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Hampshire Industrial Archaeology Society

Journal No. 27

(2019)



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Front cover picture:

An early view of the original Railway Institute probably taken not long after its opening. *(Eastleigh & District Local History Society)*
[see page 10]

Back cover pictures:

Top: Looking east along Bishopstoke Road in 1906, with the carriage works on the right. The hipped-roof buildings had been extended to the road by this time, except for the nearest one which could not be, because of the presence of the clock tower. Even though the tower was removed later, the building was never extended to match the others. The dining hall is seen on the opposite side of the road. *(Eastleigh & District Local History Society)*
[see page 9]

Centre: A colorized postcard, showing the White Star Liner SS *Majestic* in the Southampton floating dock with the floating crane on the left.
[see page 24]

Bottom left: The ex-Southampton floating dock being towed into Heysehaven on 18th May 1959. (From a painting by Frits Hoogstrate)
[see page 27]

Bottom right: The iron grave marker cast for Tony Yoward.
[see page 35]

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Hampshire Industrial Archaeology Society

(formerly Southampton University Industrial Archaeology Group)

Journal No. 27, 2019

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Editorial

Welcome to issue **27** of our *Journal* which contains just two longer articles and a note by the late Tony Yoward.

In our first article, Howard Sprenger outlines the history of housing for the workers in Hampshire's 'railway town' of Eastleigh. The LSWR's move to Eastleigh was spread over 20 years while various departments were moved away from Nine Elms in London. Private developers provided the housing for almost all the work force. As a postscript, Howard provides a glossary of the road names of a much more modern housing estate in Hedge End. The second article is contributed by a Dutch colleague, Jerry Vondeling, who has written a history of Southampton's floating dock which, at the time it was built in 1923, was the largest of its kind in the world. It had a life in Rotterdam after it left England and was finally wrecked off Spain *en route* to Brazil. The final short article on cast iron grave-markers was written by Tony Yoward just before he died in January 2019. We print it in the *Journal* as a tribute to a friend and member of HIAS and its predecessor, who was a prolific contributor to our publications.

Martin Gregory
June 2019

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Edited and produced by Martin Gregory

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The Contributors

Howard Sprenger
After training as a teacher at St. Luke's College, Exeter, Howard spent ten years teaching in Staffordshire and Hampshire before joining IBM as a technical author. He retired twenty six years later as a software development manager, and now teaches mathematics to adult students in Portsmouth. With his wife, he runs Kestrel Railway Books, and is the author of four railway books. He is a member of several industrial and railway societies and is the present Vice-Chairman of HIAS.

Jerry N. J. Vondeling writes of himself:
I am forty years of age and have been interested in history most of my life. I always wanted to study archaeology but that never happened. At age fourteen, I started working at our local windmill as an apprentice miller. I received my miller's certificate at age 25. After completing my regular education, I studied to be a pharmacist's assistant. Currently I am working in second hand retail. In my spare time I still work at the mill and I passed my 25th anniversary there last year. Currently, I have written a book about the history of the windmills in Hoogeveen where I live.
Another hobby of mine is collecting items about the R.MS *Titanic* and the White Star Line. During the last couple of years I have built quite a nice collection. From one article came another, and then I found out that the Southampton floating dock had a connection with the Netherlands.

Tony Yoward
The late Tony Yoward grew up in Swindon and moved to Emsworth in 1952 to manage, and later own, the Pharmacy. He always had an interest in Industrial Archaeology, especially canals, and had served on the AIA committee. In 1970, he moved into the converted Slipper Mill building and his interest in mills took off. He was Chairman of SUIAG, a member of the SPAB Mills Committee and was one of the founding trustees of the Mills Archive, a website for British Mills. He died in January 2019.

Acknowledgements

My thanks are due to all who have contributed to this edition of the *HIAS Journal*. Acknowledgements and thanks for the provision of illustrations are made as follows:

Bishopstoke Local History Society, (Figures 10 [Roy Smith], 14 & 20 [Kevin Robertson]); Eastleigh & District Local History Society, (Figures 1, 5-7, 12, 23, Front & Back covers); Kelvin Holmes, (Figure 46); www.RDMarchief.nl, (Figure 43); Howard Sprenger, (Figures 2-4, 8-9, 11, 13, 15-19, 21-22, 24 & road signs); Jerry Vondeling, (25-45 & Back cover); Tony Yoward, (Figures 47 to 56).

The authors and HIAS have made every effort to trace copyright holders of illustrations, but if we have inadvertently overlooked any, we apologise.

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Housing the Workers: how the New Town of Eastleigh grew

Howard Sprenger

A town is born

The story begins with the arrival of the London & Southampton Railway (L&SR), which opened its route in stages between 1838 and 1840, the section between Winchester and Northam opening on 10th June 1839. An Act passed that same month granted powers to build a line from the new station at Bishopstoke to Gosport, and also authorised a change of name to the London & South Western Railway (LSWR). The Gosport branch opened on 29th November 1841, and was followed by another to Salisbury, which opened to goods services on 27th January 1847 and to passengers on 1st March. To reflect its status as an important junction, Bishopstoke station was renamed Bishopstoke Junction in 1852. All trains between London and Salisbury ran via this junction until the opening of the line between Basingstoke and Salisbury on 1st May 1857, and traffic between London and Portsmouth (via a ferry from Gosport) ran this way until the Portsmouth Direct line was opened throughout on 24th January 1859. Bishopstoke Junction was renamed Eastleigh and Bishopstoke on 1st July 1889, and became simply Eastleigh in 1923.



Figure 1. An 1812 map of what would become Eastleigh. Little Eastley Farm is where the recently-closed Leigh Road police station is and Great Eastley Farm is in the area roughly bounded by Pirelli Way, Nutbeem Road, Blenheim Road and Cable Street. The other building of note is The Home Tavern, now The Wagon Works, built in 1712 as a thatched building, and now so much rebuilt that it is debatable how much of the original remains. Home Farm, on the extreme west of the map, still exists (much altered) as a business centre. Running between Little Eastley Farm and Home Farm is now Leigh Road and Dew Lane.

The area was owned by various landowners, including the Smythes at Brambridge, the Chamberlaynes at Cranbury Park, the Flemings at North Stoneham and the Heathcotes at Hursley. Thomas Chamberlayne owned the manor of Barton Peveril, and in 1860, he bought part of the Brambridge estate from William Craven, who had inherited it from his mother, a niece of the Smythes. The 1841 census reveals that 80 people lived in the tithings of Barton and Eastley, which comprised thirteen houses, one of which was unoccupied, plus two more that were in the course of erection. Eight of the thirteen were in Barton, which belonged to the Cranbury estate, and five were in Eastley, which belonged to the Brambridge estate, so by purchasing a piece of that estate, Chamberlayne owned both component parts of what would become Eastleigh. Chamberlayne was an early director of the L&SR, although the extent of his involvement with the LSWR at the time of Eastleigh's rise is not clear.



Figure 2. The statue of Charlotte Yonge outside Eastleigh station.

Barton and Eastley were part of South Stoneham parish but, in the 1860s, thoughts turned to creating one to serve the growing population. In 1868, the new parish was created (incorporating Boyatt), and in return for donating £500 towards the cost of building the parish church (the Church of the Resurrection on the corner of Romsey Road and Twyford Road) Charlotte Yonge, writer and resident of Otterbourne, was asked to decide which of the two

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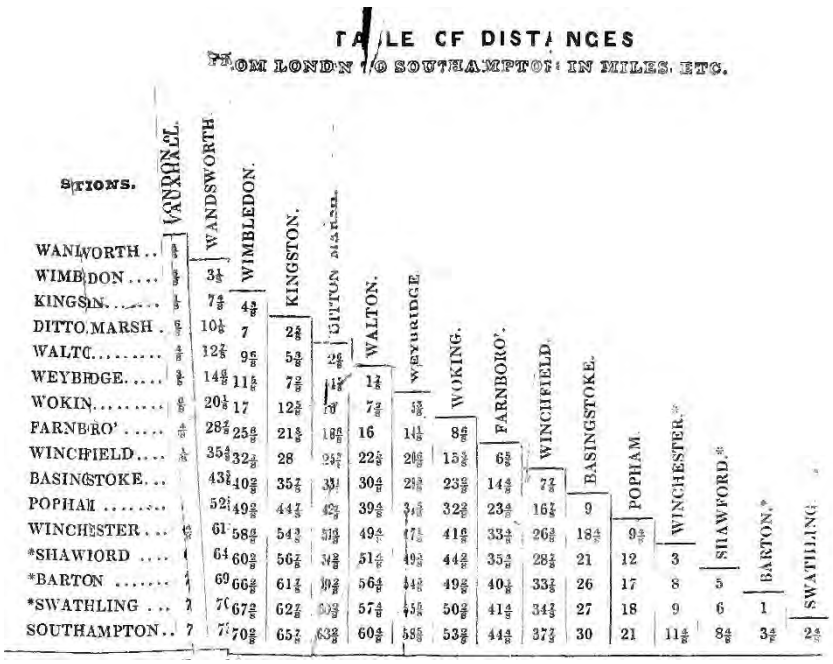


TABLE OF DISTANCES
FROM LONDON TO SOUTHAMPTON IN MILES, ETC.

STATIONS.	VAUXHALL.	WANDSWORTH	WIMBLEDON.	KINGSTON.	DITTON MARSH.	WALTON.	WEYBRIDGE	WOKING.	FARNBORO'.	WINCHFIELD	BASINGSTOKE.	POPHAM.	WINCHESTER. *	SHAWFORD. *	BARTON. *	SWATHLING.
WANDSWORTH ..	5															
WIMBLEDON	5	3½														
KINGSTON.....	5	7⅞	4⅜													
DITTON MARSH .	5	10⅛	7	2⅝												
WALTON.....	5	12⅝	9⅝	5⅜	2⅝											
WEYBRIDGE.....	5	14⅜	11⅝	7⅜	4⅜	1⅞										
WOKING.....	5	20⅛	17	12⅜	10	7⅜	5⅜									
FARNBRO'	5	28¾	25⅝	21⅝	18⅝	16	14½	8⅜								
WINCHFIELD....	5	35⅜	32⅛	28	25⅛	22⅝	20⅜	15⅝	6⅝							
BASINGSTOKE...		43⅜	40⅜	35⅞	33⅛	30⅜	28⅛	23⅝	14⅜	7⅞						
POPHAM		52⅛	49⅜	44⅞	42⅜	39⅝	37⅜	32⅜	23⅜	16⅞	9					
WINCHESTER...	5	61	58⅜	54⅞	52⅜	49⅝	47⅜	41⅜	33⅛	26⅜	18⅛	9⅜				
*SHAWFORD		64	60⅜	56⅞	54⅜	51⅝	49⅜	44⅜	35⅛	28⅜	21	12	3			
*BARTON		69	66⅜	61⅞	59⅜	56⅝	54⅜	49⅜	40⅛	33⅜	26	17	8	5		
*SWATHLING ...		70	67⅜	62⅞	60⅜	57⅝	55⅜	50⅜	41⅛	34⅜	27	18	9	6	1	
SOUTHAMPTON..	7	7	70⅜	65⅞	63⅜	60⅝	58⅜	53⅜	44⅛	37⅜	30	21	11⅛	8⅛	3⅛	2⅛

Figure 3. A table of distances from the London & Southampton Railway Companion published in 1839. At the time of printing, the section south of Winchester had not been opened, and Eastleigh station was being referred to as "Barton". (Note also that Micheldever station is referred to as "Popham".)

LONDON AND SOUTH WESTERN RAILWAY.

Southampton to Nine Elms.

Trains depart from	B 45 p 7 MORN.	B 9 MORN.	B 7 MORN.	B 9 MORN.	C 15 p 9 MORN.	A 11 MORN.	B 1 AFTN.	A 3 AFTN.	B 15 p 5 AFTN.	B 6 EVEN.	B 30 p 7 EVEN.
	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.
SOUTHAMPTON.....	..	..	7	9	15 p 9	11	1	3	..	6	..
Bishopstoke	..	..	11 p 7	11 p 9	35 p 9	11 p 11	14 p 1	11 p 3	..	11 p 6	..
Winchester	..	..	32 p 7	35 p 9	5 p 10	30 p 11	35 p 1	30 p 3	..	32 p 6	..
Andover Road	..	..	59 p 7	10	35 p 10	50 p 11	2	50 p 3	..	54 p 6	..
Basingstoke	..	..	23 p 8	28 p 10	15 p 11	11 p 12	28 p 2	11 p 4	..	16 p 7	..
Winchfield.....	..	..	43 p 8	48 p 10	45 p 11	28 p 12	48 p 2	28 p 4	..	32 p 7	..
Farnborough.....	..	..	9	6 p 11	10 p 12	42 p 12	6 p 3	42 p 4	..	50 p 7	..
Woking	45 p 7	..	20 p 9	30 p 11	42 p 12	1	30 p 3	5	15 p 5	10 p 8	..
Weybridge.....	57 p 7	9	32 p 9	40 p 11	20 p 1	..	..	..	27 p 5	..	30 p 7
Walton	3 p 8	5 p 9	..	45 p 11	28 p 1	..	..	..	33 p 5	..	35 p 7
Esher.....	10 p 8	12 p 9	..	52 p 11	40 p 1	..	..	..	40 p 5	..	42 p 7
Kingston	19 p 8	22 p 9	55 p 9	12	50 p 1	..	4	..	49 p 5	33 p 8	52 p 7
Wimbledon	32 p 8	33 p 9	..	13 p 12	6 p 2	..	..	..	5 p 6	..	3 p 8
Wandsworth.....	41 p 8	42 p 9	..	22 p 12	18 p 2	..	..	..	15 p 6	..	12 p 8
Nine Elms (LONDON).....	50 p 8	50 p 9	30 p 10	30 p 12	30 p 2	..	40 p 4	6	25 p 6	15 p 9	20 p 8

There is a *Mail* Train from Southampton to London at a quarter past 2 in the morning.
Sunday Trains (all mixed) from GOSPORT and SOUTHAMPTON to Nine Elms at ½ past 9 morning, and ½ past 4 afternoon; and from WOKING to Nine Elms at a ¼ past 9 morning, and a ¼ past 6 and a ¼ past 8 evening.

Gosport Branch.

Bishopstoke to Gosport.

Depart from	B MORN.	B NOON.	A AFTN.	B AFTN.	A AFTN.	B EVEN.	*Mail.* NIGHT
	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.
Bishopstoke	10 20 p	12 37 p	1 20 p	4 37 p	5 12 p	8 44 p	11
Botley	13 p 10	32 p 12	..	32 p	4 47 p	5 24 p	8 56 p 11
Fareham ..	25 p 10	46 p 12	58 p 1	46 p	4 58 p	5 38 p	8 10 p 12
Gosport ..	45 p 10	10 p 1	25 p 2	10 p	5 25 p	6	9 32 p 12

Gosport to Bishopstoke.

Depart from	B MORN.	B MORN.	A MORN.	B NOON.	A AFTN.	B EVEN.
	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.
Gosport	30 p 6	30 p 8	30 p 10	30 p 12	30 p 2	30 p 5
Fareham	42 p 6	42 p 8	42 p 10	42 p 12	42 p 2	42 p 5
Botley.....	54 p 6	54 p 8	..	54 p 12	54 p 2	54 p 5
Bishopstoke	11 p 7	11 p 9	11 p 11	11 p 1	11 p 3	11 p 6

The Trains respectively marked A, B and C are *First Class*, *Mixed*, and *Slow*.
There are also *Slow Trains* at 37 minutes past 5 afternoon from Bishopstoke to Gosport, and at half-past 8 morning from Gosport to Bishopstoke.
From SOUTHAMPTON to GOSPORT.—Trains at a quarter before 10 morning, 12 noon, 4 afternoon and 8 evening.
Sunday Trains.—At ten minutes past 1 afternoon, and ten minutes past 8 evening.
From GOSPORT to SOUTHAMPTON.—Trains at half-past 8 and half-past 10 morning—half-past 2 and half-past 5 afternoon—and twenty minutes past 7 evening.
Sunday Trains.—At half-past 9 morning and half-past 4 aftern.—all are *Mixed* Trains on the Gosport Branch.

