

# THE JOURNAL OF THE LONDON UNDERGROUND RAILWAY SOCIETY

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## WORLD CUP SERVICES

The concentration of World Cup Football during July provided LT with some problems, as many of the matches were played in the evening so that the rush of spectators to Wembley or White City coincided with the normal evening peak.

For the Wembley games, extra trains ran on the Metropolitan from both Baker Street and the City (Aldgate or Liverpool Street), followed by a very frequent service after the matches - provision being made for the possibility of extra time in the later matches of the competition. The Bakerloo Line also played its part, and, a new development, a coach service was run from Sudbury Town to the Stadium (and in the reverse direction after the matches), to enable spectators to travel by the Piccadilly Line if this was more convenient for them. These coaches commenced running about 2½ hours before the kick-off.

For the White City match, the Central Line service to White City was augmented both before and after the match, and ordinary passengers were advised to use the Hammersmith and City Line where possible.

The matches for which provision had to be made were as follows :-

### Wembley

Monday July 11	England v. Uruguay	19.30
Wednesday July 13	France v. Mexico	19.30
Saturday July 16	England v. Mexico	19.30
Tuesday July 19	Mexico v. Uruguay	16.30
Wednesday July 20	England v. France	19.30
Saturday July 23	Quarter Final	15.00
Tuesday July 26	Semi-Final	19.30
Thursday July 28	3rd/4th Place Final	19.30
Saturday July 30	Final	15.00

### White City

Friday July 15	Uruguay v. France	19.30
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## NEWS FLASHES

NF 574 A guard's van ran through buffers at Chorley Wood on the afternoon of 1-8-1966 and blocked the main Metropolitan Line. Trains were reversed at Rickmansworth, and it is understood that there are some single-line working between Rickmansworth and Amersham.

NF 575 LT have denied that there are to be drastic cuts in services when the new timetable is introduced on October 17; but they do admit to a 5 per cent reduction in trains on Saturday mornings, and some 'minor adjustments' on a few lines outside peak hours during the week.

NF 576 The current summer timetable came in to force on 2-5-1966, and a new issue of the Underground Guide was made to coincide, as is usual. There are no very important changes from the previous services, but the printing of the Guide does not appear to be up to the recent standard.

NF 577 The 1966 Edition of the Underground Route Diagram and Index of Stations is now available, and for the World Cup LT published a special edition of the Diagram, printed on paper instead of card, and giving sketch plans on the back showing how to reach the stadiums.

NF 578 The latest proposal for rail connections to London Airport is a little more startling than usual. It is for the passenger cabins of the aircraft themselves to be made removable from the planes, and for these 'modules' to be transported (at 150 m.p.h.) by a monorail built over the existing railway lines via Feltham to central London. To the mere traveller, it would seem a good idea for the experts and government departments to stop scheming and talking and to get something built instead; the present journey by road from the various Air Terminals to the Airport is quite ludicrous.

NF 579 A 4-car unit of ex-LT tube stock was seen at Stewarts Lane Southern Region depot on 4-8-1966, ready for the Isle of Wight services. The unit number was O44 and the car numbers S4S-S96S-S44S-S23S; the previous LT numbers of these cars are not yet known.

NF 580 In connection with the government plans for national transport, announced by the Minister on 27-7-1966 in a White Paper, it is proposed to set up a joint review body for London Transport. This will be headed by Stephen Swingle, Joint Parliamentary Secretary, with outside experts to assist. The only possible reaction would seem to be "What, another one?"

## SOCIETY NOTICES

Correction August issue, p.121,1.30; width of seats should read 2'11".

Ticket Distribution 8 LTB and LTE Forces Leave and 2d Platform Tickets (withdrawn from use 1-1-1965). Cost 1/- per set. All sets are identical, but any number may be ordered, by sending an open postal order and strong stamped addressed envelope to Ian Lawson, 10 Rotherwood Road, London, S.W.15. All orders must be received by 1-10-1966.

Photographic Competition The delay in printing the Rules in the Journal is regretted, and is due to pressure on space this month. They will appear in the October issue.

## THE TIMETABLE

10th September - Saturday Visit to Stewarts Lane Depot, Southern Region. Those who have booked meet outside Wandsworth Road station at 09.31.

