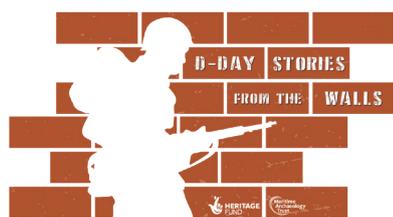


D-Day: Stories from the Walls



The Contribution of Railways in the UK & in Southampton Docks & Port

During the Maritime Archaeology Trust's National Lottery Heritage Funded D-Day Stories from the Walls project, volunteers undertook online research into topics and themes linked to D-Day, Southampton, ships and people during the Second World War. Their findings were used to support project outreach and dissemination.

This Research Article was undertaken by one of our volunteers and represents many hours of hard and diligent work. We would like to take this opportunity to thank all our amazing volunteers.

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The Vital Contribution of Railways in UK and in Southampton Docks & Port

The contribution made by the railways to the success of the D-Day Invasion is often overlooked and yet, it was so vital.

This aspect is addressed in outline as it transpired to be a huge part of the transportation of invasion troops, material, and after D-Day, of wounded troops and of prisoners of war.

The comprehensive railway layouts in Southampton Docks and Port are discussed.

The Maritime Archaeology Trust gratefully acknowledge the assistance of Ian Drummond of Holne Publishing including provision of rail schematics in the Docks for this article.

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Figure 1: Nameplate from Shunting Locomotive

Source: The late Frank Burridge Collection, courtesy R. Burridge

Clausentum was a busy port circa AD70 near the present-day port. The steam shunting locomotive Clausentum was acquired in 1890 by Southampton Docks Company which was absorbed in 1892 by London and South Western Railway, itself later absorbed into Southern Railway who owned the Southampton Docks during the Second World War. The locomotive left the docks in 1901 undertaking a variety of uses in the area, including at Eastleigh, until scrapped in 1945.

An Overview of UK Railway Operations Prior to D-Day

American records state *“The British railways, which in normal times were numbered among the most efficient and well-equipped systems of the world, had been taxed almost to breaking point by several years of war when the Americans entered the scene”*. [Fold3: Rail 1] The Americans also prepared an inventory of the British Railway network, included as Appendix 1, which summarised the situation presented at a six-day comprehensive Transportation Corps Training School in October 1943, the agenda for which included several aspects of the British railways designed to assimilate British operational practices.

During the long build up for the invasion, prodigious tonnages of material and numbers of troops arrived in Britain, but primarily at the Clyde, Manchester, Liverpool, Bristol Channel including Wales and Avonmouth which were deemed safer, but not immune, from enemy attack compared with Southern English ports. The supplies and troops had to be moved quickly throughout UK to avoid congestion at the ports. Then, because the roads in pre-motorway Britain were mostly narrow and often twisting, the railways therefore had to convey most of the discharged cargoes and disembarked troops throughout Britain, and subsequently to ports of embarkation although roads were increasingly and unavoidably used in addition to the railways from late 1943 due the sheer volume of arriving cargo. British railways were heavily burdened, alterations were needed at ports to handle the volume and type of cargoes, and early in 1943, British and American authorities agreed the way forward – this included Americans operating parts of the network where their forces predominated. Background to this includes: *“With the first inauguration of the BOLERO build-up in the summer of 1942 a question immediately arose as to the role of U.S. Transportation Corps personnel in the U.K. organization. The British desired that American troop units should be absorbed into the existing system. Colonel Ross (Chief of the Transportation Corps in the European Theater of Operation (ETO)) objected to such complete integration, and quickly established trained traffic control personnel in the British rail transportation offices in the regional commands to learn the British system of control. With continental operations in mind, when U.S. Transportation Corps units would have to operate their own lines of communications, he felt it was his duty to develop an organization capable of functioning independently. He therefore insisted that the Transportation Corps in the ETO be allowed to assume full responsibilities in transportation operations as rapidly as permitted by available personnel. At the same time, he organized a refresher course for transportation officers, (referred to in the opening paragraph above) in British railroading methods. The development of a completely separate U.S. transportation system was hardly feasible, and ETOUSA agreed with British officials to establish a joint control. Under this arrangement the American traffic control system paralleled the British, American personnel working closely with British transportation officials and assuming a full share of responsibility in the control of movements. By early 1943 American traffic officers were handling all their own transportation in areas where U.S. troops were preponderant, and American Rail Transportation Officers (RTO's) became familiar figures in the many stations along the British rail lines.*