Figure 4. A timetable from June 1844, the station now being referred to as Bishopstoke.

settlements the parish should be named after. She chose Eastley, but changed the spelling to Eastleigh, as she considered the "Frenchified" version to be more of the age. She is commemorated by a statue created in 2015 by Vivien Mallock that depicts her sitting on a bench outside Eastleigh station, and also by Yonge Close to the north of the church she helped to fund.

The LSWR's London terminus was originally at Nine Elms, and would remain so until the opening of Waterloo station on 11th July 1848. Alongside Nine Elms station was the company's locomotive, carriage and wagon works, but the site proved too small for the burgeoning company, and in order to allow the locomotive works to expand, a search was made for a new location for the carriage and wagon works. Basingstoke, Andover and Eastleigh were considered, the decision going to Eastleigh largely as a result of its greater importance as a major junction, and because the company was able to buy sufficient land at a very advantageous price. Even at this stage it was apparent that the locomotive works might have to follow later, and Eastleigh offered plenty of room to expand. The carriage and wagon works were duly relocated there in 1891.

In 1851, the population of the nascent Eastleigh was 193, growing to 253 in 1861 and 515 in 1871, but by the time the carriage and wagon works opened twenty years later, it had grown to 3,613. The development of a large facility at such an isolated location created a huge demand for housing and public buildings, and the LSWR might have been expected to be in the forefront in providing these, but most of the town was developed privately by speculators including Thomas Chamberlayne, who set up the Barton and Eastley Building Estate with the purpose of exploiting the land that he held. This seems to have been typical when compared to the growth of other railway towns such as Swindon, Crewe and Horwich, where the railway company left the provision of most of the housing to private builders.

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The growth of Eastleigh



Figure 5. "The Elms" photographed on 11th November 1975.

The first house built by (or for) the LSWR is believed to have been "The Elms" in 1841, a detached house at the south end of the station, and fronting onto Southampton Road. It was rated at £9 7s 6d (£9.37) per annum, and occupied by the "Inspector of Rails", Thomas Teesdale, whose job title is taken from the *Hampshire Advertiser*, which reported on 2nd October 1841, that, "a man who gave his name as Tummas Teasdale, Inspector of Rails on the Railway" was charged before the Southampton Police Court with an assault on the police, and was fined 10s plus 8s 6d (£0.92) costs. A later inhabitant is believed to have been James Philip Annett, the LSWR's signalling superintendent, whose father had held the same post on the London, Brighton and South Coast Railway and invented the Annett key, a valuable contribution to railway safety, in 1875. (In the 1898 *Kelly's Directory*, Annett Jr is listed as living on Winchester Road, now Twyford Road.) It is possible that "The Elms" was built by Matthew Tate (of whom, more later). If so, it would have been his first undertaking for the company. The Elms survived until 1977 when it was removed as part of the redevelopment of the station.

Next to be built, in 1842, was a block of four houses on the east side of the railway roughly opposite the junction of Factory Road (now Wells Place) and Southampton Road. One of these was for Thomas Walker, probably the original stationmaster, and like The Elms, it was rated at £9 7s 6d per annum, while the other three (rated at only £5 per annum) were occupied by porters James Chandler, William Hall and David Harris. Being to the east of the line, they could not have lasted long as the growing railway rapidly engulfed them.

The Junction Hotel, to the north of the station, was built by David Nicholson of Wandsworth, who was also responsible for building most of the stations on the L&SR; it opened around the beginning of 1842. Although designed by the railway's architect, William Tite, the hotel was built for Nicholson himself. The first licensee was Mary Slade, but by 9th September 1843, it had been taken over by James Heath, a railway contractor who was building the Salisbury line. He lodged several of his men, deducting rent from their wages, but this resulted in frequent disagreements over money, and Heath appeared in court on more than one occasion.

The hotel was bought by Peter Young of the Twyford Brewery at auction on 8th January 1846, and on 25th March 1847 the licence was transferred to Charles White. When the cheese market was established, Young bought shares in it, and added the Market Room, where the annual market dinner was held; this later became the billiards room. Young died in 1859, and the hotel was owned by his estate until it was sold to the LSWR in 1871 for £2,300. It ran the hotel until 1899, when it was leased to Spiers & Pond, who ran hotels and refreshment rooms for many railway companies. It was demolished in 1970 to make way for the station car park.

When the Salisbury line was built, a level crossing was put in where it crossed Twyford Road, and a cottage called "Cross House" was provided for the crossing keeper, Stephen Isaac, who moved there from Salisbury with his wife, Mary Ann. It was a small, picturesque bungalow, built to the same design as others on the line such as at Crampmoor. The crossing became redundant when the then Winchester Road was re-aligned in around 1870 (consent having been given by the Quarter Sessions in 1867), and the current Salisbury Arch was built to take the new road over the railway. Cross House continued to be let to railway workers even though it was becoming increasingly inaccessible as a railway yard grew up around it, and it was demolished soon after World War 2.

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Figure 6. The particularly fine set of railway cottages built by the LSWR between 1847 and 1858 on Southampton Road photographed shortly before their demolition in 1973.



Figure 7. Tate's Terrace showing the site of Eastleigh's first Post Office. The photograph was probably taken shortly before demolition.

Also by 1847, ten cottages had been built on Southampton Road, with four more being added between 1852 and 1858. These "superior" properties were built by the railway for foreman grades and the like, and were opposite Derby Road. They are listed in the *South Stoneham Rate Book* for October 1850, which describes the LSWR's property as, "Station, cottages and land at Bishopstoke … and 10 cottages near Bishopstoke Station". The occupiers of the cottages are shown in the 1851 census, and a further entry in the *Rate Book* for 1858 reads, "Station, cottages and land at Bishopstoke … and 15 cottages and garden near Bishopstoke Station" – why "15" is not known, as there were only ever 14. They were known as the "Railway Cottages", and were demolished in 1973 to make way for a car park, petrol station and light industrial units.

In 1852, a rectangular enclosure was set aside for the county cheese market just north of the station on the east side of the railway. It had two lines of rails running in front of the sheds and stores, which were on the east and west sides. The market was held on the third Thursday of every month. Probably only a few years later, two more cottages were built in the yard off Twyford Road, in connection with horse transport from the station, although their exact purpose is not known. They are believed to have been demolished in around 1891 to make way for a new District Engineer's office.

The aforementioned Matthew Tate appears to have been employed on construction work by the LSWR in the early 1840s, but it is unclear what qualified him to do such work, as he had previously been described as a platelayer in Cheshire. He must have picked up the necessary railway-building skills, however, as he helped the contractor, Thomas Brassey, solve a problem with Fareham tunnel, and subsequently worked on other projects including the extension of the line to Clarence Yard (Gosport), the building of the Fareham to Cosham line and the Portsmouth Direct line, by which time he was sufficiently valued by the LSWR to be made superintendent of the permanent way for the Bishopstoke District.

In around 1864, he established a building business while retaining his railway job, and in that year, he is credited with building a terrace of railway workers houses opposite the station. Known as "Tate's Terrace" (in some directories, "Tait's Terrace"), they were built speculatively by Tate, who was the first to take advantage of the building leases being sold by Thomas Chamberlayne. In housing returns for 1894, 22 dwellings are listed, numbered 1 to 23, but with no number 11. The cost of each house was £200, with a rateable value of £9 7s 6d per annum, and it is said that a signalman, Luther Cook, literally "moonlighted" as a labourer, delivering bricks from the station to the building site between trains when he was on night shift. The terrace, which included Eastleigh's first Post Office, survived until the 1960s when it was swept away for the current multi-storey car park and offices. When it was demolished it was found that the foundations were virtually non-existent.

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Tate remained active in the construction industry, despite continuing to be the LSWR's district inspector of permanent way, and was listed as a brick maker in 1867. Originally from Darlington, he settled with his family in Fareham, and in the 1871 *Hampshire Directory* was described as "Gentleman farmer of 100 acres of land and water, also brick maker". He died on 16th September 1883 at the age of 71.

Thomas Chamberlayne died in 1876 and his son, Tankerville, took over the estate as well as serving as MP for Southampton between 1892 and 1896 and again between 1900 and 1906. He thus oversaw the large growth in the number of houses in Eastleigh as it prepared for the arrival of the LSWR's carriage and wagon works. Jonas Nichols (a property developer in Southampton commemorated today for the area known as Nicholstown, where he built and owned around 500 houses between Bevois Valley and St Mary's) acquired all the land available for sale in Eastleigh, and over a number of years, created the current grid-pattern street plan. He extended Southampton Road, Market Street and Tankerville Street (now High Street), all of which were crossed by Brewery Road (now Factory Road and Wells Place), and created Chamberlayne Road, Cranbury Road and Arthur Road (named after Chamberlayne's land agent – now Blenheim Road). Later roads were named after other railway towns (Derby Road, Doncaster Road, York Road) although it might be more than coincidence that an ancient lane called Doncaster Drove is just to the south of these. Some terraces were named in their own right such as Amport, Gloucester, Oxford and Putney Terraces. Nichols had a brickworks at Boyatt and it is likely that he used his own bricks for the houses he built.

This development was largely built as "three-up, three down" terraces of

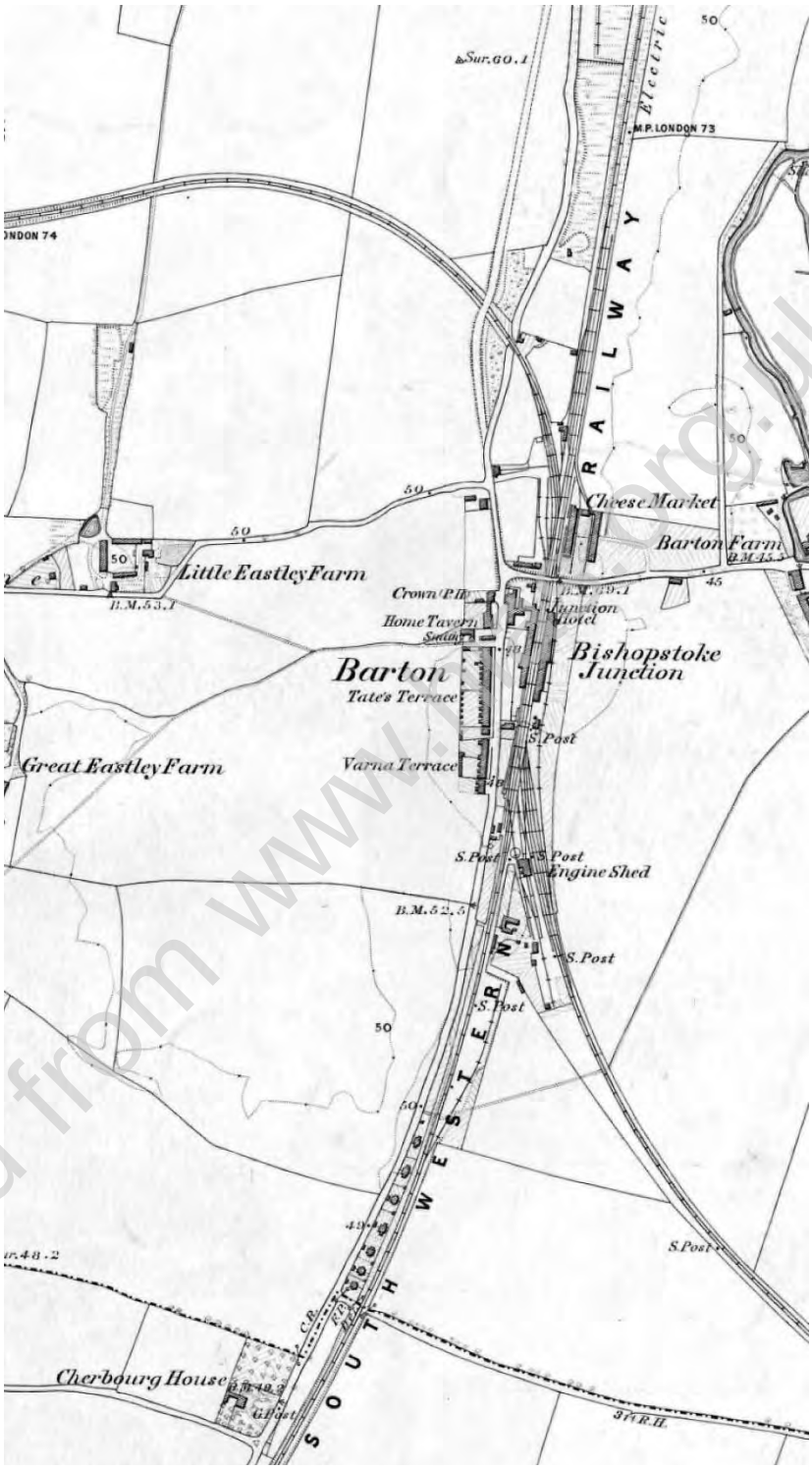


Figure 8. There are several items of interest on the OS 6-inch map published in 1872. The two Eastley farms are as they were, but the station is now present together with the branches to Salisbury and Gosport. The level crossing and Cross House on Twyford Road can be seen, but the new road over the railway is in the course of being built (it peters out just off the top of this extract). The cheese market is clearly marked, as is the Junction Hotel, The Elms (due south) and Tate's Terrace. Varna Terrace appears to be a continuation of Tate's Terrace, but no information has been found about this. The building within the junction of the main line and the Gosport line could be the block of four houses referred to in the text, and further south, to the west of the main line, are the 14 railway cottages. It is likely that the northernmost ten were built first.

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Figure 9. Jonas Nichols, who built most of the houses in Eastleigh.



Figure 10. Some of the houses built by Nichols under construction on Southampton Road.

houses, many having a cooking range in the middle room downstairs so that two families could share one house. There were no bathrooms, just an outside toilet in the back yard to be used by all. They were brick-built with slate roofs, the timbers for which were revealed to be very lightly-built when replaced by tiles in later years, and they were lit by gas. Other amenities were slow to arrive, however, and there was inadequate mains drainage, street lighting and properly surfaced roads and pavements, which must have been a huge inconvenience to those who had moved from the capital. Nevertheless, swapping the poorest parts of Battersea for life in a healthy country town was surely appreciated by those who made the move.



Figure 11. The clock tower and gatehouse for the carriage & wagon works can be seen in this view taken from the Railway Magazine for May 1898 before the adjacent buildings had been extended towards the road.

In 1889, the South Stoneham Rural Sanitary Authority received a letter from Ralph Neville, F.S.A., of Chancery Lane, which they considered on 5th March: "I am instructed by the South Western Railway Company to make the necessary arrangements for building and draining a number of cottages on their ground at Bishopstoke Station … the cottages will eventually number about 100." This was the first substantial number of houses to be built by the company and the first mention of a scheme to build houses on what is now Dutton Lane, although it was an ambitious one that was never fully realised. Interestingly, a plan of building plots from around 1880 shows the area earmarked as a site for the LSWR's "engineering works", suggesting either an extension to the carriage and wagon works or an early intended site for the locomotive works. Plans for the cottages were exhibited at the Royal Academy in 1889, and a description of them appeared in *The Builder* on 11th January 1890:

"There are 100 cottages in all, arranged in one irregular and one complete quadrangle, enclosing village greens. Each cottage has a garden of a ¼ rod and arrangements are made to supplement this by as much allotment as the men like to take up. The material is to be red brick, in a selenitic mortar, with tiles for the roofs, and the windows are to be of imperial stone, all wood and paint being thus avoided. The ground floors are to be bedded on six inches of selenitic concrete laid to leave a clear one foot (30 cm) of air space beneath, above the ground level. The cost is calculated, on

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estimate of work already executed, not to exceed an average of £200 per cottage, exclusive of the value of gravel, for concrete, which will be dug on the spot."

Nothing more was heard about the scheme until August 1891, when it was announced that Messrs. Martin and Wells of Aldershot had been awarded a contract to build thirty cottages on a site opposite the new carriage and wagon works. They were intended to accommodate the works police and the fire brigade, who needed to be on call at all times, and to facilitate this, all were provided with "electric call signals". These men were seen to have a high status within the works; all were married men to whom a uniform was provided, and who received extra pay for attending fire drills. 1891 also saw the opening of the LSWR dining hall on the corner of Bishopstoke Road and Dutton Lane, a site now occupied by ATS Euromaster Ltd since the hall was destroyed by fire in 1971. This red brick building with a tiled roof could accommodate 600 workers who provided their own meals, which were cooked for them free of charge. They paid a penny per week for the use of condiments, and could also attend cookery classes there, which were put on in connection with the County Council's "technical instruction scheme".

