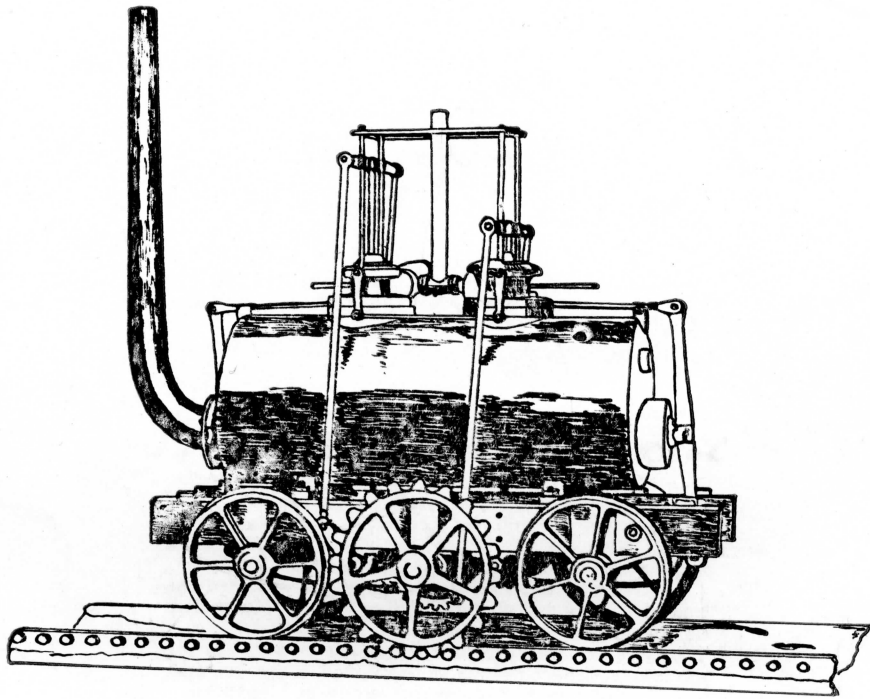


# The Old Run

AUGUST 1962



Journal Of The  
1758 Middleton Railway,  
Steam Locomotives 1812

# An Historic Month

[ See Opposite ]

12 AUG 1812

7 AUG 1862

9 AUG 1962

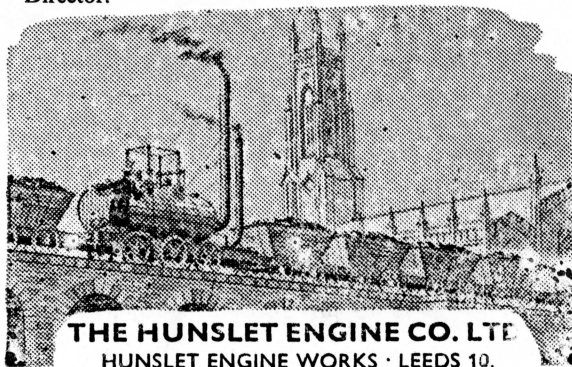
## The Leeds Tradition . . .

It was at Leeds, and not 100 yards from our works, that the first locomotive went into commercial operation. Matthew Murray built this locomotive, illustrated below, in 1811 at his works in Water Lane and placed it in service hauling coal on the Middleton Railway.

