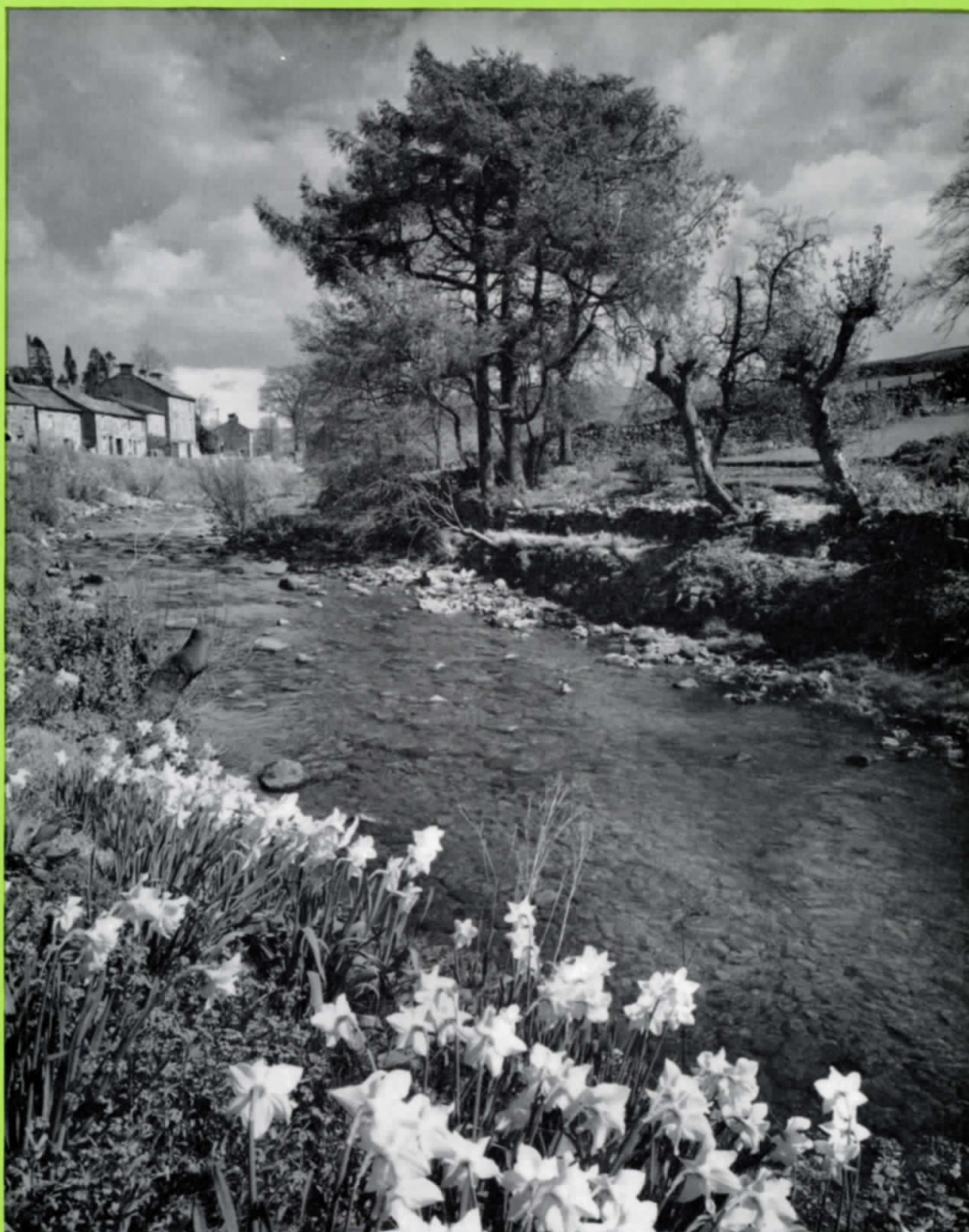


Spring 1970

# Wright ahead

the Head Wrightson magazine



# Editorial

Elsewhere in this edition we have occasion to refer to the 150th Anniversary of the Stockton and Darlington Railway. It was an exciting venture.

What was outstanding at the time was the readiness of great men to back their ideas with vigorous action. We are not the less in need of the same quality today.

We talk easily of the incidence of change today as though it were new, but the necessity for change has always been there. The rural community of Teesside changed. The population of Middlesbrough in 1830 was 40 and by 1850 was 6,000 and in 1860 was 20,000. That was change. All those people were strangers and most had to learn their trade.

The most important of all the phenomena of the last 200 years has been the power revolution. The harnessing of steam was the beginning of it and it has taken us to the moon in 1969. At the beginning of the Railway era 1,000 horse-drawn coaches per day left London and in 10 years the railways killed the whole trade stone dead. The horse traders and breeders, the farriers, the tanners, let alone the drivers and the staffs of the coaching inns. All were redundant! Let us remember that, when we think of change as though it were a modern phenomenon.

Immense good has come to the world from the power revolution and now we face the revolution of instant calculation. That too will be accomplished.

The resourcefulness of man and his resilience must not be doubted. The great restrictive enemy is pessimism. What we have shown we can do in the past we can certainly do again.

*front cover*

Springtime comes to the village of Muker, in Swaledale, Yorkshire.

## Appoint- ment



Mr K Home has been appointed a Director of Head Wrightson Process Engineering Ltd.

## HW in Spain

Head Wrightson & Co Ltd and Indein of Madrid have formed a new Spanish company named 'Indein-Wrightson SA' with offices in Madrid.

The Members of the Board are :  
Mr P Gonzalez – Bueno *president*  
Mr John Eccles *vice president*  
Mr W H Adams  
Mr G Reimers Suarez

The General Manager of this new company is Mr W A Philipson formerly with HWPEL Thornaby.

## TNPG in Australia

Because of the important nuclear developments now under way in Australia The Nuclear Power Group Limited, of which Head Wrightson & Co Ltd is a member company, is establishing an office in Sydney. The primary objective of the office is to support the 500MW steam generating heavy water reactor bid to be made by TNPG to the Australian Atomic Energy Commission in June 1970.



# Going decimal

The time is slipping by. We are down to less than ten months to go at the time of publication to D Day 1971. From 15 April 1970 there are 306 days left in the countdown and this without weekends or holidays leaves only some 202 working days.

There have been several important changes in our coinage in recent months. Of our £sd coins, the ½d and halfcrown have already been withdrawn, and the ten shilling note has virtually disappeared. New decimal coins are in wide circulation, and the new ½p, 1p and 2p coins will be issued from D Day (15 February 1971).

An official 'changeover period' starts on D Day and will end not later than August 1972. During this period our familiar £sd and the new currency (£p) will both be legal tender. All banks, Post Office, most government departments will change to decimal on D Day and many businesses will even change before this date. On the other hand, shops will have to wait until D Day because the new bronze coins are not available until then. However, it is expected that almost all organisations will change to £p operations within a few weeks following D Day and thus the current 1d, 3d and 6d will disappear rapidly.

The recent replacement of the ten shilling note by the 50p piece caused much protest at the time. One wonders what may be said if our well-loved tanner is withdrawn, when subsequently paying for chocolate bars, bus fares, telephone calls, etc. However, in view of recent announcements that the fate of the sixpence is being reconsidered at this relatively late date, it is possible this coin will be retained after all. On the other hand, it will not make that much difference now as the Post Office, local authorities, etc have already planned their conversion arrangements which allow for the withdrawal of the sixpence. For example, the programme to re-equip many thousands of telephone call-boxes with new 2p and 5p payment meters, is the result of the simple decision to demonetize the

sixpence (2½p). It is also announced that it will cost nearly 2½d to 'spend a (new) penny'.

## HW study group

Detailed plans for the eventual conversion of accounting records including such items as pricing, invoicing, stocks and wages, are progressing well. We have decided (in common with many organisations) that the date of our internal changeover should be in advance of D Day, and have selected 2 November 1970. All accounting records and balances will be converted to £p amounts from this date, however, the legal currency will continue to be £sd for some 3½ months. Therefore, all money transactions, eg payment of

wages, will continue to be in £sd until D Day.

The conversion of wage rates is being carefully examined. As part of our conversion arrangements, salaries and wages payrolls will be expressed entirely in decimal (gross pay to net pay) from February 1971 at the latest. However, to give employees a better appreciation of the new currency and changeover arrangements in advance of D Day, it is hoped that we can adopt and produce decimal payrolls from November 1970, with the net pay amounts being shown also in £sd. In this respect, it is intended that all wage rates will be converted so that no loss or gain accrues to either the Company or employees. Detailed explanations of the changes proposed will be distributed in due course.