15th September - Thursday Visit to Lots Road Power Station, London Transport. Those who have booked meet in Lots Road, by the entrance to the Coal Yard, at 14.30.

16th September - Friday Illustrated Talk by Alan Cruikshank on "Metropolitan Steam Locomotives". This will be given at Keen House, Calshot Street, London, N.1, at 19.00. Refreshments are available at Keen House.

8th October - Saturday Visit to Baker Street Signal Cabin, London Transport. Names to Norman Fuller, 62 Devonshire Road, Ealing, London, W.5 as soon as possible. Only unsuccessful applicants will be notified; place and time of meeting will appear next month.

14th October - Friday President's Address - "Some Forgotten Tube Schemes" by Alan A. Jackson. This is the first President's Address to be given to the Society, and a very full attendance is hoped for; the meeting will take place at Hammersmith Town Hall, King Street, Hammersmith at 19.00. Entry to the Hall is gained by the Nigel Playfair entrance (on the side nearest Ravenscourt Park station) and the meeting room will be on the second floor (the doorkeeper will know the room number). Refreshments are available in the Canteen at the Hall until about 19.00.

29th October - Saturday (provisional) Sale of Relics at Keen House during the afternoon. Times will be announced next month; members with relics for sale should bring them to the hall on the day or arrange to hand them to a

## LETTERS TO THE EDITOR

Dear Sir,

I was very interested in the list of Metropolitan steam locomotives in the Journal for May and the query as to wheel diameter and boiler pressure.

Reference to the drawing enclosed\* will show the boiler pressure to be 120 lbs/sq.in. and the driving wheels 5'9" diameter. This drawing is from the "Railway Pictorial" of July 1950 and is itself copied from the original Beyer=Peacock drawing.

Reference to the Met. loco Data sheet 51 also enclosed\* and drawing No 22569 dated, I think, 1903, shows the driving wheel diameter was later 5'10".

Some time during the war Mr K.A.C.R.Nunn wrote a series of articles in the Stephenson Society Journal on the Beyer 4-4-0 tank locos. He gave the pressure of the "A" class locos. (i.e. 1-33 and 39-49) as 120 lbs/sq.in. and the driving wheel diameter 5'9". The "B" class locos (34-38 and 50-66) together with the earlier District locos were built with a pressure of 130 lbs/sq.in. but the driving wheels remained 5'9".

It was not until the coming of Mr. T.F.Clark in 1893 that some of the Met. locos were rebuilt with 5'10" driving wheels. This increase may have been achieved by the use of thicker tyres. It was about this time that some of the original forged wheels were replaced with cast steel wheel centres. The forged wheels had rectangular spokes and the balance weights were of the bolted on type. The cast steel wheels had oval spokes and crescent shaped balance weights cast in. No.23 at Clapham has the old forged wheels and can still, of course, be examined. No. 42 and perhaps others, finished up with both types of wheels.

While on the subject of these Beyer tank locos there is one mystery to which some member may have the answer. The first batch of Met. locos had bunkers only 1'6" long. This was found inadequate so subsequent batches had this dimension increased to 2'6". There is photographic evidence that, of the second batch, Nos. 19-23, No. 20 at least had a 2'6" bunker. The problem is that both Nos. 22 and 23 finished up with 2'0" bunkers. Has any

member a photograph of 22 or 23 in its' early days before rebuilding? I would be most grateful if I could have a copy of such a photo, or the opportunity to see it.

The final batch of "A" class locos, Nos 45-49, together with all the "B" class were built with 2'0" bunkers.

The original 18 Met. locos had their bunkers increased to 2'0" when they were rebuilt.

Incidentally, No.23 at Clapham has the guide bars belonging to No. 24 and the coupling rods belonging to No. 31. These numbers are clearly stamped on the parts concerned.

I wonder if the loco at Clapham really is 23.

A.Cruikshank

24 Parbury Road,  
Honor Oak Park,  
London, S.E.23.

\*Drawings and Data reproduced on pp. 136-138 - Editor.