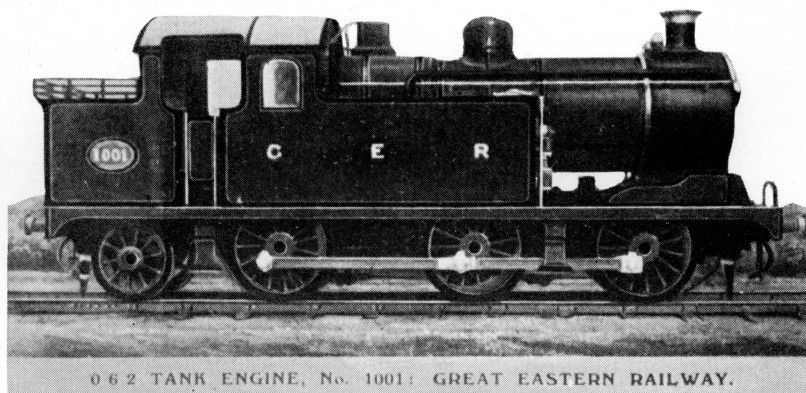
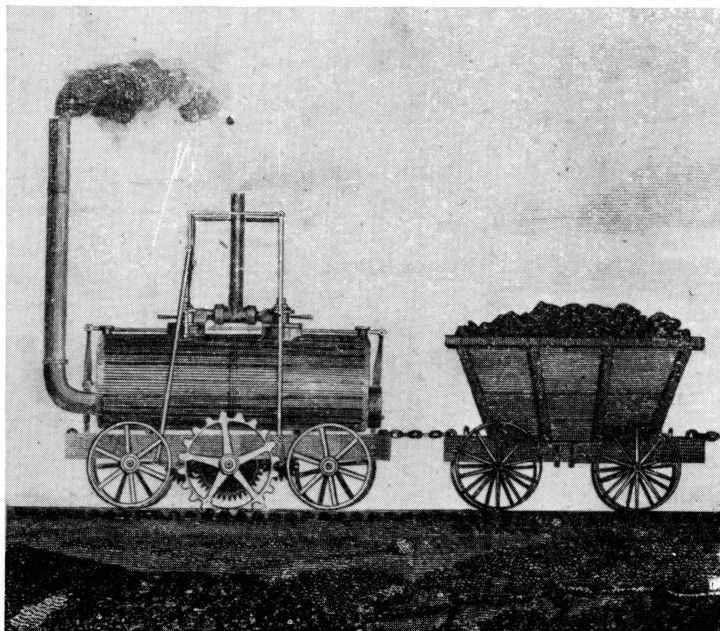
The Hunslet Engine Company has inherited the traditions of a hundred and fifty years of locomotive building in the City of Leeds.

The company also provided the steam locomotives for the first passenger railway in the World — the Swansea and Mumbles, one of whose cars is now at Middleton.

Today the name 'Hunslet' is proudly carried by locomotives all over the World, on the main lines and in industry. The Middleton Railway itself is operated by "JOHN ALCOCK" a pioneer 'Hunslet' diesel locomotive named after the present Chairman and Managing Director.



**THE HUNSLET ENGINE CO. LTD**  
HUNSLET ENGINE WORKS · LEEDS 10.



0 6 2 TANK ENGINE, No. 1001: GREAT EASTERN RAILWAY.



## ILLUSTRATIONS

### Frontispiece:

1. A Murray and Blenkinsop engine at work, 1812 onwards.  
By courtesy Charles E. Lee and Railway Magazine.
2. 7th. August 1862, the Great Eastern Railway was formed. 1001, built 1915, was the only one of her class to have the Ultramarine livery. Her neighbour, No. 999E, was the last steam engine built at the G.E.R. works at Stratford, being finished shortly after grouping. Sir Nigel Gresley had many more of them built in L.N.E.R. days.
3. 9th. August 1962. "Windle" one of the last two Borrow's well tank locomotives, kindly presented to Middleton by Pilkington Brothers; St. Helens, arrived in Leeds to join Middleton Railway.

Inside Cover. Fenton, Murray and Wood were one of the companies which later became part of Hunslet Engine Company. This classic illustration shows Christ Church Meadow Lane with a coal train hauled "push and pull" fashion by a Murray Blenkinsop locomotive in which a nearby works chimney has been combined to give it a spurious double chimney appearance. The steam central blast pipe lacks the "silencer" so that it must be an early design.

## A CENTURY AND A HALF OF STEAM LOCOMOTIVES

A hundred and fifty years after steam locomotives took over in full on the Middleton Railway, August 1962 is a proud month for us. Three years ago, all that remained of the work of Brandling, Murray and Blenkinsop was two miles of slowly rusting, disused, worn-out line, abandoned with little prospect of rebirth. In defiance a Great Northern J50 puffed along a bare half mile, "carrying coals to the City of Leeds."

And now, we see the steam engine at work all along the line. For the whole of August, the diesel has remained silent, and the glow of the firebox, the clank of valve gear, and the puff of exhaust steam has been seen and heard across Hunslet Moor. And newly laid track glistens with the brightness of daily use.

So Murray and Blenkinsop's memories remain green. Can we pay better tribute than Kilburn Scott did in 1928 -- "Matthew Murray - Pioneer Engineer." ?



