



CENTRAL SECTION PROJECT

Old Oak Common Worksites Non-Listed Built Heritage Recording of 70' Turntable.

Document Number: C150-CSY-T1-RGN-CR076_PT001-00019

Document History:

Revision:	Date:	Prepared by:	Checked by:	Authorised by:	Reason for Issue:
1.0	11 th October 2010	[REDACTED]	[REDACTED] (PCA)	[REDACTED] (PCA)	Draft for Consultation
2.0	15 th November 2010	[REDACTED]	[REDACTED] (PCA)	[REDACTED] (PCA)	Addendum added following Watching Brief

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Old Oak Common Worksites Non-Listed Built Heritage Recording of 70' Turntable.

National Grid Reference: TQ 21870 82390

Researched and written by: Malcolm Gould and Guy Thompson

Pre-Construct Archaeology Ltd

Project Manager: Charlotte Matthews

Commissioning Client: Capita Symonds Ltd

Contractor:

**Pre-Construct Archaeology Ltd
Unit 54, Brockley Cross Business Centre
96 Endwell Road, Brockley
London SE4 2PD**

Tel: 020 7732 3925

Fax: 020 7732 7896

Email: cmatthews@pre-construct.com

Web: www.pre-construct.com

**Pre-Construct Archaeology Ltd
November 2010**



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1 NON-TECHNICAL SUMMARY

- 1.1** This report presents the results of a non-listed built heritage (NLBH) assessment of a locomotive turntable at the Old Oak Common Crossrail Worksites, Acton, London Borough of Hammersmith & Fulham NW10. The Old Oak Common Depot Worksites are located within Route Window 3 as defined in the Crossrail Environmental Statement (2005). The site comprises a corridor of land presently occupied by a complex of railway facilities including stabling sidings, carriage sheds, workshops and other elements. The study area for the NLBH assessment comprises the Maintenance Depot in the northern half of the Old Oak Common site, although the present report is confined to the turntable.
- 1.2** The proposed works entail the demolition of existing buildings and the remodelling of the entire Old Oak Common depot site in order to provide depot and stabling facilities for Crossrail. These facilities will include stabling sidings, a new train care facility building, accommodation for maintenance staff, a maintenance storage building, new access roads and turning area, parking spaces for 150 cars, train crew accommodation and parking for a further 50 vehicles. Other new facilities will include a paint shed, a biohazard pit, a wheel lathe facility and associated siding, train washers and lighting gantries. The sidings will be fitted with Overhead Line Equipment (OHLE) and a new traction substation will be built. During the main construction phase of the Crossrail project the Old Oak Common depot will also be used to support the main tunnelling works. The pre-cast concrete sections of the twin-bore tunnels will be manufactured and stored at the depot. A number of temporary facilities will be constructed including a concrete batching facility, silos, concrete segment storage facilities and new track.
- 1.3** This NLBH assessment builds upon the conclusions of the recent Detailed Archaeological Desk Based Assessment (DDBA) of the site (Crossrail, 2010a). The latter report identified the present turntable as an element of regional significance. Built under the auspices of the Great Western Railway's Locomotive Superintendent, George Jackson Churchward, the Old Oak Common locomotive depot was one of the most modern locomotive repair facilities in the country when it opened in 1906. A huge new engine shed formed the focal point of the new depot. Equipped with four 65' locomotive turntables supplied by Ransomes and Rapier of Ipswich in 1905, the depot was capable of accommodating and servicing the company's latest and largest locomotives.
- 1.4** Of the four original turntables, the north-east example appears to have been replaced with a new model of the same diameter c.1919, while the example in the south-east corner was likewise replaced c.1946. In 1952-3 the north-east and north-west turntables were replaced with 65' diameter models supplied by Cowans, Sheldon & Co Ltd of Carlisle, who also replaced the turntable in the south-west corner with a new 70' model the same year. The new 70' turntable was fitted with both manually and electrically powered drive systems. In contrast to other early 20th century Great Western locomotive depots, the majority of which were closed and demolished in the 1960s, Old Oak Common was retained and converted into a motive power depot (MPD) for diesel locomotives. Despite the demolition of the engine shed and the removal of the three 65' turntables, it was decided to retain the 70' turntable, which remained a central element of the diesel MPD until the latter closed in 2009.



- 1.5** The NLBH assessment found that a number of relatively minor alterations were made to the 70' turntable during nearly five decades of use. Modifications included the reduction in the size of the timber deck and the updating of the electric drive motor, which necessitated a number of changes to the superstructure of the turntable, including the removal of the second hand-crank mechanism and the construction of a booth containing the electric motor controls. This NLBH assessment and subsequent examination during dismantling substantiated the conclusion of the DDBA regarding the significance of the turntable, presenting a more detailed insight into the turntable's structure, mechanism and the changes that have been made since it was installed in the early 1950s.

2 INTRODUCTION

2.1 Origins and Scope of the Report

- 2.1.1 This non-listed built heritage (NLBH) recording report has been commissioned by Crossrail Ltd in advance of the proposed redevelopment of Old Oak Common Depot, London Borough of Hammersmith & Fulham NW10 in accordance with the Crossrail Act 2008. The definition of non-listed built heritage adopted by Crossrail encompasses “above-ground historic features and structural elements of historical interest” (Crossrail, 2009a: 4). Crossrail has established procedures relating to the recording of NLBH assets that “will be, or have the potential to be, totally or partially demolished, damaged or removed as a result of Crossrail works” (*ibid*: 3). The report has been written in accordance with both the above procedures and with guidance on the recording of historic buildings published by English Heritage (English Heritage, 2006).
- 2.1.2 NLBH recording is undertaken in order to determine the potential for and survival of archaeological resources, to determine the nature of any relationships between the above-ground built heritage and below-ground archaeology and to inform subsequent phases of mitigation planning (Crossrail, 2009a: 5). A site-specific Written Scheme of Investigation (WSI) informed by preliminary desk-based research (contained in the Crossrail Environment Statement) and a walkover survey of the Old Oak Common worksites identified a requirement to assess and record a number of non-listed built heritage (NLBH) assets to inform the archaeological mitigation strategy for Crossrail (Crossrail 2009b).
- 2.1.3 Among the assets recognized by the WSI, the 75’ [*sic*] locomotive turntable in the south-west corner of the former Engine Shed was identified as being of “moderate local significance”, as it had been “constructed in the early 1970s [*sic*] in the area of a previous 60’ [*sic*] turntable” (Crossrail, 2009a: 17). The WSI recommended that the turntable be removed to the ‘York Railway Museum’, and that a programme of site photography be undertaken in order “to place the turntable in its context for archival purposes prior to removal” (*ibid*).
- 2.1.4 It was decided that a Detailed Desk-Based Assessment (DDBA) be undertaken of those NLBH elements highlighted by the site walkover in order to scope both the NLBH recording identified from the preliminary Desk Based Assessment and from the initial walkover reported in the WSI (Crossrail 2010b: comment 13). The DDBA was also undertaken in order to validate the conclusions of the WSI regarding the significance of the NLBH assets by identifying their age, construction design, function, development, phasing and significance (Crossrail 2010a, 2010: 11).
- 2.1.5 Documentary research undertaken for the purposes of the DDBA corrected a number of misapprehensions regarding the age, dimensions and significance of the turntable. The Great Western Engine Shed (built 1904-1906) originally contained four electrically-driven 65’ locomotive turntables supplied by Ransomes and Rapier in 1905 (*ibid*: 25). Although these turntables were regularly repaired and refurbished over the following four decades, all were replaced between c.1946 and 1953 (*ibid*: 35).
- 2.1.6 In June 1951 British Railways placed orders with Cowans Sheldon Ltd for two 65’ articulated turntables and one 70’ model, the latter of which was destined to replace the existing 65’ turntable in the south-west corner of the group. When the Engine Shed was demolished and the locomotive depot converted into a diesel motive power depot (MPD) in 1965, the 70’ turntable was retained in its present location,



while the 65' examples were removed. As the sole surviving element of a programme launched at the end of the 1940s to upgrade the Engine Shed, this turntable was considered by the DDBA to be of regional significance (*ibid*: 46).

2.1.7 In anticipation of the demolition of the existing buildings and the remodelling of the entire Old Oak Common Worksite for Crossrail, permission has been granted to lift the surviving turntable and relocate it to Swanage (Matthews, 2010: 2). In advance of its removal, Pre-Construct Archaeology Ltd (PCA) was commissioned by Capita Symonds Ltd on behalf of Crossrail Ltd to prepare a Method Statement for recording the turntable in order to fulfil the criteria for mitigation specified by the WSI (Crossrail, 2009b: 17; Matthews, 2010). The Method Statement specified that the recording was to take the form of a Level 2 record, as set out in the English Heritage guidance note *Understanding Historic Buildings: a guide to good recording practice* (English Heritage, 2006). The aim of the recording exercise presented in this report is to provide a more complete understanding of the turntable in terms of identifying its age, construction, design, function, development and significance, compiling a lasting record and disseminating these results.

2.2 Site Description and Location

2.2.1 The Old Oak Common Crossrail Worksites comprise a broad corridor of land covering an irregularly-shaped area of 14.1619ha and are presently occupied by an extensive complex of railway facilities including stabling sidings, carriage sheds, workshops and other elements. Non-listed built heritage assets on the site include surviving elements of the locomotive depot built by the Great Western Railway in 1904-6, a carriage repair depot built in the late 1930s, a locomotive oil fuelling plant built in the late 1940s and various servicing facilities added in the mid-1960s when the locomotive depot was converted into a motive power depot (MPD) for diesel locomotives.

2.2.2 The site is bounded to the east by Old Oak Lane, to the north and west by the Grand Union Canal and to the south by the Old Oak Common railway sidings and the Great Western Mainline (GWML) between London and the South-West (Figure 1). The central Ordnance Survey National Grid Reference for the site is TQ 21870 82390. The turntable lies at the western end of the site. It originally lay in the south-west corner of Churchward's Engine Shed of 1904-6, which was demolished in 1964. The turntable can be found to the north of the Sand Furnace building (Building 20) and Pullman Shed Boiler House (Figure 2: Building 21) and just to the west of Diesel Maintenance Shed (Figure 2: Building 19).



3 PLANNING BACKGROUND

3.1 Introduction

3.1.1 The Crossrail Act 2008 provides for deemed planning permission under the relevant provisions of the Town and Country Planning Act 1990 to be granted for the development authorised by the Act.

3.2 Scheduled Ancient Monuments and Listed Buildings

3.2.1 There are no Scheduled Ancient Monuments (SAMs), Listed Buildings or Registered Parks and Gardens within the 1 km radius of the study area.

3.2.2 There are no Listed Buildings within the boundaries of the development site. There are two Listed Buildings within the 1 km radius of the study area, the nearest of which is located approximately 975m to the north-east of the site.



4 METHODOLOGY

4.1 Aims and Objectives

4.1.1 The WSI identified the turntable as a structure likely to be affected by the Crossrail works, and set out proposals for appropriate recording and mitigation (Crossrail, 2009b: 17). The WSI recommended “site photography to place the turntable in its context for archival purposes prior to removal” (*ibid*). It was subsequently decided to formally record the turntable to English Heritage Level 2 prior to its removal from site and relocation to Swanage (Matthews, 2010). English Heritage Building Recording Level 2 comprises a brief written description of the structure identifying its age, construction, design, function, development and significance. The aim is to provide a better understanding of the turntable, to compile a lasting record, to analyse the results and to disseminate the results.

4.1.2 The NLBH recording process serves the following purposes:

- To determine the potential for, and survival of, archaeological (above-ground non-listed built heritage) resources within a given area or site;
- To determine the nature of any relationships between above-ground built heritage and below-ground archaeology;
- To determine the nature of any relationships between non-listed and listed built heritage;
- To inform subsequent phases of mitigation planning (i.e. focus and refine the proposed mitigation measures for works at a particular site and set these out in archaeological Written Schemes of Investigation (WSIs).
- The mitigation measures may include detailed recording of the structure before works commence or where appropriate, storage of items for reuse either within the site or elsewhere. Detailed requirements for site assessment and mitigation will be defined in site-specific WSIs (Crossrail 2009b: 5).

4.2 On-Site Assessment

4.2.1 Two PCA historic buildings archaeologists (Malcolm Gould and Kari Bower) undertook the on-site visual analysis and produced measured drawings recording the structure on 10th and 11th June 2010. A scale CAD drawn plan of the turntable is included in this report (Figure 12).

4.2.2 A photographic survey was also undertaken recording key features and the wider setting of the turntable. A plan photograph from vertically above the turntable was also taken using an extendable mast. An illustrative selection of these can be found in Appendix 2 of this report. This photographic survey was undertaken using medium format black and white film, 35mm colour slide film and digitally. Additional detailed photographs of the turntable were also taken in digital only format. A register of photographs taken on site is included in this report (Appendix 3).

4.3 Documentary Research

4.3.1 This report incorporates evidence gathered from the British Library, the Hammersmith and Fulham Archives Centre, The National Archives (TNA) at Kew



and the Wiltshire & Swindon History Centre (WSHC) at Chippenham in addition to relevant historical maps, archaeological and historical publications and reports. The National Archives were the primary archival resource consulted during the research process. Reference was made to records produced by the Great Western Railway (GWR) and its successor organisations including British Railways Board (BRB), the British Railways Western Region (BR-WR), the British Transport Commission (BTC). Architectural and engineering drawings of the Old Oak Common locomotive turntables produced by or on behalf of the Great Western and British Railways (Western Region) between 1905 and 1964 held by the Wiltshire & Swindon History Centre (WSHC) at Chippenham have been used to inform the historical narrative and descriptions. The results of this research are presented in Section 5 of this report.

4.4 Project Archive

4.4.1 The project archive is currently held at the offices of Pre-Construct Archaeology Limited in Brockley, London, under the site code OOC10. The archive will be managed in accordance with the Crossrail Information Management Plan, which takes account of national archaeological reporting standards and guidelines. It is envisaged that the documentary, drawn, digital and photographic records that comprise this archive will be stored within the appropriate Crossrail archaeology site survey file (Crossrail, 2009a: 9).