Railway Operating units meanwhile trained by performing switching service at the depots and operating for short distances on the main lines. American units first took over the operation of switchyards at the Ashchurch, Sudbury, and Thatcham depots in the fall of 1942, and in November for the first time operated a 'goods' train on a British main line, between Sudbury and Egginton". [US Army: 149]

The US Army deployed several Railway Operating Battalions for Military Railway aspects which included the 707th within the American Central and Southern Base Sections, which had arrived in UK on 20 December 1943. The 712th was deployed within Southern depots, and this practice was being undertaken by other Battalions at 25 British depots. [Fold3: Rail 2]

British rolling stock, especially engines, was in short supply due to the war. *"The British in 1942 arranged for the shipment of 400 engines (known as Boleros) from the United States. These 2-8-0's were the equivalent of the British "Austerity" class engines. They had been designed in co-operation with the British, the principal consideration being simplicity of design and construction and the necessary ruggedness to stand up under combat conditions, since they were eventually intended to be used on the Continent. The first of these utility locomotives arrived with ceremony befitting their importance at Cardiff, Wales, in November 1942. The program was later extended, based on an estimate that some nine hundred locomotives would be needed on the Continent in the first six months*



Figure 2: US Built Locomotives Stockpiled in Wales

excellent Source: <https://www.ibiblio.org/hyperwar/USA/USA-E-Logistics1/USA-E-Logistics1-3.html#cn89>

of operations, and joint stockpiling of Boleros and British Austerities was begun. In 1943 the American-built engines began to arrive at the rate of about fifty per month. A freight car building program was also undertaken. Large numbers of cars designed for use on the continental railways were shipped knocked down to save shipping space and were assembled in England, principally at the Hainault Railway Sheds and Siding, shops constructed just before the war at Chigwell, Essex, a few miles northeast of London". [US Army: 150]

American Railway Shop Battalions were employed in UK for assembling US 'flat pack' wagons and diesel locomotives but they were also used to convert Liberty ships into troop transports for continental operations. In the first quarter of 1944, *"As the stock of railway equipment mounted, and as the constantly increasing flow of supplies strained the British facilities, The Military Railways lent the British equipment to meet the exigency. It loaned 400 2-8-0 locomotives, seventy 0-6-0s, 25 diesels, and 42 refrigerator cars, as well as 700 flat cars, with the proviso that they could be recalled on 14 days' notice, for use on the continent. In addition, it loaned several hundred tank cars to the Petroleum Board to alleviate a back drop of POL products in the UK". [Fold3: Rail 3]* Flat wagons, in very short supply in Britain and desperately needed to carry oversize loads, were assembled at the rate of 25 per day, first delivered in a batch of 200 on 2 March 1944 with the balance on 11 March.

Background to Historical Rail Facilities in and near to Southampton

Near to the docks, the "Southampton Terminus" station, which underwent several name changes since being fully operational on 11 May 1840, was built as the terminus for the then London and Southampton Railway, with sidings, a turntable, and engine sheds being added later. At the southern end of the station, the Imperial Hotel was built, later renamed South Western Hotel, and used by the military during the Second World War with name HMS *Shrapnel*. The station was closed in 1966, and

the land including sidings etc converted to a car park. But the station building remained, now a casino. Another disused station, “Southampton West End”, now demolished was lost in the mid-1930s when “Southampton West”, since 1935 named “Southampton Central”, was developed. This station was originally adjacent to the coast and is now approximately 780m from the Western Docks’ quayside following the 1930’s reclamation scheme to create the Western Docks. “Southampton Royal Pier” station was removed in the 1920’s. “Hamble Halt” station was built in 1942, just to the east of the rail link into Royal Victoria Hospital, the purpose being to enable aircraft workers to get to the aircraft factories via bus from an adjacent newly built bus station. “Millbrook” station, towards the western boundary of Southampton was opened on 1 November 1861 – this is a small station and included here only because it is adjacent to the spur line into the Western Docks and the present-day freightliner terminal.