18/7/66

Dear Sir,

I have been interested for some years in train movement in terms of time, speed and distance and have managed to construct graphs applying generally to the old LT stocks, i.e. pre-1938 and 1938 tube stock, and also the Dist. and Met. surface stocks up to but not including the A.60 Met.

Such graphs follow a fairly common pattern for all Multiple-Unit Electric Stock, with a straight-line acceleration from rest up to a point which I have termed the "I.F.E." i.e. the Initial Full Energisation of the motors as all resistance is cut out; which is followed by a much longer die-away curve as the original acceleration dies away to the point where the balancing speed is first attained. The completed graph of course is for movement on tangent-level track and corrections have to be made for gradients, curves etc.

In the old days when I could get around, I obtained the necessary data for such graphs whilst in or near

trains by means of stop-watch readings taken at known distances, but of course this is impossible for me now. L.T. do not appear to have any publication giving this information; I do not know if you could suggest any likely source of this information; if so I shall be most grateful to know about it, but do not wish to put anyone to too much trouble about this matter.

The minimum data really necessary is

- (a) The rate, in m.p.h. of the initial straight-line acceleration and its duration.
- (b) The Balancing Speed (on level track); and
- (c) Details about the use of 'weakened-field' running.

Yours sincerely,

16 Pendrell Road,  
Brockley,  
London, S.E.4.

F.F. Brown

Can any member help Mr Brown (who is house-bound as the result of an accident) Please write direct to him.

3-7-66

Dear Sir,

If I understand correctly Mr Benest's reference (p. 105, July 1966 "Underground") to "dummy-ramps" at the entrance to non-electrified sidings, as being Y-shaped arrangements of the negative conductor rail, I would think these are still very widespread, although I realise they may be old installations not relaid.

One place where this arrangement is absent is where the down line from Marylebone joins the electrified line at Harrow South Junction.

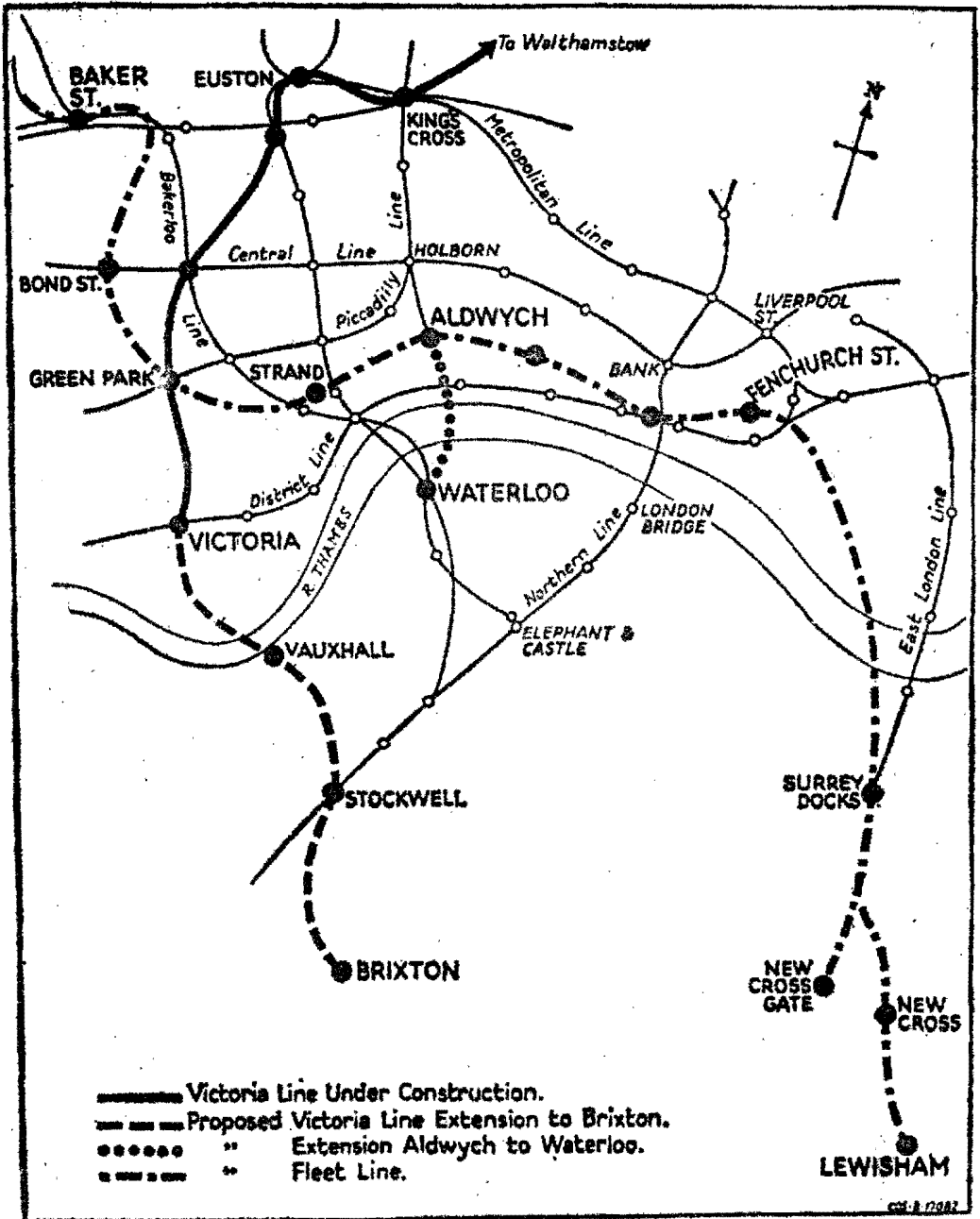
I have always been rather baffled by the retention of short sections of conductor rail in trap sidings, as in those between Neasden and Wembley Park, and at the exit of the up loop near Finchley Road. Is this simply because they were once part of through roads?