## Municipal incineration

*The diversity of skill which enables HWPEL to build four post blast furnaces and to incinerate four post bedsteads is depicted in this cartoon illustrating the municipal incineration feature on pages 2 and 3. There are no prizes*

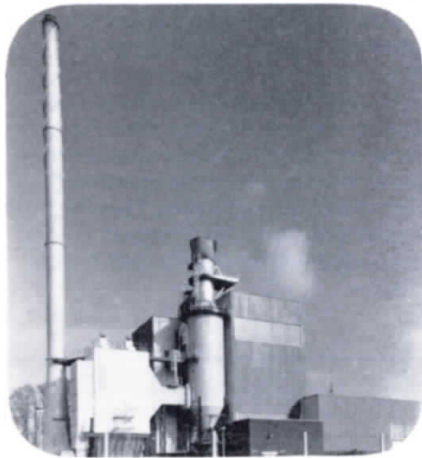
*for guessing who are depicted as Steptoe and Son.*



# Municipal incineration

from blast furnaces to bedsteads

by Gordon Moodie



In 1966 Head Wrightson set out to establish themselves in municipal incineration and formed an association with Josef Martin, Feuerungsbau GmbH of Munich, Germany. This enabled HWPEL to build the well proven Martin municipal refuse incineration equipment in the United Kingdom. It is the best of its kind in the world. The move was timely. Two major plants are at present being constructed by HWPEL for the cities of Birmingham and Exeter.

## The Martin Stoker

The Martin stoker was developed in Germany to burn low grade fuels, such as industrial wastes and slurries and over 400 installations have been made.

In 1959, two Martin stokers were commissioned in Sao Paulo to burn municipal refuse. Since this installation 57 units have been sold to burn municipal refuse. These 57 units have a total burning capacity of over 19,000 tons per day. This is more than any other stoker in the world.

One of the great features of the Martin stoker is that it consists of only one grate. Along the length of the grate alternate bars are fixed to a common reciprocating beam. The remaining bars are attached to a common stationary supporting structure. The length of the grate is designed in accordance with the

type of fuel expected and the calorific value of it. The width of the grate, is determined by the capacity of the stoker. The higher the capacity, the wider the stoker. Refuse often contains quite a lot of moisture and regardless of its calorific value will not ignite and burn until it is dried. Common practice by other methods usually involves two or more grates, stage one, the drying zone ; stage two the heating and igniting zone ; and three the burning zone. The single reverse acting Martin stoker is unique because it simplifies this by drying, igniting and burning in one simultaneous process.

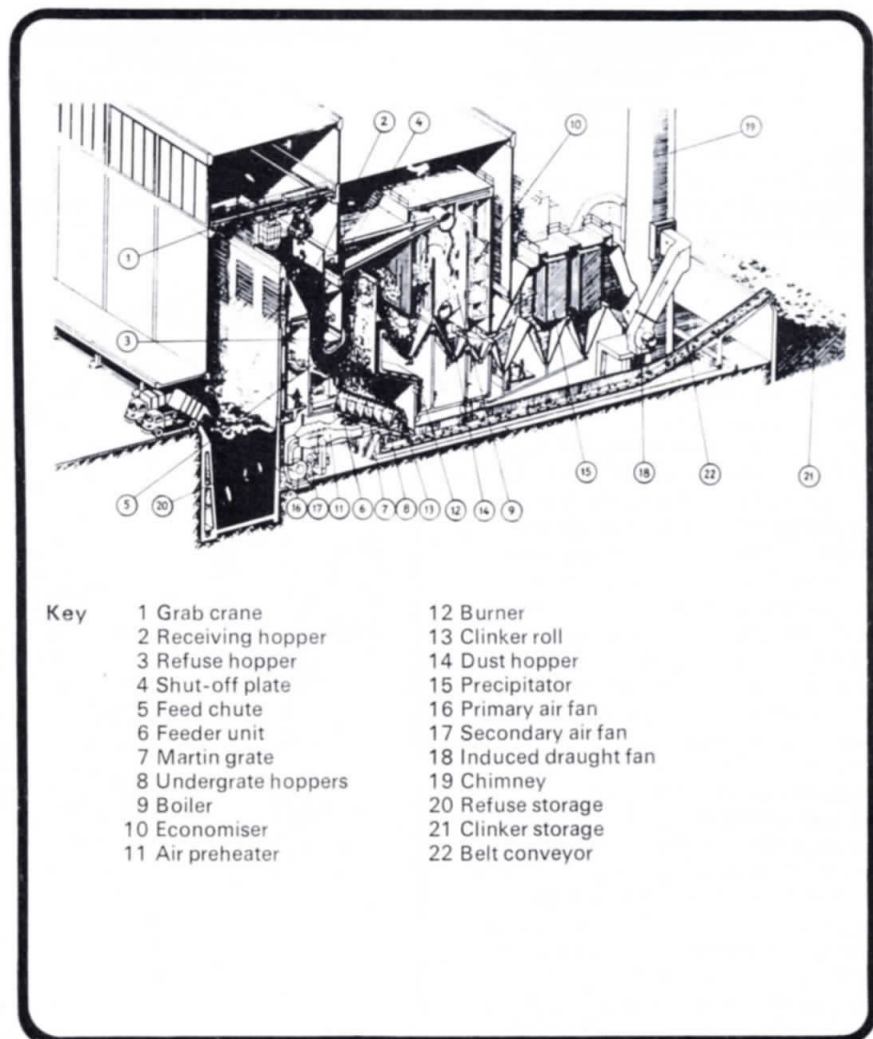
## General description of refuse incineration plant

A typical refuse incineration plant with ancillary steam raising equipment is illustrated below. Refuse vehicles tip their contents into the refuse storage bunker 20. The grab transports the refuse from

the storage bunker into the refuse feed hopper 3. The refuse passes by gravity down the feed chute 5. A horizontal hydraulic ram at the bottom of the feed chute feeds the refuse on to the Martin Stoker 7. A primary air fan 16 forces combustion air through the hoppers and stoker on to the bed of refuse. The oxygen in the air is of course necessary for combustion of the refuse. Normally no auxiliary fuel is required to burn the rubbish except for a short period when starting up.

The clinker produced by the combustion process is quenched in a water bath which is situated below the bottom of the Martin Stoker. The cooled clinker is fed onto a rubber belt conveyor 22. A magnetic separator extracts the tin from the conveyor, the tin being baled and sold as scrap metal. The clinker is conveyed to a clinker storage hopper 2 and can eventually be sold as temporary road fill.

The hot gases emanating from the stoker pass through a radiant heat boiler 9. The gases which have a





temperature of approximately 2000 °F impart their heat through the outside metal face of the boiler tubes and into the water which is circulating inside the tubes. The gas temperature is reduced in this way by approximately 600 °F at the boiler exit. The water flowing into the boiler tubes is heated and forms steam which can be passed to a steam turbine to generate electricity or alternatively used as process steam and/or hot water. To extract the dust from the cooled gases, they are drawn through an electrostatic precipitator 15 by an induced draught fan 18. The dust is removed by this highly efficient means and clean gas is passed up the chimney stack 19 to atmosphere. Because the clinker is odourless and no dust is emitted from the plant, it is possible to site a refuse incineration plant in or near to a residential area given the appropriate architectural treatment. The photograph of our Exeter plant on page 2 shows how this can be achieved.

### The need for refuse incineration in the United Kingdom

The need for incineration plants in the UK is very great. This statement is best explained by the following facts. Based on the present population, 22 million tons of refuse is generated every year in the UK. As the average density of the refuse is 2 cwt/s per cubic yard, 220 million

cubic yards of tipping or storage space would be required every year if we were to dump all the rotting unsightly rubbish. The Martin incineration process however reduces the refuse volume by approximately 90% and only 1/10th of the tipping space is required for the inert clinker which is produced. It can if required be used as road-fill. As ground area and health consideration are at a premium, the need for incineration plants is patently obvious.

### Potential business

The potential of this business is correspondingly very great. To burn the existing quantity of refuse 122 plants would be required if we assume an average plant size of 500 tons per day. The cost of each of these plants would be approximately £1m.

### Refuse as a fuel

Whilst most of us look upon the material in our dustbins as completely useless rubbish, a glance at the table below gives an interesting indication of what present day refuse really consists of in scientific terms. To the ordinary man in the street the table might appear quite difficult to understand but it shows that rubbish is composed of different chemicals some of which are fuels.

In simple terms it means that if you were to add steam raising or electrical power generating equipment to a refuse incineration plant, the heat that is generated by the burning rubbish could produce 22 megawatts of electricity per day for every 1,000 tons of refuse burnt. As Teesside alone produces 500 tons of refuse per day, 11 megawatts of electrical energy could be produced every day locally by this means. It would provide enough energy for 11,000 one bar electric fires, burning for 24 hours per day or sufficient electrical energy to supply the complete demand of Head Wrightson Thornaby works.