4.5 Standards and Guidance

4.5.1 All historic building-related works were undertaken in accordance with standards set out in the following documents:

- Association of Local Government Archaeological Officers, 1997: *Analysis and Recording for the Conservation and Control of Works to Historic Buildings*
- British Archaeologists and Developers Liaison Group, 1986: *Code of Practice*
- British Standards Institution, 1998: *Guide to the Principles of the Conservation of Historic Buildings* (BS 7913)
- English Heritage: Guidance Paper 98: *GLAAS: Guidance Paper 3-Standards and Practices in Archaeological Fieldwork in London*
- English Heritage, 2006: *Understanding Historic Buildings; a guide to good recording practice*
- English Heritage (Clark K), 2001: *Informed Conservation*
- English Heritage, 2000: *The Presentation of Historic Building Survey in CAD*
- IFA, 1999: *Standards and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures*
- Crossrail, 2009a: *Archaeology Procedure for Non-Listed Built Heritage Recording*



5 HISTORICAL BACKGROUND

5.1 Background

- 5.1.1 The site of the Old Oak Common depot was originally wooded and it is likely that it was managed as a source of timber and for rough grazing throughout the Middle Ages and into the post-medieval period. The area became known as Old Oak Common during the 17th century and the right to graze livestock on the common continued to be enjoyed by parishioners until the second half of the 19th century.
- 5.1.2 The earliest railway line to be built in the vicinity was laid by the Great Western Railway across Old Oak and Wormwood Scrubs Commons in 1837. This was followed in the early 1850s by the North & South Western Junction Railway (NSWJR), while the North London Railway opened the Hampstead Junction Railway, which joined the NSWJR line at Old Oak Junction in 1860 (Baker & Elrington, 1982: 2). Eight years later the Midland & South-Western Junction Railway (MSWJR) line was connected to the NSWJR at Acton Wells Junction.
- 5.1.3 By the second half of the 1880s Great Western services using Paddington goods and passenger stations were experiencing considerable disruption caused by congestion in the west London area. Since both stations were situated in a densely built-up area that offered little room for enlargement, there was insufficient space at either to accommodate and repair the Great Western's locomotives and rolling stock. As a consequence in November 1898 the company proposed to establish a goods and coal depot at Old Oak Common (TNA RAIL 250/339: 255-257).
- 5.1.4 In October 1899 the company revised its earlier plan and decided to build new engine sheds at Old Oak Common and to dispense with the proposed goods and coal depot (TNA RAIL 250/340: 145-6). Little came of this scheme, and by the end of 1902 the company had done little more than build a number of carriage sidings and an oil gas main at Old Oak Common.

5.2 Old Oak Common Locomotive Depot

- 5.2.1 In June 1903 George Jackson Churchward (GWR Locomotive Superintendent) revived the earlier scheme to build a new engine shed at Old Oak Common (TNA RAIL 250/271: 124). The contract for the construction of the depot was awarded to Messrs William Walkerdine of Derby, who tendered to undertake the works for £40,313 (TNA RAIL 250/47: 52, 86).
- 5.2.2 Walkerdine undertook to build the Factory, the engine shed, WCs, messrooms, internal and external inspection pits and turntable foundations (TNA RAIL 252/1340, Bill No. 2: 5; Bill No. 3: 48-55; see Figure 3). The foundation walls of the latter were to be built of brindled brickwork in cement (*ibid*: 9-10). The Great Western agreed to supply and fix the structural iron- and steelwork, and arrange the fitting of the majority of the plant and machinery including the turntables, traversers and traverser foundations within and without the engine shed.
- 5.2.3 Construction of the locomotive depot started in January 1904. By October the works were sufficiently advanced for Churchward to order the fixtures, fittings and machinery for the new buildings. Churchward placed orders for four 65' turntables from Ransomes & Rapier of Ipswich for £3,900 (TNA RAIL 250/271: 224). Ransomes supplied their in-house workshop with engineering blueprints of



elements of these turntables in April 1905 (WSHC 2515/403/0350/0351, 11/04/1905).

- 5.2.4 Electrical power for the Great Western's facilities in West London was to be supplied by the company's new generating station at Park Royal, which necessitated the construction of new sub-stations at Old Oak Common, Shepherds Bush and Royal Oak. In May 1905 Churchward proposed that the turntables in the Engine Shed be driven by electricity (TNA RAIL 250/47: 405). Shortly thereafter Ransomes submitted a tender for the supply of 'electric tractors' to drive the turntables for £1,240, which was duly accepted¹.
- 5.2.5 The majority of works undertaken at Old Oak Common during the years immediately after the end of the First World War comprised essential repairs to and maintenance of existing plant and machinery. Expenditure authorised during this period included £3,900 for the repair of the engine turntables in early 1919 (the cost later rose by a further £2,800). Although Great Western committee minutes revealed little about the nature and extent of these somewhat costly turntable repairs, a plan of the turntables produced shortly after the Second World War suggests that the turntable in the north-east corner of the shed may have been replaced relatively early in the history of the depot (compare Figures 6 and 7). A set of drawings issued in the early 1930s showing proposed modifications to the locking gear also offer an indication that the stresses and strains of daily use necessitated extensive periodic repairs and refurbishment (WSHC 2515/403/0352,/0353,/0354, March 1933).
- 5.2.6 In October 1946 the Great Northern Board authorised the expenditure of £6,000 to replace No. 4 engine turntable with a model to be supplied by Cowans Sheldon Ltd of Carlisle (TNA RAIL 250/62: 106). The move appears to have been a reflection of the fact that despite the frequent repair and refurbishment of the turntables over the preceding decades, the four Ransomes 65' engine turntables were approaching the end of their useful lives.
- 5.2.7 It is not altogether clear whether the replacement of No. 4 turntable took place before nationalisation; however a drawing issued by the British Railways Western Region drawing office at Swindon in September 1949 indicates that the remaining turntables were also considered to be in need of replacement by that date (Figure 7). It was proposed to replace the north-west and north-east turntables with turntables of identical diameter while the south-west turntable was to be replaced by a turntable 70' in diameter (WSHC Drawing No. 128308, 23/09/1949)². On 26th

¹ Churchward's insistence upon the use of electrically driven engine turntables at Old Oak Common was somewhat ahead of its time. A British Railways inventory of Western Region steam MPDs (including Stourbridge, Tyseley and Wolverhampton) compiled c.1955 listed ten depots (the majority built during the Churchward era to a similar design as Old Oak Common, albeit on a smaller scale), all of which still used manually operated 65' turntables (TNA AN 7/188; Lyons, 1978: 6-7).

² It is likely that the fourth (south-east) turntable had already been replaced by this date. Drawing No. 128308 indicated that the south-west and north-west turntables were numbered 1 and 2 respectively, suggesting that the remaining two had originally been numbered nos. 3 and 4. However the north-east turntable was labelled no. 10, suggesting that it may have been replaced some years earlier. This may account for the high expenditure

June 1951 British Railways placed orders with Cowans Sheldon Ltd for two 65' articulated engine turntables (Order Nos. 9707 and 9708) and one 70' articulated engine turntable (Order No. 9709). Cowans Sheldon supplied engineering drawings of the two electrically-driven 65' models in April 1952, with those of the electrically-driven 70' example following eight months later (WSHC 2515/406/0908, 18/04/1952; WSHC 2515/406/1414, 31/12/1952; see Figure 8). A drawing issued later that the decade suggests that all three had been replaced by 1958 (WSHC 2515/403/2195, 14/03/1958; see Figure 9). While the 65' turntables were all removed when the locomotive depot was converted into a diesel MPD in the mid-1960s the 70' example was retained and has survived to the present.

- 5.2.8 A drawing of the 70' turntable supplied by Cowans Sheldon indicates that the device was capable of both manual and electric operation. A 12½ hp x 945 rpm electric motor with a current supply of 400 volts was to be supplied by Crompton Parkinson Ltd. The motor's output was considered sufficient to rotate the turntable with its maximum working load through 180° in 32.5 seconds, an operation that would take 2 minutes and 20 seconds by hand.
- 5.2.9 The contract drawing (Figure 8) indicates that the turntable was to be built of a steel frame supporting a timber deck of 3" thick planks, which would completely cover the turntable pit. This turntable rotated by means of four 4' guide wheels, each of which had a cast iron centre and a rolled steel tyre, which projected above the deck. The diameter of the turntable guide track was 33' 4".
- 5.2.10 The British Railways modernisation programme of 1955 established a timetable for the conversion of selected steam locomotive depots into diesel MPDs. While many steam depots were surplus to future requirements and were therefore earmarked for closure, the association between Paddington and Old Oak Common guaranteed the survival of the latter into the diesel era as a depot for new diesel-hydraulic locomotives (TNA AN 90/87, February 1958). The introduction of the diesels would render whole areas of the existing depot such as the coal stage redundant, while the new diesel servicing regime meant that extensive covered accommodation at the engine shed was also surplus to requirements (TNA AN 8/17, 1957: 1; TNA AN 91/13, 1965: 2).
- 5.2.11 Preliminary plans for the conversion of the depot were issued in the early 1960s (WSHC 2515/410/1781, 1962). Demolition of the engine shed began in March 1964, although it was not until the following March that the last steam locomotive left the depot (Lyons, 1978: 55; TNA AN 91/13, 1967: 2). The 70' turntable was retained, while the three 65' turntables were removed along with their associated track and their pits filled in to leave no trace of their previous locations.
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upon unspecified turntable 'repairs' in 1919. The south-east turntable was labelled no. 61, suggesting that it had been replaced more recently (i.e. after the replacement of No. 4 turntable was authorised at the end of October 1946). A drawing of the Engine Shed dated 1958 indicated that following the replacement of the south-west, north-west and north-east turntables in 1952-3, they were numbered 505, 74 and 78 respectively, with no. 61 having been retained in the south-east corner (WSHC 2515/403/2195, 14/03/1958).



- 5.2.12 The new diesel depot was opened on 20th October 1965. The depot offered facilities for the full maintenance of 70 mainline and 25 shunting locomotives, with daily servicing for 65 locomotives (TNA AN 91/12, 1965). Servicing took place at the new servicing shed, a single storey structure with three through roads, which could accommodate two mainline locomotives simultaneously (TNA AN 91/13, 1967: 2). This was located directly on top of the site of the south east turntable which meant that locomotives could pass through the servicing shed to the 70' turntable beyond (Figure 10, Plate 2).
- 5.2.13 This arrangement remained largely unaltered until the close of the depot in 2009 and is shown on an Ordnance Survey map of 1991 (Figure 11). The basic structure of the turntable remained the same since its installation with only a reduction in the size of the turntable deck and an updating of the electric power unit.

6 TURNTABLE DESCRIPTION

6.1 Turntable Track and Pit

- 6.1.1 Located in the south-west corner of Churchward's original Engine Shed, the Cowans, Sheldon & Co Ltd turntable was 70' in diameter and installed in 1952-3 as a replacement of the original Ransomes 65' turntable in this location. A plan drawn in 1949 shows that twenty-eight tracks radiated outward from the original 65' turntable, which interconnected with the neighbouring turntables to the north and east, while a single track to the south entered through the south wall of the Engine Shed linked the turntable directly to the track network to the east (Figure 7).
- 6.1.2 A plan of the engine shed from 1958 indicated that the new 70' turntable had inherited exactly the same track layout as that which had serviced its predecessor (Figure 9). The track layout for the three 65' turntables also remained unchanged from 1949. Following the demolition of the Engine Shed in 1964 and the removal of the other turntables the 70' turntable stood alone and a new arrangement of track was laid to it (Figure 10). Additions included a second direct access to the rail network from the north side, while three tracks connected the turntable with the new Diesel Maintenance Shed just to the east.
- 6.1.3 This arrangement remained largely unaltered until the present, although a modern Ordnance Survey map suggests that several of the short radiating sidings from the turntable had been removed by 1991 (Figure 11, Plate 3). On the south-west side of the turntable two sections of track had been shortened to such an extent as to render them useless (Plate 4). These rails terminated at an arched metal stopper that prevented the accidental use of the track with the possibility of derailment, if the turntable had been incorrectly aligned (Plate 5).
- 6.1.4 The turntable was formed of a circular pit with a concrete floor that gently sloped down to the centre. The outermost metre of the pit base was close to horizontal with just enough of a slope to shed rainwater and it is here that the circular turntable track/guide rail was located. This rail was seven centimetres wide and was supported by three different types of fixing (Figure 8 and Plate 6).
- 6.1.5 The large flat pads of the rail mounts were probably of different types, some of which appear to have been reused, perhaps from the three turntables removed in the mid-1960s. These were not all of one phase and date and so it is likely that different types and ages of mount were available from a pool of potentially recyclable material. The circular turntable track is of a flat bottomed type but the track of the sidings at ground level leading to the turntable is bullhead type with a flange on the base of the same width. This would suggest the circular turntable track is later than the siding track, which was probably relaid when the turntable was installed.
- 6.1.6 The side walls were constructed from twelve courses of red brick and approximately one fifth of the pit wall had been repaired and was covered with a cement render. The top of the inside face of the turntable pit wall was protected by a metal plate approximately 20cm high and 1.5cm centimetres thick (Plate 7). Centred between each pair of rails was an inserted steel plate with an oval hole in the side of the pit wall (Plate 8). This was to receive a locking bolt that held the turntable in position and kept the track aligned for the locomotive to safely pass

over. Behind the metal edging plate the ground was consolidated with a wide band of concrete.

- 6.1.7 The turntable pit edging plate had small sections removed where the track joined the turntable. Very close to the edge the tracks were supported by a 'chair' that was bolted to the sleeper with the rail sitting in the chair. Sprung steel keys or occasionally wooden wedges were then driven in between the chair and rail to hold it in place. The last chair before the turntable was protected by an angled vertical metal plate on either side which looked to have been fabricated on site. This formed an edge to the concrete ground and was covered by a metal plate on each side of the rail that had been painted yellow (Plate 9).
- 6.1.8 On both the north and south side of the pit base there were sections of concrete nearly 3m square that did not slope down to the centre but remained horizontal (Plate 10). The purpose of these was not clear as there was no evidence of any fixtures or fittings. However, they may have been used as a level base below the turntable for maintenance or even installation, as they proved to be of considerable use when lifting and removing the turntable.
- 6.1.9 In the centre of the turntable pit was a raised cylindrical concrete base to which was bolted the main pivot of the turntable platform (Plate 11). This was flat-topped and along with the four turntables wheels supported the weight of the rotating turntable.

6.2 The Turntable and Turntable Superstructure

- 6.2.1 The basic construction of the turntable was relatively simple, consisting of two large parallel composite I-beams. Each had a rail laid on top, were internally braced and rotated about a central pivot. These beams had riveted upper and lower plates with supporting flanges on both the outer and inner faces. The two beams were the same height for most of their length, while at either end the base plate was angled upward narrowing the beam where diagonal horizontal bracing I-beams were angled outward to support the axles of the four wheels (Plate 15).
- 6.2.2 These wheels projected above the surface of the turntable deck and were protected by an arched steel cover that was fitted with a small sliding inspection panel. Two of the wheels were used to drive the turntable. One was used for manually powered operation and the other at the opposite end of the turntable was driven by electric power. The two main beams were braced internally with horizontal and diagonal L-shaped members and on either side of the main pivot there were larger vertical supporting plates also riveted to the main beams creating a strong, box section (Plate 12).
- 6.2.3 The central pivot was a large steel bell-shaped structure that was fixed to the cylindrical concrete base with eight bolts (Plate 13). Although not visible, manufacturer's drawings show that the top of this pivot structure was domed and a steel T-section sat snugly on top of this and was able to rotate freely (Figure 8). The T-section was connected to the two I-beams with a heavily engineered boxed frame with massive vertical bolts. The space between the rails of the turntable deck was covered by a number of metal plates. These were not fixed in place and could be easily lifted for inspection, access and maintenance (Plate 14). The rest of the deck on either side of the turntable track was formed of 3" thick timber sleepers. The



sleepers were supported by a steel frame built out from the sides of the turntable main beams (Plates 10 and 11).