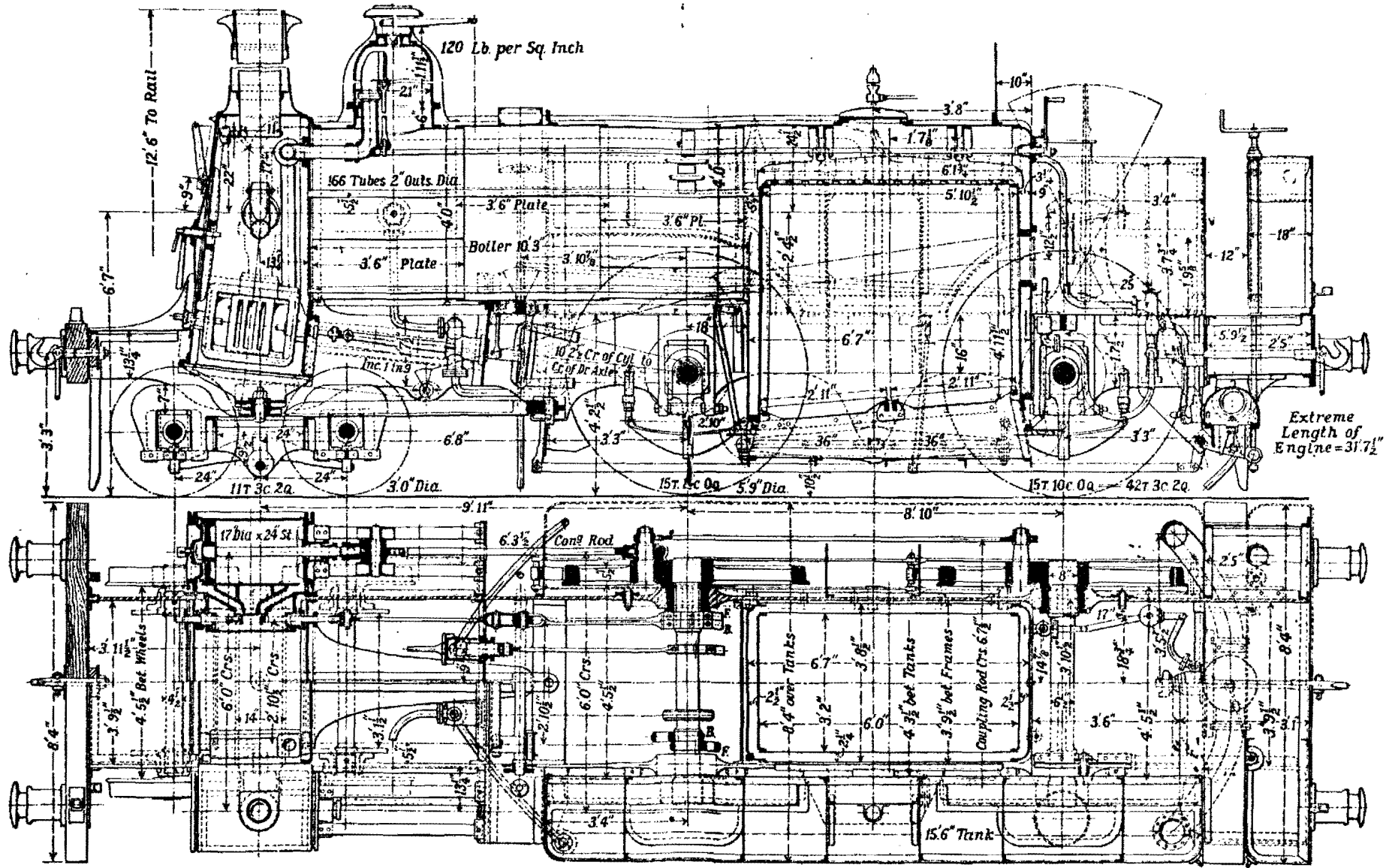
Yours sincerely,

E.D. Chambers.

25 Cranleigh Gardens,  
Kenton, Harrow, Middlesex.

# THE PROPOSED NEW FLEET LINE A Route Diagram

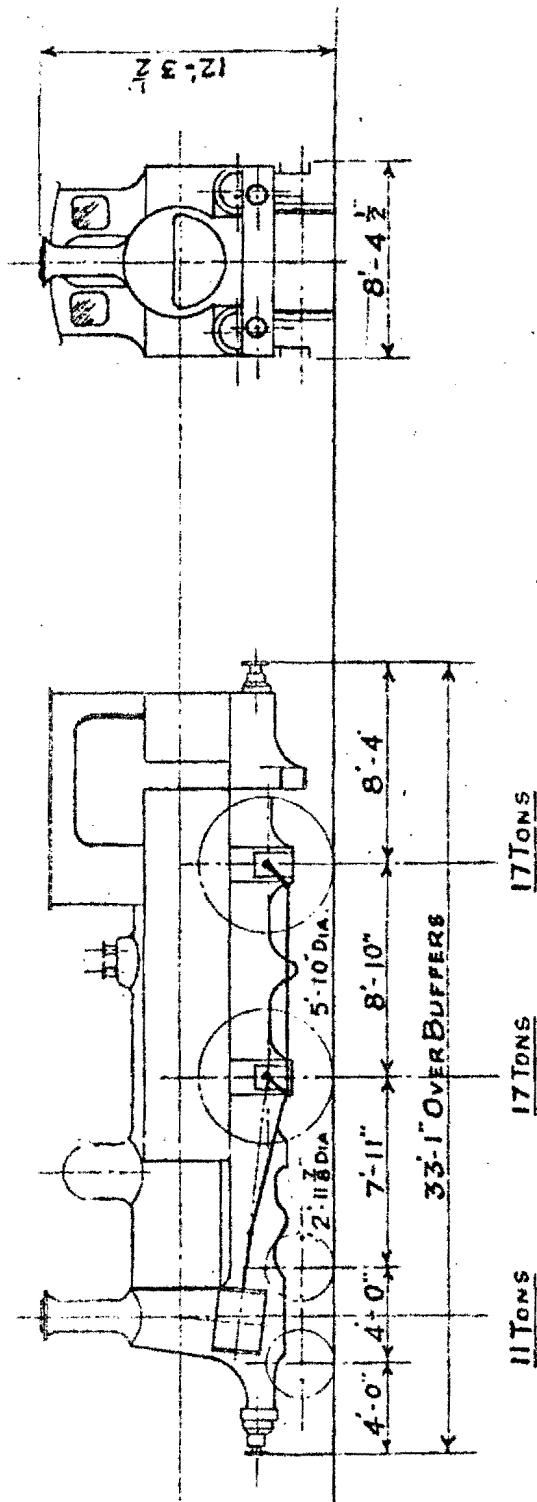




A tracing from the original working drawing of the Class "A" 4-4-0T locomotives which worked on the Metropolitan Railway and Metropolitan District Railway between 1863 and 1905.