From the table below it can be calculated that when burned the heat contained in one pound of this refuse is 3,000 British Thermal Units (3,000 BTU's).

**Ultimate analysis and gross calorific value of typical refuse components**

type of refuse	carbon %	sulphur %	hydrogen %	oxygen %	nitrogen %	ash %	water %	percentage present	calorific value BTU/LB
Fine dust < 3/8"	5.4	0.1	0.4	2.6		83.0	8.5		865
Cinders > 3/8"	3.2		0.1	0.1	0.1	91.0	5.5	14.17	520
Inert Cinder						100		1.24	
Vegetables	14.1		2.1	15.4	1.0	2.4	65.0	20.61	2330
Paper (all kinds)	34.0		5.0	40.0	1.0	5.0	15.0	37.83	5390
Rags (all kinds)	36.0		5.0	25.0	4.0	5.0	25.0	3.69	6650
Unclassified debris incl. plastics	16.0		2.0	18.0		60	4.0	5.53	2375
Metals						100		7.39	
Glass						100		9.54	



# Invergordon aluminium project report

## Invergordon: progress to January '70

In the centre of the photograph is the carbon plant showing the Head Wrightson gabbard cranes commencing erection work and also the baking furnace pits. To the left are the pot rooms which contain 80 furnaces in each room. Each pot room is 1500 ft long. Near left are the bases for the 30,000 ton alumina storage silos.

Head Wrightson and Taylor Woodrow Construction formed Taywood Wrightson Ltd ('TWW') 18 months ago to carry out the management, engineering, and construction for The British Aluminium Company Ltd of the £37m aluminium reduction works at Invergordon in Scotland. The HW contribution to TWW is to provide the expertise for the heavy plant and electrical part of the works and TWC to cover the building and civil engineering plus the mechanical services.

We are now at the half-way stage of the project and the emphasis has passed from the engineering to the construction. We can, therefore, look back on our efforts in tackling the engineering and look forward to our problems in completing the construction.

It was on Thursday 2 October 1968 that we were informed that TWW had been awarded the contract and that work would start on Monday 7 October 1968. The news was the signal for intensive activity within the Group. We were immediately interviewing and selecting staff to

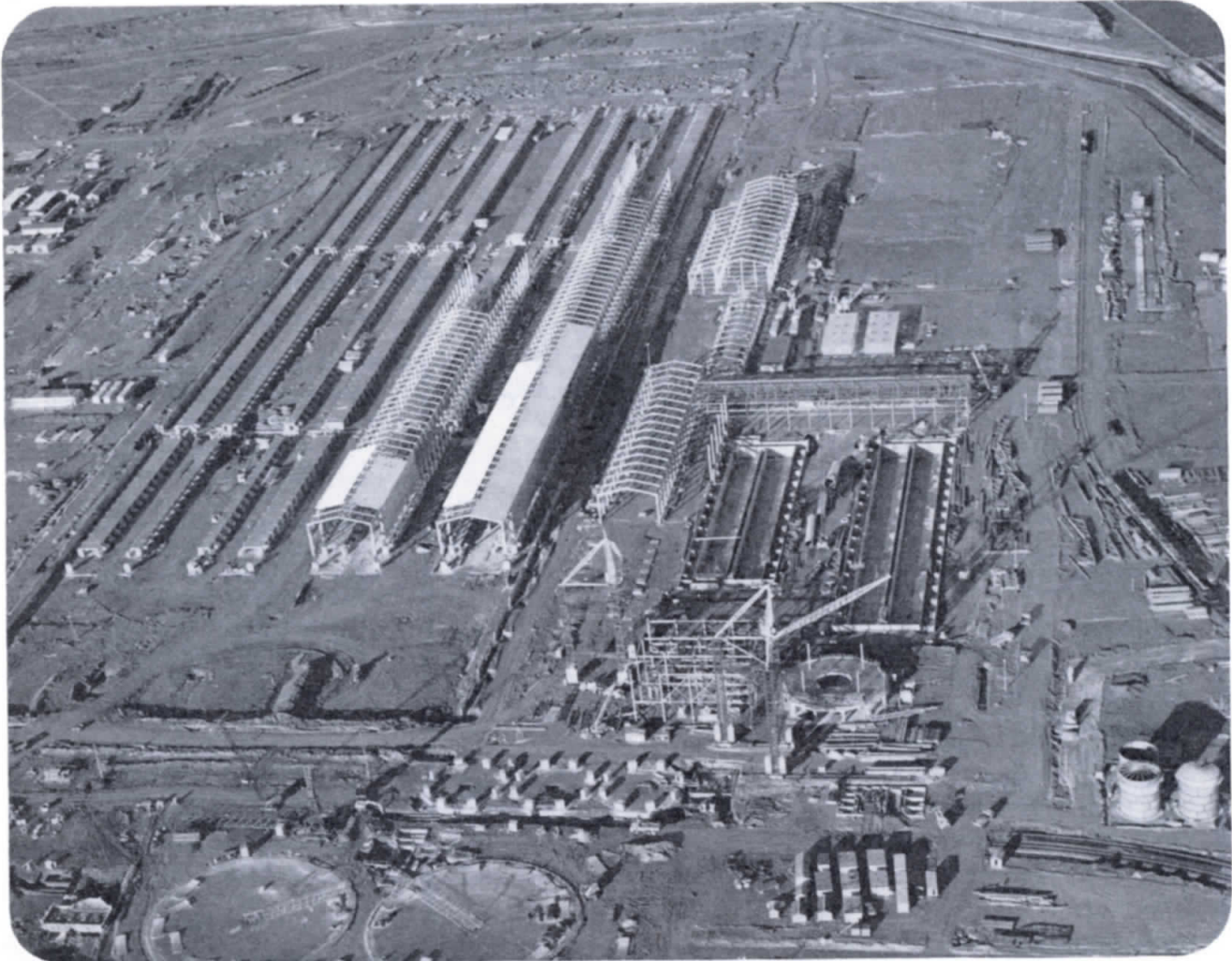
work in the TWW head office that was at once set up at Southall, Middlesex. The HW contribution to the TWW office organisation included staff from HW Teesdale, HW Stockton, HW Steel Foundries, HWPEL Thornaby, Sheffield and London and Headquarters and included representatives of HW Australia and HW India. We had, therefore, a wide group representation. A small number of the staff were drafted on a short term basis to give the job a sound start but the majority of the staff were transferred to TWW to see the work through to a successful completion.

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### Southall

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Initially we had 15 Teesside and 2 Sheffield commuters surviving the travelling to London on Sunday evenings and returning home on Friday nights. The early days of the project are well remembered for the prolonged stay at the 'Peggy Bedford' a hotel located at the end of the main Heathrow runway and adjacent to the main London to Bath





road. Now the commuters are only four and the location is transferred to Kensington. The peak TWW staff at Southall was about 180 of which HW contributed 53 permanent staff and 30 contract draughtsmen. The photograph shows the Southall permanent staff at December 1969. Familiar faces include the strong contingent from HW Stockton :

Geoff Eastwood, Des Good, John Coulson, Bill Barnard and Terry Crawford ; Jim Busby of HWT ; Phil Elliott and Don Thomas of Sheffield ; Roger Marton, Fred Coombs, Alan Enright, Ludwig Hess, Bernard Grassly and Jim Whitman, Bert Townsend and George Berry of London ; and Ken Home, John McCrone, Mike Street, Peter Lofthouse and Maurice Rhymer of

PEL Thornaby. Missing from the photograph are John Kier of HW Stockton and Reg Whiting of Sheffield. The current operations at Southall are headed by John McCrone to cover engineering and Phil Elliott on the commercial side. A small progress/inspection office manned by Cyril Gray and Steve Wilson is operated from HWPEL – Thornaby.



### HW Group effort

The project has to date put demands on all sections of the group and mention must be made of the backroom work carried out by R&D in advising on the many technical and process matters and of the administrative back up work carried out at Yarm (not forgetting of course the co-operation of the Transport department).

The main work is now transferred from the Southall office to two major areas, our fabrication shops and the site. HWT are fabricating the aluminium furnace structure, which is the heart of the reduction process and it involves the manufacture of all the 320 furnace units. The total value of this is in excess of £1m.

### At site

Work at Invergordon commenced in November 1968 with the general levelling and preparation of the site. The civil engineering work is now well past the halfway mark whilst the plant erection is still in its early stages. (The aerial photograph shows the progress made on site to the end of January 1970). Invergordon is a small town of 2,500 population located on the shores of the Moray Firth. It is popularly best known for the Royal Navy mutiny

of the first World War, although there are some whose expertise associates the name accurately with the local distillery. The fine rural setting has been the basis of articles in *Country Life* and *Field* magazines. For those who do not read these salubrious journals, the area can still offer activities ranging from bird watching to duck shooting and golf to skiing.