- 6.2.4 Manufacturer's engineering drawings indicate that the deck was intended to extend across the entire turntable pit with three small supporting wheels on either side (Figure 8). The date of the reduction of the deck to its present size is unclear, but surviving elements of the supporting deck structure correspond to those shown on original drawings of a fully enclosed deck, suggesting that such a reduction did indeed take place and it was not installed in its present condition. On the same side of the platform at either end the platform was slightly wider to provide space for the turntable controls. At one end the controls comprised a manually operated (hand cranked) drive system and at the other were the controls for an electrically operated system.
- 6.2.5 The manually operated drive was operated by two linked horizontal handles on either side of a central gearbox housing (Plate 16). A metal plate on the side of this housing had been impressed with the makers' name and date of manufacture (Plate 17),

COWANS, SHELDON & CO. LTD.

9709 CARLISLE. 1953

PAT. APPN NO 15161/33

- 6.2.6 Next to this plate was a direction of movement indicator that either extended from this side of the housing when the turntable rotated in a clockwise direction, or retracted and extended from the other side of the housing when moving anticlockwise. A very similar example of manually operated turntable originally installed in the Perth New Yard was donated by the Yard's owners EWS Railways to the Scottish Railway Preservation Society (SRPS) Bo'ness in 2008 (online at: <http://www.railbrit.co.uk/location.php?loc=Perth%20New%20Yard>; also see: <http://www.srps.org.uk/index.html>). This turntable featured an identical hand-crank mechanism, although the Perth example was in a better state of preservation. Whilst the reverse side of the manually operated gearbox housing to the maker's plate was blank, the Scottish example had a plate embossed with the words:

POINTERS INDICATE DIRECTION
OF TURNTABLE WHEN USING
HAND GEAR
WARNING HAND GEAR REVERSE
LEVER MUST NOT BE MOVED
WHEN TURNTABLE IN MOTION

- 6.2.7 The horizontal 'hand gear reverse handle' was found below the location of this plate in both examples. Below this handle was a larger vertical lever rising through the floor of the deck and attached to the side of the hand cranked drive housing. The operation of this lever changed the use of the turntable from manual to electrically powered operation. The hand cranks turned a vertical steel drive shaft

which descended through the housing to below the deck, where it transferred torque to the turntable drive wheel via a simple gear arrangement (Plates 18 and 19). The I-beams of the supporting framework for this mechanism were embossed with the maker's stamp 'Dorman Long Middlesbrough'.

- 6.2.8 Power for the electric drive motor of the turntable was provided by a cable raised above ground level on the north and south sides of the turntable on two slender 'A' frames (Plate 20). The positioning of these meant the loss of two track sidings. Across the centre of the turntable was an arched framework of the same L-shaped steel members as the side 'A' frames. This framework appears to have superseded the original 'collector column' supplied with the turntable in 1953, although it performed the same function as its predecessor (see Figure 8). The 'A' frames were cast with the makers name 'Cargo Fleet England', a steel manufacturer based in Middlesbrough. The power cable was passed from a box on the south side of the turntable up the 'A' frame on this side, along a steel cable to the centre of the gantry and then down the side of the framework to the underside of the platform where it ran to the control booth (Plate 21). It is conceivable that the original collector gear and frame were replaced around the time that the engine shed was demolished and the depot converted into a diesel MPD in the mid-1960s. Given that these works necessitated the conversion of the turntable from an internal to an external feature, it is likely that changes were made to the way in which electrical power was delivered to the turntable.
- 6.2.9 The control booth was a small timber-framed structure with large windows in all elevations and a flat roof (Plate 22). Like much of the superstructure of the turntable, the booth was painted in English, Welsh & Scottish Railway (EWS) livery. The booth was accommodated on an area of deck slightly larger than that which accommodated the hand-crank mechanism, which extended out from the parallel areas of deck on either side of the turntable track. The booth is unlikely to be original to the installation of the turntable (it is not shown on Figure 8) and the control panel within the booth was also a more recent addition, suggesting that the motor may have been replaced as well (Plate 23 and 24). It is reasonable to assume that the 'collector' gear and supports were replaced at the same time.
- 6.2.10 A plate indicated that the control panel was manufactured by Automation International Ltd and supplied by Clarke Chapman Services Ltd, Wolverhampton. Also in the booth was a transformer and a large lever extending up from below the deck and this is likely to be the same manual to electrically powered operation lever found at the other side of the turntable. Between the booth and the turntable track was a hinged metal cover over a hole in the deck which gave access to the electric motor below. The maker's plate on this motor was worn and only the inscription 'K.R.N. CLASS' was discernable.
- 6.2.11 Inspection of the underside of the deck below the operator's booth showed that minor modifications had been made to the framework housing the electric motor, supporting the hypothesis that suggested that the electric power and control system had been updated at some point during the operational lifetime of the turntable (Plate 25). The original engineering drawings supplied by Cowans, Sheldon & Co Ltd appear to show that the turntable as supplied was fitted with a second hand-crank mechanism in the vicinity of the present operator's booth with additional levers to operate the electric motor housed below (Figure 8). It is unclear when this was removed and the electrical system updated. Like the manually operated drive system, the electrically powered system was connected to a single drive wheel that had an integral toothed inner ring almost the same diameter as the wheel itself (Plate 26 and 27).

7 CONCLUSION

- 7.1** In 1905 George Jackson Churchward set out to ensure that the new Great Western locomotive depot at Old Oak Common was fitted with the latest electrically operated plant and machinery. The engine shed contained four 65' electric locomotive turntables supplied by the prolific Ipswich-based manufacturer Ransomes and Rapier. Of the four original Ransomes turntables, the north-east example appears to have been replaced with a new model of the same diameter c.1919, while the example in the south-east corner was likewise replaced c.1946. In 1952-3 the north-east and north-west turntables were replaced with 65' diameter models supplied by Cowans, Sheldon & Co Ltd of Carlisle, who also replaced the turntable in the south-west corner with a new 70' model the same year. The new 70' turntable was fitted with both manually and electrically powered drive systems, capable of rotating the turntable with its maximum working load through 180° in either two minutes and twenty seconds or thirty two and a half seconds respectively.
- 7.2** When the British Railways modernisation programme reached Old Oak Common in the mid-1960s it was decided to convert the steam locomotive depot into a diesel MPD. The conversion necessitated the demolition of the old engine shed and the removal of the three 65' turntables, one of which made way for the new diesel servicing shed. Despite this disruption the 70' turntable in the south-west corner of the former engine shed was retained and a through track connection made with the new diesel servicing shed in the south-east corner.
- 7.3** This arrangement appears to have remained unaltered until the closure of the depot in 2009. The 70' turntable remained in use until the depot closed with relatively minor alterations, such as the reduction in the size of the timber deck and the updating of the electric drive motor. The latter modification necessitated the removal of the second manually operated (hand-cranked) drive and a number of changes to the superstructure of the turntable, including the addition of a small booth containing the electric drive motor controls and the replacement of the original collector column. The DDBA of the Crossrail Old Oak Common Worksites identified the turntable as an asset of regional significance. The results of the present recording exercise substantiated this finding, providing a more detailed insight into the turntable's structure, mechanism and the changes that have been made to it over the last five decades.
- 7.4** It is recommended that an archaeologist is present on site to observe the lifting of the turntable and that a brief supplementary photographic record is made of the turntable pit after the turntable has been removed. An engineering drawing issued in 1964 of the new single storey diesel servicing shed (presently the Diesel Refuelling Maintenance Shed) built on the site of the south-east 65' turntable indicates that elements of the pit and foundations may have survived archaeologically beneath the present building (TNA AN 91/13, 1967: 2). It is recommended that any archaeological remains of these foundations identified during the Watching Brief phase of works are compared with those of the present 70' south-west turntable in order to enhance understanding of these important elements of early 20th century railway depot design.



8 ACKNOWLEDGEMENTS

- 8.1 Pre-Construct Archaeology Limited would like to thank [REDACTED] of Capita Symonds Ltd and Crossrail Ltd for commissioning the project.
- 8.2 The authors thank Charlotte Matthews for project management. Thanks are also given to Kari Bower for her on site recording, Strephon Duckering for his photography and Mark Roughley and Amanda Hayhurst for the preparation of the illustrations in this report. This report was written by Malcolm Gould (Turntable Description) and Guy Thompson (Historic Background and other sections).



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10 ADDENDUM

OLD OAK COMMON WORKSITES NON-LISTED BUILT HERITAGE RECORDING OF 70' LOCOMOTIVE TURNTABLE.

10.1 INTRODUCTION

- 10.1.1 As an adjunct to the non-listed built heritage (NLBH) recording report Pre-Construct Archaeology Ltd was commissioned by Crossrail Ltd to monitor and record the dismantling and lifting of the 70' Cowans, Sheldon & Co Ltd turntable at Old Oak Common Depot, London Borough of Hammersmith & Fulham NW10. The dismantling and lifting of the turntable was undertaken by Beck and Pollitzer Engineering Ltd between 11th October 2010 and 5th November 2010. The turntable was then relocated to Swanage and donated to the Swanage Railway Trust.
- 10.1.2 Crossrail has established procedures relating to the recording of NLBH assets that "will be, or have the potential to be, totally or partially demolished, damaged or removed as a result of Crossrail works" (Crossrail, 2009a:3). The report has been written in accordance with the above procedure and with guidance on the recording of historic buildings published by English Heritage (English Heritage, 2006).

10.2 METHODOLOGY

Aims and Objectives

- 10.2.1 The aim of the watching brief was to monitor and record the dismantling and lifting of the 70' Cowans, Sheldon & Co Ltd. turntable. This was undertaken in order to provide a better understanding of the turntable as hitherto unseen elements were to be exposed during the dismantling process. A lasting record was then to be compiled and the results disseminated.

On Site Assessment

- 10.2.2 On-site assessment was undertaken by an historic buildings archaeologist (Malcolm Gould) from Pre-Construct Archaeology Ltd. This took place at significant stages throughout the process of dismantling and on the day the turntable and bogies were separated, lifted from the turntable pit and removed from site (11th/12th October, 2010, 21st October, 2010 and 3rd November, 2010). Written notes on the sequence and method of dismantling were compiled as were descriptions on previously unseen elements exposed during works. This access also allowed a greater understanding of the operation and modification of the turntable.
- 10.2.3 A more detailed photographic survey of the turntable was possible during the stripping and dismantling process and key features were recorded using a digital 35mm six megapixel camera (Plates 28-64). The lifting of major turntable components out of the turntable pit and onto waiting vehicular transport was also recorded photographically. The wider setting of the turntable and its proximity to



original 1905 buildings were recorded. An illustrative selection of these photographs was added to the previous photographic illustrations and can be found in Appendix 2 of this report. A register of additional photographs (digital films D4-7) was compiled and added to the previous register included in this report (Appendix 3).

- 10.2.4 Copies of original turntable drawings (Figure 8) were supplied to the contractor to more fully inform the work of dismantling and lifting. A scale drawing of the turntable by Pre-Construct Archaeology Ltd (Figure 12) was also used as a basis for a drawing recording the original location and number allocated to each timber plank prior to the lifting and removal of the turntable deck (Figure 13).

10.3 DISMANTLING AND REMOVAL OF TURNTABLE

Methodology

- 10.3.1 The overall strategy of the dismantle procedure was to dismantle and separate elements of the structure into as few sections as possible. This would not only make transportation easier, but would retain the integrity of the turntable mechanisms to allow for a more complete understanding by the rebuilding team (of the Swanage Railway Trust) and also to allow them to disassemble elements in a more forensic and considered way for restoration.
- 10.3.2 The practicalities of implementing this strategy meant that the two main beams of the turntable structure were largely unaffected. The turntable handrail, timber decking and its supporting framework were dismantled, the manual and electric drive units were separated from the structure as complete units and the two bogies remained intact with the turntable lifted off. All of these procedures were accomplished by either undoing or cutting the bolts that joined the sections. While the main elements of the turntable beams and bogies were constructed from riveted composite parts, no rivets had to be removed in the dismantling process. This would suggest the dismantling was a reverse of the construction process where the main elements were constructed off-site and then bolted together *in situ*.
- 10.3.3 The first task of the dismantle procedure was to have a flexible method of numbering those elements that were to be removed from the main structure so they could be conserved and later reinstated in their correct positions. It was decided that the turntable should be divided into two halves, a right and left side, as seen when standing at the electrically driven end of the turntable. Separate elements were given the prefix L or R and numbered sequentially. The position and number of all the planks of the timber decking were recorded on a scale plan of the turntable, which is included in this report (Figure 13).
- 10.3.4 The sections of circular turntable rail were numbered differently, the junctions of the rails were identified with the same number on the end of each rail to allow for them to be reunited and relaid in the same order. All major metal parts were numbered using a yellow aerosol spray paint and the timber deck planks were numbered with a wax crayon.

Turntable Deconstruction

- 10.3.5 Once the components had been numbered the dismantling process began with the removal of the deck handrail on both sides of the turntable. The bolts fixing it to the below deck framework were cut and in several places the tubular handrail and knee height bar were cut into manageable sections (Plate 28). Only one vertical post of the handrail had to be cut to remove it from the manual end of the turntable as it was welded to the main structure.
- 10.3.6 The two A-frames on either side of the turntable that carried a taught steel cable across the deck that supported the power cable (Plate 20) were cut at ground level and the D-ring restraining the steel cable on the outside of the frames was unbolted from a metal pin left buried in the concrete ground surface. The overhead gantry that carried the power cable to the electric drive unit had been bolted to the horizontal framework of the deck supporting structure and these were cut to remove this structure.
- 10.3.7 The majority of the metal plates covering the space between the rails were left *in situ*, apart from the central plate over the pivot and the plates at either end. The plate over the central pivot was removed to allow for a closer inspection of the central pivot (Plates 29 and 30). This confirmed that the design of the pivot was the same as that shown in the original manufacturer's drawings (Plate 31, Figure 8). This meant that the turntable beams could be simply lifted off the central pivot as expected, as the structure rested upon, and was free to rotate upon a ring of greased ball bearings in the top of the pivot column. Also noticeable was an aspect of the construction of the turntable main beams not immediately obvious from the exterior. Both of the main composite beams were constructed from two sections joined at the same point adjacent to the central pivot on the manually operated side of the turntable. Removing the central metal deck plate over the pivot revealed the bolted, riveted and pegged method of joining these two sections.
- 10.3.8 The two metal plates between the rails at either end of the turntable were also removed for an inspection of the turntable structure. This confirmed that the two main beams were bolted on top of the wheel bogies at either end. Access to the internal structure of the turntable at this point would therefore be essential to sever the joining bolts and separate the turntable from the bogies. Access to the space between the turntable rails also revealed that the rails themselves were manufactured with '110A - BA – Workington – 1963' on them.
- 10.3.9 Once numbered the softwood timber planks were removed. Two were found to be broken beyond repair and their position was numbered, but marked as 'missing' on the record deck plan drawing (Figure 13). The timber superstructure of the electric motor operator's booth was also removed in one piece at this time with the control panel and disused transformer box (Plates 22 and 23).
- 10.3.10 The supporting framework below the deck was then removed on both sides by either undoing or cutting the bolts, with connecting plates being left attached to the main structure (Plate 32). Examination of this framework confirmed previous analysis that suggested it had been truncated. Horizontal members had been roughly cut to reduce the size of the deck from its original size completely covering the entire turntable pit. Additional L-shaped steel members had been bolted to the top of the original main horizontal deck support beams to provide new edges for the deck, retaining the timber planks in position.
- 10.3.11 The removal of the deck and its supporting framework left the manual and electric drive units exposed at opposite ends of the turntable (Plate 32). It also revealed that the two main beams of the turntable upon the two bogies, with a 45°