On 16th January 1892, the local press reported that 28 cottages were being erected to the north of the dining hall, and on 28th August it was reported that the houses were finished and occupied. Called "Dutton Cottages", they were built on the west side of the road which was called Dutton Lane after the chairman of the LSWR, the Hon. Ralph Heneage Dutton (it had previously been known as Fisherman's Lane); they still stand today. Only 26 cottages were actually built, arranged in three blocks of eight (Nos. 1 to 15), ten (Nos. 17 to 35) and eight (Nos. 37 to 51). However, in recent times the gap between the second and third blocks has been infilled bringing the total



Figure 12. The dining hall, probably taken around 1910. The shop on the opposite corner of Dutton Lane is now the home of the Steam Town Brew Co.



Figure 13. The LSWR cottages built in 1892 on Dutton Lane are seen here on 28th January 2019.



Figure 14. A striking picture, probably taken around 1910, of the houses built on Dutton Lane opposite those built by the LSWR.

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Figure 15. A recent view of the carriage & wagon works looking towards Bishopstoke and showing how the hipped-roofed buildings were extended up to the road.



Figure 16. A recent picture of the recreation ground and bandstand looking east with the site of the original Railway Institute on the right (now Sainsbury's).

to 27. The development bears little resemblance to the grandiose scheme drawn up in 1889, but the addition of 53 houses on the east side (Nos. 4 to 108, built privately after 1894) brought the overall total a little nearer its planned 100. The houses in Barton Road and on Bishopstoke Road at its junction were built to the same design as the later Dutton Lane houses and at the same time. To the west and north of Dutton Cottages, allotments were provided, and further north still, was a recreation ground with football pitches, a cricket pitch and a stadium with a banked cycle track, which was said to be one of the finest in the country; one lap measured one-fifth of a mile. All of this land has since been taken over by additional railway facilities.

In 1890, communications between the east and west sides of the railway were improved by the building of a new road bridge, which replaced a shorter narrower one. It was replaced by the present bridge in 1972/3.

Apart from the few dwellings built by the company in its early years, and the cottages built on Dutton Lane, the amount of housebuilding undertaken by the LSWR must be judged inadequate given the number of workers employed at the works. Its policy of allowing the private sector to meet demand could be forgiven if adequate housing had resulted, but it didn't, and a public enquiry was held in 1891 to ascertain why the housing provision was so poor. In addition, the local authority (South Stoneham) was overwhelmed by the huge changes taking place in the area, and could not cope. History would repeat itself when the locomotive works arrived, although at least by then Eastleigh had become an Urban District in its own right (in 1894), later enlarged by the inclusion of Bishopstoke.

At a public meeting of the Railway Temperance Society in March 1889, the LSWR declared that it intended to provide an Institute and recreation ground, and the following summer, Jonas Nichols met officials of the company near the site of the original bandstand (not yet built, and approximately 30 yards to the west of the current bandstand) to mark out the site of the Institute. William Panter, superintendent of the carriage and wagon works, was the driving force behind it, drawing on his experience of the very successful Institute called Brunswick House at Nine Elms. Towards the end of 1890, talks between the LSWR and Nichols were concluded, and plans were drawn up by the architects Mitchell, Son and Gutteridge of Southampton; the estimated cost being just under £3,000.

With a tender of £2,700, Nichols duly received the contract to build the Institute, and work had started by the spring of 1891 on a plot of land measuring 120 ft by 80 ft (37 m x 24 m) at the junction of Leigh Road and Upper Market Street. This was at the south-east corner of the site where the current entrance to Sainsbury's is, and sufficient land was set aside for a future extension, with still more to create a recreation ground. The foundation stone was laid by the LSWR's Chairman, Ralph Dutton, on 9th May 1891, a special train being

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provided to bring him, the Vice Chairman, directors and chief officers of the company, together with around 400 workmen from Nine Elms who would be employed at the new works. The Institute was opened on 10th October 1891 by the Hon. Mrs. R. Dutton, wife of the Chairman who was unable to perform the ceremony due to illness. Nichols had died on 30th July, so the work was completed by his son, Sidney. It wasn't until 1896 that the land for the recreation ground was secured, the LSWR providing £2,000 towards the purchase price of £4926 11s 3d.

Other buildings sprang up as the commercial side of Eastleigh developed to serve the growing population, and Lloyds Bank on the other side of Upper Market Street contributed to an impressive group of buildings at the crossroads, now sadly lost to the Eastleigh townscape. In 1891, the LSWR contributed £500 to enlarge the Parish Church of the Resurrection. It had originally been built in 1868 to the design of George E. Street R.A. in Plymouth stone with Bath stone dressings in the Early Decorated style at a cost of £2,300; the reredos was contributed by the mother of Charlotte Yonge. After some additional work costing £1,296 to the design of J.L. Pearson in 1884, a major extension of 1901 was designed by Sir Arthur Blomfield, architect of the Royal College of Music amongst other notable buildings. This was done at a cost of £7,450 and a chancel was added in 1905. Blomfield was careful to incorporate as much of the original building as possible and Street's church is largely preserved on the north side of the enlarged building.

Churches were also built to serve other denominations, and when the LSWR gave £500 to the parish church in 1891, it also gifted £50 to each of the nonconformist chapels. Among the other religious buildings was a brick-built Railway Mission Room on Factory Road, which held about 200 people. It was built by Miss Perks of Winchester in 1884, and by the late 1890s it had become the property of the Misses Ashby. Before World War 2, it was taken over by Hampshire County Education Committee for use as a technical instruction centre.

The first mention of a bandstand is on 1st June 1899, when the minutes of the Council's General Purposes Committee record that it, "resolved that while considering the (bandstand) most desirable yet felt it was more or less in the nature of a luxury and that the matter stand over for the present to ascertain probable cost". The chairman of the Council was William Panter, and he persuaded the LSWR to pay for the bandstand. According to the *Eastleigh Weekly News*

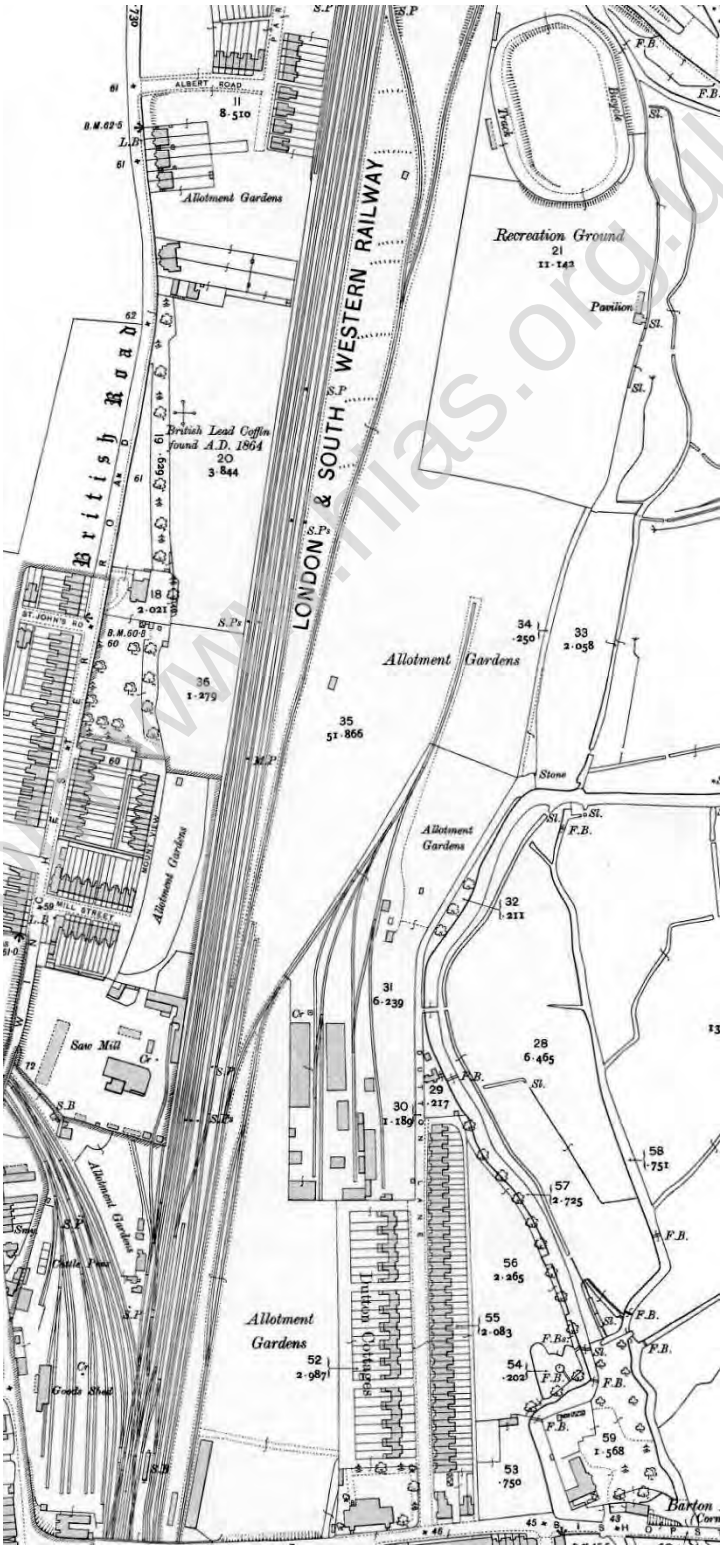
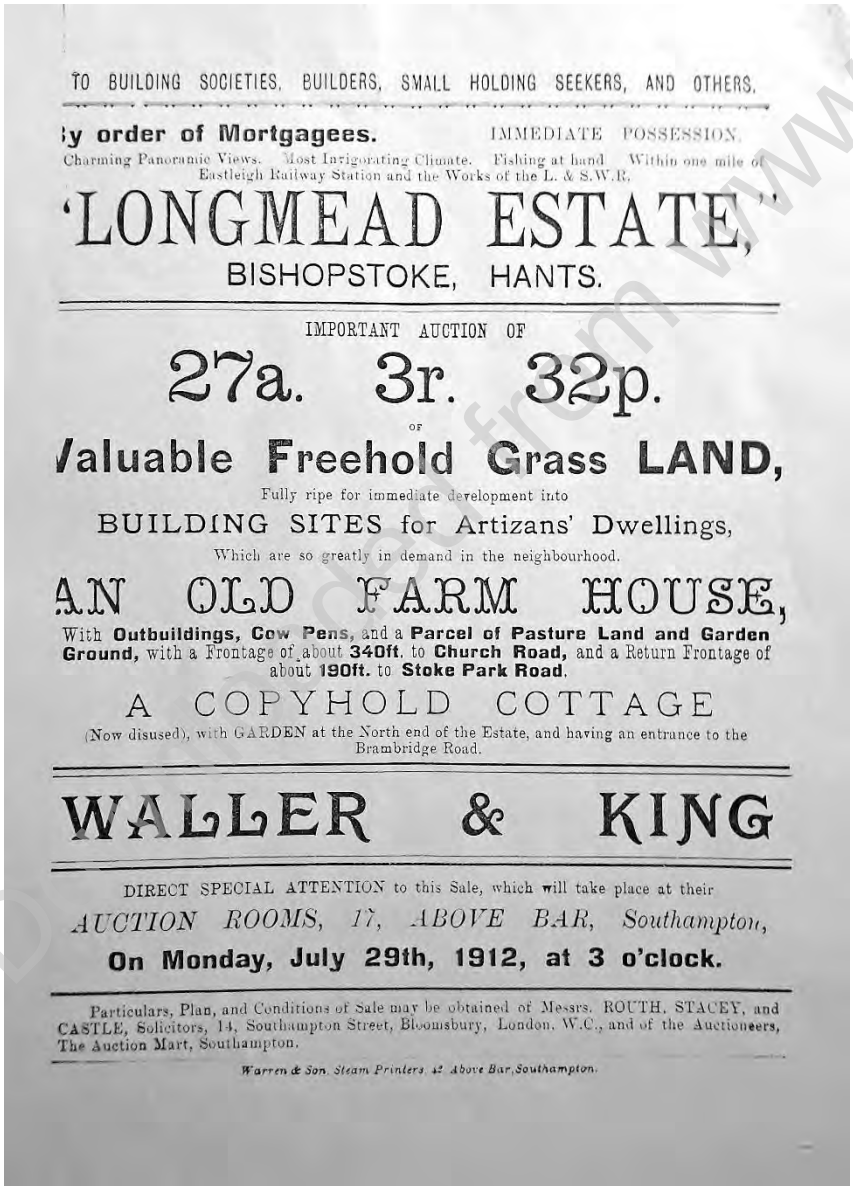


Figure 17. This OS 25-inch plan from 1909 shows Dutton Lane with the dining hall at the bottom of the map (centre) and the three blocks of LSWR-built cottages to its north. The extensive allotments to the west and north lead to the recreation ground with its banked cycle track. All of this land is now covered by railway sidings.

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Figure 18. The former Parish Church of the Resurrection of 1868, now converted into flats, 28th January 2019.



TO BUILDING SOCIETIES, BUILDERS, SMALL HOLDING SEEKERS, AND OTHERS.

By order of Mortgagees. IMMEDIATE POSSESSION.

Charming Panoramic Views. Most Invigorating Climate. Fishing at hand. Within one mile of Eastleigh Railway Station and the Works of the L. & S.W.R.

'LONGMEAD ESTATE,"

BISHOPSTOKE, HANTS.

IMPORTANT AUCTION OF

27a. 3r. 32p.

OF

Valuable Freehold Grass LAND,

Fully ripe for immediate development into

BUILDING SITES for Artizans' Dwellings,

Which are so greatly in demand in the neighbourhood.

AN OLD FARM HOUSE,

With **Outbuildings, Cow Pens,** and a **Parcel of Pasture Land and Garden Ground,** with a Frontage of about **340ft.** to **Church Road,** and a Return Frontage of about **190ft.** to **Stoke Park Road.**

A COPYHOLD COTTAGE

(Now disused), with GARDEN at the North end of the Estate, and having an entrance to the Brambridge Road.

WALLER & KING

DIRECT SPECIAL ATTENTION to this Sale, which will take place at their

AUCTION ROOMS, 17, ABOVE BAR, Southampton,

On Monday, July 29th, 1912, at 3 o'clock.

Particulars, Plan, and Conditions of Sale may be obtained of Messrs. ROUTH, STACEY, and CASTLE, Solicitors, 14, Southampton Street, Bloomsbury, London, W.C., and of the Auctioneers, The Auction Mart, Southampton.

Warren & Son, Steam Printers, 17 Above Bar, Southampton.

Figure 19. A sale notice for the Longmead Estate in Bishopstoke.

dated 3rd August 1900, "the directors of the LSWR were … persuaded to show their sympathy with the Works Band in a practical manner by placing on the recreation ground at their own expense a band stand on which from time to time the band could perform to the enjoyment of the public". It was described as having iron columns embedded in concrete with slabs of concrete for the floor. The outside was varnished matchboard, with a top and bottom moulding, and around the stand was a substantial iron railing. The paper reported that the company proposed to put a further fence around the structure and to add a roof.

The additional fence was not built until nearly three years later, and was funded by the Council at an estimated cost of £22. However, the roof never was put on, and plans were overtaken by a decision to build a new bandstand – a Council minute of 29th April 1909 stating that "the Committee recommend that a concrete stand be provided in the Park for band playing, 30 yards to the East of the present structure, at an estimated cost of about £30, such stand to be so constructed as to be available for a complete covered Band Stand". The new one was duly built but still no roof was provided, and a succession of delays, not least due to World War 1, meant that it wasn't until 8th February 1923 that the Council instructed the surveyor to obtain estimates for its construction. On 19th October 1923, the *Eastleigh Weekly News* reported that work was in hand to put a roof on, and on 16th July 1925, a tender was accepted from Cray Installations Ltd to install electric lighting. It had taken over 25 years for the bandstand to be completed after the initial decision to build it in 1899.

