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STEAM

RAILWAY

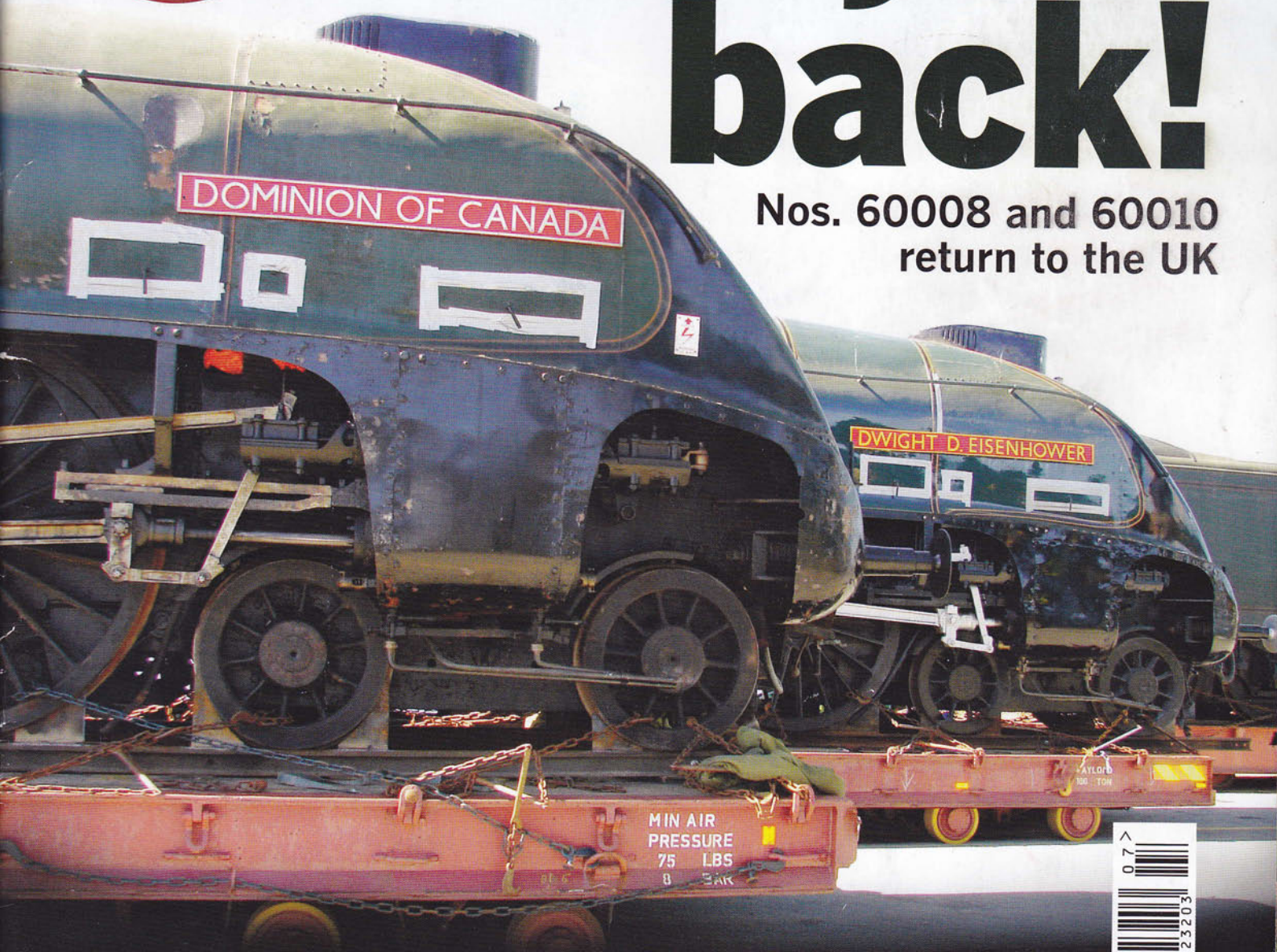
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Seaham steam

Returning a 19th century locomotive that has known many guises to steam presents curatorial dilemmas for a museum. Such was the case with Lewin 0-4-OST No. 18, as the Beamish Museum's transport curator explains

BY PAUL JARMAN

September saw the completion of seven years' work on a locomotive that became an icon of North East industrial railways in the 1960s, gaining a certain amount of fame at the time. It had a working life of 93 years at Seaham before a protracted retirement and prolonged restoration at Beamish Museum.