The installation of the main plant and electrics will be carried out by the Plant Construction Department (PCD). This is one of the sections of the work for which HW have the principal responsibility. The department will be manned by staff drawn from HW and will be responsible for the installation of equipment valued at approximately £20m. The work will necessitate the provision of about 30 staff, 250 erectors and will include the supervision of sub-contractors employing approximately 350 erection staff and site men. Members of our site staff are shown on the accompanying photograph. Managing the department is John Lander, supported by Bob Mitchell – recently appointed *chief erection engineer*, Peter Warwick – *chief electrical engineer*, Alan Muir – *plant agency contractor supervision* and Ian Fox – *commercial manager*. Other familiar faces include Mike Jones, Alan Ayres, Geoff Smith,

Eric Patterson and Tony Morris. Single staff living at Invergordon are mainly living in the staff hostel which can accommodate up to 75 staff, the site labour men now live in the labour camp which has a capacity of 500. A large proportion of the staff are living in new estates built by the local councils at Alness and Dingwall. These houses provide good class accommodation and some have central heating. Others are living in rented private property.

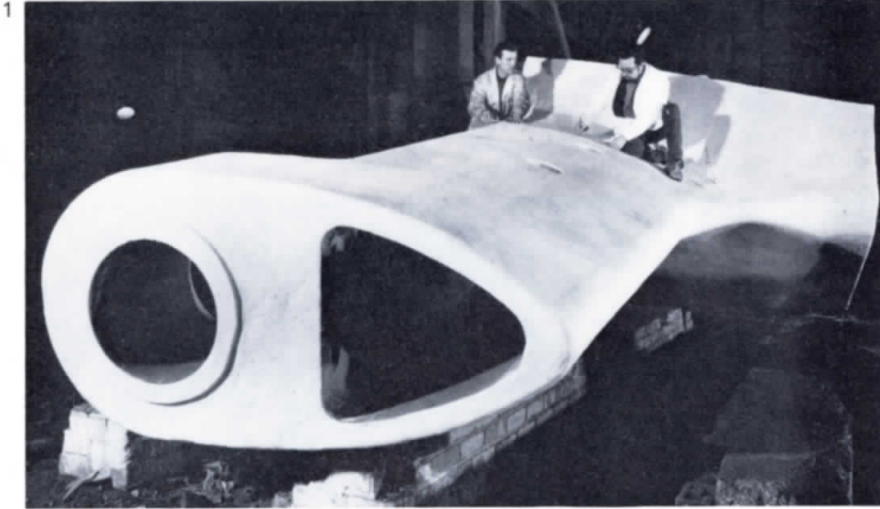
All eyes are now on the target which is to produce the first aluminium from the smelter early in 1971. We confidently expect to be reporting on this event in the corresponding issue of 'Wright Ahead' next year.



Our site staff at Invergordon – January 1970



# HW steel foundries



When the fumes of the burnt sand and the chatter of the chipping hammers have faded away at HW Steel Foundries the castings come under stringent scrutiny from the inspection staff.

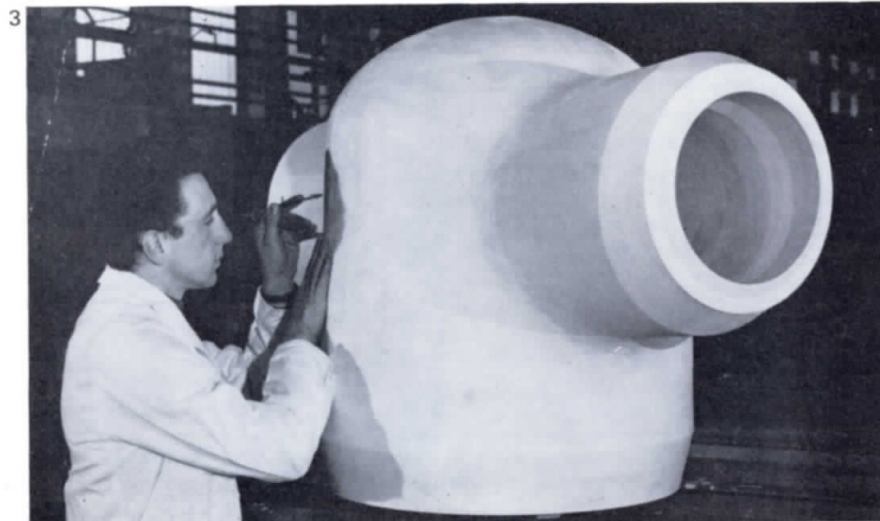
Typical of the very special medium and medium/heavy steel castings passing through their critical hands in recent months are those illustrated here :

1 a 29 ton stern frame casting for a ship under construction in Brazil. Eleven of these formed the largest single direct export contract awarded to HW Steel Foundries. Bob Lock and Albert Higgins are doing the checking.

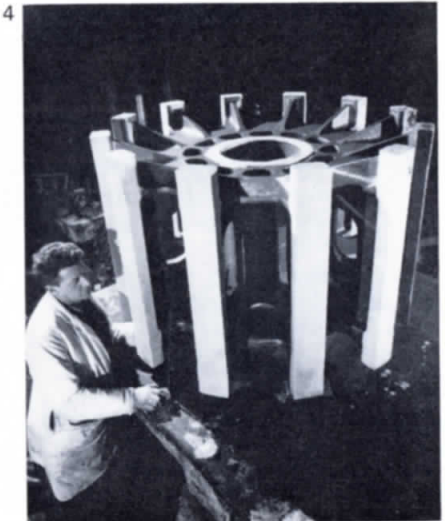


2 half of a 26ft diameter alloy steel girth gear being marked off by Dick Edmundson and Brian Matthews. After machining this casting was bound for Norway. HW Steel Foundries have successfully cast the largest steel cast gears in Europe. Sometimes they are made in halves or segments before assembly and machining.

3 HW Steel Foundries have long held a leading position in the making of cast steel valve parts : they get bigger as the size of installations grow. This is one of three large stainless steel main bodies for valves for Grangemouth. Made to extremely high radiographic inspection standards, the valves are for hot hydrogen service. Valve bodies like these have never been produced before outside the United States.



4 a large cast steel armature spindle for an electrical generator being checked dimensionally by Jack Clutton.