Further building took place as the town expanded northwards and westwards, all of which was done by speculators hoping to cash-in on the

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increasing population. Many workers chose to live outside Eastleigh, travelling to their jobs by rail from their homes towards Portsmouth. The suburb of Chandler's Ford grew up as a result of the building of the Salisbury line, and relieved some of the pressure on Eastleigh. This was encouraged by the LSWR, who provided special trains for workers. The area north of Leigh Road became known as Newtown, and the village of Bishopstoke grew as parcels of land such as the Longmead estate were sold off for workers' housing, their names living on as road names to the present day.

The arrival of the Locomotive Works

Despite having the whole of the site at Nine Elms at its disposal, the locomotive works could no longer meet the company's requirements. This, and the need to widen the approach to Waterloo station, prompted the LSWR to find an alternative location, and in 1898, powers were obtained to purchase 200 acres (80 ha) of the Chickenhall Farm estate. The following year, the decision was made to move the works to Eastleigh with another 4,000 to 5,000 people being added to its population, but before this move was completed, the locomotive running sheds at Northam were closed, and a new depot (which would become the second largest shed on the LSWR after Nine Elms) was opened at Eastleigh on 1st January 1903. Tellingly, its opening had to be delayed due to lack of housing, and it was only in that month that the company resolved to build 54 "company cottages" north of the new sheds on Campbell Road, named after Lieut-Col H.W. Campbell, Chairman of the LSWR between 1899 and 1904.



Figure 20. Houses under construction on Campbell Road with materials being delivered over a temporary rail connection built along the road.

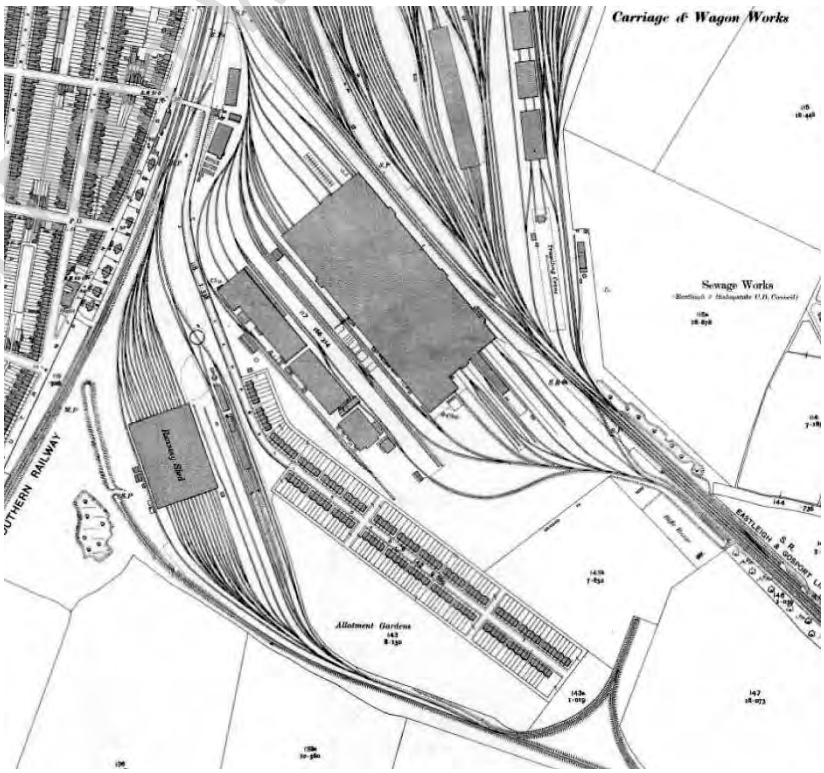


Figure 21. The OS 25-inch plan from 1933 shows the extent of Campbell Road and how it became encircled by the locomotive works to the north-east and the lines through the running sheds on the other side – very handy for work, though! A pair of semi-detached houses has recently been added on the spare piece of ground at the end of the southern side of the road bringing the total up to 156 houses.

They were constructed by William Henry Whitehead of 41 Hamilton Road, Bishopstoke, at a cost of £225 each, and unlike the earlier ones, were built with bathrooms; they were completed by the end of 1904. As the lines through the running sheds were extended (eventually to join up with the Portsmouth line) the cottages became surrounded by tracks, and it is said that the area became known as "Spike Island" because of the spiked railings outside the properties. The company provided another dining hall within the new locomotive works, also seating 600 people, where workmen could buy a meal of meat

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Figure 22. A view of Campbell Road taken on 28th January 2019.

and two veg followed by a sweet for 6d (2½p). Although the decision to begin construction of the new works was taken in December 1902, progress was slow, and the transfer was not fully complete until nearly eight years later. The combined cost of moving the works and the running sheds was estimated at £277,000.

The Locomotive, Carriage & Stores Committee minutes for February 1904, show that the rent for a block of six cottages being built in Campbell Road, which were due for occupation in April, would be set at 6s (£0.30) each per week, the company paying all outgoings. At the same meeting, it was agreed that the rent for cottages in Dutton Lane would rise from 4s to 5s per week, as they become vacant. The transfer of locomotive workers began on 6th January 1910, and Nine Elms works closed completely on 31st January 1910 (although office space for the chief mechanical engineer's staff wasn't ready at Eastleigh until the following September); the population of Eastleigh the following year stood at around 15,300.



Figure 23. The Locomotive Engineers Club & Institute dating from 1919, and probably photographed in the 1980s before the brickwork was painted.

As had happened in 1891 when the carriage works arrived, the company's response to this second influx of workers left a lot to be desired, and in 1908, it expressed the view that the needs of the incomers would best be met by private enterprise. Perhaps inevitably, land prices rose and no speculative building was carried out, so that workers arriving from London in 1909 were forced to commute daily to work from lodgings outside the town. A special train ran to Waterloo at midday on Saturdays to enable them to visit their families, returning on Sunday evening. Urged by the locomotive committee, the company agreed in January 1910 to build 100 more cottages in Campbell Road at a cost of £30,758. These were built to the south-east and north-west of the original block and were completed in December 1912. They were let out at 5s 6d (£0.28) per week and brought the total number of cottages on Campbell Road to 154. This was the last workers' housing built by the LSWR.

Although not built by or for the LSWR, the Locomotive Engineers' Club and Institute on Station Hill, which opened in 1919, deserves a mention. The current entrance is one floor higher than originally built, as the road outside was raised to ease the gradient up to the bridge over the railway opposite. Additional recreational facilities were provided at the Locomotive Engineers' Recreation Ground on land off Chickenhall Lane and, given its title, it is possible that it was operated by, or in conjunction with, the Club.

The original Railway Institute became threatened by town centre developments in the late 1970s and the search began for a site for its replacement. Coincidentally, the Church of the Resurrection closed in late 1978, so the vicarage and its grounds became available and were acquired for the new Institute, which opened on 2nd July 1982; it is still there today. The original Institute closed on the previous Sunday before being

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demolished for the building of the supermarket, and the Grade II listed church was converted into flats after a serious fire ravaged the building in 1985. All Saints church on the corner of Desborough Road and Derby Road, has replaced it as the parish church of Eastleigh. It was built at a cost of about £8,200 to the design of Messrs. Colson and Nisbett, architects, of Winchester, and opened in 1910.



Figure 24. (alongside) The OS 6-inch map from c.1946 (revised 1938) shows the extent of the housing in Eastleigh before post-war development enlarged the town still further. The map straddles two sheets, so they have been aligned as best as possible here. New Town is seen north of Leigh Road, and has extended along Twyford Road north of the Salisbury line. Cross House can be seen where Twyford Road originally crossed the line on the level (now Marks & Spencer), and the Junction Hotel is visible by the station. The recreation ground with its bandstand is called "The Park", and lies between the Town Hall at one end and the Railway Institute at the other. South of Leigh Road is the grid system of roads laid out by Jonas Nichol, and the 14 semi-detached cottages built by the LSWR are visible. The land to the east of the main line is a mass of railway tracks serving the locomotive works and running sheds with Campbell Road almost isolated between the two – only the road bridge with its 90-degree corners at each end allows access.

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Postscript: Road names in Hedge End

In the late 1980s, plans were made for a large housing development north of the village of Hedge End that would extend the residential area up to the Eastleigh to Fareham railway line. To cater for the growing settlement, a brand new railway station was opened between Eastleigh and Botley on 9th May 1990, and fittingly, Eastleigh Borough Council chose railway-related names for the roads on the Grange Park development. I have long felt that the origins of these names should be recorded somewhere, and although not connected to the foregoing account of housing in Eastleigh, this seems an appropriate place to do it.

It would be interesting to know how the names were chosen. Several are named after members of the Southern Railway's "Schools" class locomotives (built at Eastleigh) and belie their railway connections as a result. Most of the others are named after railway engineers and officials, usually (but not always) connected with railways in the south of England, but Telford is misplaced, as the famous engineer of that name died before he was able to

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contribute to "The Railway Age". The inventors of three types of articulated locomotive are commemorated for some reason, and there are some other oddities. A single "Merchant Navy" class locomotive is honoured, and a rather obscure one at that, "Blue Star", although it has to be admitted that Elder Dempster Lines Close or General Steam Navigation Crescent would probably not have worked very well! Billington (Gardens) is a mis-spelling, and Lomax (Close) has so far defied a convincing explanation!

Notable by their absence are Oliver Bulleid (Chief Mechanical Engineer of the Southern Railway after Maunsell) and Robert Urie (the last Chief Mechanical Engineer of the LSWR). One can only assume that the spelling of their names counted against them, Bulleid frequently being rendered as "Bullied" and Urie being only one letter away from disaster. The names are truly a mixed bag, but an interesting collection nevertheless. They are listed alphabetically.

Adams Close: William Adams was Locomotive Superintendent of the LSWR between 1878 and 1895.



Ardingly Crescent: One of many roads to be named after one of the Southern Railway's V class 4-4-0 express passenger locomotives named after independent schools, and built at Eastleigh.

Arthurs Gardens: Named after the LSWR's N15 class 4-6-0 express passenger locomotives known as "King Arthurs", whose names were derived from Arthurian legend.

Beattie Rise: Joseph Hamilton Beattie was the locomotive engineer of the LSWR from 1850 until his death in 1871, after which he was succeeded by his son, William George Beattie.

Billington Gardens: Lawson Butzkopfski Billinton (no "g"!) was Locomotive Superintendent of the LBSCR from 1912 until the takeover by the Southern Railway in 1923.

Bluestar Gardens: Named after one of the Southern Railway's Merchant Navy class 4-6-0 express passenger locomotives, which were named after shipping companies. No 35010 "Blue Star" is awaiting restoration at the Colne Valley Railway in Essex.



Britannia Gardens: Named after the BR Standard class 7 4-6-2 mixed-traffic locomotives, many of which were named after great Britons, notably the first, which was called "Britannia", and gave its name to the rest of the class.

Brunel Close: Isambard Kingdom Brunel was the renowned Chief Engineer of the Great Western Railway.

Cheltenham Gardens: A school (see entry for Ardingly Crescent).

Churchward Gardens: George Jackson Churchward was the Chief Mechanical Engineer of the GWR between 1902 and 1922.

Collett Close: Charles Benjamin Collett was the Chief Mechanical Engineer of the GWR between 1922 and 1941.

Cudworth Mead: James I'Anson Cudworth was Locomotive Superintendent of the South Eastern Railway from 1845 to 1876.

Drummond Road: Dugald Drummond was the locomotive engineer (later Chief Mechanical Engineer) of the LSWR from 1895 until his death in 1912. He oversaw the relocation of the company's locomotive, carriage and wagon building operation from Nine Elms to Eastleigh.

Elliot Rise: John Elliot was a career railwayman who rose to become acting General Manager of the Southern Railway shortly before nationalisation, after which he became chairman of the Railway Executive in 1951.

Fairlie Close: Robert Francis Fairlie was a Scottish railway engineer and inventor of a double-bogied articulated locomotive famously used on the Ffestiniog Railway in Wales. (Presumably, the residents of Fairlie Close live nearby…)

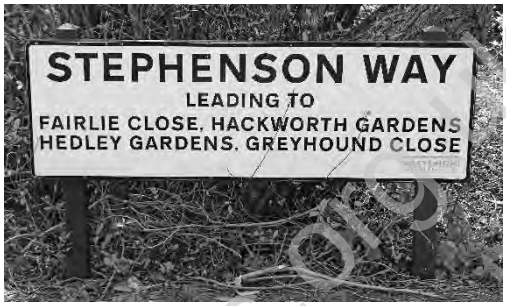
Garratt Close: Herbert William Garratt was the inventor of the eponymous articulated steam locomotives built by Beyer, Peacock & Co.

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Giles Close: A pupil of John Rennie, Francis Giles was appointed engineer to the L&SR in 1831, and subsequently became the engineer of Southampton Docks in 1836.

Gresley Gardens: Sir Herbert Nigel Gresley was the Chief Mechanical Engineer of the GNR (1911-1922) and the LNER (1923-1941).

Greyhound Close: The LSWR's T9 class 4-4-0 express passenger locomotive were nicknamed "Greyhounds" because of their speed.



Hackworth Gardens: Timothy Hackworth was a steam locomotive engineer who lived in Shildon, County Durham, and was the first locomotive superintendent of the Stockton and Darlington Railway.

Hedley Gardens: William Hedley was a leading pioneer in the early years of railway development, building the first steam locomotive to rely simply on the adhesion between iron wheels and iron rails.

Leatherhead Gardens: A school (see entry for Ardingly Crescent).

Locke Road: Joseph Locke was a notable English railway engineer chiefly associated with railways in the Midlands, north of England and Scotland, but he also worked on the LSWR, designing tunnels at Micheldever, and the 12-arch Quay Street viaduct and the 16-arch Cams Hill viaduct, both in Fareham (1848).

Lomax Close: There is no obvious railway connection apart from a little-known railway engineer called Edward Lomax who has no discernible link with the area. The Far East prisoner of war, Eric Lomax, who was the subject of the 2013 film "The Railway Man", can probably be ruled out as the book on which the film is based was not published until 1995. (There is a type of wagon called a "Lowmac" – perhaps a pun was intended!)

Mallard Gardens: LNER class A4 Pacific locomotive No 4468 "Mallard", designed by Sir Nigel Gresley (*q.v.*), became the holder of the world speed record for steam locomotives on 3rd July 1938. Its record speed of 126 mph has never been beaten.



Mallett Close: Anatole Mallett was a Swiss engineer who invented an articulated steam locomotive widely used in the USA.

Malvern Gardens: A school (see entry for Ardingly Crescent).

Marlborough Gardens: Ditto.

Marsh Gardens: Douglas Earle Marsh was the Locomotive, Carriage and Wagon Superintendent of the LBSCR between 1904 and 1911.

Martley Gardens: William Martley was the Locomotive Superintendent of the London Chatham & Dover Railway from 1860 until his death in 1874.

Maunsell Way: Richard Edward Lloyd Maunsell was the Chief Mechanical Engineer of the South Eastern & Chatham Railway from 1913 until the grouping of 1923 after which he held the same position on the Southern Railway until 1937. This is the main connecting road through the estate.

Missenden Acres: Sir Eustace Missenden was General Manager of the Southern Railway from 1941 until nationalisation, after which he became the first chairman of the Railway Executive.

Nelsons Gardens: Named after the Southern Railway's LN class 4-6-0 express passenger locomotives known as "Lord Nelsons", which carried the names of famous admirals.

Peppercorn Way: Arthur Peppercorn was the last Chief Mechanical Engineer of the LNER, serving between 1946 and nationalisation in 1948.

Repton Gardens: A school (see entry for Ardingly Crescent).

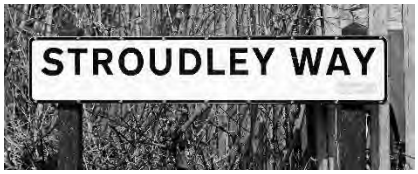
St Lawrence Close: Ditto.

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Stanier Way: Sir William Arthur Stanier was the Chief Mechanical Engineer of the LMS between 1932 and 1944.

Stephenson Way: George Stephenson is acknowledged as the "Father of Railways" whose pioneering work on early railways was assisted, and later carried on, by his son, Robert.

Stirling Crescent: James Stirling was the Locomotive Superintendent of the South Eastern Railway between 1878 and 1898.



Stowe Close: A school (see entry for Ardingly Crescent).