Block by courtesy of the RAILWAY GAZETTE.





Metropolitan  
'A' Class Loco

Serial Nos. 23,41,48,49.  
Quantity - 4.

Maker - Beyer Peacock & Co.

Weight - Running - 45t.

Empty - 37t.

Adhesive - 34t.

Adhesive Factor - 6.

Cylinders - 17 1/4" X 24"

Boiler Pressure - 160lbs.

Tractive Effort

at 80% - 12,680 lbs.

Wheel Diameter -

Drivers - 5'10"

Bogies - 2'11 7/8"

Tank cap. - 1170 galls.

Coal cap. - 1.5 tons.

Heating Surface -

Small Tubes 841

Firebox 101.6

Total sq.ft. 942.6

Grate Area - 19 sq.ft.

Vacuum Brake Cylinder

2 Off - 15" dia.

Braking Force at 21"

(10lbs) 13.7t.

Percentage of total

weight - 30.4%

Into service - 1866-70.

Large Journals - 8"x7"

Pressure p.sq.in. -

Driving - 316lb.

Trailing - 334lb.

Bogie Journals - 7"x4 1/2"

Pressure p.sq.in. 186lbs.

Valve Motion -

Stephenson.

Valve - Slide.

## THE MINERS OF LONDON

A chapter from 'Straphangers' by Arnold Palmer  
Published by Selwyn and Blount Limited  
in April 1927

The news that the C. and S.L. tube is being extended from Clapham to Morden is certain to leave you, unless you happen to live in the district, stone cold. Even if you live in the district, you have long since ceased to speculate about the pit-heads which rise, gaunt and ugly, like entrances to coal mines, but without the coal, every few hundred yards along the route. After all, something is always going on in London. Somebody is always digging a hole, or filling a hole, or being busy behind a hoarding which pushes you off the pavement.

At the corner of Trevelyan Road, amid the tin huts and wooden shanties, the cranes, the buckets, and the mud, there is a little hole 50 ft. deep, three ladders deep, which acts as Entrance Hall, Booking Office, Lift and Moving Stairway. It is very muddy at the top, and as I followed the engineer down the slimy ladders I got muddier and muddier. Then, down at the bottom, the mud really begins. This is the blue London clay, found hardly anywhere else in the world, and affording, with its softness and stickiness, the perfect medium for tube construction. In its ordinary state it is a slaty-blue, and has the consistency of a fresh chocolate caramel. It dries hard, and of a blue-mauve colour often streaked with red, and very beautiful. Before we had taken many steps I noticed two other things about that clay. First, that it would suck my shoes off my feet if I wasn't careful; and secondly, that it was bubbling with what appeared to be soda-water.

"Why does the floor bubble" I asked.

"Compressed air. This," said the engineer, pointing to what appeared to be a large baker's oven blocking our passage, "is the compressed-air chamber."

"Oh, yes. But why \_\_\_\_\_"

"Have you got a cold?"

"No, thank you. Why \_\_\_\_\_"

"Is your heart all right?"

"Yes. Why \_\_\_\_\_"

"Because you may find a 12 lb. compression unpleasant as first. Hold your nose, and blow your cheeks out

until your ears pop. Then yawn and make them pop again. Then swallow, then blow and yawn again. Keep on making them pop."

I looked more closely at the baker's oven. I felt myself beginning to take a faint dislike to it. A very loud hissing noise was sounding, and through a small glass panel in the oven door I could see a thick white fog. The hissing died, the door opened, and four or five men groped their way out.