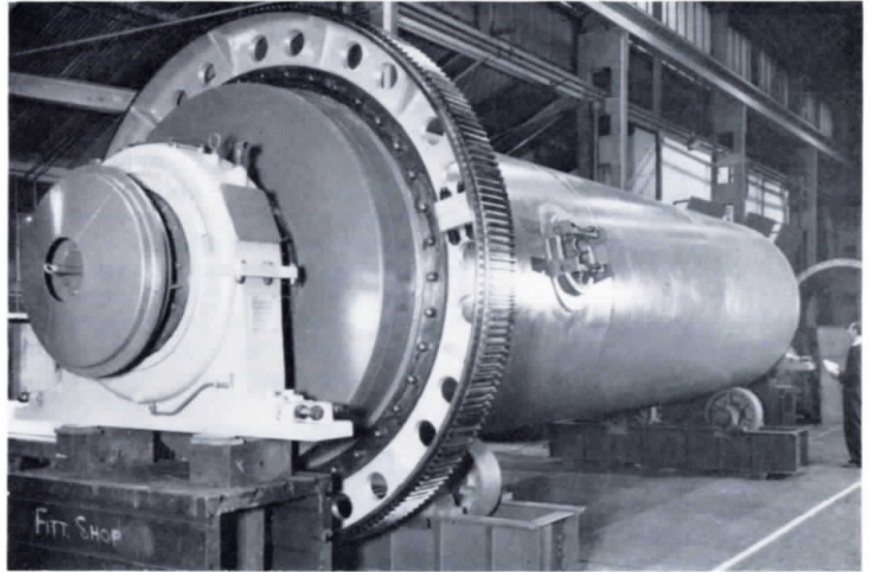




# Grinding mills for pigment production

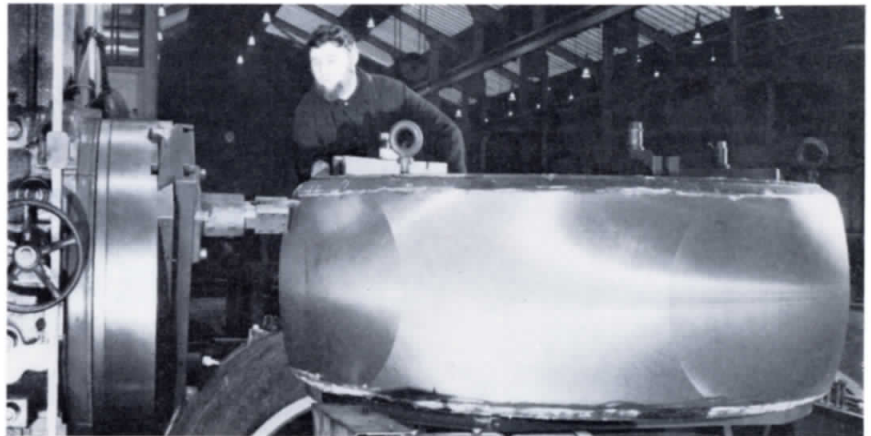
The accompanying photograph shows a 7 ft x 28 ft tube mill in the final stages of manufacture at HW Teesdale, prior to delivery to the Wallsend, Northumberland works of Associated Lead Manufacturers Ltd. This mill is the latest in a series of some 18 units of various sizes which HW have supplied to Associated Lead Manufacturers for their plants on the Tyne, in Italy and their new plant in Spain, since 1953. One of the major products of Associated Lead Manufacturers is zirconium pigments which are now extensively used in place of tin oxide based materials for imparting the white glazed finish to porcelain fittings for tiles, kitchens, bathrooms, etc. It is extremely important that the zirconium sand, which is obtained from Australia, is ultrafine and also iron free. Tube mills of the type illustrated reduce the zirconium sands to very small micron sizes to ensure that a smooth and glossy finish is obtained when the product is used for glazing. To ensure, in parallel that iron contamination is minimised, which would result in discolouration of the product, the mills are lined with silex blocks, and normally the grinding media is high density synthetic pebbles.

All our recent mills for Associated Lead Manufacturers have had 5 inch thick mild steel end plates welded to the shell. Cast steel trunnion stalks are bolted to the end plates. This design, which was developed in conjunction with R&D division, has proved to be far better for this type of mill, than the previous method of using cast steel trunnion ends. To date, most of the tube mills supplied to Associated Lead Manufacturers have been for their Wallsend works. Other mills have been for their plant at Carasco, Italy, the first mills were supplied in 1962 and a further mill has just left our works for shipment to Italy. We have recently supplied another mill for their plant at Valencia, Spain. The Spanish plant which will be completed this year, will be the only plant producing zirconium pigments



in Spain, and will cater for the rapidly expanding Spanish ceramic industries. All of the large mills for Associated Lead Manufacturers, in this country and abroad have been erected and commissioned by HW personnel. Associated Lead Manufacturers are

supplying zirconium pigments to growth industries at home and abroad. As the demand increases for their products so will there be need for increased output for their plants. We at HW anticipate, and hope, to be supplying mills to this company for many years to come.



James Wastell HWT Stockton works, operating a horizontal borer during part of the machining process of a spherical

bearing. The bearing forms part of a major ball-mill contract currently being manufactured by HWT for supply to Spain.

## Progress at Egglecliffe

During January HWIF achieved a record weekly production of 904 tons of ingot moulds and other steelworks castings. For the year ended 31 January 1970 HWIF also achieved, for the first time in its history, a turnover in excess of £2m. The new financial year commenced with the receipt of an order from Holland for 500 tons of ingot moulds for delivery to the Royal Dutch Steel Works.

The photograph shows the stockpile of CI tunnel segments for the Manhattan Sewer contract at the job site on the Hudson River, New York





# The Friarage and the Railway

On 12 February this year the people of Yarm celebrated the 150th anniversary of the founding in a room at the George & Dragon of the Stockton & Darlington Railway Company.

Those who stride daily through the side gates of the Friarage into Yarm High Street do not usually think of the momentous event of 12 February 1820 when Thomas Meynell, the then owner and Lord of the Manor, walked through that same gate on his way to the George & Dragon Inn. There the



meeting of merchants and gentlemen, dominated by Darlington Quakers and presided over by the Catholic Meynell, (surely an interesting combination 9 years before the Catholic Emancipation Act), prepared the ground for two memorable developments that have left their mark on Great Britain and indeed on the world. They were laying the seeds of Industrial Teesside and beginning the world wide Transport Revolution.

Yarm was seriously in decline and Stockton had already overtaken her as the principal port on the Tees. The new Stockton Bridge in 1771 had sealed her fate. The beautiful but tortuous river Tees, famous for its salmon, had too many twists and turns and too many broad flats. The principal traffic had to be transhipped into barges down river and came up in small keels. Stockton took a bold initiative and made two cuts in the river. The Mandale Cut in 1810 was decisive and by straightening the river line enabled medium vessels above 150 tons to reach the new quays and wharves. This was the stroke which finally killed Yarm as a port. The gentlemen of the George & Dragon were combining to gain control of the transport from the

hinterland of Darlington to the Stockton wharves. Their sights were on the coal of South Durham.

In this part of the County the coal seams lay deep and the expense of sinking deep shafts demanded a better and more assured distribution of their ore than was available by the River Tees. A coal service capable of competing with that of the Tyne was needed and the mecca was the great booming London market. The ships were available at the river mouth, whilst the river and roads were impassable.

Here was the challenge that Yarm and Darlington were facing. Stockton enterprise was very much alive and there were plans for cutting a 29½ mile canal from Portrack to Darlington. Other innovations were more intriguing. George Stephenson of Wylam-on-Tyne and others were running steam powered locomotives on rails in the collieries of the North. Robert Stephenson, his son, was engaged to survey for a railway. The decision to use steam locomotives came later but the scene was set. The Stockton and Darlington Railway Company was formed with Edward Pease the largest shareholder and Thomas Meynell Chairman. The public service opened on 27 September 1825 with a procession from Brusselton Incline at Shildon to St Johns Well at Stockton with all the now famous ballyhoo. The journey of 21 miles took 1 hr 5 mins to Darlington and 3 hrs 7 mins to Stockton. George Stephenson was driving his own 'Locomotion 1' and 35 wagons. The attention of the world has concentrated on the human passengers but the businessmen had their eyes on the coal. The main line had four locomotives and they mostly drew coal. Most of the passenger traffic continued to be in flanged wheel, horsedrawn carriages and the Yarm branch line never saw a locomotive.

The deep shafts were now economically possible. The first ship left Cottage Row Stockton in 1826 laden with coal for London. The trade grew phenomenally. A contract for 100,000 tons per year was signed. Soon a million tons of coal had left the Tees and the price of coal in Stockton which was 18/- per ton had been brought down to 8/6 per ton.

The Darlingtonians did not have the local benefit of locomotives either but they controlled the railway and they called the tune: 'Why stop half way at Stockton?' they said.



Protests from Stockton were of no avail and the Stockton men resigned from the railway. By 1829 the chain bridge and the causeway which was to take the rail on to the tiny hamlet of Middlesbrough had begun.

No more than a huddle of houses and a public house on the high and dry land amongst the marshes, it was a well chosen site. The instigator of the move was Joseph Pease, Edward's son, who with his partners had bought Middlesbrough Farm and 400 acres of adjacent land for the purpose in 1828. Here ships could load much further down river and the new estate owners could control the wharves and staites which at first they called Port Darlington.

Stockton did not give in. They completed the river improvements by the second, the Portrack Cut, in 1831 and they tried to block the railway extension in Parliament. When this failed they opened a competing rail along the north bank of the river to Haverton Hill and founded Port Clarence on the other side. They gained only a respite. The victory was to Darlington and to Middlesbrough.

The Railway and the improved port facilities brought new industry to the area and there was fierce rivalry between Stockton and the new town. In 1839 a group of Stockton merchants led by William Smith and William and George Skinner—

after whom Skinner Street is named—bought land on the Thornaby Carrs at South Stockton near to the old Stockton Race Course. There was a pottery there. They built a glass bottle factory and they began the Teesdale Iron Works. It was close to the new railway line, as we all know well, and behind the South Stockton shipbuilding yards. The works which were to become Head Wrightson had begun and Thornaby township came into being. HWF Bolckow came to Stockton that year to examine sites for an Ironworks but Joseph Pease persuaded him to buy a plot in Middlesbrough. Bolckow and Vaughan opened their first puddling furnace and bar mill in 1841 in Vulcan Street, Middlesbrough. To provide pig iron Bolckow and Vaughan built four blast furnaces in the mid-forties at Witton Park 20 miles to the west, near Bishop Auckland. Bell Bros of Wylam-on-Tyne examined sites at Stockton but they took no decision.

There were now 21 blast furnaces in operation in County Durham all sited in the coal fields but not one on Teesside. This was the era of the struggle for King Coal on the wharves of the Tees.