Stroudley Way: William Stroudley was Locomotive Superintendent of the LBSCR from 1870 until his death in 1889. This road leads to Hedge End railway station.

Telford Gardens: Thomas Telford was a renowned Scottish road, bridge and canal engineer whose inclusion here something of an anomaly. His only (tenuous) railway work was building Whitstable harbour in 1832, in connection with the Canterbury and Whitstable Railway; his death two years later precluded any further involvement in railway engineering.

Terrier Close: The nickname of the LBSCR's A1 class 0-6-0 tank locomotives, some of which were used on the former Hayling Island line.

Wainwright Gardens: Harry Smith Wainwright was the Locomotive, Carriage and Wagon Superintendent of the South Eastern & Chatham Railway between 1899 and 1913.

Walker Gardens: Sir Herbert Ashcombe Walker became General Manager of the LSWR in 1912, and General Manager of the Southern Railway on its formation in 1923. He is credited with the introduction of third-rail electrification across the system.

Watkin Road: Sir Edward William Watkin was chairman of several railways, notably the Metropolitan Railway, the Great Central Railway and the South Eastern Railway.

Acknowledgements
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A History of the Southampton Floating Dock

Jerry N. J. Vondeling

A short history of the Southampton docks up to 1922

Southampton has been a centre for shipping and trade for centuries. Watergate Quay is first recorded in 1411. This quay fell out of use due to competition from London for the continental trade. In 1803 the newly formed Harbour Commissioners demolished the Watergate and began to build the new Town Quay on the site which was used for goods and passenger services. Overcrowding later made it unsuitable for passenger services. Passenger services were relocated to the Royal Pier, opened in 1833, which was used by steamers to the Channel Islands, Le Havre and the Isle of Wight.

The London and South Western Railway (LSWR) arrived in 1840, linking London to Southampton. In 1838 the Southampton Dock Company had started on the construction of the first dock, the Outer Dock, later part of the Eastern Docks system. The Outer Dock opened in 1842. The continental steamers moved to the Outer Dock once the railway arrived. Between 1846 and 1879 four dry docks and 2000 feet of quay on the River Itchen were added. The Inner Dock was opened in 1851. It was connected to the Outer Dock by locks and was the only closed wet dock in Southampton.

The Southampton Dock Company was in a poor financial position and used loans from the LSWR to finance the building of the larger Empress Dock which was opened in 1890. The Empress Dock was the only dock in the United Kingdom that could be entered or left at any state of the tide. However, the dock finances did not improve, and so the LSWR bought the docks in 1892 for £1,360,000. In 1895 more quays and the Prince of Wales dry dock, the largest in the world at the time, were completed.



Figure 25. A John Adams postcard published between 1925–30 giving a general view of the docks and the floating dock in situ

Twelve years later, in 1907, the White Star Line express services, which had formerly been based in Liverpool, were moved to Southampton. The White Star Dock was built to accommodate them. When other shipping lines followed after the First World War, the dock was renamed the Ocean Dock (now, it is the cruise terminal).

During the First World War, the Government was in control of the docks, and used them for military traffic, mainly barges, traveling across the English Channel. Control of the docks was returned to the LSWR after the war. In 1923, the LSWR passed to the Southern Railway which continued to expand the docks, building the New Docks (later renamed the Western Docks) and the King George V dry dock.[1]

Building the Floating Dock

On 13th October 1922 the LSWR placed an order for a floating dock with Messrs. Sir. W. G. Armstrong Whitworth and Co. of Newcastle upon Tyne. The contract time for delivery of the dock was set at ten months. Construction was supervised by Mr. H. A. Butt, resident inspector of the designers, Messrs. Clark and Standfield.[2]

But at the end of April 1923 a dispute had arisen. The Boilermakers Society had refused to sign a national overtime clause that had been agreed with other shipbuilding unions. The boilermakers went on strike until an agreement was reached on the 16th November.[3] The men went back to work on 26th November. This delayed the delivery time until 21st April 1924.

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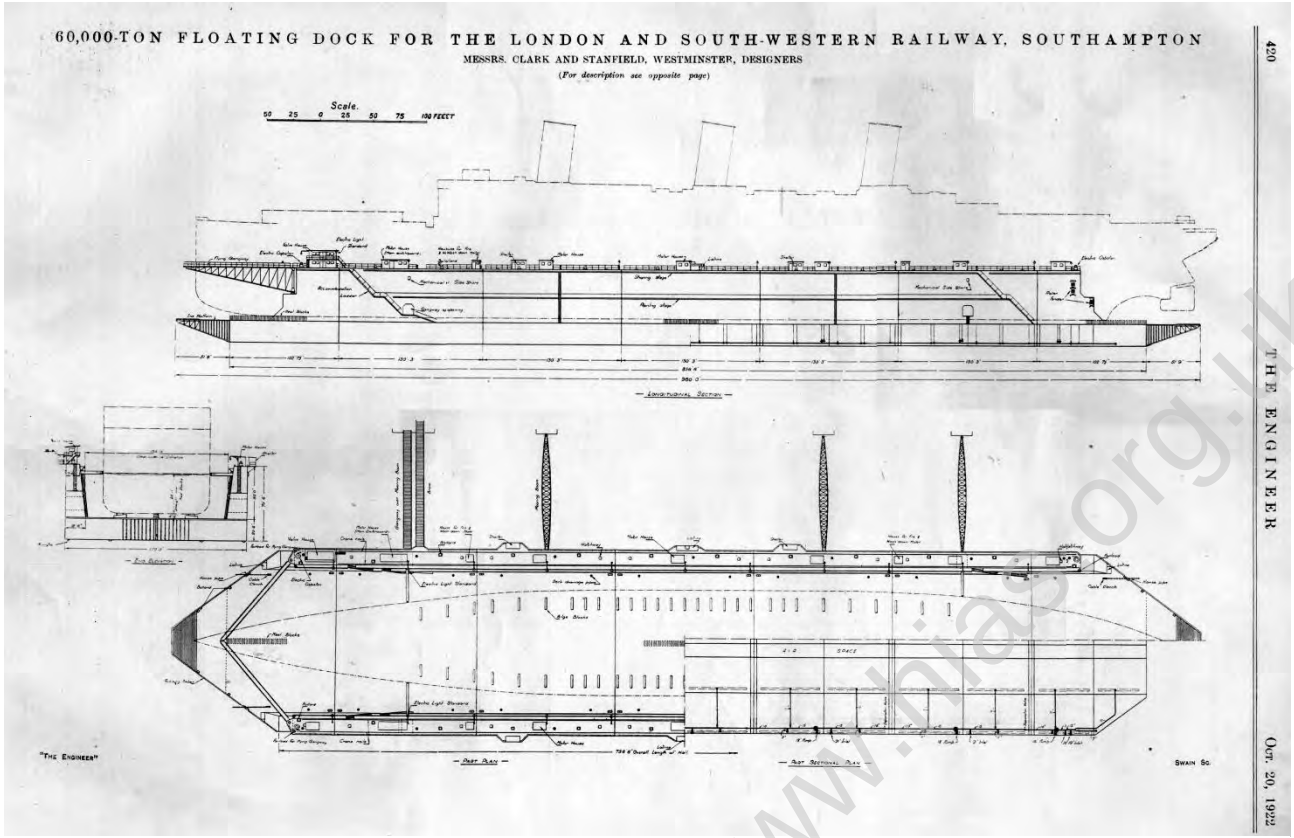


Figure 26. A diagram of the new floating dock, showing the Majestic which was unavailable at the time of testing. (The Engineer October 20th 1922, page 420)

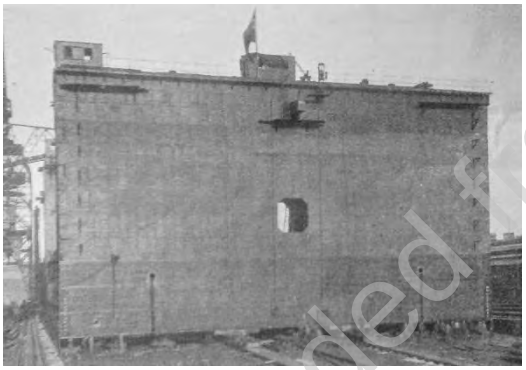


Figure 27. Section 6 ready for launching (The Engineer, 22nd February 1924)

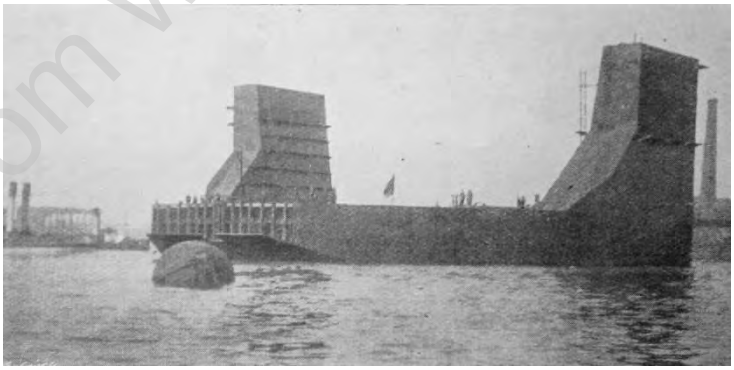


Figure 28. An end section after launch (The Engineer, 22nd February 1924)

The dock was constructed as a box type dock; it was divided into seven sections which could be disconnected from each other. This way, if needed for cleaning or repair the dock was able to lift a section out of the water by itself. The disconnected section would be turned 90 degrees and put back into the remainder of the dock.

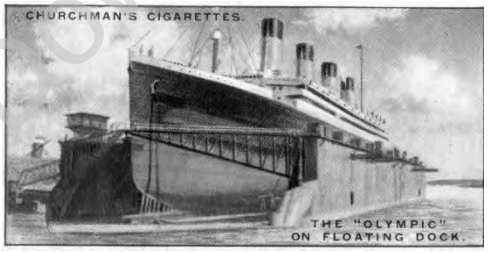


Figure 29. The RMS Olympic in the floating dock. (Churchman cigarette card, c1930)

It was built to accommodate the largest ocean liners that came into Southampton. It was reinforced so that, in case of need, it could also lift certain battleships. There was also a possibility to add more sections for lifting larger ships if that were needed in future.

As built, the dock was to be 960 feet (293 m) long, 170 feet (52 m) wide and 70 feet and 6 inches (21.5 m) high. The five inner sections were nearly identical, each being 130 feet and 3 inches (40 m) long. The two identical end sections with pointed ends were each 102 feet and 7½ inches (31.3 m) long. Its weight was found to be 19,330 tons. It was built to have a lifting capacity of 60,000 tons, however later tests showed it to be slightly larger.

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All the sections were constructed on ship building ways as this allowed pneumatic riveting. The five centre sections were constructed at the High Walker yard. The two end sections at the Low Walker yard. The dock was constructed using 3,407,000 rivets.

The rate of construction can be seen in the timetable below:

Operation	Date		Dock section	First plate laid	Date of launch
Start date of contract	Oct. 13th 1922		I	Dec. 4th 1922	May 2nd 1923
First plate arrived at shipyard	Oct. 21st 1922		II	Dec. 8th 1922	Feb. 6th 1924
First plate drilled	Nov. 2nd 1922		III	Nov. 29th 1922	Mar. 29th 1923
First rivet driven	Nov. 13th 1922		IV	Nov. 15th 1922	Mar. 22nd 1923
First plate laid on ways	Nov. 15th 1922		V	Apr. 5th 1923	Jan. 7th 1924
			VI	Apr. 5th 1923	Jan. 19th. 1924
			VII	Dec. 28th 1922	Feb. 7th 1923

The five centre sections were built lengthways, as seen above. After launching and fitting out, the sections came together at the High Walker yard without any problems. On top of the bow end section, the control house was built as a two storey building. On each section motor houses were built for the electric motors to drive the pumps. The motor houses on the second section were extended to house the main switchboards. Two shelters were put on each wall for use of the workmen. Also, and not unimportant, four latrines were fitted, two on each wall.

The dock would be fitted with two electric cranes capable of lifting 5 tons each. A floating crane was provided for installing these by the railway company. The floating crane could be used in conjunction with the floating dock. It was able to lift 150 tons. In practice, the two cranes were taken from nearby docks that were not busy, and were not fitted permanently. That is why in some photographs the dock does have cranes, and in others, does not.[4]

Trying out the new Floating Dock

The official trials took place on the 7th, 8th and 12th of July 1923, the test was to take place lifting the *Majestic*, weighing 56,551 tons. But at that time she wasn't available. Instead the *Olympic* was used, weighing 46,500 tons. She was lifted in 3 hours and 42 minutes. The dock was designed to lift a 52,500 ton ship in four hours.[5]

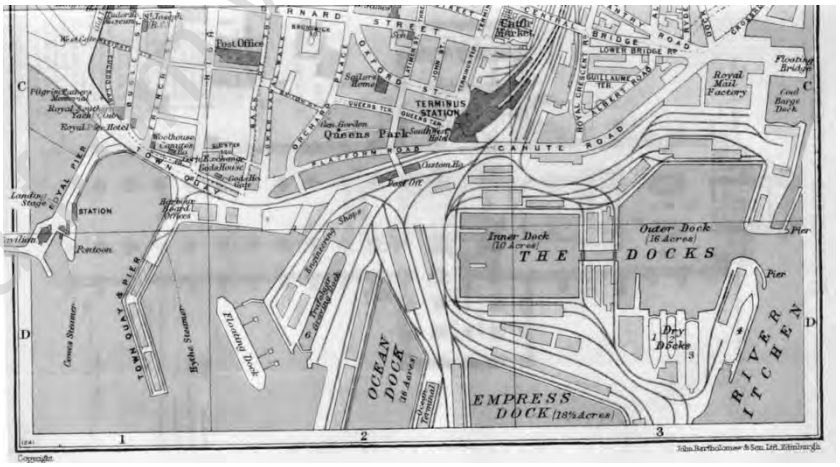


Figure 30. A map of Southampton showing the location of the floating dock at the lower left. (John Bartholomew and Son)

On 14th April 1924 the dock was finished and ready for towage. Due to the weather the voyage to Southampton was delayed for three days. At 7.10 am on 17th April the dock was taken in tow by five tugs. The voyage went unexpectedly well and the dock arrived at Southampton at 10 am on 21st April. Unfortunately work at Southampton was not completely finished, and a gale caused the floating dock to ride up on its dolphins, built by A. Jackman & Son. Ltd. On May 1st and 2nd, the permanent mooring booms were fitted and bolted up. At the bow and stern, chain moorings were fitted leaving the dock ready for work. By the 27th May, the necessary repairs to the damaged frames had been made.

Dredging Berth 50 for the Southampton Floating Dock

Before the dock could be fitted to its mooring, Berth 50 had to be dredged to a depth of 62 feet. (18.86 metres). According to the accounts 100,000 to 200,000 tons of spoil were removed. There was some silting over time and, at least once, the dock had to be released from its moorings and moved to a place near the Town Quay, or to Berth 101 in the Western Docks.[6] This operation caused some inconvenience and expense. After work had

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finished, the dredger was towed from Southampton by the Dutch tug *Witte Zee* to Keppel Harbour, Singapore to be fitted out for work at the Admiralty naval base in the Johore Straits.[7]

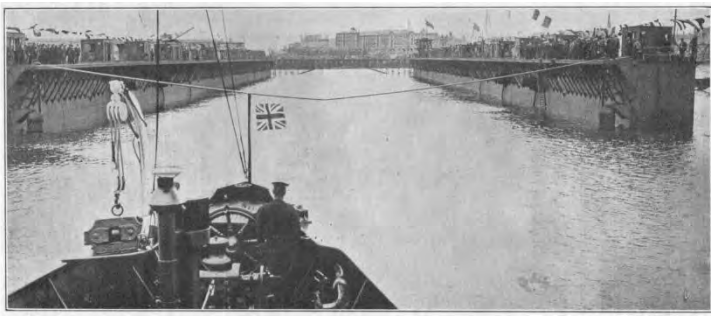


Figure 31. The Duchess of Fife entering the floating dock, breaking a ribbon by which the dock was formally opened. (Railway Magazine 1924)

Opening the Southampton Floating dock

A month after repairs had been made to the dock, it was opened on the 27th June 1924 by the Prince of Wales. The Royal train carrying His Royal Highness arrived at the tastefully decorated Southampton West station at 10.55 am. He took an open Buick and made his way to the docks.[8] Shortly after noon, the Prince entered Southampton docks via gate two, he proceeded west of the Harland and Wolff engineering shops and was welcomed at Berth 50 by the chairman, directors and managers of the Southern Railway and Southampton docks.[9] H.R.H. started the opening ceremony by entering the control room of the dock. He pulled a couple of levers, and the dock began to submerge. The Prince left the dock and went aboard the Cunard liner *Aquitania*. There he changed into casual clothing and had a meal with several of the guests.