Mention should be made of some the area rail infrastructure enhancements made pursuant to Southampton being selected as a principal invasion port. These included a variety of works such as four additional sidings at Micheldever with access road, platform extension at Botley, six new sidings at Brockenhurst, and enhancements at stations or yards serving Eastleigh, Millbrook, Havant, Fareham, Chandlers ford, Nursling, as well as at Southampton. [Hampshire and D-Day: 34]

By 1937, the rail network around the port is evident from the Ordnance Survey map of the day as shown below. The rail track, from the Southampton Terminus Station into the eastern docks and past the Town and Royal Quays to the Western Docks, ran within the public road as shown by 



Figure 3: Undated Principal Rail Layout circa mid-1930s

Source: http://www.disused-stations.org.uk/features/southampton_docks/index.shtml

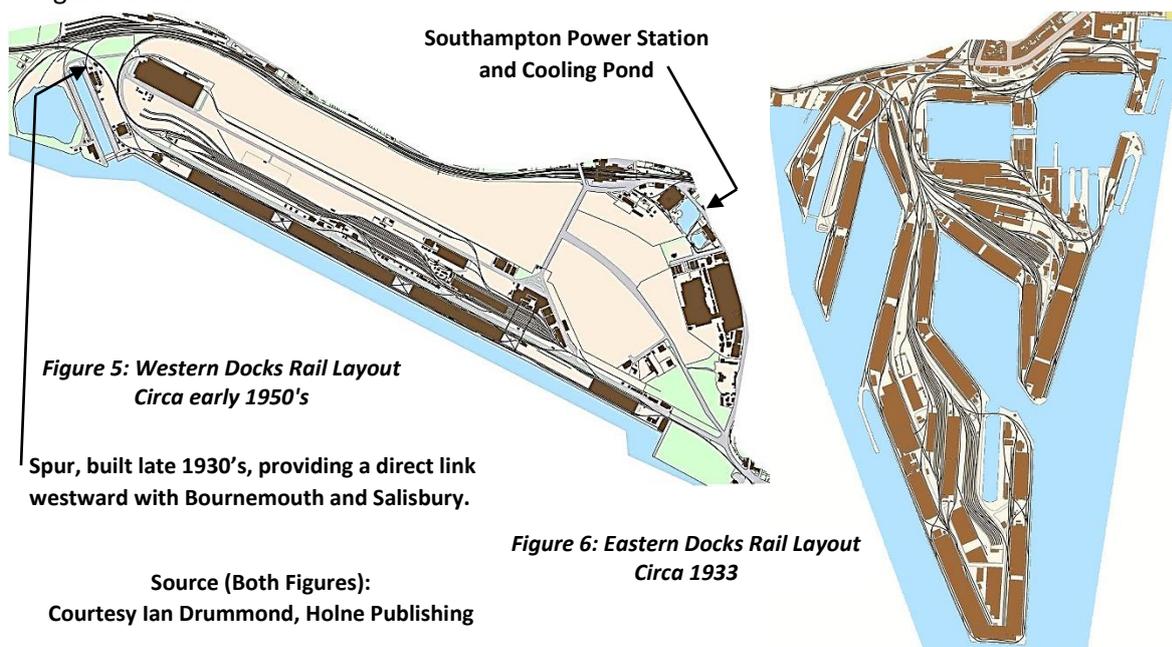
Figure 4: Main Line Railway, Private Dock lines, Western Docks 1937

Source: Courtesy National Library of Scotland CC-BY-NC-SA <https://maps.nls.uk/geo/explore/#zoom=15&lat=50.90464&lon=-1.40624&layers=10&b=1>

Southampton power station, 1904-1977, located eastwards of the Central station near the main line tunnel exit, was served by a short rail spur for coal, and within the power station environs wagons were moved by traction units powered from the overhead electric tramways system. Before the landfill extensions for the Western Docks, the power station was adjacent to the shoreline, using seawater for cooling and the infill for the port necessitated an adjacent cooling pond. The present-day geothermal plant commissioned in 1986 and the first of its kind in the UK is located approximately where the old power station was sited. [Wikipedia: Power Station]

Railway Facilities at Southampton Docks & Port

The Southampton Docks were owned and operated by the Southern Railway during the war and boasted over 60 miles of railway track within its environs, linking with the national network which was a fundamental key resource in material movement to and from the port. Track length increased after the war to a peak of 77 miles in 1952 [Southern Rails: 45] then declined as operational needs changed. This was accomplished with nearly 1,000 points, and one set of signals at a road crossing – the development of the rail layout in the Eastern Docks had progressed hand in hand with the periodic docking extensions over some 70 years and was somewhat chaotic in layout whereas the extensions for the port, or Western Docks, were efficiently planned with good access and dedicated marshalling yards. Access to the Eastern Docks was routed over and across public roads whereas access to the Western Docks was via a spur from near Millbrook station although there was during the war also a link from the Eastern access via the public highway as shown in Figures 3 and 4. Layouts are depicted in Figures 5 and 6.