As our own tribute, this September, our president, Lord Carnock, Vice -presidents, the Right Reverend Eric Treacy, Bishop of Pontefract, and Professor Carter, with British Railways friends, Mr. E.E.Cowell of N.E.R. Leeds and Mr. George Dow of L.M.R. Birmingham will open the Exhibition Week at Leeds City Museum.

This special Sesquicentenary number of the "Old Run" is to celebrate briefly the outstanding work of 1812 in Leeds.

The earlier ideas of Cugnot, Boulton and Watt, Trevithick and Hackworth, and the later work of Stephenson gave, with Murray and Blenkinsop's achievement, a chain of development of the steam locomotive as we know it. For the first time, flanged wheels, a steam boiler, and twin cylinders were combined with success. Apart from using exhaust steam to draw up the fire, as Trevithick had done, all the essential features of the steam railway locomotive were together.

There has been a tendency for Murray and Blenkinsop to receive less widespread fame than other early locomotive engineers. Their use of the rack rail system was often regarded as a blind alley to which they stuck obstinately instead of using smooth wheel adhesion. It must be remembered however that the rack method enabled the first locomotives to climb steep hills and to pull heavy loads with a light weight engine, thus avoiding the damage to the far from robust early rails which occurred with other early locomotives. The rack system was the best solution to the demands made at that time by the Middleton Railway. The relaying with easier gradients in 1881, and the use of rope haulage were necessary when rack traction was abandoned in favour of adhesion haulage. The Middleton 4' 1" standard gauge was abandoned only 11 years before Brunel's broad gauge, in favour of the all conquering Stephenson 4' 8½". There was the difference however that Middleton gauge preceded Stephenson, whereas Brunel's gauge was a later competitor. The first public passenger railway, the 1804 Swansea and Mumbles, was "between 4' and 4' 2" " Other competitors like the Eastern Counties, succumbed very much earlier to the Stockton and Darlington gauge. The half way house of mixed gauge was apparently never seen at Middleton. One shudders to think of a permanent way engineer trying to lay two running lines 7½" apart!

## PRESENT DAY DESCENDENTS

We found out only this month that Dr. A.B. Leah, of the Mechanical Engineering Department of the University of Leeds is a direct descendent of one of the group which had a battle against the Middleton Railway for "invading" the common land at Hunslet Moor. Rails were pulled up and harsh words were said before the law decided that the railway might go forward. The railway celebrated their victory by putting up very heavy fencing outside the line, when light fencing would have done. One wonders whether the age old battle against the commoners of Hunslet had a remote effect on the erection of the 1901 Saxby and Farmer level crossing gates which look strong enough to stop a runaway battleship, let alone the humble horse and cart which is all they had to compete against. Dr. Leah is collecting historic material about Matthew Murray.

A direct descendent of Blenkinsop has come to our notice living at Moortown, Leeds.

Matthew Murray's sister Margaret married into the Clayton family. One wonders whether this was the same part of the Clayton family which founded the present Clayton Company now served by the Railway.

The rest of the Murray descendants became the families of March, Thompson, Standish and Thoday, though the name Matthew Murray died hard. A Matthew Murray Jackson died in 1901, and another of this name died in Russia in 1882. Ralph Murray Thompson of 1889 is the last easily traceable, though the name Thompson appears among the high-ups of Claytons.

## MATTHEW MURRAY'S ACHIEVEMENTS

Many mistakes have been made in accounts of Murray's work, and related matters. It is hoped that this account will avoid the worst pitfalls. The double chimney mistake is well known and illustrated in this issue. There has long been confusion in models as to which side the rack wheel was, although it is known that twin rack wheels were originally intended on central rack rails being ruled out by the need for horse accessibility at times. Some illustrations show the valve gear and piston rod slides in completely impossible layouts. There is also a confusion between the smooth chimney and the type in three sections with two rings bolted half way up.

Murray's achievements were outstanding in their scope. If his locomotive work has not received its full credit other achievements of merit are simply unknown.

Murray is not alone in this. Stephenson is often popularly believed to have invented locomotives, which he did not. He did however invent miner's safety lamps, but Humphrey Davey, not content with the odium of having discovered sodium, took the credit, using his academic prowess to steal the thunder!