At 2.15 in the afternoon the official part of the opening took place. The Prince disembarked from the *Aquitania* and went aboard the paddle steamer *Duchess of Fife*. The paddle steamer entered the dock breaking a broad tricolored ribbon. The dock was now officially opened.

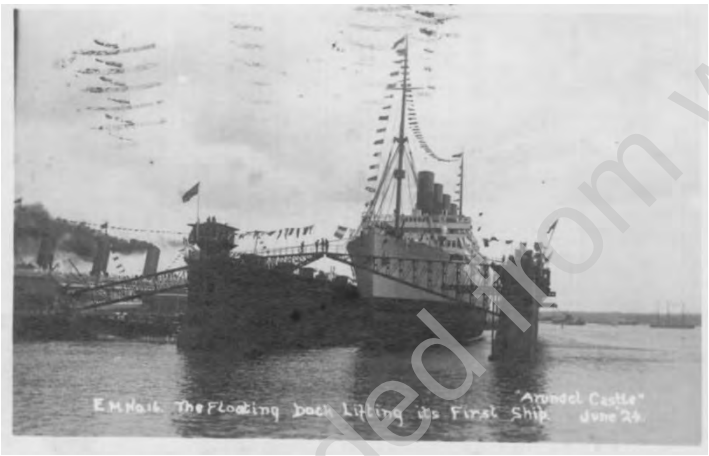


Figure 32. The RMS Arundel Castle in Floating dock.

After having declared the dock open, he expressed satisfaction, saying: *"It was as true today as ever, that the welfare of Great Britain was largely bound up with the prosperity of seaborne traffic."* [10] Cheers and sirens were heard from the fleet of smaller ships following in the wake of the *Duchess of Fife*. Afterwards the Prince disembarked the steamer at the Royal Pier. Then the Union Castle liner *Arundel Castle* entered the dock and was "experimentally" raised. Of course the official experiments had already taken place lifting the *Olympic* in July 1923. The *Arundel Castle* was in position at 3.15 and was completely lifted out of the water by 5.30, she was taken back to her normal dock the next day.[11] Now, with the dock officially in use, larger ships like *Olympic* and *Majestic* could be serviced at Southampton instead of having to go to the larger docks at Boston in the USA.

"One armed man lifts ships in dock"

The dock was operated by Mr. G. P. Reah who had served in trawler service during the First World War, in which he had lost one of his arms. He controlled the dock by operating controls and wheels, which connected the fourteen electric pumps that pumped out the water. Keeping a constant look at a spirit-level, he controlled the pumps to lift the dock evenly.[12]

In October 1924, the Cunard Magazine[13] wrote an article about lifting the *Berengaria* shortly before nightfall: "*She went into the dock after tea. Somebody wrote a play a while ago called 'A Roof and Four Walls'.*
Ours was a drama of a ship and two walls, the floor intervening subsequently. The two walls are 130 feet apart and the ship is 100 feet in the beam. There is not a great margin for error in putting the ship between those two walls, but the tug masters and the pilots of Southampton Water are barely acquainted with the word 'error'. They only meet it in accounts of events occurring in other ports. So the Berengaria slid, with that bulky urge that is her characteristic when in motion, into position between the walls. And the great towering mass of the floating dock, which normally seems to dominate all the western end of Southampton Water, was eclipsed and dwarfed and generally blotted out. It became a mere accessory to the ship's framework.

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"Standing on the top of the dock walls, one was only a little above the water line of the ship. Her decks, tier upon tier of them, heaped above. The pilot on the bridge was seventy feet nearer the sky. It seemed impossible that the monstrous structure floating there could ever be lifted. The electric motors of the dock pumps began to purr. Inch by inch the sides of the dock crept up the sides of the ship. That was comparatively simple, for there were still two or three feet of water between her keel and the blocks of the cradle in which she was to rest. It was the last six inches that were the test. Then was the time when the ponderous bulk of the Berengaria had to be persuaded to move by minute fractions of an inch to port or starboard, so that she should be exactly mathematically centred on the blocks before the lifting began.



Figure 33. The Cunarder RMS Berengaria in the floating dry dock at night.
(L'Illustration, no. 4650, April 16th 1932. Photo: Associated Press)

"How, exclaims the layman, can anyone know that the whole nine hundred feet of keel are exactly in the mathematical centre of the blocks? It looks very simple when it is done. Little red and green electric light bulbs in a plain wooden box are the intelligence department. They flash in response to the depression of six-inch brass levers fixed between the keel blocks fore and aft. As the ship settles she touches the upraised levers first. If the light burns red, she is too much to port. The lifting stops, the hydraulic rams in the walls of the dock are run out and they push her gently to starboard. If the light burns green she is too much to starboard and must be edged to port. When both lights burn at once, she is touching evenly.



Figure 34. Harbour board offices and RMS Berengaria in the floating dock

"The lifting can begin. It began and as night fell, the ship rose. In the windowed valve house on the starboard wall forward, two or three busy men touched buttons or pulled levers now and again, to check or increase the flow of water out of various sections of the dock to keep her trimmed. Clusters of lights hung from the sides of the ship, and cast a gloomy radiance down into the depths, where the water lessened as the darkness deepened. The ship climbed slowly to meet the winking stars. The gas buoys of this strange channel. But for most of us on the dock walls the interest was below, down where at last only a few inches of water swirled, bewildered, over the iron plates of the keel block platform. Swirled - slipped away thoroughly frightened of the monstrous ghost castle. She was dry.

"We stepped on to the platform, and our footfalls echoed feebly among the groans, the creaks, the cracks of the oppressed keel blocks, victims in the dungeons of the ghost castle undergoing the peine forte et dure of the mechanical torturers. Midgets they were, those men who peered into the dim recesses beneath the keel. Midgets. But the monster's masters. They could "call spirits from the vasty deep" and make them mount. Away, miles away, in some other universe eight bells struck. The sound of it barely penetrated into the cavernous

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depths among the keel blocks. A tired dock master pushed a long extinct pipe into his side pocket, "Tell Harry to bring my supper along" he said."

Docking the White Star Liner *Majestic*

On the morning of 26th March 1925 the *Majestic* arrived at Southampton to be lifted by the largest floating dock capable of lifting her. To keep the ship to its lowest possible weight all fuel and stores were removed. At mid-morning, nine tugs took the *Majestic* in tow and manoeuvred her into the dry dock using only their own power as the *Majestic*'s engines were being overhauled and all fuel was taken from the ship. Docking the *Majestic* was completed without the slightest hitch.[14] By October 1925 the dock had lifted all the largest liners except the *Leviathan*.[15]

An article written in June 1931 about the docking of the *Majestic* reveals some more details about the procedures:

"*The Majestic was attached to the towing cables of the dock's hawsers. Slowly the ship is pulled in between the walls of the dry dock. Up in its control room, the officer in charge controls the tangles of the wire hawsers which move the great ship. "A whistle, a wave of the arm and one set of hawsers is slackened until their curves dip into the water while others tauten into vibrant bars under the strain. A prolonged whistle and a final gesture of the arm, all hawsers are belayed and the ship is placed in dock." Then the pumps are put at work, forcing the water out of the tanks and out of the structure between the two walls of the dock. Divers in the dock go around the ship and check if all chocks are in place and if the keel is directly on top of them. As the chocks reach the keel the pumps are halted and divers check each chock to see if it is in place and supporting the ship evenly. When this is done, the pumps are started again and the dock lifts the ship out of the water. As the ship rises out of the water shores are placed and wedged in place to keep the ship upright. When the dock is completely up, one could walk under the ship's hull and maintenance can start." [16]*



Figure 35. A press photograph of the Bremen in Southampton floating dock, taken in December 1929



Figure 36. Visitors at the dock in an anonymous photograph taken August 8th 1929, the group also visited the RMS Aquitania

SS *Bremen* in dock

The most secretive operation might have been the lifting of the new German liner SS *Bremen*. The Germans had provided design drawings to have a special cradle built for *Bremen*'s lower hull. Early in the morning of a summer day in 1929 the *Bremen* was towed into the submerged dock by four tugs. She was halted smoothly. Then the pumps started to pump water out of the dock and it lifted the new liner out of the water.

The North German Lloyd wanted to keep the interiors of the liner a secret, as she was not completely finished yet. Her interiors were claimed to be the last word of luxury. So the owners and officials took every effort to exclude sightseers and even the press. When the ship was raised out of the water, shortly after noon, German workers continued their work on the lavish interiors while British workers started scrubbing the hull and painting it with an antifouling mixture.[17] To ensure the secrecy of the new vessel extra watchmen, police and detectives were engaged. Passes had been given out to workers and officials who had to do work at the ship.

In November 1929 she docked here again as it was the only available floating dock . The second

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largest floating dock, in Germany, was occupied by her sister ship the *Europa* after she was damaged by a fire while she was being fitted out.[18]



Figure 37. The Homeric in the floating dock at night

Visiting the dock

During this period, the Southern Railway ran excursions to the docks and for most of the time, this included a visit to an oceangoing liner and the floating dock.[19]

The *Homeric* in dock for overhaul and the redecoration of her interiors

"So successful was the innovation made by the White Star Line last year (1930) of introducing various color scheme of interior decoration of their liners that the company has taken it a step further during the recent overhaul of the *Homeric*.

The first class verandah café was redecorated in shades of green and cream for the walls and a design in sky blue with fleecy clouds for the ceiling. Another example in the same vessel was the tourist dining saloon, the walls being in pale rose and grey, with delicate green figured curtains. These colour blends created a most pleasing effect, and it was anticipated that it would be adopted in the future.



Figure 38. Homeric in the floating dock with Aquitania, Berengaria and Majestic in the Ocean Dock

After overhauling the *Homeric*, the *Olympic* would follow into the floating dock for her spring clean which in her turn was followed by the *Majestic*. These ships were going to be cleaned, repainted and generally overhauled. This would take something like 6 tons of enamel and 54 tons of paint, not to mention such items as 5 tons of soap, 3.5 tons of putty and 150 gallons of varnish." [20]

***Olympic* in dock for repairs after collision.**

During the night of 14th May 1934 the *Olympic* sailed towards New York in dense mist. She homed in on the beacon of the Nantucket lightship. But unfortunately they were unable to contact the lightship by radio. A course correction by the *Olympic* brought her straight on a collision course with the lightship. The *Olympic* tried to avoid the collision by turning her rudder and putting the engines full astern. Sadly, the accident was unavoidable and the *Olympic* struck and sank the smaller vessel. Having picked up survivors, the *Olympic* sailed on to New York. After a brief inspection of the liner in New York it was found that the *Olympic* had minimal damage and was cleared to leave New York as scheduled on the 17th May. She returned at Southampton on 25th May where she was taken into the floating dock for repairs to the dented hull plates. She returned to the docks on 27th May and started her next voyage on 30th May 1934.

The Floating Dock for sale

In March 1934 the Southern Railway was thinking about selling their floating dock. The newspapers wrote: *"Who wants to buy a 60,000 ton floating dock?"* With the completion of the King George V dry dock the floating dock became obsolete. The Southern Railway was willing to sell their dock if a suitable offer was made. It was mentioned that enquiries had already been received from Japan and Brazil.[21] Negotiations about selling the dock must have failed as the dock was not sold and in later newspaper articles it was denied that Japan was interested.[22]

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South Africa had also shown interest in the dock, placing it at Capetown. But in the summer of 1936 their Minister of Defence, Mr. C. Pirrow, denied that negotiations about buying the dock had been entered. *"It was previously decided that the dock was unsuitable,"* he said.[23]

In January 1938 'a foreign power' had visited the dock in Southampton. The owners admitted this had happened, but declined to discuss the matter any further, but they did state that this foreign power was not Japan. News of selling the Floating Dock also reached the international newspapers and the Dutch Indies newspaper reported the following:



Drijvend Dok te Koop

In Southampton ligt het grootste drijvend dok ter wereld, een constructie van 16.000 ton. Bezitster van dit reuzendok is de „Southern Railway Co." In Engelsche kringen ging het gerucht, dat het dok bestemd is voor buitenlanders, hoogstwaarschijnlijk voor Japan. Een officieel bericht van een Britsche reederij heeft echter gemeld, dat het dok noch voor Japan, noch voor de Britsche Marine bestemd is, doch dat Australië en Zuid-Afrika zich voor den drijvenden kolos interesseeren, wijl het ook voor reparatie van reuzenschepen van groot nut kan zijn. Het bericht van de reeders werd van regeeringszijde bevestigd.

Figure 39. Nieuws van de dag voor Nederlandsch Indië 18 februari 1938

Floating dock for sale

In Southampton lies the largest floating dock in the world, a construction of 16,000 tons. The owner of this giant dock is the "Southern Railway Co." In British circles there was a rumour that the dock was destined for foreigners, most probably Japan. An official message from a British shipping company mentioned that the dock was neither destined for Japan, nor the British Navy, but that Australia and South Africa were interested in the gigantic floating colossus where it could be used for the repair of gigantic vessels. This message from the shipping company was later confirmed by the government.

The Floating dock offered to Australia

In 1934, Australia was known to be in need of port equipment. A dock being built at Singapore would not satisfy Australia's problems. If Australia built a floating dock it would have the required equipment. Also, in case of hostilities, Australia would have the nucleus for a floating base that could be repositioned in a suitable place very easily in case of a war in the Pacific.[24]

On March 1st 1939, a newspaper article lets us know the dock was offered to Australia by a leading British firm. And if the dock was capable of lifting capital ships, the offer would be considered. Mr. Street, from the Ministry of Defence had enquired on the offer. If the dock was not suitable for lifting capital ships the offer would not be considered further. Buying the British floating dock would have a lot more advantages than building a graving dock at Sydney Harbour. For instance,

1) The floating dock could be bought for £250,000 and could be transported to Australia for about £100,000, against an estimate of £2,000,000 for building a new dock at Sydney,

2) Installing the dock would take only a few months instead of two years for building a new dry dock.[25]

But four days later, on 5th March 1939, Australia denied being in negotiations with the Southern Railway Company. Also the Southern Railway would not confirm or deny that the dock was offered to Australia. But it was the only dock large enough to lift capital ships and for sale at the time. Maritime experts said they wouldn't be surprised if the dock was offered to Australia, as the owners were very secretive about negotiations about selling the dock to Japan or South Africa.[26]

On 5th April 1939 the newspapers reported that the sale to Australia was cancelled. The high costs of transport and the need for docking facilities for British warships in the Mediterranean led Australia to decide to decline the offer and revive the plan of a fixed dock at Sydney.[27]

The Floating dock during the Second World War.

On 28th March, 1939 the floating dock was requisitioned by the government for the repair of Navy ships and was renamed Admiralty Floating Dock 11 (AFD 11). When it was bought on the 23rd August 1939 it was still in use at Southampton for repairs to the Monitor HMS *Erebus*. After the repairs were finished it was sent to Thornycroft for reinforcement which took place between August 1939 and February 1940. This included the removal of the 51 feet 9 inch end platforms, reducing its length to 856 feet.[28] This had some influence on her lifting capability as in 1947 is was noted that it had been reduced from 60,000 tons to 54,000 tons.[29]

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At the 31st March 1939 it was decided that the Portsmouth floating dock, renamed AFD 5, had to be moved temporarily to Alexandria until the new graving dock there was finished.[30] It left on 25th June 1939 and arrived only three weeks before the war broke out.[31]

Therefore the Admiralty moved the Southampton floating dock (AFD 11) to Portsmouth Naval Dockyard on 24th February 1940. It arrived there the same day at 12.45 pm.