Shunting locomotives were an obvious requirement within the Docks. Procurement started in 1861 and eight besides Clausentum were operating by 1890 but were all dispensed with by 1901, replaced initially by D1 Class which had all left the docks by the start of the Second World War, but mainly by Class B4 and K14 locomotives. [Wikipedia: Class B4, K14] Also, to supplement shunting operations, 28 battery powered electric trolleys were bought in the 1920's. [Southern Rails: 13]



Figure 7: Battery-Electric Trolley
Source: Southampton CC Record Office



Figure 8: Locomotive Depot in Eastern Docks 1936
Source: http://www.disused-stations.org.uk/features/southampton_docks/index33.shtml
From John Mann Collection

The Class B4 and K14 locomotives used in Southampton docks were named reflecting the destination of ships sailing pre-war as indicated overleaf in the table which also provides historical content. As can be seen, these locomotives served within the docks throughout the war.

Table of the History of the Class B4 and K14 Locomotives						
No.	Built	To Docks	Name	Withdrawn	Disposal	Scrapped
81	11/1893	11/1893	<i>Jersey</i>	2/1949	Sold eventually to Skinningrove Iron Co., Saltburn	6/1961
85	10/1891	4/1900	<i>Alderney</i>	1/1949	Scrapped	7/1949
86	12/1891	2/1896	<i>Havre</i>	3/1959	Scrapped	3/1959
89	11/1892	3/1901	<i>Trouville</i>	3/1963	Scrapped	5/1964
90	11/1892	3/1901	<i>Caen</i>	5/1948	Scrapped	2/1950
93	12/1892	4/1896	<i>St. Malo</i>	4/1960	Scrapped	5/1960
95	11/1893	2/1896	<i>Honfleur</i>	4/1949	Sold to Ministry Fuel and Power, Gwaun-cae-Gurwen, Swansea	10/1957
96	11/1893	12/1893	<i>Normandy</i>	10/1963	Sold to Corralls Ltd., now preserved at Bluebell Railway	N/A
97	11/1893	12/1893	<i>Brittany</i>	2/1949	Sold eventually to Stewart & Lloyds, Bilston, Staffs	8/1958
98	11/1893	5/1900	<i>Cherbourg</i>	2/1949	Sold eventually to Stewart & Lloyds, Bilston, Staffs	8/1958
102	12/1893	4/1896	<i>Granville</i>	9/1963	Sold to Butlins now preserved at Bressingham Museum	N/A
176	10/1893	11/1893	<i>Guernsey</i>	6/1948	Sold eventually to Stewart & Lloyds, Bilston, Staffs	2/1961
746 (later 101)	4/1908	4/1908	<i>Dinan</i>	11/1948	Sold to Taylor Woodrow	1/1954
747 (later 147)	4/1908	4/1908	<i>Dinard</i>	2/1949	Sold eventually to Blaenavon Company	8/1958

Table Reproduced from Southern Rails on Southampton Docks:35, courtesy Ian Drummond, Holne Publishing

During the Second World War, four ex-LBSCR Class E1 locomotives were allocated to Southampton Docks, Nos 2112, 2156, 2162 and 2689, [Southern Rails: 40] [Southern Railway E-Mail Group] which were of similar vintage to the Class B4 locomotives. By the end of the war, the long serving and heavily used B4 locomotives were in a poor state of repair, and 14 from 42 USA 0-6-0 locomotives designed for European gauge which were stored at Newbury Racecourse and which had seen little service were purchased in 1947 by Southern Railway and deployed to the Southampton docks where they served for approximately 20 years. [Southern Rails: 42, 44]. Within the docks, facility after D-Day for USA Army locomotives and rolling stock to be shipped to the Continent was needed and berth 109 was specially created north west of the King George V Graving Dock for the loading of locomotives and rolling stock, including Ambulance trains, destined for France. The image below was taken at berth 109 on 12 August 1944. [Southern Rails:122]