Iron ore for the Witton Park furnaces came from Grosmont by sea from Whitby and by the rail to the West End. The rich seam at Eston lay unexplored until Vaughan commissioned John Marley to

examine it in 1848. The great iron age was to be the next phase. The foundations of Teesside were being prepared for the bigger enterprises that lay ahead and the first and greatest of the Iron Masters had come to stay. Bolckow and Vaughan took up residence together at their well-known house in Queen Square half a mile from the works. The 'Infant Hercules' as Gladstone was to call Middlesbrough was born. Still very much an infant, it was already kicking.

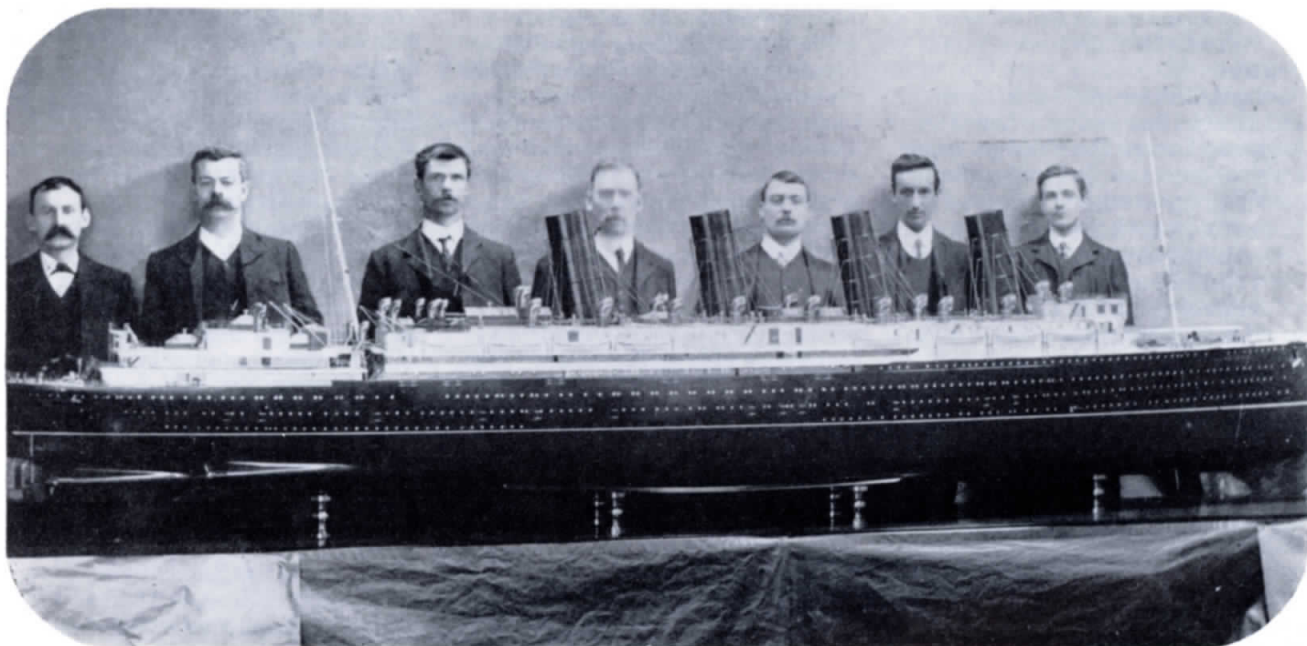
Yarm played no further part in these ventures. Four new ships were built for their trade but fewer craft came up river until eventually in 1850 the last ship was rebuilt in the yards at Worsall and the stones of the quay were used to build the church. Today people wonder why the pub is called 'The Ship'! Thomas Meynell resigned as Chairman of the Stockton & Darlington Railway in 1828 and Joseph Pease became chairman. He had presided over the decision to found it, laid the first rail, performed the opening ceremony and written a page in history. He left his Friarage residence in 1841 and went to live at his other property in North Kilvington.

The Friarage land and buildings were bought by Head Wrightson in 1957 and the house became the Headquarters office of the Company in 1967.





# From the family album



The current photograph in the series is the oldest we have published to date and from the story angle it is certainly the most interesting. The photograph was taken in December 1907 and shows the official model of the *Mauretania* which was built by Robert Smith's of Stockton-on-Tees, reputed to be one of the premier model builders in the country. Standing with the model are the craftsmen who created this perfect facsimile of the great ship being built at that time for the Cunard Steam Ship Company at the yards of Swan and Hunter, Wallsend.

Standing left to right are  
Mr E Turpin model maker of  
*Ropner's Shipyard*  
Mr D Hutton model maker of  
*Richardson & Duck's Shipyard*  
Mr W Bartram Robert Smith's  
Mr R Smith himself  
Mr J Mowbray HW patternmaker  
Mr W Walker model maker of *Craig Taylor's Shipyard*  
Mr F Clark apprentice with Robert Smith.

Robert Smith and his staff were virtually full-time on the model and model makers of the shipyards and Jack Mowbray, HW patternmaker, worked on various special parts either at home or in Robert Smith's workshops in the evenings and at weekends.

There are three interesting stories connected with the photograph:

## The 'Diddy' door

In the last edition of 'Wright Ahead' a small article on Bill Hopper's *HW Steel Foundries* miniature door was published. The *Evening Gazette* were intrigued by the story and Bill's cheery face duly appeared on the front page of the *Gazette* on 15 January with the story of the 'diddy' door. Following this Bill received a letter from a Mr F Clark of 5 Raby Road, Stockton, who stated that he also had a similar 'mini' door which was in fact surplus for the model of the *Mauretania*. At Mr Clark's invitation Bill Hopper and the editor visited Mr Clark and spent a most entertaining evening with a wonderful gentleman and a master craftsman. Meanwhile, the following letter appeared in the *Gazette* on 19 January:

### Diddy door

A friend who lives in Norton sent me the *Evening Gazette* containing the report 'Strictly for the Diddy Men'. Mr Jack Mowbray, who died in March 1941, was my father, and I well remember when I was a child seeing the little door mentioned. I never knew where this door went to but am very pleased to know that it is still in existence. I believe the door was for a model ship my father made or was making before I was born. Perhaps Mr Hopper could enlighten me. My father was foreman pattern-

maker at Head Wrightson for several years, as was his father before him.

MURIEL MOWBRAY  
Lancaster Road  
Salford  
Lancs

## The model of the *Mauretania*

The model took 38 weeks to make and cost £725. A long time and a lot of money, you may think (particularly in 1907), but when it is taken into account that the model represents a steamer 790 ft long, 88 ft beam, 60 ft moulded depth, 33,200 gross tonnage, and that every detail, however small, had to be fitted with great care and exactness, the surprise is that the model did not take longer to build. The scale was  $\frac{7}{32}$  in to 1 ft, it was originally intended to be  $\frac{1}{4}$  in to 1 ft, but this would have made the model 18 in too long for Cunard's shop window in London, where it was intended to be on display. The model was, of course, for the most part solid in hull and bridge decks but there were several thousand specially made parts, all perfect replicas, used in the construction, eg the windows and berth lights were made of mirror glass which gave a representation of a real interior, these numbered 280 sky-lights, 1,818 windows in deck berths and 874 port lights around the hull, all of which were fitted with



gold plated frames and settings. Along the deck were 30 gold plated ventilators, several electric cranes and winches, thermo tanks for heating the cabins, wireless telegraphy fitted to the fore and aft masts, 16 life-boats supported on gold plated davits, 76 ft of teak handrailing complete with 852 stanchions, 20 small ladders with handrails and even 200 doorknobs. The deck cabins, lounges and cafes were complete in every detail with miniature tables and chairs and other furnishings.

### Mr F Clark

Mr Clark, the apprentice in the photograph, is quite a remarkable man for his 80 years. He has examples of the portholes, handrail stanchions, and windows used in the ship model, all of which were 'basically' handmade, and beautifully reproduced, a photograph of these would not do justice to the workmanship. During the First World War he was seconded by the Admiralty to Head Wrightson and Company Limited as Research and Experimental Engineer. He did experimental work on sea mines and sinkers, on oscillating mines and

also underwater signalling devices. He recalled that during research on these projects he required a 60 ft deep testing tank, and built a makeshift tank out of cast iron tunnel segments which HW were producing at that time for the London underground. Mr Clark stayed with HW after the war, working on various experimental models of blast furnaces, BF chargers and other steelworks plant. He left the company in 1921 when he started his own business in Prince Regent Street, Stockton, his letterhead stated 'Maker of ships models and fittings and engineering and structural models'. For a few years his business flourished, but hard times throughout the country made him give up his business in 1926. However, prior to this he had undertaken a lot of work for a new firm in Billingham called Synthetic Ammonia Nitrates Company (now ICI) and when they heard he was giving up his workshops they immediately offered him a job and was employed by them until his retirement in 1953.

An interesting photograph, an interesting story, an interesting gentleman.