During the war years it was mainly used for repairing damaged floating docks and smaller vessels. Eight of the large Phoenix concrete units for the D-day Mulberry harbour were built in it. Due to the vulnerability of Portsmouth to air-attacks it was not until 1946 that it was used for lifting its first warship, the aircraft carrier HMS *Indomitable*. Between 1946 and 1958 it was used to lift several other carriers.[32] By 1958 the dock became a surplus for the Admiralty and was put up for sale on December 9th of that same year.[33]

The Floating Dock sold to the Netherlands

In 1902 the Rotterdam Droogdok Maatschappij (RDM) was founded; it existed until 1996. The Company built 355 ships, among them the SS *Rotterdam* which still survives. At the height of its prosperity the company employed 7000 workers. Its main function was to repair ships. For this the RDM has owned twelve dry docks.

In 1958 the RDM sought to buy the Admiralty Floating Dock (AFD 11) in Portsmouth. When engineers of the RDM inspected the dock and put in a bid this was the highest bid and a reasonable price, as was mentioned in their annual report:

"In this last year we have invested in our docks, the biggest amount of money was used to construct dock nine and its accompanying works like quays and warehouses. This dock, which by its size can hold tankers weighing up to 85,000 tons and larger passenger ships, is nearing completion.

Even before completion of this dock we realised that the tanker companies had started to use larger ships faster than we had expected.

So it give us great satisfaction that we managed to buy a very large dock from the British Admiralty at a reasonable price, this dock has a lifting capacity of 54,000 tons and thus is even larger than our new dock nine.

When this dock is taken into service by the end of this year we will have ten docks with a lifting capacity ranging from 3,000 to 54,000 tons." [34]

On 14th May 1959 three sea tugs, the *Elbe*, *Tasmanzee* and *Schelde* were used to tow the dock from Portsmouth to the Netherlands. It arrived in the Netherlands at Hoek van Holland early on Whitsuntide Sunday, 18th May. Five other tugs, including the *Atlas* and *Ajax* came to their assistance. After having floated at sea for a couple of hours the order came at a quarter to six in the morning to pull the dock up the "Waterweg" towards "Heysehaven" where the RDM had its facilities. For this job the canal was closed for other traffic. The whole spectacle was seen by hundreds of spectators who had not seen a bed that night, or who got up before sunrise. In front of the dock, the three tugs which towed the dock from Portsmouth sailed, proudly flying the Dutch flag. On the dock itself a large flag was placed which was ordered specially for this occasion. At about 9.30 the dock arrived at "Heysehaven" where they waited for neap tide, then assisted by several other tugs it was placed next to crane 13.[35]



Figure 40. The Ore Titan leaving Dock 10 on 13th November 1963.
(Stadsarchief Rotterdam 4181_RDM-253882)

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Figure 41. The way of shoring the stern of the Ore Titan, seen here in Dock 9, 21st May, 1961 (Stadsarchief Rotterdam 4181_RDM-22896)



Figure 42. Repairing Dock 10, Dec. 6th 1960 (4181_RDM-22410, Stadsarchief Rotterdam)

The dock was modernized and reduced in size[36] by the RDM itself and was taken in use later that month. For the placement of this new dock the other docks in the ownership of RDM had to be re-arranged. Three docks were relocated and repairs and maintenance were done while at hand. On 1st May, Dock 9 was taken into use and named "Prins Bernhard Dok" for which permission was granted by Prince Bernhard himself. The same permission was also given for the former Southampton Floating Dock, now named "Prins Bernhard Dok 10".[37] In 1960 the dock was placed in "Westerhaven" next to Dock 9, creating a place where the largest ships of the Dutch fleet could be maintained.

Flexing of the dock

It was in December of that same year that an incident happened which damaged the dock. In this month a new ship of the National Bulk-carrier Company (NBC) from New York was docked in Dock 10 for the first time. This carrier, probably the *Ore Titan*, was built in an unusual way to be able to sail up the Orinoco River to reach the harbour of Puerto Ordaz which is 350 km upriver. Here it should be able to dock and load ore, or other heavy products. The idea was to design a ship which was wider and with a shallower draught. A result of changing the design was that these carriers needed two propellers instead of one, and, most of the time, also needed two rudders. This completely changed the design of the stern and its docking plan. Such a ship should be lifted using two rows of keel blocks supporting both propeller shafts and rudders. But since the dockworkers were inexperienced in docking a ship of this design, it was supported using only one row underneath its keel, placed as if it were a usual carrier. Now when the water was pumped out of the dock the double stern of this vessel was not supported in any way.[38] This caused the dock to flex and eventually the walls ripped apart. Dockworkers were advised not to come close to the dock for a while as rivets were flying everywhere.[39] On December 6th 1960 repairs on the dock had commenced.[40]

Maintenance of the dock

After being used to lift ships for maintenance for a while, the dock itself would need to be lifted out of the water once in a while for maintenance, this would happen at another dockyard. In 1974 Dock 10 was towed to Verolme dockyards (est. 1957) in Rotterdam; there the dock would be taken out of the water for cleaning and maintenance.

A few years later, disaster struck again, on 25th May 1975, during work on a ship in the dock, one of the cranes snapped and was damaged. This would have been repaired by the dockworkers and work would continue a while later.[41]

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Halfway into the 1960s, non-traditional shipbuilding countries, like Korea and Japan, grew exponentially and, with lower costs, could start building ships for a fraction of the price charged by European yards.



Figure 43. Dock 10 on tow to Verolme dockyards for its own maintenance.

The RDM shifted its main construction work towards defence and the offshore energy sectors. Yet bankruptcy lurked around the corner. Some dockworkers saw this coming and took their precautions. A select group was chosen to make a restart after the company had been declared bankrupt. They wanted to continue as a smaller organisation specializing in repairing ships. Tools needed for this job were hidden and welded into Dock 10 to keep them out of the bankruptcy.[42] After several mergers with other companies the RDM was no longer viable and went bankrupt on 6th April 1983. Some surviving parts of the company were taken over by the government and were renamed RDM Nederland BV.[43]

After the RDM was declared bankrupt, Docks 10 and 8 were, on 28th December 1983,[44] sold off to be scrapped to Fa. van Rijsdijk in Rotterdam. These docks were sold under the condition that if they were going to be re-used, it had to be done outside of Europe. Fa. van Rijsdijk later sold Dock 10 to Verolme Docks in Rio de Janeiro, Brazil.



Figure 44. A snapped crane on Dock 10, 25th May 1975. (4181-44664 Stadsarchief Rotterdam)

On 17th December 1984 the RDM dock left Rotterdam. Because the 256 m long dock was too old and fragile to be taken in tow it was put on two specially reinforced pontoons with a total length of 220 m. These pontoons, *Giant I* and *Pacific Float* floated with a space of 15 m between them. The dock spanned over the open space. Here the dock was especially reinforced by the Dutch dockworkers. The reinforcement ran up to 12 m onto the forward pontoon, *Giant I*. [45]

This was the first time a dock was transported this way. It was calculated that it should be possible. Even a powerful wind or storm should not cause any harm. A first sign that this was not going to be a pleasure trip was presented to the tug *Smit Houston*'s crew on the night of 22nd December. A powerful wind surge created ten metre high waves and one of the 365 ton cranes broke off and fell into the dock. Although the storm only lasted for a while, the high winds continued.

Then, on the 24th December, disaster struck. Just north of the Spanish town of La Coruña, Feike Melein who was a crewman and aboard for the trip as a passenger, saw it happen and he warned his wife. She, also a passenger, saw the dock tear apart and break in two; *"I went aft, at the portside the dock had already broken, I saw it break at the starboard side as well and half of it floated away just like that".*

Captain Tiesinga, who would go into retirement after having delivered the dock, was awakened by a crew member who gave him the message that a tow had broken. They went up on deck, and saw the aft pontoon rolling up and down in the waves.[46]

Later it was found that the second 365 ton crane had also been torn off and disappeared beneath the waves. It appeared that at the place where the pontoons did not support the dock, right behind the reinforcements, it had started to shift and break.[47]

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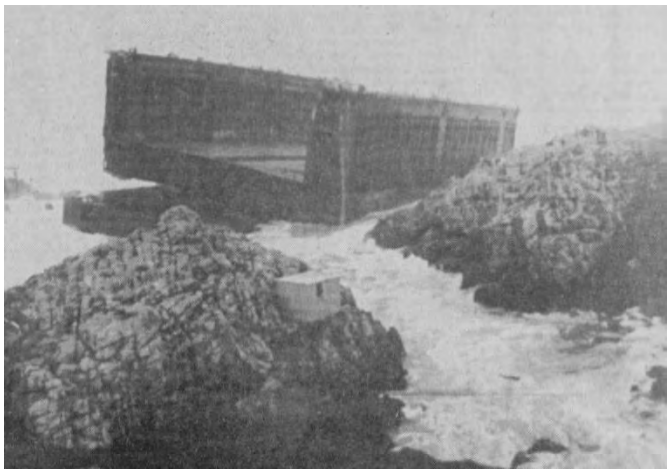


Figure 45. A section of Dock 10, the ex-Southampton floating dock, wrecked on the coast of Spain. (Provinciale Zeeuwse Courant. 27th December 1984)

The part that broke off floated towards the shore where, still on its pontoon, it was wrecked on the rocks at 9.30 in the evening. A boat was sent out to see if the wreck could be salvaged: the boat was swamped and capsized, so a second boat had to be sent out to pick up the first boat's crew. All returned safely aboard. That Wednesday night a Spanish tugboat, *Ferrol*, or *Remol* would prevent the dock section from moving further up towards the shore. The following day a second Spanish tug was asked to assist. The tugs *Punta Tambo* and *Remol Canosa* tried to salvage that part of the dock. The idea was to re-attach it to the first pontoon, still on tow by the Dutch tug, and keep it out of the way of other maritime traffic, but they didn't succeed.[48] Then the second undamaged part was taken to Vigo harbour where it was anchored.



Figure 46. Four dolphins (D) remain at Southampton where the floating dock was moored (Photographed in December 2011)

At the end of 1984, it was still unclear what would happen to the broken parts of the dock. A group of insurance companies, salvagers and representatives of the companies who made the calculations and tests for transport wanted to know the status of the wrecked part. Could it be repaired, put back together again and continue its way to Brazil? Because of bad weather it was impossible to inspect the wrecked part of the dock and *"if the weather doesn't improve, it is even possible that the wreck will flip over during high tide"* according to one spokesman.

After a couple of days the storm abated and it was possible to send divers into the water to inspect the remains of the dock and during the first week of 1985 the dock was declared a "total loss". Nedbarges, the company that transported the dock would put it up for sale for the new Brazilian owners. The surviving part anchored in Vigo would also be scrapped.

What was left in Southampton?

When the dock was removed from Southampton the dolphins to which the dock had been moored remained. In 1948, the international flying boat services returned to Southampton from Poole Harbour, after an absence of eight years. The leftover dolphins had been turned into the flying boat terminal, with offices and passenger terminal erected nearby. In 1949 the flying boats started to be phased out: BOAC ended their operations in 1950 and services were taken over by Aquila Airways, which closed the terminal in 1958.[49]

A list of approximate dates and ships lifted

1923, July 7th, 8th & 12th	*SS Olympic*	tests
1924, June 27th	*SS Arundel Castle*	opening
1924, July	*SS Olympic*	propeller maintenance
1924, winter	*SS Berengaria*	overhaul
1925, March 26th	*SS Majestic*	overhaul
1928, March	*SS Berengaria*	annual cleaning
1928,	*SS Mauretania*	annual cleaning
1929, July 1st – 3rd	*SS Bremen*	clean and painting
1929, November 27th	*SS Bremen*	maintenance
1931, February	*SS Homeric*	annual cleaning

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1931, March	*SS Olympic*	annual cleaning
1931, March	*SS Majestic*	annual cleaning
1931, July 17th	*SS Majestic*	overhaul
1932, January	*SS Majestic*	
1932,October 26/27th	*SS Homeric*	overhaul
1932, Winter	*SS Olympic*	overhaul
1932,Winter	*SS Majestic*	overhaul
1932,Winter	*SS Homeric*	overhaul
1932, Winter	*SS Berengaria*	overhaul
1932, Winter	*SS Mauretania*	overhaul
1932, Winter	*SS Aquitania*	overhaul
1932, Winter	*SS Empress of Britain*	overhaul
1932, Winter	*SS Empress of Australia*	overhaul
1932, Winter	*SS Duchess of Richmond*	overhaul
1932, March 21st.	*SS Berengaria*	rudder replacement
1933, January 1st	*SS Mauretania*	
1933, March 11th.	*SS Olympic*	repairs
1933, July 22nd	*SS Olympic*	overhaul
1933, December	*SS Mauretania*	overhaul
1933, December	*SS Aquitania*	overhaul
1933, April	*SS Berengaria*	overhaul
1933, August 20th	*SS Aquitania*	
1934, January, 17th	*SS Berengaria*	
1934, May 25th	*SS Olympic*	repairs after accident
1934, June	*SS Empress of Britain*	overhaul
1939, August	*HMS Erebus*	overhaul
1940 – 1946	*Several smaller vessels*	overhaul
1946,	*HMS Indomitable*	overhaul
1946,	*HMS Ranee*	unknown
1947,	*HMS Victorious*	unknown
1948, February	*HMS Illustrious*	unknown
1948,	*HMS Indefatigable*	unknown
1949, March	*HMS Subtle*	unknown
1949,	*HMS Implacable*	unknown
1950,	*HMS Warrior*	unknown
1952,	*HMS Leviathan*	unknown
1955,	*HMS Theseus*	unknown
1957	*HMS Triumph*	unknown
1960, May 6th	*SS Ore Meridian*	
1961, March 15th	*SS Frisia*	maintenance
1962, June 16th	*SS Ondina*	repair hull damage
1962, June 30th	*SS Kissavos*	overhaul
1963, October 23th	*SS Ore Titan*	adding hull plates
1963, November	*SS Ore Meridian*	
1963, November, 18th	*SS Nieuw Amsterdam*	
1965, August 5th	*Oilrig Orient Explorer*	
1965, October 1st	*MS Malmöhus*	
1965, November 8th	*SS Höegh Laurel*	
1965, November 11th	*MS Malmöhus*	
1966, January 20th	*MS Eljo Mara*	
1966, April 19th	*SS Ossa*	repair hull damage
1966, May 2nd	*Oilrig Orient Explorer*	
1966, June 8th	*Pipe layer Hugh W. Gordon*	
1966, June 10th	*SS Clythia*	
1967, January 5th	*MS Malmöhus*	replacing bow
1968, October 24th	*MS John P. Goulandris*	adding section
1978, Januari 26th	*MS Nedlloyd Delft*	maintenance
1979, March 20th	*Dock 4 Nieuwe Waterweg*	preparation for Canada
1981, March 4th	*Thor, Heerema Mar. cont.*	
1981, March 13th	*MS Alster*	
1981, April 16th	*MS Bonnieway*	

Of course many more ships would have made use of the floating dock, but the exact dates are unknown, as not all documentation has survived. Among them are the SS *Asturias*, and the SS *Belgenland*.[50] There is also an image of HMS *Mull of Kintyre* docked in AFD 1I but the date is unknown.

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Cast Iron Gravestones and Memorials

Tony Yoward

One does not normally associate Sussex as a centre of the British Iron Industry. But iron stone, lime stone and forest, for making charcoal were available. From the 1300s, iron was being produced in Bloomeries in Sussex using hammers which were later powered by water wheels. But from about 1500, a new smelting process involved a blast furnace was introduced into Sussex. For all these processes charcoal was required as fuel. By the middle of the 16th century, many forests had disappeared due to glass making, iron founding and ship building. At this period Henry VIII was enlarging his Navy and required oak from the Sussex forests to build his fleet. Most of the cannons for the Navy were made of iron from the Sussex Weald.

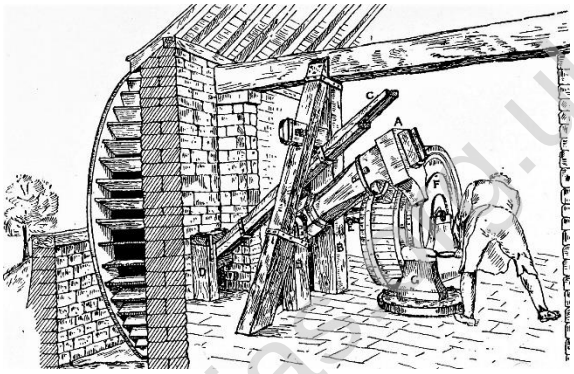


Figure 47. A Bloomery with waterwheel

During the reign of Queen Elisabeth I, a law was passed which restricted the use of timber for charcoal, making it illegal for iron-founding except in Kent. Thus, the iron industry moved to Wales and Scotland where there was an abundant supply of timber for charcoal and many rivers and streams for powering the blast furnaces.