Figure 9: USA Army Transportation Corps Locomotive No 2347 being loaded onto the Hampton Ferry

Source: The late Bert Moody Collection courtesy Southampton CC Record Office

Another rolling stock loading location was at berth 101 at the north west corner of what is now Mayflower Park, where trains were run directly into converted Landing craft. This was at the site of one of the four Embarkation Hards built in or near the docks in 1942/1943 – this hard is designated S1 in the description by the Trust at <https://www.maritimearchaeologytrust.org/embarkation-hards> .

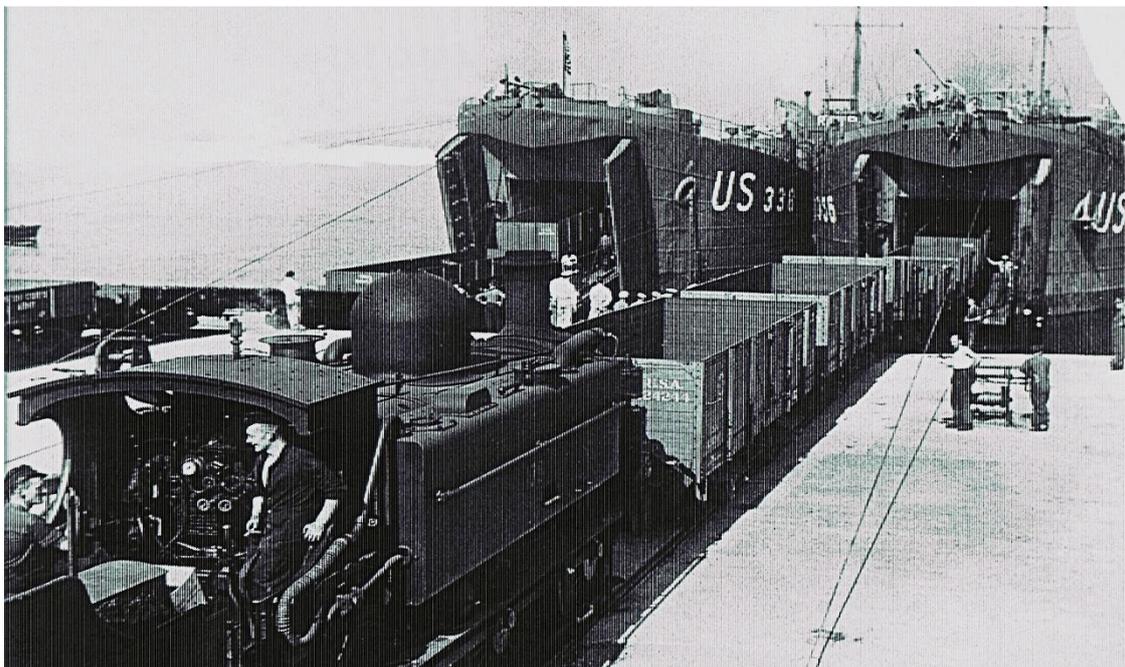


Figure 10: USA wagons being loaded at Berth 101, undated

Source: The Late Bert Moody Collection courtesy Southampton CC Record Office

The locomotive is WD179 ex-GWR No. 2466 [Southampton Rails: 123]

The censor has removed the background to this image.

In the image below, rail track down the Embarkation Hard, designated S2 by the Trust and also built in 1942/1943, can be seen in the middle left, as Prisoners of War are marched near the Royal Pier.



Figure 11: Rail Track at Embarkation Hard near the Royal Pier, undated
Source: The Late Bert Moody Collection courtesy Southampton CC Record Office

Train Ferries operating out of Southampton included three Southern Railway owned ships, *Hampton Ferry*, *Shepperton Ferry* and *Twickenham Ferry* which were fitted with rear gantries, as seen in Figure 9, to assist with loading and unloading rolling stock and, when needed, turning locomotives through 180°. These three ferries survived into the 1970's but another Train Ferry, *HMS Daffodil*, was lost in 1945 striking a mine when returning to Southampton as described in a companion article to this 14th Port series.

