class train travel cheaper and faster than flying down to the capital on business; southbound was the Flying Scotsman from Edinburgh, formed of one of the new Class 91 electric sets – no faster than a , but bouncy and cramped. No commuters, as first stop is York, miles north. And the last coach was almost empty – a table for two at the very rear of the train to yourself. Spread out, recline the seat, perhaps; enjoy the at seat drinks service from the attentive stewards. Then, after York, move forward to the Dining Car for the best train food in Britain- a leisurely three course dinner, with not a drop of wine spilt, as we skim across the Vale of York at two miles a minute or more, if time needs to be made up. Beats an hour on the Underground to Heathrow, two hours queuing and an hour and a half squashed in a every time. How right he was – and nothing has matched that standard yet.

Chapter 8 : ScotRail HSTs: Don't let the truth spoil a good headline – Rail Engineer

INTERCITY s have been backbone of long distance trains for more than 40 years. But now these iconic British built trains face being pushed into the sidings by a new era of high-speed rail.

The decision to use two power cars was taken very early in the project—engineers had calculated that the train would need 4, horsepower to sustain the required speed of miles per hour on the routes for which it was being designed the Great Western Main Line , Midland Main Line , and the Cross Country Route , and it was quickly established that no single "off-the-shelf" diesel engine was capable of producing such power. Also a factor in the decision was that the use two locomotives, operating in push—pull formation , would cause less wear on the rails than a single, much heavier, locomotive. The framework of the new locomotive, classified British Rail Class 41 , was built at Crewe Works before being transferred to Derby Carriage and Wagon Works for completion. The design of the locomotive incorporated a driving desk fitted around the driver, a sound-proofed door between the cab and the engine room, and, unusually, no side windows. By the autumn it was running trials on the main line and in May the prototype, now designated Class , set a world diesel speed record of Production versions Edit The first production power car, numbered , was delivered in late , with a significantly different appearance from the prototype. The streamlined front end lacked conventional buffers, and the drawgear was hidden under a cowling. There was also no driving position at the inner end. The appearance of the train is the work of British designer Kenneth Grange. Grange was initially approached just to design the livery for the train, but under his own impetus decided to redesign the body working with aerodynamics engineers. He went on to present the new design to British Rail and persuade them to adopt it. The lighter axle loading allowed the trains to travel faster than conventional services along lines not suited to full-speed running, such as the Edinburgh to Aberdeen line. Known as HST differential speeds, coupled with superior acceleration capability over older locomotives, this allowed substantial cuts in journey times over these lines. The increased speed and rapid acceleration and deceleration of the HST made it ideal for passenger use. By the start of the summer timetable in May , the full complement of 27 Class sets — was in service on the Western Region, completely replacing locomotive-hauled trains on the Bristol and South Wales routes. Passenger volumes on the trains rapidly increased due to the speed and frequency of the service, an effect previously seen only when electric trains had replaced diesel or steam services. British Rail Class 43 at Chesterfield. Initially, British Rail planned to fit uprated Template: Within a year they had displaced the Deltics to lesser workings and reduced the London-Edinburgh journey time by up to an hour. Ninety-five HST sets including Class 43 powercars were built between and More Mark 3 trailer cars were built in the s for the Western Region Class s, making them eight-car rakes in common with those used on East Coast and Midland Main Line services. During the s only the Cross-Country sets remained as seven-car rakes, with just one first-class carriage.

Chapter 9 : Railway Books - Diesel and Electric Traction

InterCity (or, in the earliest days, the hyphenated Inter-City) was introduced by British Rail in as a brand-name for its long-haul express passenger services (see British Rail brand names for a full history).