Built in 1877, No. 18 had been supplied to the Londonderry Railway, which then owned and operated the docks at Seaham. Subject to a number of rebuilds and major overhauls, it would be fair to say that while very little of the original locomotive - a product of Poole-based manufacturer Stephen Lewin (W/No. 693) - survives, it is no less interesting and as a result is probably of greater regional historical interest. It is, I believe, more appropriate to consider No. 18 a Seaham Harbour Dock Company product, incorporating components of the Lewin within its fabric.

Quite how a tiny contractor's locomotive from Dorset came to be supplied to a County Durham port will probably always remain a mystery, but works number 683, which would become No. 18 at Seaham, was set for a long working life ahead of it when it arrived, presumably by sea, to join the locally built Head Wrightson vertical-boilered 'coffee pot' locomotives at work on the confined and sharply curved dockside lines beneath the coal staithes. The engine was a four-wheel well tank with an open cab, tall chimney and prominent sand box mounted atop the boiler.

At some time between 1877 and the early 20th century, an enclosed cab was added and a small set of side tanks fitted either side of the boiler. A photograph of the engine shows it in this condition, though the tanks followed the cab at a later date as evidenced by a drawing by R J Inness. For the next three decades the trail goes very quiet and we don't see anything of No. 18 until 1936 - perhaps it lay out of use for a number of years, hence the lack of photographic record in this period?

The extent of the rebuild is certainly interesting. It also raises the question of who actually carried the work out. The Seaham Harbour Engine Works (SHEW), which had emerged from the Londonderry Railway's Engine Works, would certainly have been able to carry out such work, the premises having outshopped new locomotives in its long history since George Hardy had arrived in 1855 and begun the establishment of an impressive facility that ultimately was bigger than the demand for it. However, the SHEW lost money with gusto and closed in 1925. So the harbour company was compelled to develop its own facilities and, given the readily apparent house style of engines appearing in the 1930s from overhaul, No. 18 was rebuilt in this new workshop as it shares those same characteristics and finish.

No. 18 was fitted with a new saddle tank, cab and probably boiler, with the well tanks removed and a host of fittings including Peckett injectors and steam brakes - items favoured from this manufacturer by the Seaham Harbour Dock Company for its locomotives. It also received the preferred North Eastern Railway livery style and also the square window frames of a type that was favoured for the engines built and rebuilt by the Londonderry Engine Works in the 1890s.

It settled into a regular pattern of operation, shunting the distinctive 1870s chaldron waggons engaged on retrieval of spilt coal, collection ➔

Right: Chaldron waggons are no strangers to No. 18, having been its staple diet during its years at Seaham Harbour. On September 1, the newly-restored locomotive poses with some of Beamish Museum's Chaldron's during the attraction's 'Power From The Past' event, just days after it made an emotional return to Seaham.

ANDREW DENNISON



am survivor



No. 18 prior to work commencing on this restoration.



After rebuilding in Derbyshire, the boiler returns.



Newly fabricated tank and bunkers await fitting.



Polishes the gloss before the tank is fitted into place.



Nearly there. No. 18 complete with new wooden buffers.



With the cab on, No. 18 nears completion.



→ of stone from the north beach (for use in the concrete plant) and delivering concrete blocks from the plant to the breakwaters where there was a constant demand for them in the defence of the harbour against the force of the North Sea.

The next major overhaul took place in 1960, again after a period out of use. At this time the open cab was enclosed and a number of other changes made. We also know that the engine had suffered from numerous bumps and scrapes including a water carry-over which shattered the driver's-side cylinder cover and sheared the corresponding crankpin, and, later, a broken coupling rod. We know this as the man driving that day, Hal Weetman, has been a supporter of the project since he came to know about it in recent years, offering not only fascinating anecdotes about No. 18, but also practical advice regarding some of the missing fittings.