Murray had many patents. He patented slide valves and a stationery steam engine. A battle with Boulton and Watt followed and on a purely technical point, the patent was found invalid so that Murray's rights were wiped out. It is rumoured that Boulton and Watt even acquired land round the round foundry of Holbeck to prevent Murray expanding his factory. Although not all Kilburn Scott's research is believed to be infallible, he traced many types of engines to Murray's work. Mill engines and Beam engines were known to be his work, many lasting a very long useful life. Many factories had Murray engines, including one in Burley Road, Leeds. Hydraulic Presses, Hydraulic pressure gauges and a flax hacking machine are among the wide scope of his work.

Furthermore one can trace many later engineers or influences to Murray's lead. Peacock, engineer of the Leeds and Selby Railway, was a pupil of Murray, and he founded the famous firm of Beyer Peacock which is still in the locomotive industry. Among the other names associated with Murray, one finds Joy of valve gear fame, and Kitson also interested in the locomotive field.

There is no doubt that Murray was the biggest competitor to Boulton and Watt in the early days of steam engines. Early this century, the erection of a Watt statue in Leeds City Square provoked a cry that Murray's should replace it.

It is pleasant to record the great achievements of Murray, even here briefly. Happily we are not the first to sing his praises. In 1912 a group of railwaymen walked along the line to Beale Isle to celebrate the centenary of the great August 1812. Unfortunately this is little remembered in comparison to the Darlington centenary exhibition of 1925 with the historic display steam locomotives. May we not dismiss as impossible a thought that those of us who are alive in 2012 can see a full size replica of Salamanca or Prince Regent, adapted to run on 4'8½" puff happily from Middleton to Leeds, to the cheers of the crowd?



Among the many other things he designed, there was an articulated locomotive design submitted to the Stockton and Darlington in 1825. It did not appear to have been manufactured.

Matthew Murray. Born 1765, died 1826. Remembered 1962.

## EGIDE WALSCHAERT

1820 - 1901

The valve gear of Stephenson (link motion) and that of Joy (who was at one time connected with Murray) are quite well known. Casting our net a little wider, let us take a look at a great Belgian engineer. Walschaert lived at Malines (Mechelen) and saw the Brussels-Malines line built in 1835. He started on the State Railway at Malines in 1842 and became Chief Superintendent at Brussels in 1844. A patent was registered in November 1844 in the name of Monsieur Fischer, but for Egede Walschaert's new valve gear. It contrasted with the link motions, it had in general a constant lead, and was simpler for maintenance and layout than the gears needing many eccentrics to make them work.

Walschaert's gear gained immediate recognition in Belgium and France and Germany followed suit. Britain was at first hesitant, the unsymmetrical appearance contrasting with the normal British symmetrical but more cumbersome gears. Walschaert received the 1878 Paris gold medal, and the 1883 Antwerp diploma of honour for his invention.

The Walschaert gear came into widespread use here. One often, though not invariably, finds the Walschaert gear used for fast express locomotives which need to run fast with full regulators and short cut off, with the Stephenson link preferred for hard slogging flat out at slower speeds. Each has their achievements as witness the Doncaster Pacifics and the Stratford 1500's.

Sir Nigel Gresley's genius was marked by his frequent recognition of genius in others. He often continued building other people's designs because they were just right for the job they had to do. And as an example of the tie-up of two top rank experts, we see the Gresley-Walschaerts gear



as on the L.N.E.R. Pacifics. On paper, possibly of doubtful efficiency, with a non-parallel inside cylinder of the three, and a two-to-one linked up gear control to work the centre valve from the outer two cylinders. In practice, if properly maintained there was nothing to beat it. The characteristic clank when shut off, and the equally characteristic "chifferty-chafferty" exhaust noise did not belie a successful combination of two engineering masters, one English, one Belgian. Your author's most hair raising footplate ride was on a tank engine with 4'8" wheels trying to make up lost time. With inside Walschaert gear it romped up to a clear 80 m.p.h. with 8 coaches behind.

So among our recognitions of our home expert and outstanding railway engineers, let us spare a thought for this Belgian, who has done to valve gear what his fellow countryman Poirot has done for detection. And can we please, soothe down our Belgian friend's nerves by occasionally pronouncing his name correctly?

### A GREAT TEAM

We have space for but a brief mention of the outstanding names that will be remembered as long as steel wheels turn on steel rails.