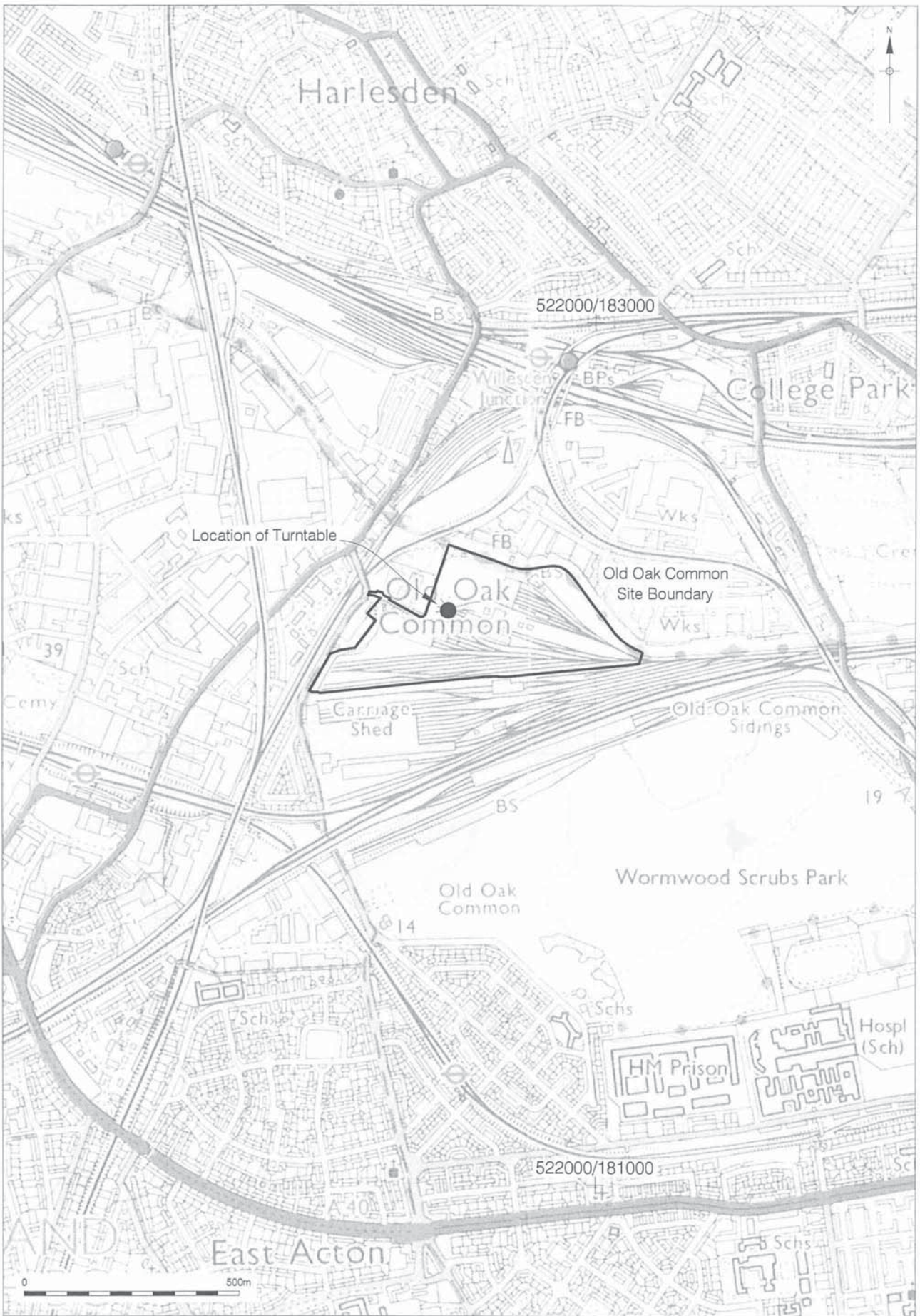
bracing I-beam between the two, represented the core elements of the turntable (Plates 33 and 38).

- 10.3.12 The manual drive unit was positioned on the outside of where the bracing beam joined the bogie, and was supported by similar beams creating a square between the end of the bogie and the turntable side (Plate 34). The manual drive comprised a simple gearbox which transferred torque from the hand cranks via a vertical drive shaft to the horizontal plane by a meshed sleeve pinion and spur wheel, the latter bolted to the inner face of the drive wheel (Plate 35). The operation of the manual/electric clutch lever was also seen to slide a collar along the horizontal drive shaft and thus disengage the manual drive gear. By unbolting the diagonal bracing and other supporting beams and the unbolting of the drive shaft from the top of the bogie it was possible to remove the manual drive system in one piece.
- 10.3.13 The locking bolt mechanism was also built to a straightforward design. The operation of a lever at the electric drive end of the turntable rotated a shaft that caused an arm to move in an outward direction, this pushed out a thick rectangular horizontal bar that engaged with a slot in the turntable pit wall (Plate 36). The addition of two levers and cables to this mechanism on the right side of the turntable transferred one movement to the other end of the turntable where the removal of the metal plate between the rails revealed exactly the same shaft, arm and locking bolt. The cables ran almost the length of the turntable and were left *in situ*.
- 10.3.14 In removing the electric drive unit to which the locking bolt lever was attached, the horizontal shaft from the lever had to be cut (Plate 37). As this shaft took only a quarter turn to operate the bolts and was therefore under little stress, it was considered unfortunate but necessary to sever this shaft instead of other parts that might prove more difficult to repair and involve a greater loss of original fabric. The loss in shaft length caused by the cut could be compensated by the minor inward movement of the shaft from its lever end without any misalignment of other operating elements
- 10.3.15 The electric power unit was removed intact as it was supported by the diagonal bracing beam and a right angle of beams between turntable and bogie which could be unbolted from the main turntable beam and the bogie (Plate 39). These beams bore the manufacturer's mark 'Dorman Long Middlesbrough'. The only other connection with either the bogie or the turntable beam was where the end of the drive shaft was bolted to the top of the bogie. While this drive shaft was very similar to the manual drive shaft the fixings to the bogie and supporting frame were different. It is possible they may have been renewed but it is likely they were originally of a different type due to the higher tolerances required by the electric motor. The bolts of this fixing (stamped 'SKF' and 'SNH 513-611') were cut and as the locking bolt lever shaft had already been identified as preventing the release of the electric drive unit and severed, the unit was free to be lifted clear (Plates 41 and 42).
- 10.3.16 Closer examination of the electric motor after its removal from the turntable structure allowed it to be identified as made by Crompton Parkinson Ltd, a 'KRN Class', 400 volt, 945 rpm motor 9881949. This had an oval disc applied to it with 'BR (W) 11651' impressed upon it. These specifications are the same as those identified on the manufacturers 'General Arrangement' drawing dated 31/12/1952 (Figure 8).

- 10.3.17 The disconnected transformer box that had been removed from the floor of the electric motor operator's booth was replaced by a larger vented white transformer box fitted below the deck (Plate 43). Removing the electric drive unit in one piece showed that this new part had been bolted to two steel members that were crudely welded to the original supporting frame. The drive mechanism itself was also much easier to examine once removed. The arrangement of the brake system and with its pedal operation and large disc with constricting collar was clear (Plate 44). The manual/electric operation clutch lever was painted yellow and retained its original enamelled 'CLUTCH LEVER' plate. It was seen to have been disconnected as the disengaging collar seen on the manual drive unit was absent. This modification most likely occurred at the same time as the removal of the hand crank system at this end of the turntable. The four vertical L-shaped members that supported the crank mechanism had been truncated at deck level and a plate fixed between them (Plate 45). The angled cog to receive the vertical shaft from the crank remained *in situ* and was now redundant. The locking bolt handle had a small arm attached to it that when rotated to lock the turntable would move and push an electric pressure switch to presumably act as a failsafe and cut the electric motor.
- 10.3.18 Once both the drive units had been removed the structure of the two turntable bogies became apparent (Plate 46). These were formed from two parallel composite beams strengthened in the centre with extra plates and with the wheels angled to fit the curve of the circular turntable track. These wheels were constructed from iron with steel rims and were perforated by six circular holes in the centre of a segment of the circle delineated by six raised spokes. Each segment also contained a further four much smaller holes, presumably to fulfil the same function as the larger one to lighten the weight of the wheel without any loss in rigidity or strength (Plate 47). Exposing the electric drive wheel to a greater extent meant it was more obvious that the toothed ring bolted to the inside face of the wheel was a replacement and it had the identifying mark 'C13 898' on it.
- 10.3.19 The rectangular housing for each wheel axle was cast with '70FT TT', referring to the size of the turntable and implying that these parts and wheels were specifically designed for this model and not reused or cannibalised from previous designs. These markings were not previously observed as they were on the outer side of housing, either directly facing the wheel and therefore covered in grease and oil or facing the turntable pit wall. Once removed from the pit, the markings on the cleaner side that had faced the wall were clear (Plate 60).
- 10.3.20 Prior to the separation of the turntable from the bogies the turntable was rotated so that it was aligned above the two flat areas of concrete on either side of the pivot. This enabled the main beams to be supported upon blocks of wood on a safe and level surface. Both bogies were likewise secured with blocks of wood and the two rows of bolts along the inner and outer flanges on the lower T of the main beams that connected the beams and bogies were cut. In so doing the turntable beams were freed and were jacked up to be lifted slightly clear of the bogies (Plates 47 and 48). This also allowed an assessment of the weight of the turntable beams to be made and to ascertain whether the turntable would lift unhindered from the central pivot.
- 10.3.21 A mobile crane was used for the final lift of the turntable and bogies and two 1 metre square steel pads were required beneath the stabilising, extended feet of the crane. This was due to uncertainty regarding the firmness of the ground, as many of the radiating tracks around the turntable had had open inspection pits which were now concreted over (Plate 49). Two metal sheets between the rails were removed

so that large slings could be placed around each beam at two points approximately a quarter of the way in from each end of the turntable (Plate 50). These were fixed to either end of a large tubular beam from either end of which the chains to the crane were attached. A long wheelbase lorry was positioned next to the turntable pit and the turntable beams were slowly lifted off their supporting wooden blocks. As expected they registered almost 22 tonnes and were effortlessly lifted onto the lorry (Plates 51-53).

- 10.3.22 Once secured, examination of the previously unseen end of turntable that had faced the pit wall revealed a rectangular slot for the locking bolt at the top, the diagonal internal bracing, the horizontal locking bolt shaft and connecting vertical arm and the bolt holes that connected to the bogies (Plate 54).
- 10.3.23 The circular central pivot was the next to be lifted and was unbolted from the eight securing bolts in its splayed base (Plate 55). These bolts were embedded in the circular concrete base of the pivot and may well have been secured by a steel ring within. The removal of the turntable revealed the top of the pivot and the ring of greased ball bearings that allowed 22 tonnes of metal beams to rotate after almost sixty years of use (Plate 56). An initial attempt to lift the pivot was delayed while the concrete around the base of the pivot was loosened with a large hammer drill. This may have been due to the weight on the pivot compressing the concrete beneath and resulting in it sinking very slightly into the base. The breaking of the 'seal' between the pivot and the concrete was successful and with a steel cable wrapped around the pivot it was lifted onto a lorry (Plate 57).
- 10.3.24 Both of the bogies were stable on their wooden blocks once the turntable was removed. The additional plates at right angles to the bogie beams that bolted to the turntable beams and continued along their underside for a short distance were noticeable (Plate 58). Each of the c.5-tonne bogies was slung with steel cables and lifted intact onto the same lorry as the pivot (Plates 59 and 61).
- 10.3.25 Following the removal of the turntable and bogies from the turntable pit the last of the eight sections of pit rail was cut free and lifted (Plate 62). The 'chairs' that held the rails in position were themselves each held in position by two bolts which were cut and the chairs removed and boxed for transportation. The larger of the chairs were stamped 'P&P' and '08' and all were formed of three parts. The upper, main part held the rail retaining clip and seated the rail, below this was a thin rubber pad sandwiched beneath a thin metal base plate. The turntable rails were lifted onto the same lorry as both of the bogies and following the turntable beams on their own lorry, the turntable left leaving Old Oak Common Depot after nearly sixty years of service (Plates 63 and 64).



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Figure 1
 Site Location
 1:12,500 at A4

- 1. SHUNTERS CABIN
- 2. NETWORK RAIL CABIN MAINTENANCE
- 3. CARRIAGE WASHING PLANT (BOMBARDIER)
- 4. UNDERFRAME CLEANING SHED
- 5. STEAM RAISING PLANT
- 6. DIESEL OIL PUMP HOUSE
- 7. DIESEL OIL OVERHEAD DELIVERY LINE
- 8. WATER TOWER
- 9. TEMPORARY METAL STORE
- 10. SAFETY STORE
- 11. OFFICES/PORTA CABINS
- 12. WATER SOFTENING PLANT
- 13. WATER TOWER (SPOT WATER)
- 14. DIESEL OIL OVERHEAD DELIVERY AREA
- 15a. LIFTING BAY AKA LIFTING SHOP OR MAINTENANCE SHED
- 15b. LIFTING BAY AKA THE FACTORY OR COPPERSMITHS SHOP
- 15c. BOILER HOUSE - FACTORY INC. TANKS
- 16a. STORES
- 16b. STORES/OFFICES - PREVIOUSLY CANTEN, DATES 1926
- 17. NEW AMENITY BUILDING
- 18. OFFICES/PORTA CABINS
- 19. DIESEL OILING MAINTENANCE SHED
- 20. MESS ROOM PREVIOUSLY SAND FURNACE
- 21. BOILER HOUSE - PULLMAN SHED
- 22. PULLMAN SHED AKA CARRIAGE SHED, CARRIAGE PAINTSHOP, ELECTRICAL SHOP
- 23. LIFTING SHOP AKA CARRIAGE LIFTING SHED
- 24. SUMP/OIL INTERCEPTOR
- 25. DIESEL OIL TANK
- 26. SUB STATION B2
- 27. OUTLINE OF DEMOLISHED STEAM SHED
- 28. TURNABLE
- 29. BUNDED OIL TANK
- 30. TOILET BLOCK
- 31. DIESEL OIL OVERHEAD DELIVERY LINE
- 32. DIESEL OIL TANK
- 33. ASH SHELTER
- 34. FUEL OIL TANKS
- 35. SITE OF DEMOLISHED MASONRY ARCH TO SUPPORT RAISED TRACKS
- 36. SUB STATION B3
- 37. SITE OF DEMOLISHED BOILER HOUSE
- 38. MESS ROOM
- 39. MESS ROOM
- 40. CORPORATION SIDINGS
- 41. BUNDED TURNABLE PITS
- 42. BURIED SITE OF TRANSVERSE PIT
- 43. SITE OF DEMOLISHED WATER SOFTNER
- 44. SITE OF DEMOLISHED REFUSE DESTRUCTOR
- 45. SITE OF DEMOLISHED SAND FURNACE
- 46. SITE OF DEMOLISHED MESS ROOMS
- 47. DEMOLISHED COAL CONVEYOR AND WATER TOWER
- 48. DEMOLISHED COAL CONVEYOR LEADING TO COALING BUILDING
- 49. CONSERVATION AREA FORMERLY COAL STOCK PILE
- 50. TANK BASES TO PREVIOUSLY REMOVED OIL TANKS
- 51. SITE OF EMBANKMENT LEADING TO FORMER BOILER HOUSE
- 52. BUNDED OIL TANK
- 53. SITE OF DIESEL OIL TANK
- 54. DIESEL OIL TANK
- 55. COVERED WALKWAY TO REAR OF STORES
- 56. COVERED WALKWAY
- 57. GAS METER HOUSE
- 58. PIPE BRIDGE
- 59. SITE OF DEMOLISHED AIR RAID SHELTERS
- 60. STORES
- 61. BOUNDARY RETAINING WALL
- 62. BOILER WASHING PLANT HOUSE
- 63. BOILER WASHING PLANT HOUSE
- 64. BOILER PUMP HOUSE