In 1969 Hal had charge of No. 18 when he noticed steam leaking from under the boiler cladding. He took the engine up to the top yard for inspection, whereupon it was condemned, never to steam at Seaham again. In 1975 it was transferred to Beamish Museum to begin a new life in preservation.

After a short spell on display at Beamish, an offer from an offshore engineering company based in Hartlepool to restore it to original condition was readily accepted. At the time the museum was in its infancy and gladly accepted such valuable offers of help whenever they arose. Unfortunately the enthusiasm of the restorers outpaced the ability to manage the curatorial elements, and while the engine rapidly regained something of its 1877 appearance, much of the subsequent history was destroyed, including the saddle tank, cab, chimney and sandboxes to name but a few items. I still live in hope that a call might be received from the Hartlepool area offering us a mysteriously chimney-shaped plant pot...

Left: A real icon of industry, No. 18 shunts beneath the staithes at Seaham Harbour in 1968, looking every hinch the antiquated 'hotch potch' it was at the time. JOHN HUNT

Below: On Friday September 14 No. 18 made its first moves under its own steam following rebuilding. A very proud moment for all concerned in the restoration of this unique survivor. ANDY MARTIN



No. 18 was relaunched into service at a ceremony in 1977. It was an indifferent performer and soon the aged boiler was a cause for concern, leading to withdrawal of the engine, by now sometimes known as 'Lewin', at the beginning of the 1980s. Again, a protracted period out of use would follow.

In 1989 the engine was loaned to the Old Locomotive restoration group based at Padiham Power Station for a proposed restoration to steam. The scheme foundered after the project to develop a new steam centre failed and No. 18 was recovered back to Beamish in 1991, where it at least now found a home inside the newly built Colliery Engine Works. Jim Rees, Keeper of Industry, removed the 1970s additions and also had the rear axle replaced, one driving wheel centre metal stitched and the tyres turned, as well as carrying out work on the boiler, which included a new barrel and dome. With little chance of the engine being used at the museum at that time, there the work (and funding) ceased until the latest project began seven years ago.

When I took the post as transport curator at Beamish, it was clear to me that No. 18 was the engine to restore. However, for various reasons the more complete Head Wrightson 'Coffee Pot' locomotive, No. 1, was chosen to reintroduce steam operations to the Edwardian Colliery area. This work was completed at Easter 2010, enabling the same team of myself, David Young (volunteer), Vince Allen (engineering contractor) and a number of other regular contractors and contributors to turn our full attention to No. 18.