A Summary of Local Industrial Lines

North of the main Southampton Docks fronting the river Itchen are successively Chapel Mills with the Chapel Tramway serving several wharves, Bull's Run serving essentially Belvedere wharf, and then Northam Wharves. All of these wharves served industrial premises and were not part of 14th Port operations although contributing to the war effort. Tramway or railway track date back in each case to the mid 1880's and were in use during the Second World War. [Southern Rails: 124-137, 146-154]

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Appendix 1 – American Statistics of the UK Railways

Source: Fold3: USA National Archives. U.S. Army, U.S. Forces, European Theater, Historical Division: Records, 1941-1946. Historical Reports and Monographs - Staff Section Reports 582A- Transportation Corps, Appendices to Vol I Page 22. Accessed June 2020 via <https://www.fold3.com/image/291669655> (3 pages)

Group Regulating Stations School	Outline No. 5.												
<u>Subject</u>													
WARTIME ORGANIZATION OF THE BRITISH RAILWAYS AND THEIR RELATIONSHIP TO THE TRANSPORTATION CORPS. MILITARY RAILWAYS IN THE ETO.													
1. <u>RAILWAYS:</u> There are four principal railway lines in the U.K.. These four lines represent a consolidation of approximately 123 railway lines after the first World War.													
The Railways are controlled by civilian management under the direction of a Ministry.													
2. <u>SOME FACTS IN BRIEF ABOUT BRITISH RAILWAYS:</u>													
<u>Air Raid Precautions</u> - Equipment includes fire-fighting engines and trains, motor petrol pumps and decontamination vans:- 170,000 railway men are trained in A.R.P. work.													
<u>Air Raid Repairs</u> - Repairs to the track have been completed generally within 12 hours; 3,000 signal wires in one week and 600 electric cables 8 days.													
<u>Amalgamation</u> - On January 1st, 1923, 123 separate British Railway Companies were amalgamated and absorbed into the present four group Companies, namely the <u>L.M.S.</u> <u>L.N.E.R.</u> <u>G.W.R.</u> <u>S.R.</u>													
<u>Brakes</u> - An express train of 12/13 coaches travelling at 60 m.p.h. can be brought to a stand in approximately 360 yards. The vacuum automatic brake is used on most steam trains and the Westinghouse compressed air brake on electric trains.													
<u>Bridges</u> - The longest bridge in Great Britain is the Tay Bridge (total length, 11,652 ft. 10 ins. - nearly 2½ miles).													
<u>Capital</u> - Capital invested in the railways - Britain's largest private undertaking - is £1,300,000,000.													
<u>Compensation</u> - Payments fixed by agreement at £43,000,000 are made annually by the Government as follows :													
<table><tbody><tr><td>G.W.R.</td><td>6,670,603</td></tr><tr><td>L.N.E.R.</td><td>10,136,355</td></tr><tr><td>L.M.S.</td><td>14,749,698</td></tr><tr><td>S.R.</td><td>6,607,639</td></tr><tr><td>L.P.T.B.</td><td><u>4,835,705</u></td></tr><tr><td></td><td><u>43,000,000</u></td></tr></tbody></table>		G.W.R.	6,670,603	L.N.E.R.	10,136,355	L.M.S.	14,749,698	S.R.	6,607,639	L.P.T.B.	<u>4,835,705</u>		<u>43,000,000</u>
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L.M.S.	14,749,698												
S.R.	6,607,639												
L.P.T.B.	<u>4,835,705</u>												
	<u>43,000,000</u>												
<u>Control by Government</u> - Government control was ordered on September 1st, 1939, under the Emergency Powers (Defence) Act, 1939 - Order No. 1197. The Main Line Railways, London Transport, and several minor railways have been taken over by the State. They are under the control of the Ministry of War Transport who appointed the Railway Executive Committee to be his agents for the purpose of giving orders. The Railways' management and staffs are carrying on their duties subject to the directions and orders of the Government.													
<u>Docks</u> - British Railways are extensive dock owners, having docks, harbours and wharves at 76 places. The world's largest graving dock is at the Southampton Docks of the Southern Railway.													
<u>Electrification</u> - The Southern Railway possesses the world's largest suburban electric train system, radiating south-west, south and south-east from London.													
<u>Hotels</u> - The British Railways own 53 Hotels.													

Outline No. 5 para 2 contd.