## Stop press

Many congratulations to Kenneth Poole, apprentice plater with HW Teesdale who has been chosen to be a British representative for the 19th International Apprentice Competition in Tokyo Japan, November 1970. (see page 12)



## Condolences

HWPEL Thornaby sincerely regret having to announce the death of Joe Nevin who died on 5 February after a very short illness, and also the death of Eric Hill (No 2 DO) who was killed in a road accident on the moor road near Castleton on 7 December 1969.

HW Machine Co personnel and indeed personnel throughout the Group were very sorry to hear of the death of Mr F V Hall on 11 January. Fred, who started his career with HW in 1930 and progressed from work bench to works manager of HWM retired in 1966 due to ill health. He was a well-known local cricketer and one of the finest players in the NYSD league. During his 18 years service with Norton CC he made three centuries, played in five Kerridge Cup finals, and had a 50 on every ground in the 'A' division. He was also a remarkable slip fielder and in later years shone as a slow bowler, for in the 1947 Kerridge Cup final he claimed 6 Darlington wickets for 22 runs. Besides his cricket accomplishments, Fred had also been a football referee, played rugby for Stockton and bowls for the 'Rooks' and Blue Hall Recreation Club.

Bob Sharples, Chief Engineer HW (Australia) Pty Ltd, died very suddenly whilst playing cricket on 3 January 1970. Bob joined the then associate company of HW in Sydney, Messrs Gibson Battle & Co Ltd, in 1950 as Assistant Works Manager and subsequently transferred to HW Australia staff on 1 October 1957. He paid many visits to the UK, the United States and Japan and was well-known and respected as an adaptable engineer of the practical kind. He was a great sportsman and this was borne out by the fact that at the age of 50 he was still playing cricket. His sudden death has left a void both in his private and business life and we send our condolences to his family and colleagues in Australia.



# Training news

## Tokyo 1970

The finals of this year's International Apprentice Competition will be held in Tokyo. These competitions are often referred to as the Apprentice Olympics. Apprentices from all over the United Kingdom compete and the City and Guilds of London Institute choose a competitor in each category to represent the country. The following HW apprentices have entered the competition and we wish them every success: Kenneth Poole and Alan Purkis *HWT bridge yard (fabrication and steelwork)*, Keith Watson *HWT drawing office*, Philip Coney *HWPEL drawing office (engineering drawing)*, Stephen Lumley *HW Machine Co (turning)*. The Head Wrightson Training Centre has been selected to provide intensive training for the British winner in the Fabrication and Steelwork section prior to the final international competition in Tokyo.

## The Institute of British Foundrymen

John Sanderson *HWSF trainee patternmaker*, has been awarded the Institute of British Foundrymen Award for the student making the most progress during the year 1968/69 in patternmaking at Longlands College. He also came second in the competition for patternmaking run by the Teesside branch of the Institute of British Foundrymen.

## Finals of degrees

Best wishes to the following HW students who are taking finals of degrees this year.

J Conroy *HWPEL BSc/Rutherford*  
 G E Goodwin *HW BSc/Aston*  
 D N Halliday *HW BSc/Newcastle*  
 D Maddison *HWT BSc/Constantine*  
 V Oliver *HWT BSc/Sunderland*  
 T Scaife *HWPEL BSc/Constantine*  
 D P Scott *HWT BSc/Constantine*  
 W E Short *HWM MSc/Manchester*

## Secretaries' achievements

Miss M A Burleson *HWPEL Thornaby* was successful in passing the London Chamber of Commerce Private Secretary's Diploma following her studies at Constantine College of Technology, Middlesbrough.

Miss Maureen Smith *personnel department* was successful in receiving the London Chamber of Commerce Private Secretary's Certificate following her studies at Stockton & Billingham Technical College. No doubt Maureen will continue her studies to attain the 'diploma'.



Our three young technicians who attended a reception at Buckingham Palace in December 1969 for winners of the Duke of Edinburgh Gold Award Scheme. Mr A E Rose, Norton Methodist Youth Club

Leader accompanied these three proud lads.  
*left to right:*

Ronald Wilson *HWPEL DO*, Mr A E Rose, Brian A Gray *HWT machine shop* and David Walton *R&D electrical workshop*.







### Sandy Muir Award

Once again preparations are in hand to decide who shall be the 1970 winner of the 'Sandy' Muir Memorial Fund Award. This fund was created by workmates in order that 'Sandy's' memory may be perpetuated and honoured by generations of apprentice boilermakers through the years. The income of the fund is used each year to provide an award of tools or books, etc to the chosen best apprentice boilermaker. Last year, Terry Ford HWT Stockton Works was put forward as a candidate for the award, and

justified his inclusion by winning against strong competition, to become the first welder trainee to achieve the honour. Apart from this, he is very active in the Young Christian Workers Movement, an organisation which if Terry is anything to go by, builds up self confidence in its members and provides opportunities for social activities and debates on controversial subjects of the present day. When relaxing, Terry enjoys all outdoor activities including horse-riding, hiking and camping. He is also preparing for our acceptance in EEC by learning German.



## Works visits

*photograph top left*  
Professor A G Quarrell (*right*) of the University of Sheffield shows interest in one of the R&D test rigs during his visit to our works. Professor Quarrell is a Vice President of The Iron and Steel Institute and President Elect of the Institution of Metallurgists. With Professor Quarrell in the photograph are (*l to r*) George Lyons, Ian McDowall and Dr C Rounthwaite.

*photograph bottom left*  
Mr Jack Wright *managing director HW Australia* arrived 'home' to Teesside for the Christmas holidays. Mr Wright, who has been resident in Sydney since 1952, spent the first few weeks of the new year visiting our offices and works in the UK exchanging information on current and future projects. He returned to the summer sunshine of Australia at the end of January. The photograph shows Mr Wright with Barry Hope, R&D physicist, explaining the intricacies of the stretch leveller pilot plant.



### Editor's competition

*From the amused expression on Mr Wright's face the editor wondered what he was thinking when the photograph (left) was taken. Could it be 'at last a secret weapon to combat my Japanese competitors' or perhaps 'does a stretch leveller make girdles?' What do you think? a small prize will be given to the best suggested 'I think - he thinks'. Entries please to The Editor, Wright Ahead, Head Wrightson & Co Ltd, Yarm, Yorks TS15 9DA.*



# Sport & social

## Yarm Friars FC

At the beginning of the 1969-70 football season, a team comprising of Head Wrightson employees, mainly from The Friarage, was formed and entered the Stockton and District Sunday League. The Friars lost their first game by the only goal and then had a fine run of wins until they lost four games during November. Since then fortunes have been mixed and the Friars are placed about midway in the league. However the Friars hope to atone for their position in the league by winning this years Inter-Departmental Knock-Out competition!



*back row left to right*  
G Green, P Bates, N Darley,  
S Merryweather, J Legg, J Maxwell,  
D Lamb

*front row left to right*  
P Appleby, M Copping capt., P Walker,  
K Lamb, K Harrison  
(Absentees J Dobson, R Lee)

## HW Cricket section

*Secretary Mr M Pratt HWT shipping dept*

The season commences on Saturday 25 April and again we are fielding two teams in the Cleveland and Teesside league. The first eleven competes in division one and the second eleven in the reserve division. Outdoor practice begins on Wednesday evening 15 April. All members and prospective members are welcome.

## HW Social Club

BINGO is called every Friday and Sunday nights in the Club at Teesdale Park Acklam Road Thornaby. The bingo sessions commence at 9 pm. Please remember that all members must be able to produce a current membership card if asked to do so. Membership cards are obtainable from any of the Bar Committee or from your departmental Athletic Committee representative.

## *bar committee:*

Mr W Ferguson (*Secretary*)  
*HW works engineers*

Mr H Hunt *HWT bridge yard*  
Mr D Gibson *HWT bridge yard*  
Mr F Rodgers *HWT bridge yard*  
Mr G Mathias *HWT tool room*

Mr R Hawks & Mr J Hunt  
*are associate members*

## Head Wrightson works band

Head Wrightson works band have been carrying out a full programme of concerts and contests in the last few months. In the contest field they played last May in the Spring Brass Band Festival at Belle Vue, Manchester, playing in the senior cup section. They were placed seventh out of twenty-four competitors, a slightly disappointing result but a creditable one in view of the strong opposition. In December last the band played in the regional qualifying round of a national championship organized by W D & H O Wills. Although the band were not amongst the winners, they were awarded sufficient marks to qualify for the final held at Leicester, on 22 March.