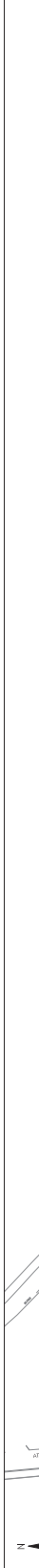


Figure 2
 Detailed Site Plan showing Turntable and Building Locations
 1:2,500 at A3

CONTRACT DRAWING NO. 3

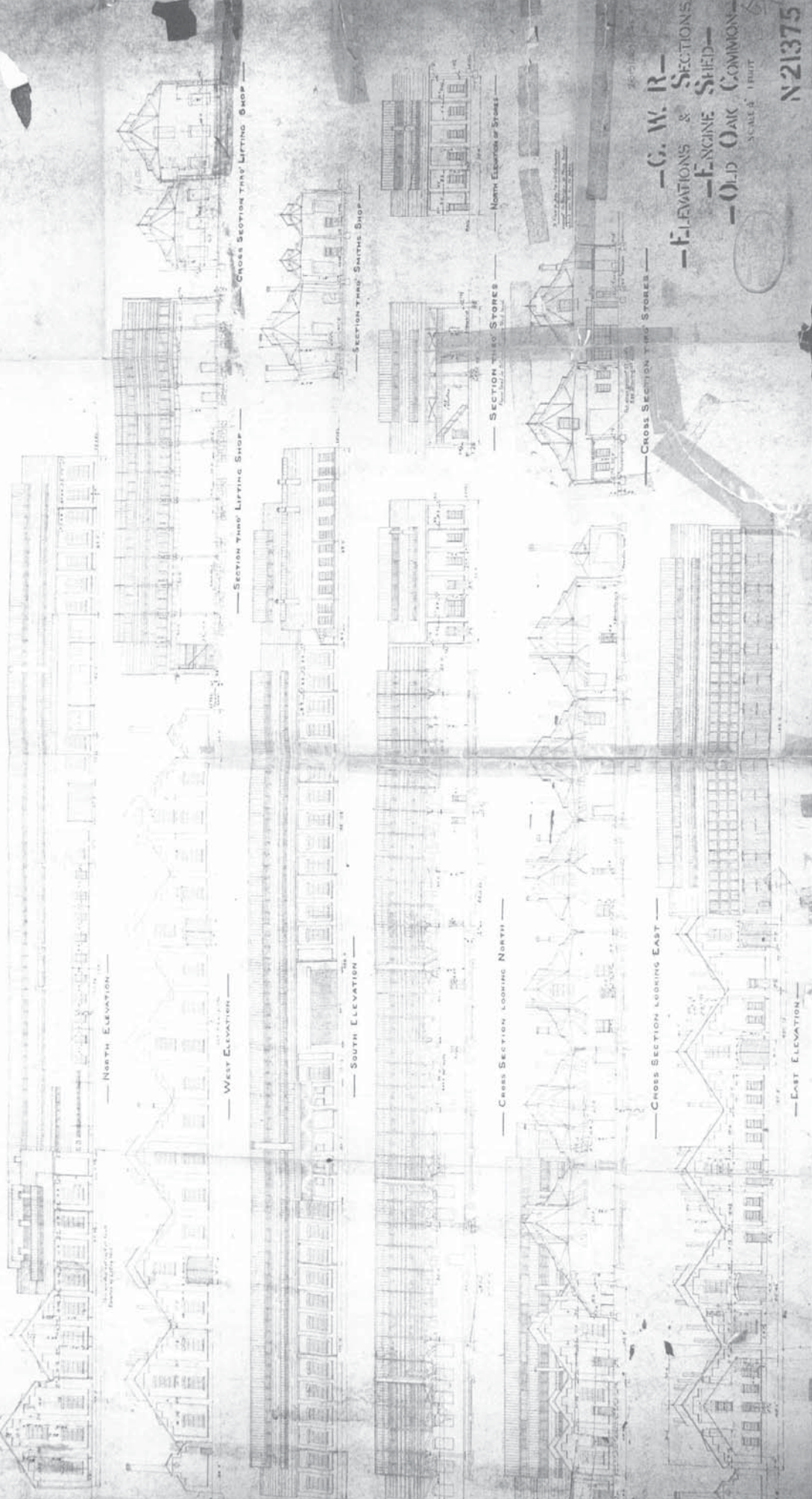
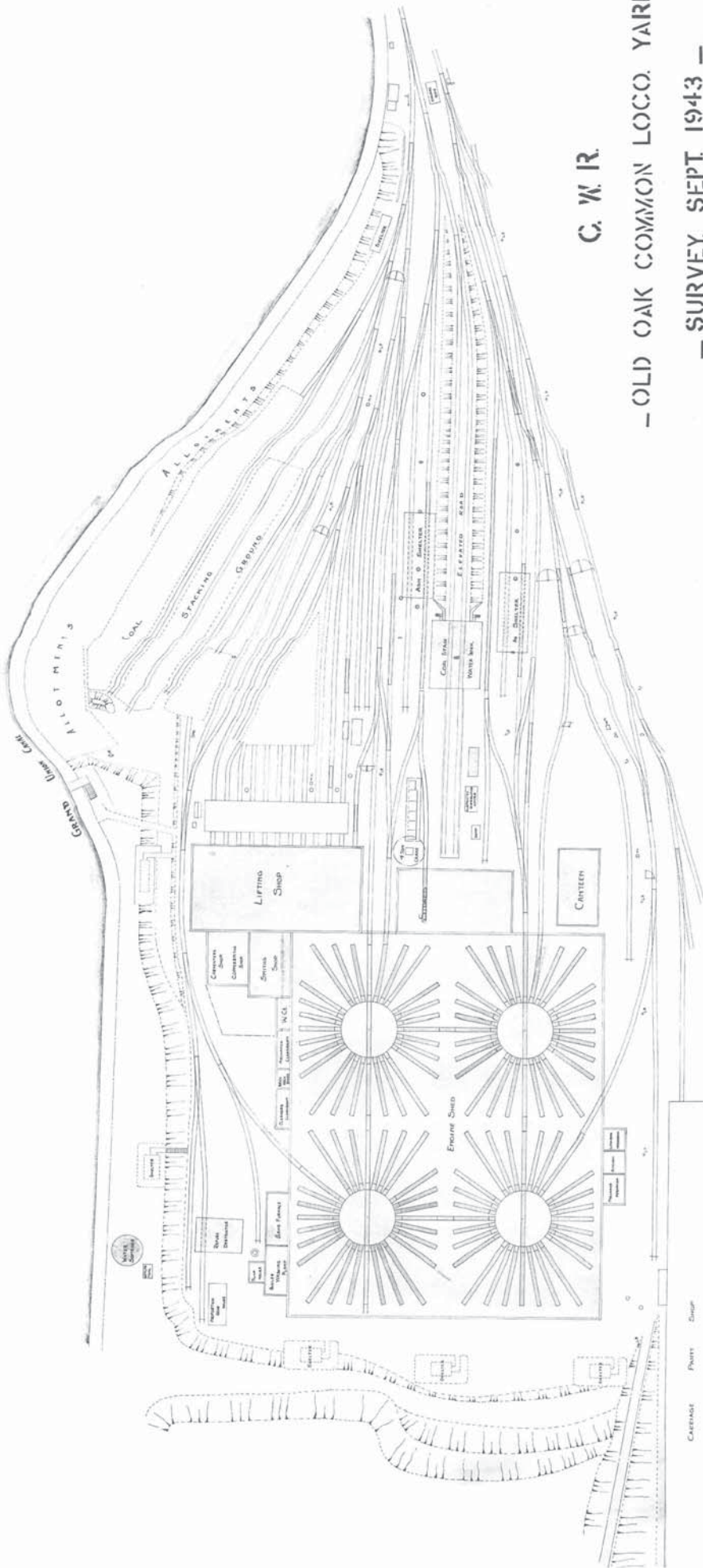


Figure 3
2515/409/0519 Sections and elevations of the Engine Shed, c.1903
not to scale



Figure 4
Ordnance Survey, Third Edition, 1914-16
1:4,000 at A4



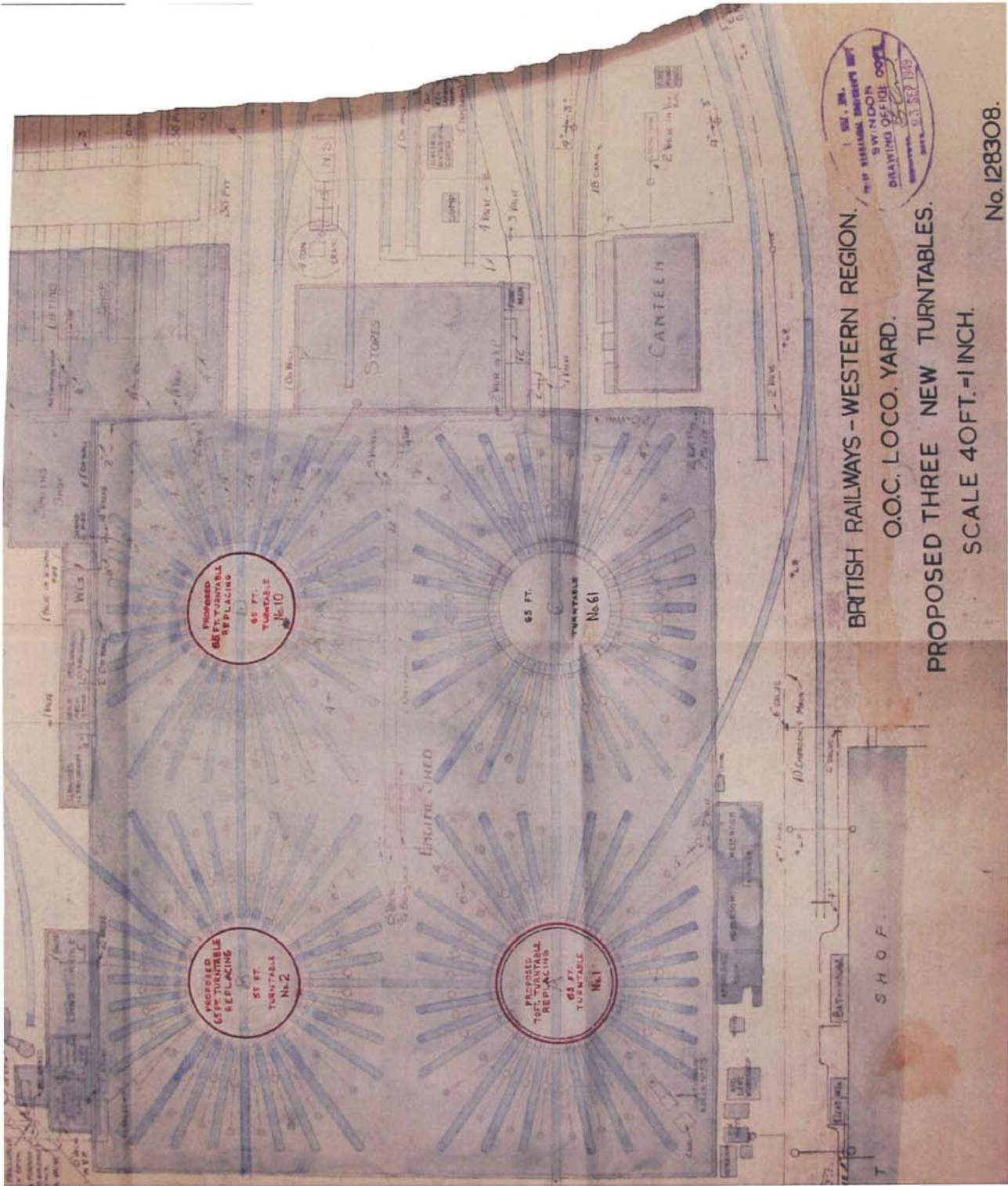


C. & W. R.

— OLD OAK COMMON LOCO. YARD

— SURVEY, SEPT. 1943 —

SCALE 40 FT = 1 INCH



BRITISH RAILWAYS - WESTERN REGION.
 O.O.C. LOCO. YARD.
 PROPOSED THREE NEW TURNTABLES.
 SCALE 40 FT. = 1 INCH.

No. 128308.