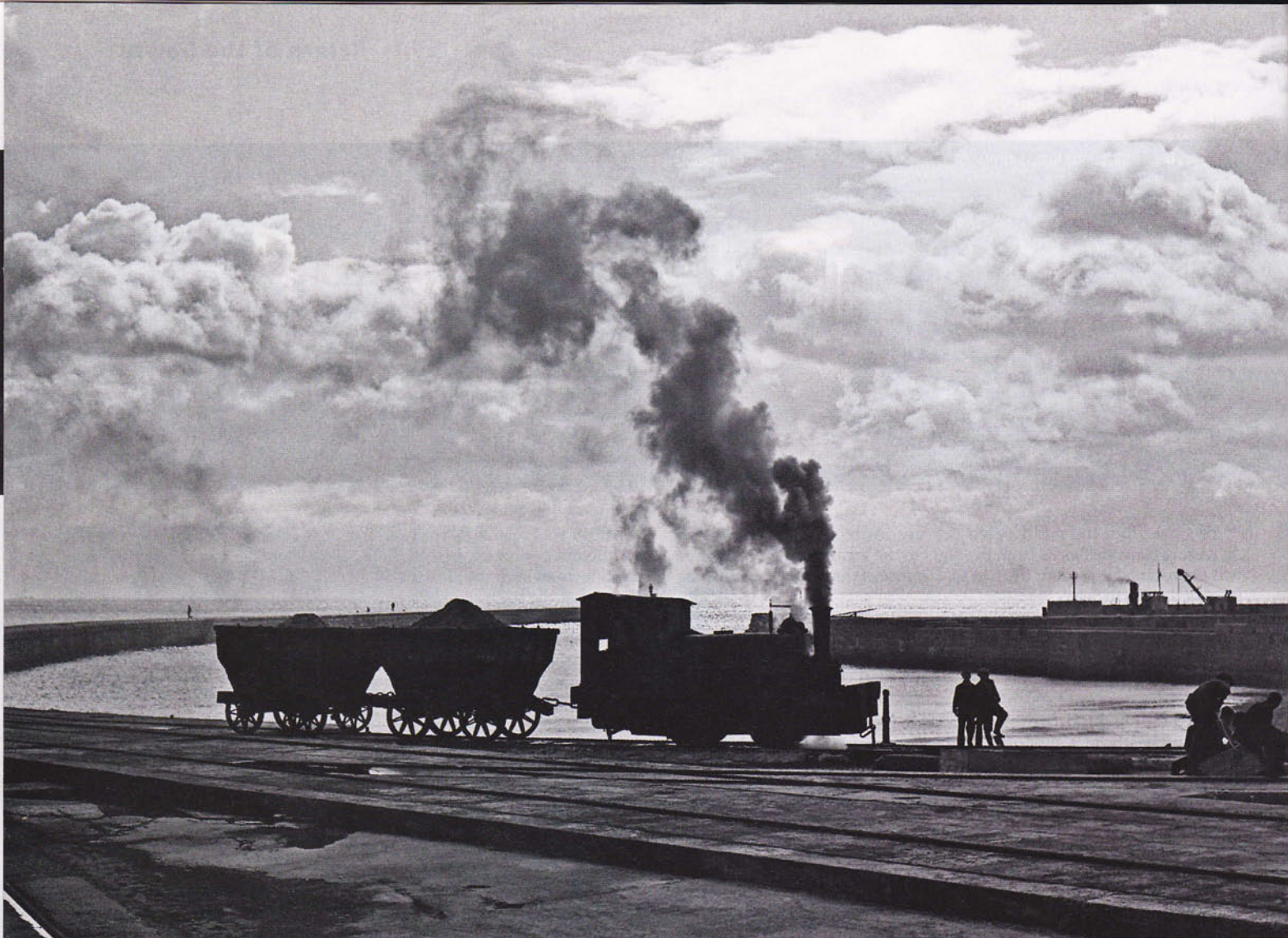
The boiler required work to the firebox as well as a number of other works to restore it to steaming condition. There were almost no fittings, no superstructure and the frames were badly bent. However, while work had been ongoing on 'Coffee Pot', Dave Potter of Bromstead Services had been busy drawing No.18, to survey what remained and then fill in the (extensive!) gaps of what needed to be made.

In essence we had a rolling chassis to rebuild, a semi-overhauled boiler to complete and everything else to make! Funding was attracted from various sources, including PRISM, private donors and the Friends of Beamish Museum. By and large, though, the restoration was carried out to a very tight budget with much made of any funds available in order to maximise their impact.

A focus on period authenticity and attention to quality was a major component of the plan. The entire project was governed by a Conservation Management Plan (CMP) which documented all known history, and discussed the then current condition, restoration options (if restored at all), what would be needed to complete the restoration and also created a framework to record the restoration process, new components added and the rationale that underpinned the decisions made. This way, future generations studying the engine will know what is original, what is restoration and what is replication. It also provides a repository for recording the ongoing history of No.18, which will hopefully be a long and active one.

The art of compromise is something that had to be learned a number of times with the restoration of No. 18. I had selected the 1936 condition for No. 18 as this enabled us to retain as much as possible of the original material that had survived - an important factor when so much had been lost in 1969 (as the engine was initially dismantled at Seaham) and in 1977.