Of the pre-grouping companies, we may think of the names Stirling, Adams, Worsdell, Churchward, Ivatt and Holden. Then there were their modern successors, like Maunsell, Stanier, Gresley and Collett.

One notices to a very great extent the close resemblances between companies which had close relations, or where father and son or two brothers were engineers. Some companies would build nothing but inside cylinders, others went the other way. Some stuck to one driving wheel diameter for many years. One thinks of the resemblance of the Hull and Barnsley and Great Northern products. Also there is the striking resemblance of the Brighton and G.N. Atlantics. How different could one simple wheel arrangement look: how different for example the G.W. Counties, the G.C. Directors and the Midland Compounds.

Again, how often did an engineer's upbringing affect his work. Stanier engines with their taper boiler not only contrast with the Fowler parallel boilers but seem to breathe the magic word "Swindon". On the other hand, Holden's first Stratford effort, a 4-2-2 looked as though it had been stolen from Swindon on a dark night. Then Holden's colleague Fred Russell got to work and Holden's later products

9

were unmistakeably Stratford, the Atte-Bow, not the On-Avon variety.

The amazing thing was how locomotive types so radically different could be equally efficient. Such contrasts were evident when competing lines ran side by side. South of Gloucester, for example, or Peterborough to Helpston. In both cases the trains caused a "No relation to the firm next door" atmosphere. But the tribute is often to those engineers who could make radically different types equally successful.

## RACES AND RECORDS

In a century and a half, what shall we remember? Many historic races and record runs come to mind. The early Broad Gauge trains made amazingly high speeds. In later days, one thinks of City of Truro and the Kings and Castles roaring up Hemerdon bank. One thinks of the Midland getting up Lickey by brute force with everything from American 4-2-0's to the 10 coupled Banker. The LNWR ran by steam from Leeds to Manchester in under the hour, and the Midland to Sheffield in a little over 45 minutes. The North Western romped so fast from Crew to Shrewsbury that they once demolished half the station on arriving there. Going East one will remember the beautiful "Clouds" with a vast Hook Continental blasting their way up the last and toughest mile to Ingrave summit with the train that was never late.

We shall remember the competitors in the Aberdeen race leaving Kings Cross and Euston together and striving to beat the opponent to the junction at Kinnaber where their routes met. One thinks of the L.S.W.R. and G.W.R. fighting for victory with the Plymouth Boat trains which managed to pass each other in opposite directions at Plymouth and Exeter before both turning up at London. The Cheltenham Flyer was very good on its straight and level Swindon-Paddington run. Then we have the combination of the highest speed and the tiniest county. Essendine in Rutland, and Mallard's 126 m.p.h., and a Kings Cross-Leeds run in 2 hours 32 minutes.

Nearer Leeds, it was possible not long ago to see the old battles relived. The North Briton and Bristol Mail would leave York side by side and run like the wind buffer to buffer before parting at Church Fenton.

## COMPOUNDS & EXPERIMENTS

Many types of locomotives have been tried out and abandoned as not worthy. The great strength of the steam locomotive has been its simplicity robustness and ability to keep going even when almost falling to pieces. So many attempts to improve their thermal efficiency were at the expense of simplicity and abandonment followed.

Of compounds, there was a whole range. The Webb compounds often had an enormous single low pressure and two small high pressure cylinders. These amazing machines were sometimes built with the high and low pressure driven axles unconnected with the result that the two axles would be almost trying to go in opposite directions, or else one slipped and upset the steam feed to the other.

The Worrell Von Borries compounds worked well but were not amplified greatly. There were the interesting trials of the G.W. simples and the De Glehn compounds including "La France". Outstanding was Deeley's Midland Compound design, one of which is being kept in perfect condition, restored to Midland splendour. All in all, one concludes that if the boiler would turn water into steam efficiently, both simple and compound would succeed.

Of unusual types, we think of those which were remembered by the builders only with embarrassment. The Padgett sleeve valve engine of Derby and the Decapod of Stratford never did useful work as originally built. The Padgett was scrapped as soon as possible, and the decapod, having defeated an electric competitor was turned to a cumbersome Octapod and trundled in fashion ungainly to March and back for a few years before going. The tender was useful to replace a tender lost from an express in an accident. Then there were the Turbine locos., the Fury high pressure design, the Gresley Yarrow water tubed 10,000, the Stumpf uniflow of the North Eastern, and the outsize Beyer-Garratts and the Swindon Great Bear which was so big it was limited to Bristol-Paddington only.