Figure 7
 WSHC 128308, Proposed new turntables, September 1949
 not to scale

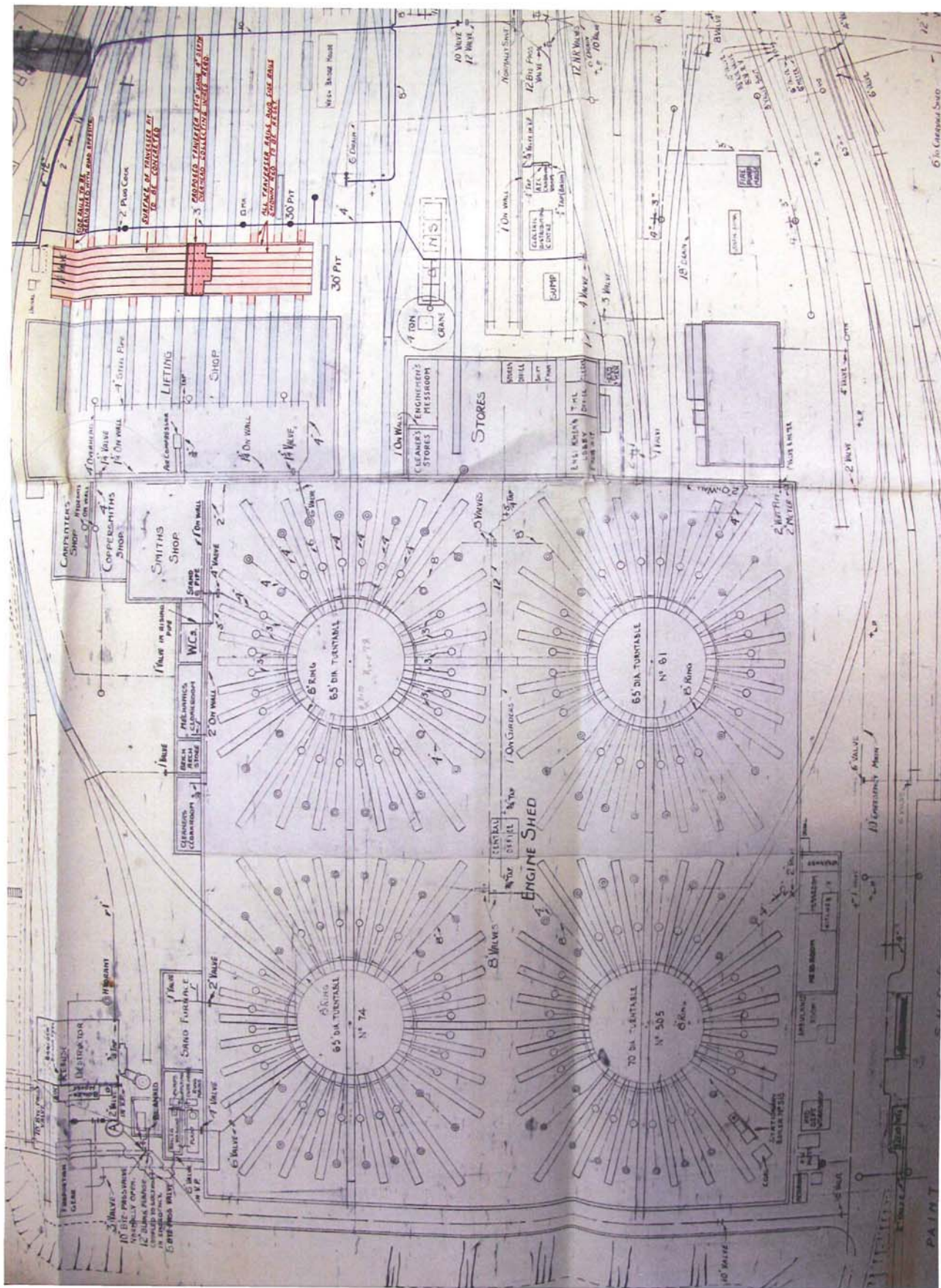


Figure 9
2515/403/2195 Engine Shed with new Traverser Table, 1958
not to scale

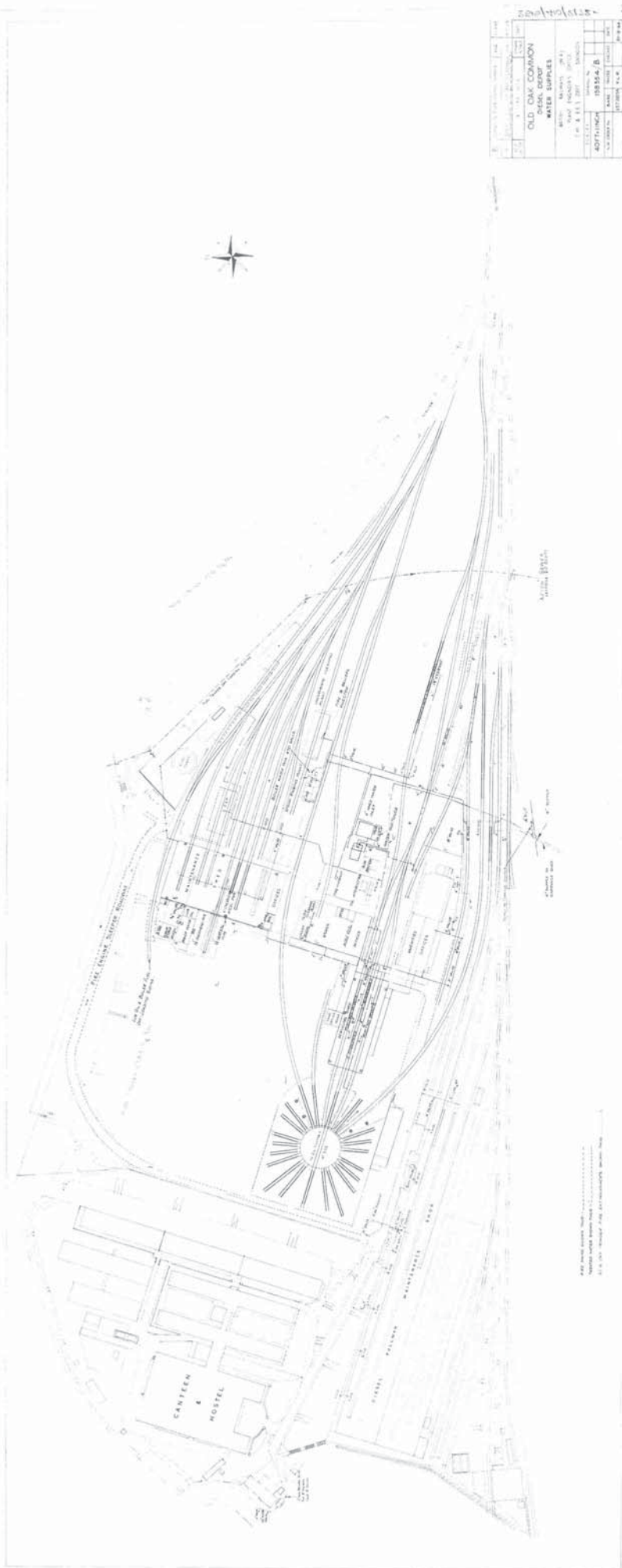


Figure 10
 WSHC 2525/410/2172 Old Oak Common Diesel Depot, December 1966
 not to scale



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Figure 11
Ordnance Survey, 1991
1:2,500 at A3

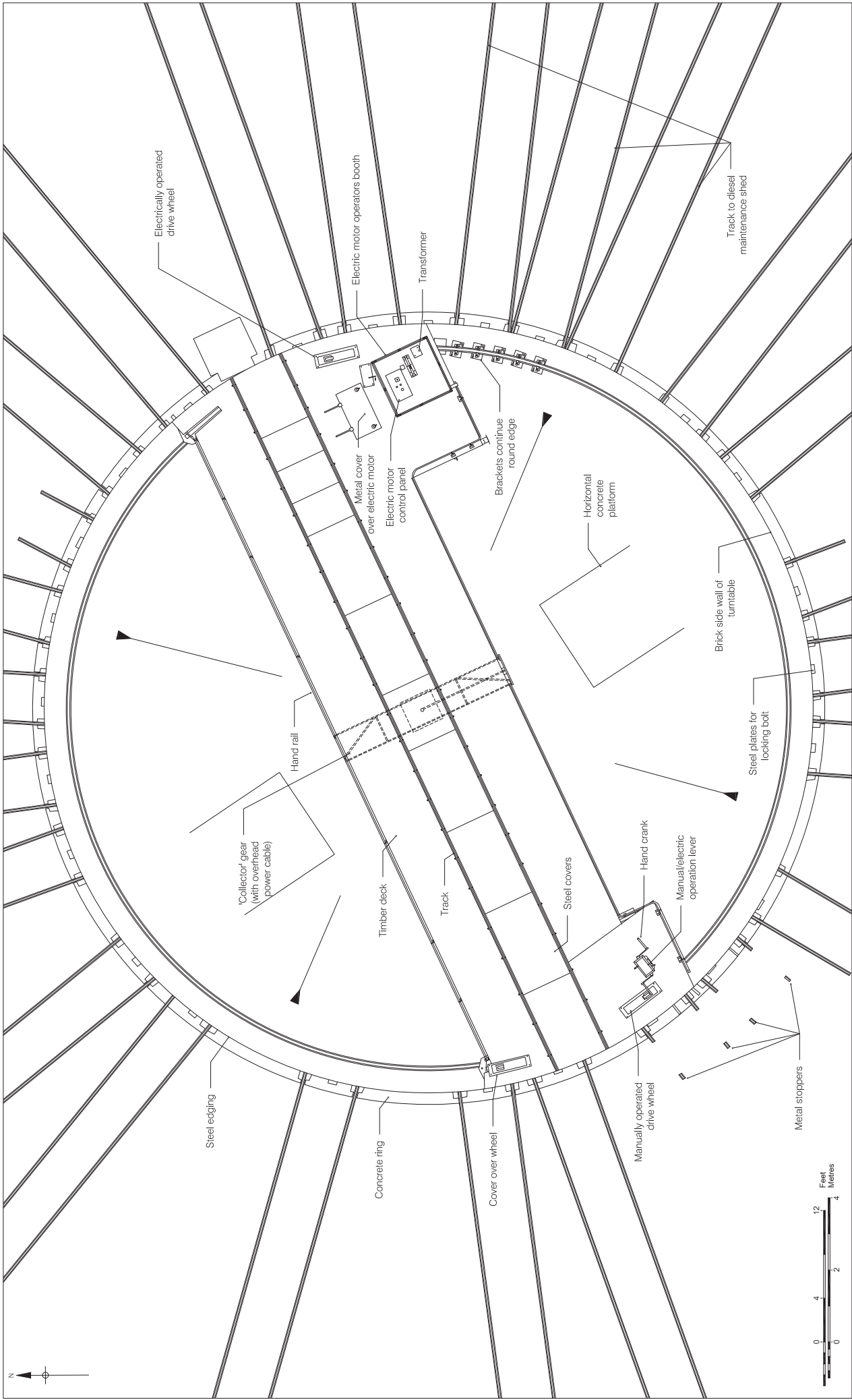


Figure 12
 Plan of Turntable
 (Surveyed 10-11/6/2010)
 Old Oak Common
 1:100 at A3

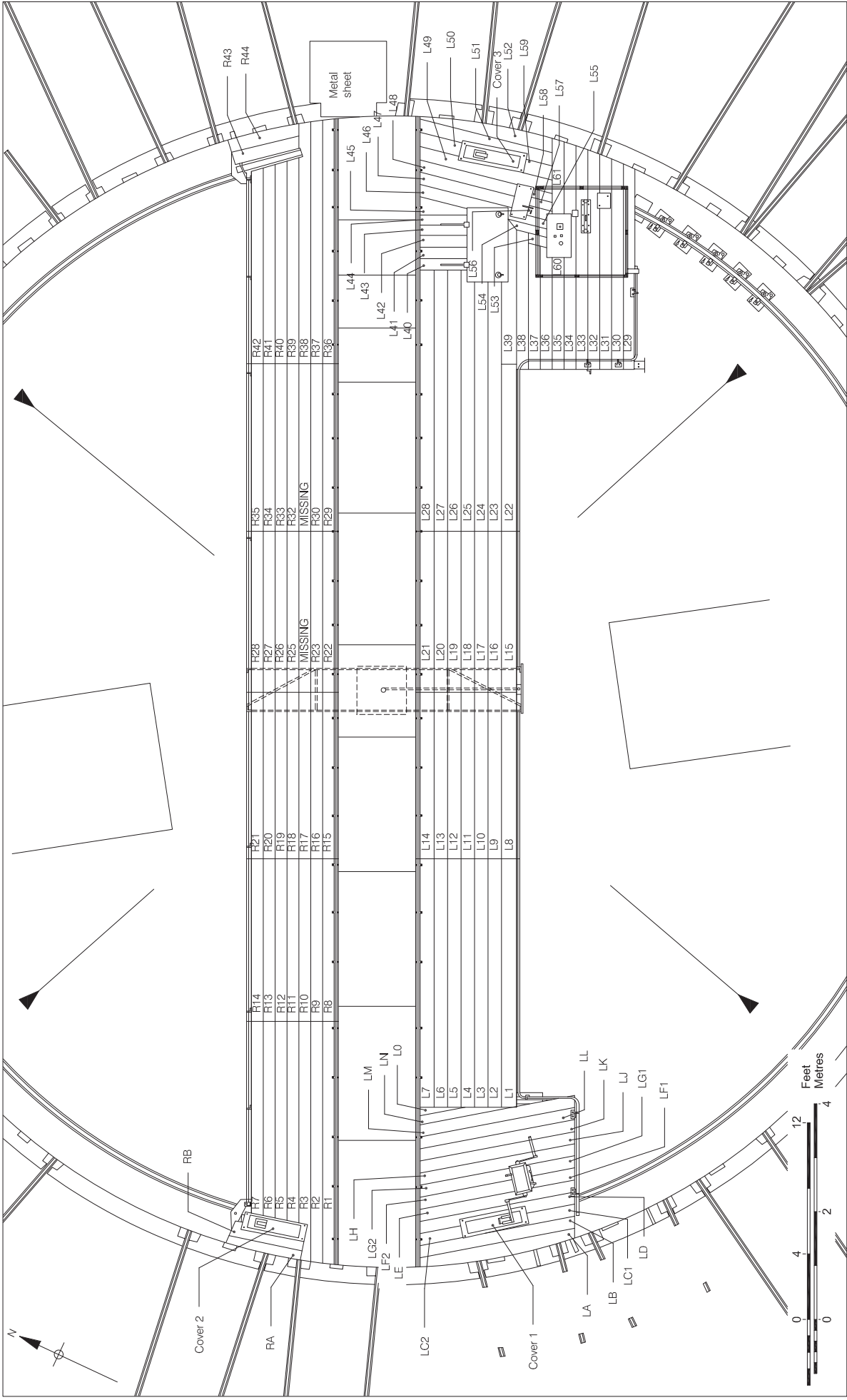


Figure 13
 Annotated Plan of Timber Deck
 Prior to Removal
 Old Oak Common
 1:100 at A4



Plate 3. Turntable viewed from the south-west with the Factory buildings beyond.



Plate 4. Turntable viewed from above, looking south-west.



Plate 5. Turntable platform with hand crank mechanism on right and operator's booth at far end. Turntable wheels are beneath the arched metal covers in the foreground.



Plate 6. Exposed turntable race wheel, platform edge and track.



Plate 7. Metal edged turntable pit with locking pin fittings and track.



Plate 8. Locking plate for turntable with hole for locking bar from turntable found in between all tracks, here shown with cover plate missing.



Plate 9. Junction of Engine Shed track and turntable deck at the bottom of the picture with covering metal plates removed, revealing metal side plates around rail retaining bracket.



Plate 10. Side of turntable showing circular concrete pad for central pivot and horizontal section of concrete on right above sloping base of turntable pit.



Plate 11. Underside of turntable showing supports for timber platform.



Plate 12. Underside of turntable between main beams showing central pivot.