Figure 48. A cast-iron tomb slab at Wadhurst

The early iron masters, between the late 1500s and 1700s, used iron tomb slabs to commemorate their forebears and other very rich and important people. These slabs are mostly six feet (1.8 m) long and 30 inches (0.76 m) wide with the name of the person and their dates cast in them. Over seventy of these slabs may be found in Sussex, thirty-three being in Wadhurst church. These were produced using charcoal as the fuel and water as the power source for producing the iron. They may be found in the Wealden Iron area of Sussex and in Herefordshire and Shropshire.

It was Abraham Darby, in 1709, who established a coke-fired blast furnace to produce cast iron. Replacing the charcoal with coke led to the availability of inexpensive iron. About 1800, the Cupola was introduced, enabling smaller quantities of cast iron to be produced. From then on, cast iron was widely used by smaller companies to replace wood in mill machinery and agricultural implements, and also for a wide range of household goods including cast iron gravestones and memorials. By the mid-1800s, cast iron was being produced cheaply and used for such everyday items as railings, manhole covers and gravestones.



Figure 49. This Cupola is at the Blists Hill Museum

Most people have never noticed cast iron gravestones even though they may have passed them quite frequently, often regarding them as the normal stone type and rarely realising that they are the product of an entirely different industry from that of the monumental mason. The term 'cast iron gravestone' is used deliberately as 'iron grave memorial' does not have quite the meaning intended. They are rarely found in the slate and stone mining areas, or in areas we now accept as an iron producing one. The cast iron gravestone was mainly a product of the smaller iron founding companies. The majority of these could be found south of a line from Bristol to the Wash, even though many were produced in the Glasgow, Edinburgh and

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Manchester areas but usually by the larger companies. How many went during the war for scrap, when railings were also removed, is not known but they are still at risk, many being broken or put with the rubbish in the corner of the graveyard.

Today, much interest is being taken in our graveyards and cemeteries, especially now a number have been turned into lawn cemeteries and numerous memorials destroyed. Cast iron memorials and headstones have been virtually ignored except for a few short references over the years, yet they represent a very specific category of monument during three distinct periods.



Figure 50. The Baldwin memorial railings at Madely, Shropshire

The first period represents the era of the early iron masters of the 16th and 17th centuries who used iron tomb slabs to commemorate their forebears and other very rich and important people. They are not at risk as their importance is well recognised and the individual slabs are well recorded.

Towards the end of the 1700s and in the early 1800s, the individually designed iron grave memorials were still being erected for those who could afford these comparatively expensive products and many of these may be seen in the Ironbridge area of Shropshire. They represent the middle period which was post the so-called Industrial Revolution when coal or coke was the fuel and steam provided the power, and iron was beginning to be extensively used.

By the mid-1800s cast iron was being produced cheaply and used for such everyday items as ploughs, railings, manhole covers, household goods and gravestones. These are the memorials whose importance has not been fully recognised or recorded.

The development of the cast iron gravestone

By the start of the 19th Century it was common for the middle classes to mark their graves, and in the Victorian era, the headstones became most elaborate, in keeping with the style of the times. The not so rich who could not afford the cost of such engraving erected much smaller stones bearing just initials and the year, enough for the grave to be identified and thus often to prevent overburial.

During the latter half of the 19th Century many small foundries, who had been producing agricultural implements and their spare parts, and who were often associated with an ironmonger's business, began to look for other outlets for their skills and began to produce fireplaces, drain-covers and other items which were saleable. From there, it was but a step to cast iron headstones.

These range from a simple cross to quite elaborate memorials, with the name of the deceased, their date of death and age cast into it, and can often be found many miles from their place of manufacture. Cheaper stock items were available, either completely plain, or with "R.I.P", "I.H.S." or some other message cast into them and were usually sold from Ironmongers and sometimes by the Clergy themselves. The name and dates could then be painted on as required, enabling a memorial to the deceased to be produced cheaply, and the poor to mark their graves in a permanent way.

Dates on the metal headstones range from the 1850s to as late as the 1940s in East Anglia and the West Country, where small foundries kept working much later than those in other parts. To date over fifty foundries and suppliers of metal headstones have been traced, and almost 450 different models have been photographed and drawn. Although over 5 000 cast iron headstones have been recorded and more than two thousand burial grounds visited, there are thousands of graveyards yet to be studied.

Manufacturers

As an example, the products of the “Etna” Iron Foundry of Glasgow can be found all over the country, and to date we have found twenty different models made by this firm. They had a large foundry in Glasgow producing items ranging from stoves and water pipes to sugar coolers and other plantation castings, bullion safes and lampposts. The company was founded in 1840, later moved to Falkirk and continued trading until

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1929 when it was taken over by the Grangemouth Iron Company. Their products are easily recognised as the word "ETNA" is cast into the back of the memorial.

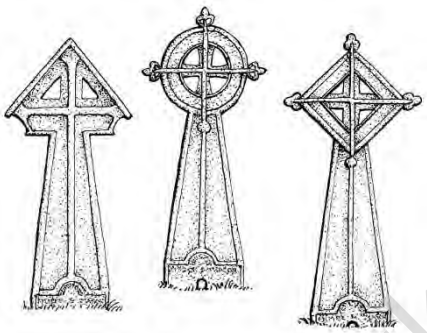


Figure 51. Designs from Filmer & Mason's catalogue

Filmer & Mason were ironmongers in Guildford, the Yvonne Arnaud Theatre being constructed on the site of their foundry. Eight models by this manufacturer have been seen in Surrey, Hampshire, Hertfordshire, Somerset and Sussex. Filmer & Mason also produced agricultural and domestic products, mileposts and castings for the Portsmouth railway. They had an ironmonger's shop in the Guildford High Street and they also cast their name on to the memorials, but this time near the base at the front. In Cocking churchyard, in Sussex, there are more than twenty examples and three are on view in the Amberley Museum, where one has been used to mark the grave of the museum cat.

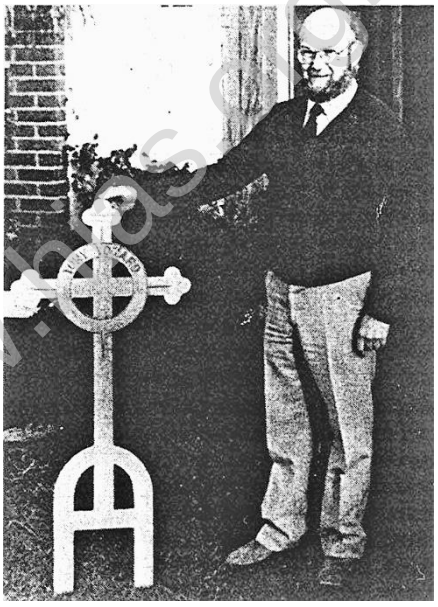


Figure 52. Tony with his personalised iron gravestone

At Great Walsingham in Norfolk is a foundry which was started in 1809 by a Cornish family. It was then called the North Norfolk Ironworks. They made all forms of castings for the farming industry, but war casualties ended the male line and the business was sold to the Wright family who continued trading until the depression caused its closure in 1932. The foundry was taken over by Messrs Barnham in 1938, renamed 'The Walsingham Foundry Co.' and is now a collection of desirable dwellings. They made cast iron gravestones, and these may be seen locally; they are of one design and usually have 'Cornish Walsingham' cast into the memorial at ground level. They still had the original pattern and made one for the author in 1987.

William Cottis and Sons started at Epping in 1858 as an agricultural depot and their foundry was built in 1872 and enlarged as the business grew. It was sold in 1962 to J. Gorden & Co and is now a housing estate. They made a cross and circle design and a cast-iron grave cover, an example of each is on view in the Museum at Waltham Abbey.

Denning's foundry started in 1828 at Chard in Somerset producing agricultural implements, moving to the Crimchard works in 1843 and making machinery for many industries. They produced fifteen different models of cast-iron grave markers in three different sizes, the largest of which was eight feet high, and sold from about ten shillings. The foundry is now a housing estate on the edge of Chard and their markers can be found from Devon to Sussex; 16 may be seen at Ballachulish in Scotland, 500 miles away.

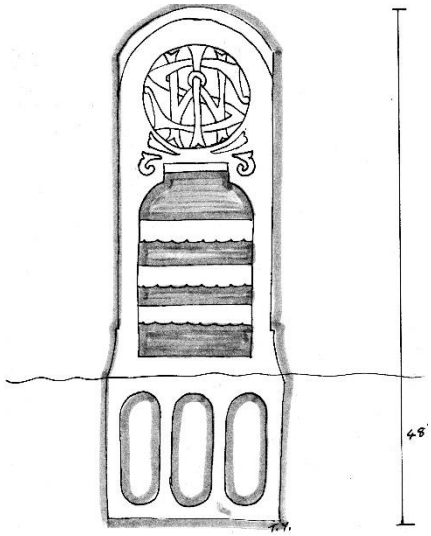


Figure 53. Hadens model No.4, weighed 68lbs (31 kg) and had a total height 48 inches (1.2 m). It sold for £2.5/- (£2.25).

Hadens had an ironmonger's shop in Warminster which was sold to Cordens in the 1890s and continues to trade under that name but no longer selling cast-iron gravestones. Their designs were patented in 1857 and cast by the nearby Wiltshire Foundry.

The cast iron gravestones were sold from ironmonger's shops which were often associated with the foundries, while the masons who were producing the ubiquitous headstones were certainly not interested in the mass-produced product which could threaten their livelihood. The printed catalogues, very few of which have survived, were sent to the clergy for them to recommend the product and in doing so add a little to their stipend. Postage for printed paper was very cheap and the railways were able to transport the product to almost any part of the country for quite a modest price. This could account for the metal headstones made by Denings of Chard, Somerset, being found at Ballachulish on the west coast of Scotland.

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Figure 54. A Test Valley Iron Works cross

Large numbers of the "Etna Foundry" products have been found all over the South of England. Johnson of Leicester managed to sell their cast-iron gravestones from Yorkshire to Cornwall while the products of the "Royal Label Factory" of Stratford on Avon have been found from Northumberland to Dorset. Foundries such as Hedges of Bucklebury, Bakers of Compton, and Robinsons of Loftus sold their products within a limited area near their works. And nearer home, the Test Valley Iron Works of Romsey made crosses with the details on a tiled pate. They were only distributed locally.

The Reasons for using cast-iron

The main reasons for its use for metal headstones were:

1. The cost was low; much less than an engraved masonry one. Therefore, they are often in memory of the very young or the very old, or women who had died at child-bearing age, times when money could be in short supply.
2. Details could be added quickly and at very little expense, enabling them to be available shortly after burial.
3. It was normal in Victorian times to mark the grave and in some areas, it became fashionable to use cast-iron gravestones for a time, with the clergy encouraging it and even marketing them.
4. The foundries were looking for new types of work to expand, and replace trade lost due to the depression in agriculture in the 1870s.
5. Railways were able to transport them quickly and cheaply to almost any destination in Britain.
6. Catalogues were printed cheaply and widely distributed by post.

RECORDING AND PRESERVING

The cast iron gravestone which was a product produced for the mass market, mainly between 1850 and the 1930s, is an item which needs recording and preserving because they are unlikely ever to be made again as the small foundries which produced them have gone. Cast iron being brittle, the memorials are easily damaged by lawn-mowers or vandals and can often be found on the rubbish tip where they have been thrown as their historical and social history value is not appreciated.



Figure 55. The Medhurst deadboards in St. Anne's churchyard in Lewes, Sussex



Figure 56. A cast-iron gravestone in the shape of a coffin at Beckington, Wilts.

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Publications

Published by Southampton University Industrial Archaeology Group

Adrian Rance (ed), *Seaplanes and Flying Boats of the Solent*
(1981) **£6.00**

Monica Ellis, *Ice and Icehouses Through the Ages* (with Hampshire gazetteer)
(1982) **£6.00**

Pam Moore (ed), *A Guide to the Industrial Archaeology of Hampshire and the Isle of Wight*
(1984) (with supplement) **£3.00**

Edwin Course & Pam Moore, *The Changing Railway Scene in Hampshire*
(1991) **£5.00**

Edwin Course, *Hampshire Farmsteads in the 1980s*
(1999) **£5.00**

Edwin Course (editor), *Southampton University Industrial Archaeology Group Journal*
No. 1 (1992); *No. 2* (1993); *No. 3* (1994); *No. 4* (1995); *No. 5* (1996);
No. 6 (1997); *No.7* (1998); *No. 8* (1999); *No. 9* (2000/2001)
£5.00 each to non-members

Published by Hampshire Industrial Archaeology Society

Edwin Course, *The Itchen Navigation*
New Edition, (2011) **£8.50** + postage

Martin Gregory (editor), *Hampshire Industrial Archaeology Society Journal*
No.10 (2002); *No. 11* (2003); *No. 12* (2004); *No. 13* (2005); *No. 14* (2006); *No. 15* (2007*);*
No. 16 (2008); *No. 17* (2009); *No.18* (2010); *No. 19* (2011); *No. 20* (2012); *No. 21* (2013);
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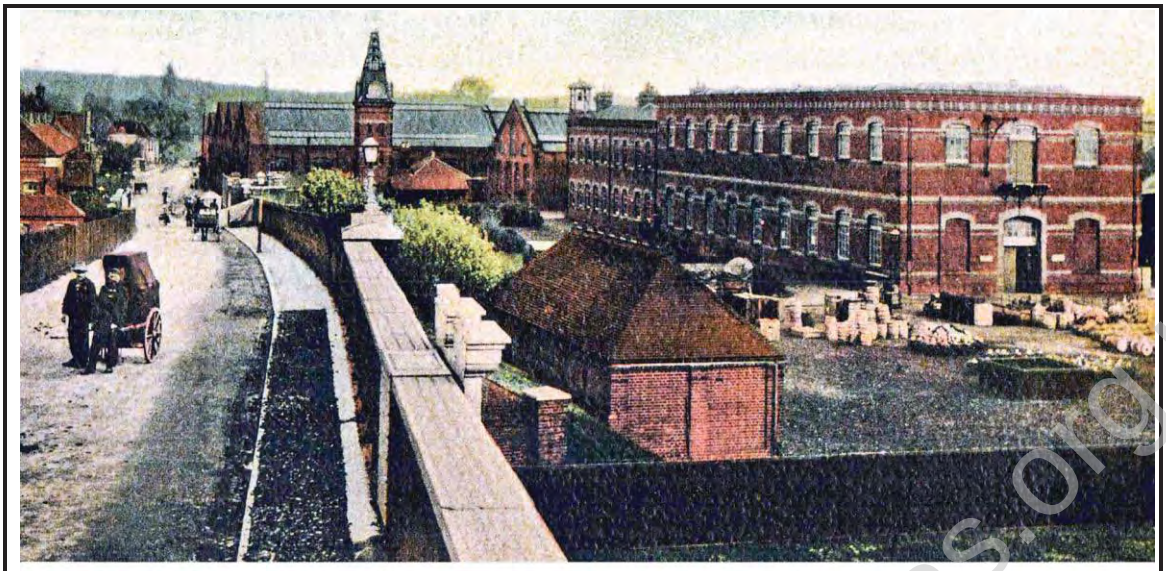
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Hampshire Industrial Archaeology Society

Hampshire Industrial Archaeology Society was founded as the Southampton University Industrial Archaeology Group in the 1960s from members of the University Extra-Mural classes who wished to continue their studies in industrial archaeology. Recording has included surveys of mills, breweries, brickworks, roads and farm buildings. Restoration work is undertaken by associated groups such as the Tram 57 Project, the Hampshire Mills Group and the Twyford Waterworks Trust. In addition to the *Journal*, the Society publishes a newsletter (*Focus*) twice a year and lecture meetings are held every month throughout the year.

To join, contact the Membership Secretary:
Keith Andrews, 13 Ashley Close, Harestock, Winchester, Hampshire, SO22 6LR.





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