## A CENTENARY

Within a few days of our celebration date comes the Great Eastern Centenary. With quite a few pro-East Anglians in Middleton, we might mention a few of the G.E.R. outstanding features.



11

The Great Eastern served an agricultural part of England, but included exactly a quarter of the London suburbs as well. East Anglia is at first sight flat, with the Fens as typical. In practice, especially with many lines being laid cheaply, the main lines are often saw toothed especially as they cross all the river valleys, with curves and speed restrictions at the valley bottoms, and then a climb up to avoid a tunnel. One finds for instance that there is more 1 in 100 than anything else on the 20 miles from Shenfield to Southend on Sea. Add to that misty junctions, swingbridges, and low axle loads, and we see why quite a low average speed meant very hard work. The locos had to be light, not too long, and able to pull anything even at the expense of a lot of coal.

The G.E.R. started off as a union of the Eastern Counties, The East Anglian Union, Northern and Eastern and other lines in August 1862, most of the lines were hard up and creditors hovered over the G.E.R. in its early days. Hard work and economy made the G.E.R. efficient and workmanlike even if it was never excessively rich. It started with two main lines via Cambridge and Colchester, the latter being the original capital of England. Apart from Norwich and Ipswich, there were few really big towns, but the service given was adequate. Many of the G.E.R. locomotive chiefs left to go to better jobs elsewhere, so the G.E.R. fleet resembled those of many other lines, until the Holdens, Hill and Ford Russell established the traditional designs, from the main line Claud Hamiltons and 1500's to the Buckjumpers and gobblers for local and goods work.

The good expresses were very good. The Hock Continental to Harwich was outstanding though one suspects an ambulance was waiting at Parkestone Quay to take the fireman off when he arrived. Even on quite ancient days remarkable times were achieved on the Norwich expresses, better even than the first Gresley Sandringham Streamliners achieved.

On September 9th this year, the last steam passenger train will run from Harwich to Liverpool Street, and an era will end. The outstandingly good steam record is to be succeeded by equally good diesels and by 25kv electrics for most of the area near London.



It is amazing but true that since the war, Norwich has had a better service from London than the equally distant Bristol. This fact no doubt annoys the Broad Gauge boys, but it was surprisingly true. If we acknowledge the Norfolk Coast Express and the Cathedrals Express (London-Ely-Lincoln-York) as being memorable, perhaps the greatest achievement on record of steam Great Eastern was the "Jazz" service. A quarter of all London's suburban traffic ran to and from Liverpool Street, and all on a 6 track approach on 1 in 70 in a tunnel. The situation was clearly impossible, as there just simply was not enough room for all the trains needed. Even the three minute interval run by the L.S.W.R. electrics was not good enough. So the impossible was attempted and carried out with success. With lock and block manual signalling, and ancient looking steam engines, they got the train interval down to 2 minutes, and up to 24 trains per hour per line. They painted colours on the coaches to speed the passenger finding first second and third class seats. The West side suburban service carried 11 passengers per second, and it was pronounced "the last word in steam operation". The present day electric service does very well to equal the quality of the steam "Jazz". The most passengers per train was a little over 1800 with the Guard allowed in as a special favour.

There were of course charming branch lines like the Wisbech and Upwell and the K.T. and T. now both doomed. There is the wonder of Cambridge with one through platform.

The outstanding success of steam days is carried on with modernisation. In 24 hours in 1960, all the electric service was altered to A.C. from 1500 volts D.C. The changeover was finished several hours early. The G.E. line today is managing to combine the history and achievements of the past with the progress of modern methods. It is one of the leading B.R. sections in modernisation.

And so we come to the end of our review of 150 years of steam. Although the electric and diesel locos. take over from steam and do very well, steam will survive in museums and on a few amateur lines. We have not forgotten the Broad Gauge, dead these 70 years. A classic poem at the time of its death said "We have lost them, we have lost them But we loved them in their prime, And their names will long re-echo down the corridors of time" And as it was with the Broad Gauge, so will it be with the steam locomotive. This is not scrapping in disgrace. It is retirement with honour.