For the 1936 reconstruction the Seaham Harbour Engine Works had removed the well tanks and fitted sturdy frame cross-members. It was felt important to retain these. However, the front end, between the cylinders in particular, had not been well supported and later even further weakened by removal of large amounts of frame plate to allow passage of steam pipes through them; the result of this, the widely spaced cylinders and numerous rough-shunts was a badly bent set of frames. →



Above: Seaham went on to become a popular target for enthusiasts in the North East after British Railways dispensed with steam in favour of more modern traction. How very different the BR diesel-electrics must have seemed compared to the 1877-built Lewin. The locomotive works the quay on July 4 1968. JOHN HUNT

➤ This clearly needed correcting and the solution was to remove the cylinders and replace the section of frames affected. The opportunity was also taken to stiffen this weak area with relieving plates. The cylinders were refitted, with fitted bolts this time, and new steam pipes made. These were to the existing pattern. It was tempting to improve the Kordina (join) of the two exhaust pipes, by streamlining the passageways to reduce the exhaust back pressure, but this would have been a step too far away from the original and if No. 18 was always an indifferent performer, so it would remain!

The tank, cab and bunkers were very kindly supplied by Hunslet at Statfold Barn, and these were fitted to new support brackets. Due to changes since 1936, the brackets could not fit per original and have had to be swept back to offer appropriate tank support while picking up the original holes in the frames. The rear cab sheet is a compromise as the brake column (possibly not No. 18's original) was shorter than it had been and a taller rear sheet would not clear the handle. In time, as recorded in the CMP, these compromises may be rectified as the engine evolves through a new working life.

The finish of the cab is probably a little excessive, being wood grained and finished to a very high standard. As the open cab is so exposed, and in 1936 the employees at the docks were so proud of their charge, it seemed reasonable to set a high standard of finish for this area, as well as the rest of the locomotive.

Livery-wise, NER style with variations was selected, based on the surviving can from 0-6-0 'Clio' which worked at Seaham, as well as detective work and much study of the contemporary black-and-white photographs. In later years the livery was much plainer (when visible beneath the dirt) and by the time No. 18 was photographed in colour, it was in a fairly basic green shade with various areas of beading picked out in red.

Great care has been taken to record changes from original where known or note where conjecture has been employed. The CMP plays its part here, and will, in time, enable a book to be produced on the long and varied life of No. 18. A high finish was always the aim, however, and great pains were taken to recreate original fittings, such as the Peckett

injectors (entirely new and manufactured from patterns made, in part, by modern CNC methods in dense foam block), and, where not, known to source contemporary fittings of an appropriate type. A very stylish open dial type pressure gauge completes the effect.

David and I painted the locomotive, with lining panels and wood graining (scumbling) by myself. Our regular coachpainter and signwriter, Phil Anderson, did provide the edging lines, however - my skills weren't up to recreating these fine white lines freehand!

A project like this can be all-consuming, with countless hours spent finding images then scrutinising them to observe the tiniest change in detail or preparing sketches so missing parts can be replicated. It is a process almost bordering on obsessive, but one that is rewarding and as much a challenge and pleasure as the finished result. For that reason, no project could be considered 'the last'.

Now that No. 18 (and the Londonderry chaldron waggon fleet) is finished (allowing for inevitable teething troubles), what next? Well, there is the ongoing restoration of the Duke of Sutherland 0-4-4T *Dunrobin* in progress, as well as recently acquired Manning, Wardle 0-6-0ST *Newcastle* (W/No. 1532 of 1901), to focus on.

Our new workshops should enable more projects to be tackled in-house and the first few of these will be started this winter. They will include the extensive overhaul of a Sheffield tramcar, overhaul of the wonderful North Eastern Railway Birdcage brakevan (to go with those chaldrons...) and also the start of the restoration of another former Seaham resident, Head Wrightson vertical-boilered No. 17. This was built in 1873, and rebuilt at SHEW in the 1890s, complete with a rather smart cab. The cab did not survive, but the engine did, though it lost several inches length along the way.

With a new boiler, replica cab and extensive mechanical overhaul, including reinstating the long-lost steam brake, No. 17 will add further to the Edwardian Colliery operation at Beamish in the future and provide another stimulating archaeological project on which to exercise the mind...

■ Latest transport news from Beamish can be found on Paul's blog at <http://beamishtransport.blogspot.com> 