Readers of 'Wright Ahead' will remember that in 1968 the band qualified for the national championship to be held at the Royal Albert Hall, London. Unfortunately, the band were prevented by the loss of several players and other domestic commitments from competing in the final, but this year they hope to qualify again in the preliminary heats in Sunderland on 14 March. On the concert platform the band have given their usual varied series of concerts in the Teesside area. Perhaps the most successful was a gala performance in Hartlepool Town Hall with HODA, the Hartlepool Operatic Society. This concert, in November last year, played to a packed hall and was one of the high spots of the Hartlepool musical scene this winter.

The band were featured by Radio Durham in a half-hour programme on Sunday and Monday, 22 and 23 February, and on Sunday, 12 April, they took part in a concert by massed brass bands, together with the Apollo Male Voice Choir, in Middlesbrough Town Hall.

Some of the band's forthcoming engagements are listed below:

Saturday 16 May 2.30 pm  
*concert:* Thornaby Town Centre  
Saturday 6 June 2.30 pm  
*concert:* Billingham Town Centre  
Saturday 13 June 3.00 pm  
*concert:* Redcar  
Saturday 20 June 2.30 pm  
*concert:* Thornaby Town Centre  
Saturday 11 July  
*Garden Fete:* Ropner Convalescent Home



## HWT Staff Social Committee

Two major festive social events organised by the committee were the childrens party attended by over 100 children of HWT staff members who were entertained to tea, films, punch and judy show, games and carols, not forgetting the very special guest 'Father Christmas'. The second event was the staff dance held on Boxing Night at the Golden Eagle Hotel, Thornaby. Some 300 staff and friends attended this very successful evening to which all credit must go to the social committee.

The Annual General Meeting was held on the 11 February when the following officials were elected for 1970/71 :

*chairman* Mr D Wright *nuclear contracts* tel 278

*vice chairman* Mr F M Seaman *process equipment DO* tel 391

*treasurer* Mr J C Trenholm *heat X & PVDO* tel 224

*secretary* Miss D W Forster *nuclear typist* tel 213

*right*

The magic of the Punch & Judy show

*below*

A top level conference with Father Christmas



Cabaret time at the HWT staff dance  
*left to right:* Keith Botwright, Fred Seaman, Garth Robson and Ken Tytler (photo by Gordon Turnbull)



## Retirements

Mr J L Ingledew, *photo right* 65 Northumberland Road, Thornaby retired on 5 December 1969. Joe, a moulder with HW Iron Foundries had been with HW for over 50 years. The photograph was taken during a presentation to him by his workmates. We all wish Joe a very happy retirement.



## Mr E Slack

A presentation of a beautiful cigarette box and table lighter was made to Eric Slack *cost accountant HW steel foundries* on behalf of all his friends and colleagues at HW. The presentation was made at a special social evening on 6 January to mark Eric's leaving the Company after 32 years service.



# Loss of the Lairdsfield

The following poem was written by D R Tallet *HWT contracts dept* within a few days of the tragic loss of the coaster 'Lairdsfield' off the Tees-mouth on the night of Friday 6 February 1970. It is based on local press reports and messages heard on Marine Radio.

## Loss of the Lairdsfield

Unhappy captain, ill at ease  
The night the 'Lairdsfield' left the  
Tees  
Two attempts to leave the quay  
Before she finally put to sea.

A flying rope, an injured wrist  
And fate then takes another twist  
For still conditions aren't 'set fair'  
There's now a lack of compressed  
air  
Those engines won't go as they  
ought

So once again, its 'back to port'.  
There's pending doom shipmates  
beware!  
Two hours later at South Gare  
And who can know, or guess,  
or say  
What is to happen in Tees Bay?

Her cargo is of North East steel  
What do we, 'land-bound' know,  
or think or feel  
For men who go to sea in ships?  
With prayers for them on  
loved-ones lips?

The pilot boat has come away  
The weather worsens in Tees Bay  
Without a warning down  
'Lairdsfield' goes  
The lifeboat warning rockets  
boom, we know –  
there's awful trouble in the night  
The 'mayday' signal tells the

plight  
– of ten men trapped beneath the  
waves

Two lifeboats and a 'copter' too  
Soon on the scene in search of  
crew  
and 'frogmen' from a nearby town,  
Equipped and eager to go down  
And 'Cullercoats' Radio on the air  
An 'all-ships' call, 'ships  
everywhere'!

Although this help is near at hand  
Cruel fate hath very different  
plans  
These ten beyond all human aid  
The Lairdsfield's final voyage  
made

To those who sit 'neath sheltering  
roof  
This awful drama's living proof  
The sea is cold and cruel, aloof  
To those who sit at home and  
weep  
For those in peril on the deep.

# Fitting shop 'dirgers'

Tension now was mounting  
As we drank our Camerons Ale,  
Not knowing what was waiting  
Dare not thinking we could fail.  
And then at last eight-thirty,  
And it is time to leave the Trig  
Some voices cursed, while others,  
Somehow did not care a fig.  
We safely passed by Scugdale,  
And then to Carlton Bank,  
But the miles were passing slowly  
And our packs began to yank.  
Then, as we reached the Wainstones  
The first ill luck did strike,  
An apprentice who is nameless  
Withdrew from his first hike.  
Then over Clay and onward  
Till we reached the railway track,  
Twas here we got the feeling  
That there was no turning back.  
We also set a scorching pace  
That caused we have no doubt,  
An ache, a stitch, a footsore  
And another two dropped out.  
From then up through the Esklets  
Till Ralphs Cross was in sight,  
But bad luck caught another  
And threw him in bad plight.  
The open moor was irksome  
As we splashed through water deep,  
Our gaze was on the horizon  
For three balls we had to peep.  
Our feet were hot and tired  
So too our blisters red,  
They sizzled in the water  
On the Wheeldale river bed.  
At last, the Warning Station,  
And later Lilla Howe,

At this stage of the crossing  
We thought it all a wow.  
The Tank road, then the Pylon,  
And to the end at last!  
The signing in the Cafe,  
Which we very nearly passed.  
The first pint of Double Diamond  
Did not touch the sides,  
But we had to split up later  
To catch our different rides.  
The findings of the crossing  
Are very plain to see,  
Of the two ales we did sample,  
We preferred the Double 'D'.

The above poem was written by a group of fitters from HWT Thornaby, describing their attempt last summer at the Lyke Wake Walk. The 'walk' covers a route of about 45 miles of rugged North Yorkshire Moors. For the benefit of readers who have never heard of the famous Lyke Wake Walk, a brief explanation may be of interest.  
Way back in 1955 Mr W Cowley, author and writer for the 'Dalesman' magazine, issued a challenge to anyone to complete a crossing of the North Yorkshire Moors at the widest point – from Osmotherley, in the west, to Ravenscar, on the east coast. The challenge was taken up, and the first successful crossing was made in October 1955. Since then 25,000 successful attempts have been recorded.  
There is now a flourishing Lyke

Wake Club, which has no formal organisation and no subscription. The only way to gain admission to the club is by ordeal, and all who complete the walk become 'dirgers' and receive a black-edged condolence card for their efforts. There are an amusing series of degrees within the Lyke Wake Club as follows:

*One crossing*  
qualifies for the title of 'dirger'.

*Three crossings*  
which include one reverse direction and two wakes, promotes the 'dirger' to the degree of a 'Master (Mistress) of Misery'.

A further four crossings, making a total of seven, which must include one solo unsupported walk, and one winter (December, January, February) walk and four wakes plus a thesis on the walk, qualifies for the title 'Doctor of Dolefulness'.

The principal degree is that of 'Past Master of the Lyke Wake Walk', which is only granted after 15 crossings, involving the specialised crossings referred to above, some great service to the club and the ability to find one's way across any moor, day or night, drunk or sober, without map or compass. It can be understood why this degree is held by very few people.

Following last year's walk we now have a number of 'dirgers' in the Fitting Shop. Will this summer see their promotion to 'Masters of Misery'?



# Employee relations officer

Mr George Wilks recently joined the Personnel Department as Employee Relations Officer. His duties will be concerned with liaison and in particular with the development of the Employees' Council and Divisional Councils and general administration of Employee services including welfare, social and sports facilities.

Mr Wilks has been with the Company since 1942 and has wide experience of Head Wrightson, having worked at HW Steel Foundries, HW Aluminium, HW Stockton and at Head Office since 1958. He is the present editor of 'Wright Ahead' and will continue this activity in his new post.



# Stampings- bird's-eye view

Head Wrightson Stampings Limited located at Brenda Road, Seaton Carew, Hartlepool employs 550 personnel in well equipped forging shops, die shop, heat treatment department, laboratories and drawing and commercial offices. They produce drop and upset forgings in carbon, alloy, and stainless steels and some non-ferrous metals in weights ranging from 1½ lb to 150 lb. Their long experience as drop-forgers, and progressive research and development combine to serve a wide variety of industries including, automobile, heavy vehicle, oil, tractor, mining, marine and railways.





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