Before , Cross-Country HSTs typically used seven coaches, with one fewer first-class carriage in the formation. In the early s Virgin Cross-Country HSTs often had five-car formations, giving better acceleration and shortening journey times. To complement the advanced technology tilting train project British Rail APT-E it was decided in to build two lightweight mph capable Bo-Bo locomotives to push-pull a rake of the new metre long Mk 3 coaches. They were intended as a stop-gap until the APT was proven. These specialised locomotives had conventional buffers at the driving end only, and an auxiliary cab at the other end to allow shunting. To power the HST at up to mph, each locomotive had a new diesel engine, the cylinder Paxman Valenta, running at 1, rpm and developing 2, bhp. The tonne total weight of the locomotive gave it a The prototype train of seven coaches and two locomotives was completed in August By the autumn it was running trials on the main line and in May the prototype, now classified Class , set a world speed record of The first production power car numbered was delivered in late , of significantly different appearance from the prototype. The streamlined front end lacked conventional buffers and the drawgear was hidden under a cowling. The single cab window was much larger than the prototype and there was no driving position at the inner end. Deliveries continued through and in October a partial service of HSTs running at mph began on the Western Region. By the start of the summer timetable in May the full complement of 27 class sets - was in service on the WR, completely replacing locomotive-hauled trains on the Bristol and South Wales routes. Usage of the trains rapidly increased due to the speed and frequency of the service, an effect previously only seen when electric trains had replaced slower diesel or steam services. The production of Class eight-car trains continued through for East Coast Main Line services. Initially British Rail planned to fit uprated 2, bhp Valentas to these longer HSTs but this plan was shelved as the intensive running on the WR began to result in a high level of engine failures, often due to inadequate cooling. For a while the WR power cars were derated to bhp. Within a year they had displaced the Deltics to lesser workings and reduced the journey time to Edinburgh by up to an hour. In total 95 HST sets and Class 43 powercars were built between and During the s only the Cross-Country sets remained as seven-car rakes, with just one First Class carriage. The original Inter-City livery was blue and grey, with a yellow front for visibility continuing down the side of the power cars. The second livery was mostly grey power cars with a white band along the middle, yellow underneath the white band, and with the InterCity colours cream, red, white, brown for the parcel compartment of the power cars and the coaches. There was brownish-grey, dark grey almost black around the windows with a red and white stripe below the windows, and retaining the yellow bands on the power cars. A later variant of this livery saw the yellow side-bands replaced with light grey and did not feature the British Rail name or logo: After the privatisation of British Rail , individual train operating companies painted the HSTs in their own colour schemes, with some lasting longer than others. The current schemes are First Great Western: A new livery is being rolled out consisting of a blue gradient body with pink doors GNER: Both power cars were purchased by First Great Western in There are several Mk 3 vehicles in the Royal Train. These vehicles came from the prototype class vehicles, identifiable by different window frames. The Royal Train is painted in a deep maroon livery. In First Great Western announced a major overhaul upgrade for its Class 43 locomotives power cars , including a new MTU engine. Two power cars are currently undergoing trials in service with the new engine. In , they undertook a trial refurbishment of a pair of HST coaches to bring them up to modern standards. Another coach has been refurbished with experimental aircraft-style seat-back screens. As part of its franchise commitments First Great Western has announced that it will be refurbishing its entire fleet and re-engining all Powercars with the MTU engine [1] In January the first batch of power cars was taken to Brush Traction to have MTU engines fitted. The remainder will be refurbished with new seating leather in First Class , at-seat power points and will retain the buffet for the long distance services to Swansea and the Westcountry. However, the reduction of the number of coaches has led to chronic overcrowding on the Great Western route.

The coaches have been rebuilt to the same "Mallard" standard as its InterCity electric sets with similar designs of seating, lighting, carpets and buffet cars. The power cars themselves have also been upgraded with MTU engines. Some retained for services to Aberdeen, Inverness and Hull. However it is widely accepted that such vehicles cannot approach the high level of comfort and noise reduction afforded by the Mk 3 coaches of the HST. The sound and effect of an underfloor diesel engine is now widely recognised as being unsuitable for Inter-City trains. Brush Traction is to fit modern quiet and fuel-efficient MTU engines to the power cars. It is anticipated that this will give the HST at least another 10 years in front-line service. First Great Western has purchased 14 off-lease ex Virgin power cars and intends to replace the modern Adelante units with s-vintage HSTs. A vision of the future? Mark 3 coaches - the coaches sandwiched by the Class 43 power cars on HSTs. High Speed Train - for information about high speed trains in Great Britain.