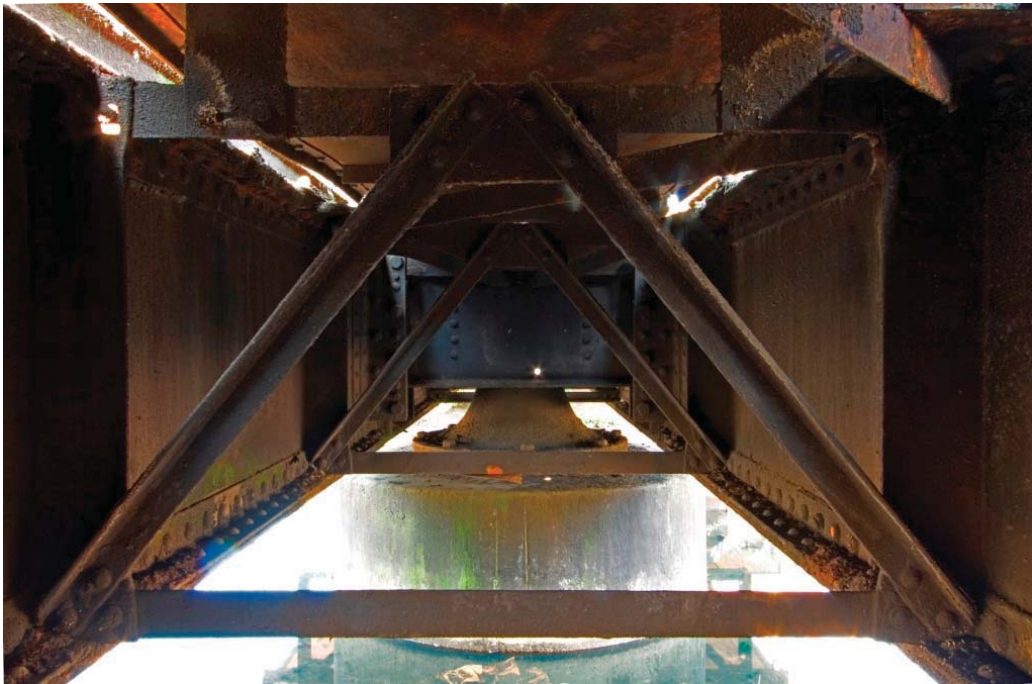


Plate 13. Underside of turntable between main beams showing horizontal and diagonal bracing and central pivot.



Plate 14. Underside of turntable between main beams looking toward outer edge, showing internal bracing covered by metal plates above fitted between the rails laid along the top of each main beam.



Plate 15. Turntable wheel, supporting structural elements and cables of locking bolt mechanism.



Plate 16. Hand crank mechanism with horizontal reverse lever and vertical manual/electric operation lever.



Plate 17. Maker's plate on hand crank mechanism dated 1953 with direction of movement pointer on left. The white painted wall beyond is the original south wall of the Engine Shed retained in the Sand Furnace building.



Plate 18. Turntable underside, showing gears with vertical shaft from the hand crank mechanism linked to a horizontal shaft and a turntable drive wheel. In front of the gears and extending upward through the deck is the electric/manual operation handle.



Plate 19. Turntable drive wheel linked to the hand crank mechanism. The horizontal girder in the foreground is marked with the maker's stamp 'Dorman Long Middlesbrough'.



Plate 20. Turntable viewed from the south. The arched 'collector' frame over the turntable was embossed with the makers name 'Cargo Fleet England' and carried a power cable for the electric drive motor.



Plate 21. Turntable platform and operator's booth looking south toward Sand Furnace and Pullman Shed Boiler House.



Plate 22. Operator's electric drive motor operator's booth on turntable platform.



Plate 23. Operator's booth, interior view.



Plate 24. Maker's plate on turntable control panel.



Plate 25. Electric drive motor on underside of turntable below operator's booth.



Plate 26. Detail of structural elements supporting electric drive mechanism.



Plate 27. Side-on view of electrically powered drive mechanism and turntable wheel.



Plate 28. Handrail being removed. In foreground is truncated deck framework beneath electric operator's booth that once extended to support a deck enclosing the entire turntable pit.



Plate 29. Top of turntable fixing above central pivot.



Plate 30. Metal plate removed revealing central turntable pivot.



Plate 31. Base of central pivot and large bolt of turntable structure.



Plate 32. Turntable (left side) with deck and deck framework removed.



Plate 33. Turntable (right side) with deck and deck framework removed. The connecting cables of the locking bolt system seen here running along the side of the turntable were left in situ.



Plate 34. Manual drive mechanism and supporting framework revealed after deck removed.



Plate 35. Detail of manual drive gearing, showing drive shaft, pinion and spur wheel.

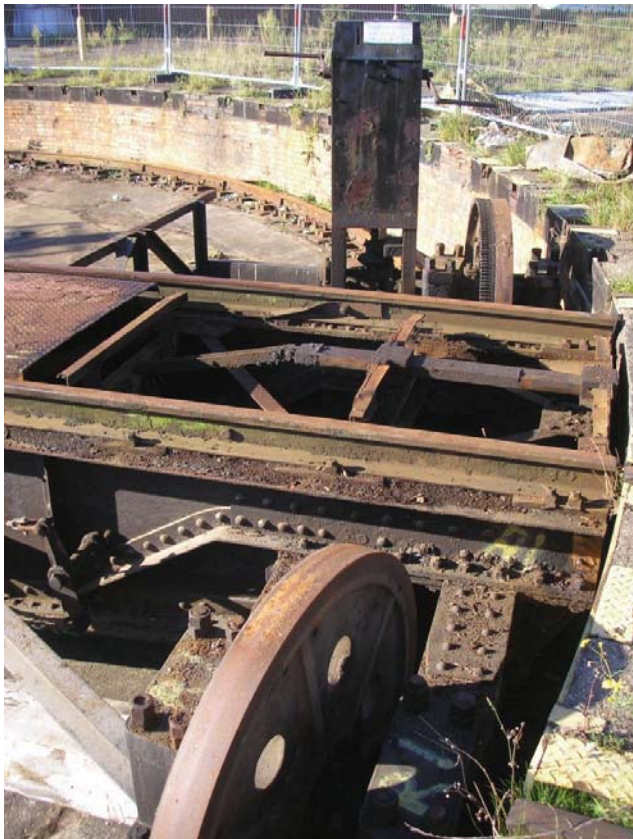


Plate 36. Hand crank and locking bolt exposed between turntable rails.



Plate 37. Locking bolt mechanism. The severed shaft on the left connected to the locking bolt lever which was left attached to the electric drive unit and removed.



Plate 38. Free wheel at hand crank end with diagonal bracing beam to bogie and steel rim to iron wheel. the



Plate 39. Electric drive unit exposed after deck removed.



Plate 40. Electric drive unit connected to drive wheel.



Plate 41. Electric drive unit being prepared for lifting.



Plate 42. Electric drive unit being lifted clear of turntable in one piece.



Plate 43. Electric drive unit and transformer in white casing. On the left is the locking bolt lever, brake pedal and the centrally located manual/electric operation lever.



Plate 44. Electric drive unit with circular brake disc on drive shaft in foreground.



Plate 45. Electric drive unit with diagonal bracing beam and locking bolt shaft in foreground.



Plate 46. Turntable with electric drive unit removed. The only component that required cutting for the separation was the locking bolt shaft which can be seen in the centre of the turntable side panel.



Plate 47. Electric drive wheel bogie secured with wooden blocks. The connecting bolts to the turntable main beam have been cut and the turntable itself jacked up slightly prior to lifting.



Plate 48. Manual drive wheel bogie secured with wooden blocks. The connecting bolts to the turntable main beam have been cut and the turntable itself jacked up slightly prior to lifting.



Plate 49. Mobile crane in position next to turntable pit, with steel pads beneath extended feet.



Plate 50. Turntable with straps being fitted in preparation for lifting.



Plate 51. Turntable being lifted clear of central pivot and bogies and registering a weight of 22-tonnes on crane.

22



Plate 52. Turntable being lifted out of pit and positioned above a waiting lorry.



Plate 53. Turntable being lowered onto lorry.



Plate 54. Previously unseen end of turntable showing rectangular slot for locking bolt at top, diagonal internal bracing, horizontal locking bolt shaft and connecting vertical arm and bolt holes for bogies.



Plate 55. Pivot and 'electric' drive bogie after turntable lifted off.



Plate 56. Greased ball bearings on top of central pivot.



Plate 57. Pivot being lifted from concrete base.



Plate 58. 'Manual' drive bogie after turntable lifted off.



Plate 59. 'Manual' drive bogie being lifted onto a waiting lorry.



Plate 60. Outer face of manual drive wheel with '70FT TT' cast into axle bearing housing identifying the specific use of this component on this size of turntable.



Plate 61. Turntable bogie being lifted out of turntable pit and onto a waiting lorry. Visible beyond are the brick gable ends of original 1905 Engine Shed buildings. The photograph is taken from approximately the same position as Plate 1.



Plate 62. Turntable pit rail being lifted.



Plate 63. Turntable on the back of a lorry leaving Old Oak Common Depot.



Plate 64. Bogies and turntable pit rail leaving Old Oak Common Depot after nearly sixty years of faithful on site service.





APPENDIX 3. PHOTOGRAPHIC REGISTER

SITE NAME: OLD OAK COMMON		SITE CODE: OOC10		PHOTOGRAPHER: S.DUCKERING (M.Gould Films D1-7)	
DATE	FILM TYPE		DIRECTION	IDENTIFIER	COMMENTS
	FRAME	FRAME & FILM NUMBER			
	Col. Slide	B/W			
11/06/10	1-3. 100			Photo mast	Working shot of photo mast next to turntable
11/06/10	4-6. 100	1-3. 102	E	Chimney on right	Location view of turntable
11/06/10	7-9. 100	4-6. 102	N	Trees on left	Side on view of turntable
11/06/10	10-12. 100	7-9. 102	NE	Turntable platform	Turntable platform and overhead electric cable gantry
11/06/10	13-15. 100	10-12. 102	SE	White metal plate	Detail of turntable hand crank patent badge
11/06/10	16-18. 100	13-15. 102	NNE	Turntable controls	Internal view of turntable control booth
11/06/10			N	Makers plate	Turntable electric controls makers plate
11/06/10	19-21. 100	1-3. 103	NNE	Turntable hatch	Electric turntable motor below platform
11/06/10	22-24. 100	4-6. 103	NNE	Red motor	Electric turntable motor detail under platform
11/06/10	25-27. 100	7-9. 103	WNW	Metal cogs	Detail view of hand crank mechanism under platform
11/06/10			NNE	Girder detail	Name stamp of girder manufacturer 'Dorman Long'
11/06/10	28-33. 100	10-12. 103	NNE	Booth on right	Side view of turntable and concrete pivot base
11/06/10	34-36. 100	13-15. 103	ENE	Diagonal bracing	Underside of turntable showing central pivot
11/06/10			WSW	Turntable platform	End of turntable platform with electric control booth
11/06/10			WSW	Turntable platform	End of turntable platform with electric control booth
11/06/10			SE	Turntable edge	Turntable wheel and its track
11/06/10			SW	Aerial View	Aerial view of NE quarter of turntable
11/06/10			SW	Aerial View	Aerial view of complete turntable
11/06/10			SW	Aerial View	Aerial view of complete turntable
11/06/10			SW	Aerial View	Aerial view of complete turntable
11/06/10			SW	Aerial View	Aerial view of complete turntable
11/06/10			NE	Turntable	Location view of turntable looking toward 'Factory'
11/06/10			SW	Rails	Turntable timber platform
11/06/10			NW	Foreground bush	Electric power cable gantry above turntable
11/06/10			SE	Metal post	Detail of makers stamp on gantry 'Cargo Fleet'
11/06/10			NW	Turntable edge	West side of turntable with hand crank
11/06/10			NE	Hand crank	Platform edge and hand crank system
11/06/10			N	Lever	Detail of hand crank to electric power lever

SITE NAME: OLD OAK COMMON		SITE CODE: OOC10		PHOTOGRAPHER: S.DUCKERING (M.Gould Films D1-7)	
DATE	FILM TYPE		DIRECTION	IDENTIFIER	COMMENTS
	FRAME	FILM NUMBER			
	Col. Slide	B/W			
11/06/10		Digital			
		8. D1	SE	Makers plate	Hand Crank makers plate
11/06/10		9. D1	NE	Booth	East side of turntable with electric operators booth
11/06/10		10. D1	E	Rails	Platform and electric operators booth
11/06/10		11. D1	S	Ladder	Turntable wheel and rail
11/06/10		12. D1	E	Rail end	Rail end where it meets turntable edge.
11/06/10		13. D1	W	Locking hole	Turntable edge with locking plate and hole
11/06/10		14. D1	S	Rail	Turntable edge and rail
11/06/10		15. D1	S	Horizontal rail	Detail of turntable rail and different fixings to ground
11/06/10		16. D1	W	Vertical rail	Individual detail of turntable older rail fixings
11/06/10		17. D1	S	Vertical rail	Individual detail of turntable rail fixings
11/06/10		18. D1	SW	Wheel	Platform and underside view of turntable wheel
11/06/10		19. D1	SW	Wheel	Detail of undriven turntable wheel at hand crank end
11/06/10		20. D1	E	Wheel	Detail of turntable undriven wheel at electric end
11/06/10		21. D1	SE	Rivets	Detail of wheel mounting (seen in frame 20. film 104)
11/06/10		22. D1	SW	Lever	Detail of cable lever
11/06/10		23. D1	S	Girder	Side detail of turntable structure
11/06/10		24. D1	E	Maker's stamp	Maker's stamp 'Shelton' on platform bracing support
11/06/10		25. D1	E	Bush	Length of turntable side showing platform bracing
11/06/10		26. D1	E	Puddle	Circular concrete base for turntable pivot
11/06/10		27. D1	NW	Concrete base	Concrete pivot base & platform mounting on turntable
11/06/10		28. D1	W	Rivets on left	Underside of circular concrete turntable pivot mounting
11/06/10		29. D1	SE	Main pivot	Turntable underside main pivot detail
11/06/10		30. D1	W	Diagonal bracing	Main turntable arm underside outer half structure
11/06/10		31. D1	N	Drive wheel	Hand crank drive wheel mechanism
11/06/10		32. D1	NW	Cogs	Turntable underside hand crank cog mechanism
11/06/10		33. D1	N	Turntable rail	Electric turntable drive wheel mechanism
11/06/10		34. D1	NE	Red motor	Electric turntable motor
11/06/10		35. D1	E	Metal plate	Motor mechanism girder maker's stamp
11/06/10		36. D1	S	Red background	Electric turntable motor maker's plate