"Now," said somebody, and I plunged into the fog. The door banged, and the hissing, twice as loud as before, started again. I held my nose, blew out my cheeks, yawned, swallowed, blew, and my ears kept popping like crackers. The fog vanished, and I saw there were two other men with me in the chamber. One was blowing, the other was yawning. At the moment I was swallowing, which seemed only fair. I remember making a mental note of our comic appearance - something to do with the 12 lb. look - and then the hissing grew louder than ever, and my head seemed to swell, to be on the point of bursting, to be absolutely certain to burst, to be bursting, I swallowed, and gained a second's respite; yawned, and gained another. Still the hissing continued, the pressure grew. I experienced a searing, scorching pain above the left eye. Just when I decided that it was unbearable, the hissing died, the further door swung open, and we stepped out into a dim corridor whose end was lost in mist.

"All right?"

"Oh, yes. But you forgot to ask me if I'd ever had neuralgia," I grumbled.

The next instant I was regretting my weakness, for the pain began to disappear now that we were out of the chamber. We were in the circular tunnel, lined with the familiar iron rings, such as can be seen from any Underground platform. The floor was still mud. We lurched along in a dim, yellow murk, and every now and then a man pushing a truckful of clay would loom up out of the mist, heading for the compression chamber. Everything, as well as everybody, must necessarily pass through the chamber, as boats on a river must pass.

through a lock, for the air in the tunnel has to be kept at a 12 lb. pressure. Only thus can the face of the tunnel be prevented from falling in, and even more important, can water be restrained from flooding the work.

We slipped and slid and groped down the long tunnel for two or three hundred yards. Ahead of us was a thudding noise; soon I heard voices also; and at last I saw opaque forms moving in the illuminated mist. We were approaching what is known technically as "the shield" - the tip of the tunnel, the vanguard of the tunnellers.

Lights were more plentiful here. The shield is an iron hoop (very slightly larger than the iron rings which are the ultimate lining of the tunnel), pushed forward into the clay by pistons, whose near ends press against the last of the iron rings. The pistons are driven by a machine which translates the air pressure into hydraulic pressure, and produces the thudding noise already mentioned. It is an important machine, perhaps a wonderful one, but when I saw it, it had been there for months, and was just a heap of mud troubled with a hacking cough. Every time it coughed, the shield moved - imperceptibly, save for the falling clay. When the piston-rods are fully extended, the machine is shut off, the pistons pushed forward and home, and another iron ring pressed into position. That means another twenty inches of tunnel.

The men in the shield are London's miners, a select almost a family band. Several of them told me of fathers and uncles who had been in the business before them. "And," they often added, "they don't forget it! They're always trying to teach us what they think we don't know."

Their position is a peculiar one. They received, as well as earn, good wages, and as there are barely enough of them to go round, they are seldom or never out of work. They have therefore an independent outlook, and belong to no union. All this I found interesting, but the next piece of information was impressive, and even awe-inspiring. They hinted that they rather despised coal-miners! In exceptionally busy times coal-miners are drafted in, and they have been, on the whole, a failure. They haven't, it seems, the right touch for London clay. Even in the tunnelling companies, during the war, the coal-miners hadn't always ———

"All the same," I murmured, "to despise a coal-miner!" I whistled softly, with compressed air.

These London miners work in shifts of, roughly, eight hours, or more exactly, two rings. The work is not really dangerous unless the air compression fails. But it is carried on in conditions which are necessarily gloomy and depressing, and may be worse. Only a little time before, the air compression in the next tunnel, the one with which they will presently effect a junction, had been slightly increased, with the result that they had worked for a week up to their knees in water.

"Didn't you send word?"

The leader shook his head. "By the time a message got to the top, and other people had been consulted, and approval given, our shift would have finished. Of course," he added, musingly, "there was always another shift following us ... But then there had been one before us, too. No, nobody sent round word."

"Since", I asked, "the compressed air ordinarily keeps the water out of the tunnels, and the tunnels keep drawing nearer and nearer to one another, where does the water go to?"

"I can tell you where some of it went to," he answered. "We struck a disused well the other day. It was beneath a house, and our compressed air rushed into the shaft of the well, blew the water up through the floor of the house, and lifted an old lady across the room. She was very good about it."