Tunnels - The longest tunnel on the British Main Line Railways is the G.W.R. Severn tunnel (4 miles 628 yards).

Longest tunnel underground in the world is on the London Transport system between East Finchley and Morden, via the Bank (17 $\frac{1}{2}$ miles).

Weather (abnormal) - Four hundred snowploughs are in service; patrol trains are run on exposed sections of lines. In the London area 1,400 electrical point heaters have been installed. In January 1940, 1,500 miles of lines were blocked by ice and snow.

Workmen's Trains - Seven thousand special trains are operated each week to and from Government factories.

3. MILITARY RAILWAYS ORGANIZATION - was originally designed to operate railways; however, in the U.K. British Civil Railways perform that function, but their services are augmented by military personnel supplied by the U.S. Army. At the present time we are operating switching cars, and are handling all the placing and switching of cars at 12 depots. We are at the present time working at these depots approximately 81 shifts daily and are using 56 engine units to engine these shifts.

4. LOCOMOTIVES - We have in the U.K. approximately three hundred 2-8-0 freight locomotives which are leased to the British Railways for service, but on which we have a call for their use in military operations at a later date when required. We have nothing to do with these large freight engines at the present time, and they are entirely under the control of the Railways for operations.

5. PERSONNEL: The Military Railway troops that are now in this country in performing their daily task are training for work beyond the U.K. In an active combat zone, Military Railways will operate and maintain railways and also have the responsibility of planning and notifying the engineers what railways they will need as well as being responsible for the ordering of equipment and supplies for the operation of the railways.

Later it is expected that a Shop Battalion will be brought into the U.K. for the purpose of training men and for the additional purpose of assuming some of the heavy repair work and maintenance of the American-built power.

The Military Railways have designed and are now being supplied with freight equipment. This is generally of a 20-ton design, which design was drawn and completed in the Office of the Chief of Transportation in this Theater last spring and already a great many of the cars are on hand. They reach us in K.D. condition; some of them will be erected and some of them will be trans-shipped K.D.

Outline No.5 para 2 contd.

Junctions - The world's busiest junction is Clapham Junction (Southern Railway) with 2,500 trains in 24 hours.

Locomotives - British Railways possess 19,624 locomotives. The most powerful locomotive in Great Britain is the L.N.E.R. Boyer Garratt No. 2395, with a 2-6-0 - 0-8-2 wheel arrangement.

Mails - The British Railways annually convey 25 million mail bags.

Parcels - British Railways forward 90½ million parcels every year.

Permanent Way - 2,112 Sleepers to one mile of track.

Dimensions of a sleeper - 8 ft. 6 ins. by 10 ins. by 5 ins.

Weight - 17 to a ton.

Standard length of B.H. rail - 60 ft.
weight - 95 lbs per yard.

Amount of ballast normally used annually - 1,700,000 cubic yards.

Total mileage, single track, including sidings - 50,956 miles.

Total route mileage - 19,273 miles.

Electrified: Route 968 miles.
Track 2,408 "

Longest stretches of straight track in Great Britain are the 18 miles of line between Selby and Hull.

16 miles between Grimsby and Burgh-le-Marsh on the L.N.E.R.

24 miles between Tonbridge and Ashford on main line to Dover.

10½ miles as far as Staplehurst.

13½ miles to Ashford with a slight deviation at Headcorn S.R.

The highest point reached by rail in Great Britain is on the L.M.S. line - 1484 ft. above sea level. (This ignores the Snowdon Mountain Railway, which at the summit is 3,540 ft. above sea level).

Rolling Stock - At the outbreak of war there were 45,838 passenger carriages with a total seating capacity of 2,655,000 seats and 18,224 passenger brake vans, parcel and mail vans, horse and carriage trucks, etc. Total - 64,062.

The largest wagon unit in Great Britain is the 150 ton trolley wagon set owned by the L.N.E.R. It is carried on 56 wheels.

Total number of railway wagons in service is 1,250,000.

Signal Boxes - 10,300.

Stations and Halts - 7,000 passenger stations. 200 of these have been constructed specially for workmen in war factories.

Largest passenger station in Great Britain - S.R. Waterloo.
6,900 goods stations.

World's largest covered goods station - Bristol Temple Meads - G.W.R.

Steamships - At outbreak of War British Railways owned 130 steamships.