DATE		FILM TYPE		SITE CODE: OOC10		PHOTOGRAPHER: S.DUCKERING (M.Gould Films D1-7)
FRAME & FILM NUMBER		DIRECTION	IDENTIFIER	COMMENTS		
	Col. Slide	B/W	Digital			
12/10/10			1. D4	E	Wheel	Toothed edge to electric drive wheel
12/10/10			2. D4	S	Concrete base	Turntable underside join in main beam
12/10/10			3. D4	SW	Steel framework	Deck frame. Detail of cut T section
12/10/10			4. D4	SE	Handrail	Deck frame. Detail of cut T section
12/10/10			5. D4	SE	Framework	Deck frame. Detail of lower cut across horizontal member
12/10/10			6. D4	W	Framework	Cut ends on underside of deck frame
12/10/10			7. D4	SW	Deck	Turntable handrail bolts being cut
12/10/10			8. D4	NW	Deck	Turntable handrail bolts being cut
12/10/10			9. D4	NE	Booth	Turntable handrail bolts being cut next to electric operators booth
12/10/10			10. D4	WSW	Wheel	Exposed original teeth of manual drive wheel
12/10/10			11. D4	SE	Wheel	Exposed replacement teeth of electric drive wheel
12/10/10			12. D4	NW	Plant	Cutting handrail bolts
12/10/10			13. D4	SE	Crank	Hand crank and drive wheel
12/10/10			14. D4	N	Lever	Clutch lever between manual and electric operation
12/10/10			15. D4	N	Rails	Top of turntable fitting over central pivot
12/10/10			16. D4	N	Rails	Top of turntable fitting over central pivot
12/10/10			17. D4	N	Steel framework	Detail of beam bracing and beam joint bolts
12/10/10			18. D4	W	Rails	Top of turntable fitting over central pivot
12/10/10			19. D4	W	Deck	Top of turntable fitting over central pivot & hand crank side of deck
12/10/10			20. D4	NE	Rails	Top of turntable fitting over central pivot
12/10/10			21. D4	SE	Booth	Top of turntable fitting over central pivot & electric side of deck & booth
12/10/10			22. D4	E	Pivot	Turntable underside, pivot and bolted main beam join
12/10/10			23. D4	E	Concrete base	Pivot and base between beams on hand crank side
12/10/10			24. D4	N	Bolts	Makers casting on side of turntable rail '1963'
12/10/10			25. D4	NE	Big bolt	Underside of main pivot bolt
12/10/10			26. D4	SE	Big bolt	Underside of main pivot bolt
12/10/10			27. D4	NNE	Beams	Join of main beam (between beams) close to central pivot
12/10/10			28. D4	W	Pivot	Pivot and beams from 'electric' side
12/10/10			29. D4	W	Bracing	Pivot, beams and bracing detail, underside on 'electric' side

SITE NAME: OLD OAK COMMON		SITE CODE: OOC10		PHOTOGRAPHER: S.DUCKERING (M.Gould Films D1-7)	
DATE	FILM TYPE		DIRECTION	IDENTIFIER	COMMENTS
	FRAME	& FILM NUMBER			
	Col. Slide	B/W			
12/10/10		Digital			
12/10/10		30. D4	NE	Booth	'Electric' side of deck with handrail removed
12/10/10		31. D4	NW	Gantry	'Manual' side of deck with handrail removed
12/10/10		32. D4	SE	Gables x3	'Electric' side of deck with handrail removed
12/10/10		33. D4	SE	Fence	Rail 'stoppers'.
12/10/10		34. D4	NE	Fuse box	Electricity box for power cable to turntable
12/10/10		35. D4	NNE	Yellow A frame	Power cable and A frame south side of turntable
12/10/10		36. D4	W	Fences	Untensioned steel cable and A frame north side of turntable
21/10/10		1. D5	S	Shadow	Free running side of turntable with deck removed
21/10/10		2. D5	W	Wood blocks	Free running side of turntable with deck removed
21/10/10		3. D5	NNW	Pivot	Manual' end of turntable with deck removed
21/10/10		4. D5	NE	Clutch lever	Hand crank mechanism
21/10/10		5. D5	NE	Cogs	Hand crank mechanism detail
21/10/10		6. D5	S	Drive shaft	Cog on manual drive wheel
21/10/10		7. D5	WSW	Wheel	Manual' end exposed locking bolt
21/10/10		8. D5	SW	Rivets	Manual' end locking bolt lever detail
21/10/10		9. D5	NW	Rivets	Junction with bolts of turntable and 'manual' end bogie
21/10/10		10. D5	N	Wheel	Manual' end free wheel detail of iron and steel rim
21/10/10		11. D5	SW	Rails	Manual' end locking bolt mechanism
21/10/10		12. D5	SW	Toothed wheel	Manual' end toothed drive wheel
21/10/10		13. D5	ENE	Crane	Lifting electric drive unit
21/10/10		14. D5	E	Red motor	Freeing electric drive unit
21/10/10		15. D5	N	Drive shaft	Electric drive unit in situ
21/10/10		16. D5	N	Motor	Electric drive unit in situ
21/10/10		17. D5	E	Locking Bolt lever	Electric drive unit in situ
21/10/10		18. D5	NE	Factory' buildings	Electric drive unit being lifted clear of turntable
21/10/10		19. D5	E	Crane	Electric drive unit being lifted clear of turntable
21/10/10		20. D5	NE	Cars	Freeed electric drive unit with brake foot pedal
21/10/10		21. D5	S	Cables	Freeed electric drive unit from drive shaft end
21/10/10		22. D5	N	Brake wheel	Freeed electric drive unit from motor end

SITE NAME: OLD OAK COMMON		SITE CODE: OOC10		PHOTOGRAPHER: S.DUCKERING (M.Gould Films D1-7)	
DATE	FILM TYPE		DIRECTION	IDENTIFIER	COMMENTS
	FRAME & FILM NUMBER				
	Col. Slide	B/W			
21/10/10		Digital			
		23. D5	W	Motor	Electric drive motor
21/10/10		24. D5	W	Cogs	Electric drive mechanism
21/10/10		25. D5	W	Cogs	Electric drive mechanism detail
21/10/10		26. D5	W	Bolts	Electric drive shaft end
21/10/10		27. D5	W	Cog	Electric drive shaft bearing and main drive cog
21/10/10		28. D5	E	Bearing	Electric drive shaft end fixing
21/10/10		29. D5	S	Data stamp	Electric motor gearing information stamp
21/10/10		30. D5	N	Plate	Transformer info makers stamp
21/10/10		31. D5	W	Pit edge	Turntable with removed electric drive unit
21/10/10		32. D5	W	Drive wheel	Detail of electric drive wheel & cut locking bolt shaft
21/10/10		33. D5	NE	Rails	Electric' end locking bolt mechanism
21/10/10		34. D5	NW	Rails	Electric' end locking bolt mechanism
21/10/10		35. D5	W	Wheel	Electric' end free running wheel
21/10/10		36. D5	NW	Lever	Electric' end locking bolt lever and cables to 'manual' end
21/10/10		37. D5	SW	Rivets	Bolted connection of turntable beams & 'electric' bogie
21/10/10		38. D5	SW	Rail on pit floor	Underside of bolted connection of turntable & electric bogie
03/11/10		1. D6	NW	Wheel	Turntable jacked up free of electric drive bogie
03/11/10		2. D6	NW	L9 Label	Detail of electric drive bogie and Turntable separation
03/11/10		3. D6	NE	Lights	Turntable pit and crane prior to lifting
03/11/10		4. D6	W	Track	Partially removed rail in pit
03/11/10		5. D6	W	Rail shoe	Detail 'P&P' on in situ pit rail base shoe
03/11/10		6. D6	SW	Wheel	Turntable jacked up free of manual drive bogie
03/11/10		7. D6	SW	L1 Label	Detail of manual drive bogie and Turntable separation
03/11/10		8. D6	E	Axel	70FT TT' casting on bogie wheel bearing housing
03/11/10		9. D6	E	Bolt	Detail of '70FT TT' casting
03/11/10		10. D6	S	Pit	Crane in position next to Turntable pit
03/11/10		11. D6	SW	Rails	Pit rails awaiting removal from site
03/11/10		12. D6	SW	Rail	Detail of pit rail

SITE NAME: OLD OAK COMMON	SITE CODE: OOC10	PHOTOGRAPHER: S.DUCKERING (M.Gould Films D1-7)
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DATE	FILM TYPE		DIRECTION	IDENTIFIER	COMMENTS
	FRAME & FILM NUMBER				
03/11/10	Col. Slide	B/W			
03/11/10		Digital	NW	Beam	Turntable internal bracing
03/11/10		13. D6	SE	Wheel	Manual drive wheel
03/11/10		14. D6	NW	Wheel	Electric drive wheel
03/11/10		15. D6	N	Cog Teeth	Electric drive wheel showing replacement toothed ring
03/11/10		16. D6	S	Turntable	Straps being attached prior to lifting
03/11/10		17. D6	SSW	Crane	Crane at full height preparing to lift turntable
03/11/10		18. D6	S	Straps	4 lifting straps with protecting timber blocks
03/11/10		19. D6	S	Puddle	Turntable being lifted off of central pivot
03/11/10		20. D6	SW	Sky	Turntable midway between pit and lorry
03/11/10		21. D6	SW	Lorry	Turntable lifted above lorry
03/11/10		22. D6	NW	Lorry	Turntable lifted above lorry detail
03/11/10		23. D6	NW	Rope	Positioning turntable on lorry
03/11/10		24. D6	W	Turntable Bolts	Outer (previously unseen) end of turntable detail
03/11/10		25. D6	NW	Lorry	Turntable on lorry
03/11/10		26. D6	N	Bearings	Greased pivot top with bearings
03/11/10		27. D6	NW	Pivot	Pivot in situ without turntable
03/11/10		28. D6	SE	Wheels	Manual bogie after turntable lifted
03/11/10		29. D6	S	Bolt holes	Turntable connecting bolt plate on 'manual' bogie
03/11/10		30. D6	E	Drive Wheel	Drive wheel on 'manual' bogie
03/11/10		31. D6	W	Nuts	Free wheel bearing on 'manual' bogie with '70FT TT'
03/11/10		32. D6	W	Wheels	'Electric' bogie drive wheel after turntable lifted
03/11/10		33. D6	NE	Bogie	'Electric' bogie free wheel after turntable lifted
03/11/10		34. D6	NW	Pivot	Freeing pivot from circular concrete base
03/11/10		35. D6	E	Pit	Crane preparing to lift pivot off circular concrete base
03/11/10		36. D6	W	Steel Cable	Pivot removed from base.
03/11/10		1. D7	NW	Pivot Base	Concrete pivot base and bogie
03/11/10		2. D7	S	Bolts	Pivot base bolts and 3 wooden pads
03/11/10		3. D7	ENE	Pit	Turntable pit and crane
03/11/10		4. D7			

SITE NAME: OLD OAK COMMON		SITE CODE: OOC10		PHOTOGRAPHER: S.DUCKERING (M.Gould Films D1-7)	
DATE	FILM TYPE	DIRECTION	IDENTIFIER	COMMENTS	COMMENTS

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FRAME & FILM NUMBER					
	Col. Slide	B/W	Digital		
03/11/10			5. D7	ENE	Pit
03/11/10			6. D7	SE	Lorry
03/11/10			7. D7	SE	Lorry
03/11/10			8. D7	SE	Bogie
03/11/10			9. D7	SE	Bogie
03/11/10			10. D7	E	Bogie
03/11/10			11. D7	N	Wheel
03/11/10			12. D7	W	Pit
03/11/10			13. D7	S	Rail
03/11/10			14. D7	W	Rail base
03/11/10			15. D7	SW	Rail Bases
03/11/10			16. D7	NE	Pit
03/11/10			17. D7	SE	Lorry
03/11/10			18. D7	E	Lorry
					Turntable pit and crane lifting out bogie
					Turntable on lorry leaving Old Oak Common site
					Turntable on lorry leaving Old Oak Common site
					Manual' bogie lifting off pit rail
					Manual' bogie lifting out of pit
					Outer face of bogie on lorry
					Drive wheel bearing housing with '70 FT TT'
					Turntable pit rail lifting
					Cutting free turntable pit rail
					Rail base shoe detail 'P&P 08'
					Rail bases with rubber pad and metal ground plate
					Turntable pit with 1905 building beyond looking NE
					Bogies on lorry leaving Old Oak Common site
					Lifting lorry with steel plates under stabilising feet



APPENDIX 4: OASIS FORM

OASIS ID: preconst1-84102

Project details

Project name	Turntable Recording at Old Oak Common Depot
Short description of the project	<p>Pre-Construct Archaeology Ltd (PCA) was commissioned by Capita Symonds Ltd on behalf of Crossrail Ltd to undertake non-listed built heritage (NLBH) recording of a locomotive turntable at Old Oak Common Depot in the London Borough of Hammersmith and Fulham centred on NGR TQ 21870 82390, in accordance with the Crossrail Act 2008. In anticipation of the demolition of the existing buildings and the remodelling of the entire Old Oak Common Worksite for Crossrail, permission has been granted to lift the turntable and relocate it to Swanage. In accordance with the site-specific Written Scheme of Investigation (WSI) the turntable was recorded to English Heritage Level 2. The aim of the recording exercise presented in this report is to provide a more complete understanding of the turntable in terms of identifying its age, construction, design, function, development and significance, compiling a lasting record and disseminating these results.</p> <p>The Old Oak Common locomotive depot was built by the Great Western Railway in 1904-6 under the auspices of George Jackson Churchward. The centerpiece of the depot was an engine shed that housed four 65' locomotive turntables installed by Ransomes and Rapier of Ipswich. In 1952-3 the turntable in the south-west corner of the shed was replaced by a 70' example supplied by Cowans, Sheldon & Co Ltd of Carlisle. The turntable remained in use until the depot closed in 2009, surviving the demolition of the engine shed and the conversion of the depot to diesel use in the mid-1960s. The NLBH recording found evidence suggesting that a number of alterations had been made to the turntable during this period, including a reduction in the extent of the timber deck and the probable replacement of the electric drive motor, which necessitated the removal of the second hand crank mechanism and the construction of a small booth containing the electric motor controls..</p>
Project dates	Start: 10-06-2010 End: 11-06-2010
Previous/future work	Yes / Yes
Any associated project reference codes	OOC10 - Sitecode
Type of project	Building Recording
Site status	None
Current Land use	Transport and Utilities 2 - Other transport infrastructure
Monument type	GWR DEPOT Modern
Significant Finds	ENGINE TURNTABLE Modern
Methods &	'Measured Survey','Photographic Survey','Survey/Recording Of

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techniques Fabric/Structure'

Prompt Direction from Local Planning Authority - PPS

Project location

Country England

Site location GREATER LONDON HAMMERSMITH AND FULHAM HAMMERSMITH
AND FULHAM Old Oak Common Depot

Postcode NW10 6DU

Study area 50.00 Square metres

Site coordinates TQ 2160 8230 51.5260119491 -0.246931526450 51 31 33 N 000 14 48 W
Point

Lat/Long Datum Unknown

Height OD / Depth Min: 30.00m Max: 30.50m

Project creators

Name of Organisation PCA

Project brief originator Capita Symonds

Project design originator Capita Symonds

Project director/manager Charlotte Matthews

Project supervisor Malcolm Gould

Type of sponsor/funding body Crossrail

Project archives

Physical Archive recipient grey literature

Physical Contents 'other'

Digital Archive Crossrail Ltd/LAARC (TBC)

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recipient

Digital Contents 'other'

Paper Archive recipient LAARC (TBC)

Paper Contents 'other'

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title Old Oak Common Worksites Non-Listed Heritage Recording of 70' Turntable

Author(s)/Editor(s) Gould, M. & Thompson, G.

Date 2010

Issuer or publisher Pre-Construct Archaeology

Place of issue or publication London

Entered by [archivist \(archivist@pre-construct.com\)](mailto:archivist@pre-construct.com)

Entered on October 2010