We slid back down the long, sticky tunnel. An empty truck, having shot its load of clay into the world, was occupying the compression chamber when we reached it. When the gauge showed 12 lb. the hissing ceased, the door could be opened, the truck could return to the shield, and we could take its place in the oven. More blowing, yawning, and swallowing, because, although the air pressure was now being reduced to normal, in the confined space of the chamber the effect is almost the same as when pressure is being raised. Further, as the air expands, it cools, and turns rapidly to an icy, choking, fog, so thick that even the electric bulb a few inches from my face was little more than a whitening of the fog.

Up the ladders, and a quarter of a mile of wonderful world where the air is always "free", and the sky overhead, where pubs light up and girls go by, and 'buses rumble past like jocular monsters; and then down another shaft to visit the Tooting Broadway Station. Once more the baker's oven awaits us. I am warned that the pressure here will be 15 lb., and I nod contemptuously, and peep through the inspection window at the dense white fog. Presently the door opens, and men and fog tumble out together. Now it is our turn, and I prove for the third time that these compression chambers are 5 ft. 11½ in. high, or just half an inch shorter than I am. More blowing, etc., more popping of ears. As the pressure rises the fog disappears as if by magic, and discloses other yawners and swallows. The hissing goes on rather longer this time, presumably in order to secure the 3 lb. additional pressure, and my left eyebrow again starts aching madly. I put my mouth to a miner's ear and yell "Do you ever get a headache? Doesn't anybody ever get a headache?" But he only smiles tolerantly and shakes his head. He may mean a negative, but I think he is merely implying that he can't hear me.

We stepped out into the huge vault of the station. This should be airy, if only with compressed air. But from a cause not discovered, it is extremely warm. Comparative idlers like the inspecting engineer and the foreman, even a complete idler like myself, perspired gently. The miners, who here wore trousers only, poured and shone with sweat. Some of them, lying on their backs, were engaged on hacking out the escalator shaft. This is the worst job of any. The clay drops on the miner as he dislodges it; he has very little room in which to work, and the hottest and stalest air to breathe.

Every time a miner swings his pick, he grunts. Even the gentlest tap is accompanied by a heartfelt grunt, as meaningless, as inevitable, as peculiar as an ostler's hiss.

I asked to see the tunnel which was to join up with the shield workers I had met at Trevelyan Road. Here, at the Tooting Broadway end, the shield was no longer in use, but from the furthest point of its progress a narrow, shallow gallery had been pushed forward, like a bull's-eye

projected from the centre of a target. If there is any variation in the direction of the two tunnels, this will be discovered when the Trevelyan Road party strike the gallery, and the Broadway end of the tunnel will be adjusted accordingly.

"Supposing they miss the gallery?"

The engineer looked at me. "I don't think they'll do that. We've already joined up with two other parties. In one case the error was  $\frac{1}{4}$  in., in the other  $\frac{1}{8}$  in. No, I don't think they'll miss the gallery."

He led the way back to the station. Men were gathered in little groups, seated on trucks, or on the still shapeless platform. In that dim, fantastic vault, where nude bodies gleamed and writhed, 50 ft. down, in the tight, foggy air, where trucks banged and clattered in the dark, narrow passages, where men and machinery tore savagely at the fleshy earth, tea-time had come and, with it, tea.

#### AN OLD SPECIAL SERVICE NOTICE

The following notice was spotted by one of our members on a disused station blackboard at Parsons Green on the 12th March 1966. The poster was printed by Baynard Press, 50 copies; the posting instructions were for 'Putney Bridge Line' (i.e. West Brompton to Putney Bridge inclusive). The printing date is shown as 1254, i.e. December 1954, and the notice refers to the Christmas Eve extension of the District Line service to Aldgate:-

#### SPECIAL TRAIN SERVICE

Passengers for District Line stations not wishing to wait for a through train should take the first train and change if necessary at Earl's Court.

Passengers for Circle Line stations Notting Hill Gate to Aldgate should travel on High Street or Aldgate trains, changing at High Street Kensington if the train terminates there.

Lithoed by The Celtic Bureau, 93/94 Chancery Lane, London, W.C.2, and Published by The London Underground Railway Society, 62, Billet Lane, Hornchurch, Essex. Insert by Eltrac Publications, 11 Chilmark Gnds., New Malden.