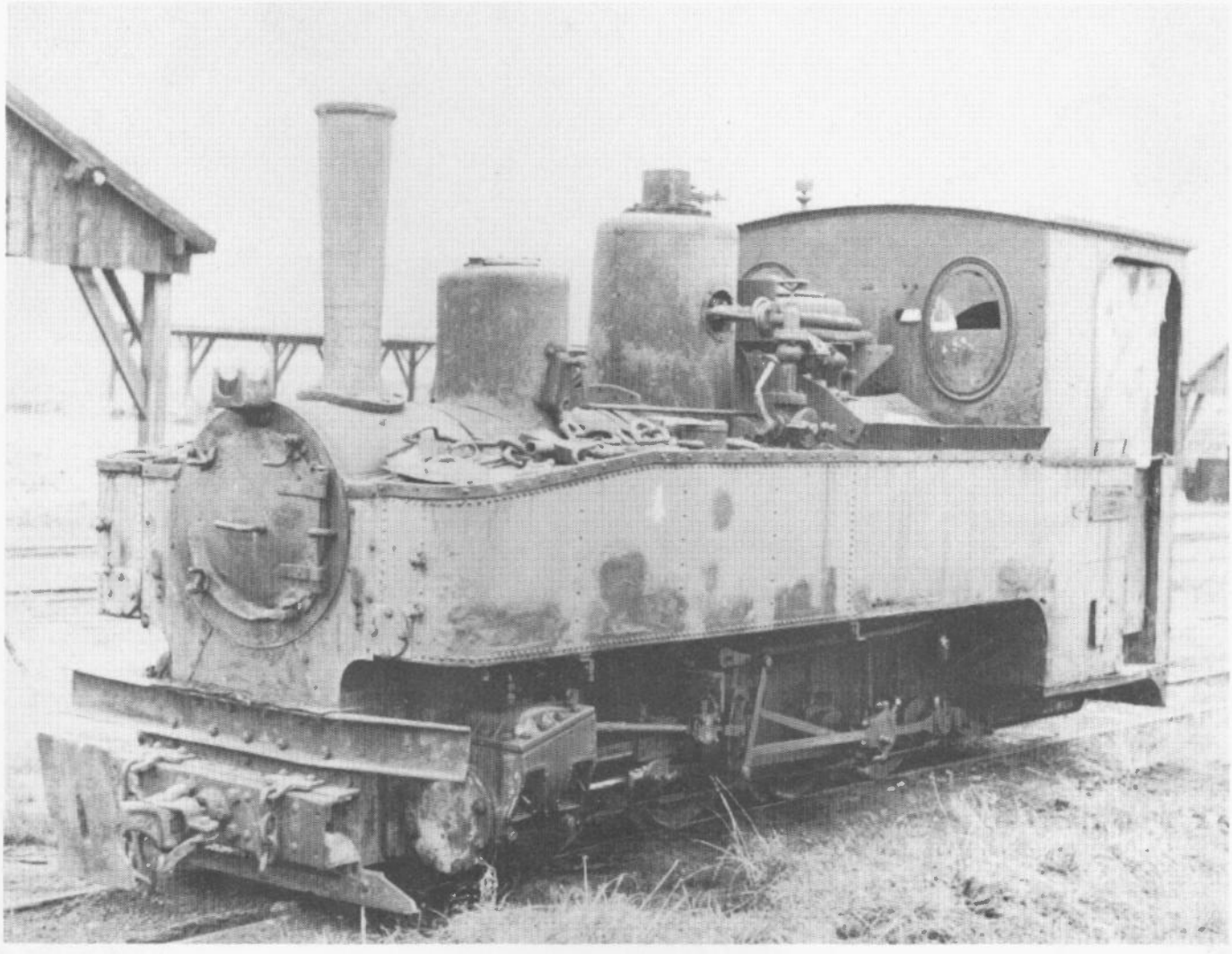
THE NARROW GAUGE



THE NARROW GAUGE RAILWAY SOCIETY

JUBILEE ISSUE No. 50 · MARCH 1969

THE NARROW GAUGE RAILWAY SOCIETY

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(For renewals, & membership enquiries)

Editorial

It gives me great pleasure to present our JUBILEE ISSUE - No. 50 and I should like to thank all the Contributors to the magazine past and present for their drawings, photographs and articles. I have tried to assemble a balanced magazine which includes a little bit from all our regular friends and I do sincerely hope you like it.

I promise another double size issue when our Century is reached (about 1981) in the meantime I must acknowledge the many other articles submitted for No. 50 which have had to be held over - for lack of space!!

Very best wishes,
Henry Holdsworth.

Cover Photo

Cover Photo - **Cremaille Feldbahn - Editor**

Facing Page - Tralee & Dingle Railway - Ivo Peters

2-6-0.T's No. 1 & 2 stop at Castle Gregory Junction for water on their way to Dingle with a cattle train.

Contents

JUBILEE ISSUE No. 50 · MARCH 1969

LISTOWEL & BALLYBUNION RAILWAY

Drawing—Adrian Garner

Photographs—RNRS Collection & Geoffrey Horsman

The Listowel and Ballybunion is the only British example of a monorail built to the LARTIGUE SYSTEM, constructed in 1887 it ran from Listowel on the line from Tralee to Limerick, in County Kerry, Ireland.

The system consisted of a single rail carried on angle iron trestles 3'3" high, the trestles rested on steel sleepers about 3' long and were fitted with guide rails on either side 2' from the top. These did not carry any weight but were fitted to carry small horizontal guide wheels to keep the vehicles in line with the top rail.

The carrying wheels were double flanged on the rolling stock they were 22" diameter with a 1½" tread, on the locomotives 24" diam.

Three engines Nos. 431/2 & 3 were supplied by Hunslet Engine Co. in 1887, the twin boilers were connected to a pair of 7" x 12" cylinders, and another pair 5" x 7" were mounted on the tender unit. It was soon realized the loco was under boilered and the rear cylinders were removed.

Weight in working order loco and tender totalled 9½ tons.

A vertical boilered loco was used during construction of the line but was not used in service and disappeared about 1900.

The Lartigue track caused complications at road junctions where a type of lifting bridge had to be used, or a length of rail raised to allow road vehicles to cross. Points could not be fitted and a half moon shape turn-table arrangement was used to shunt rolling stock into sidings, this could only carry the loco and a single coach or wagon so shunting operations became very involved and slow.

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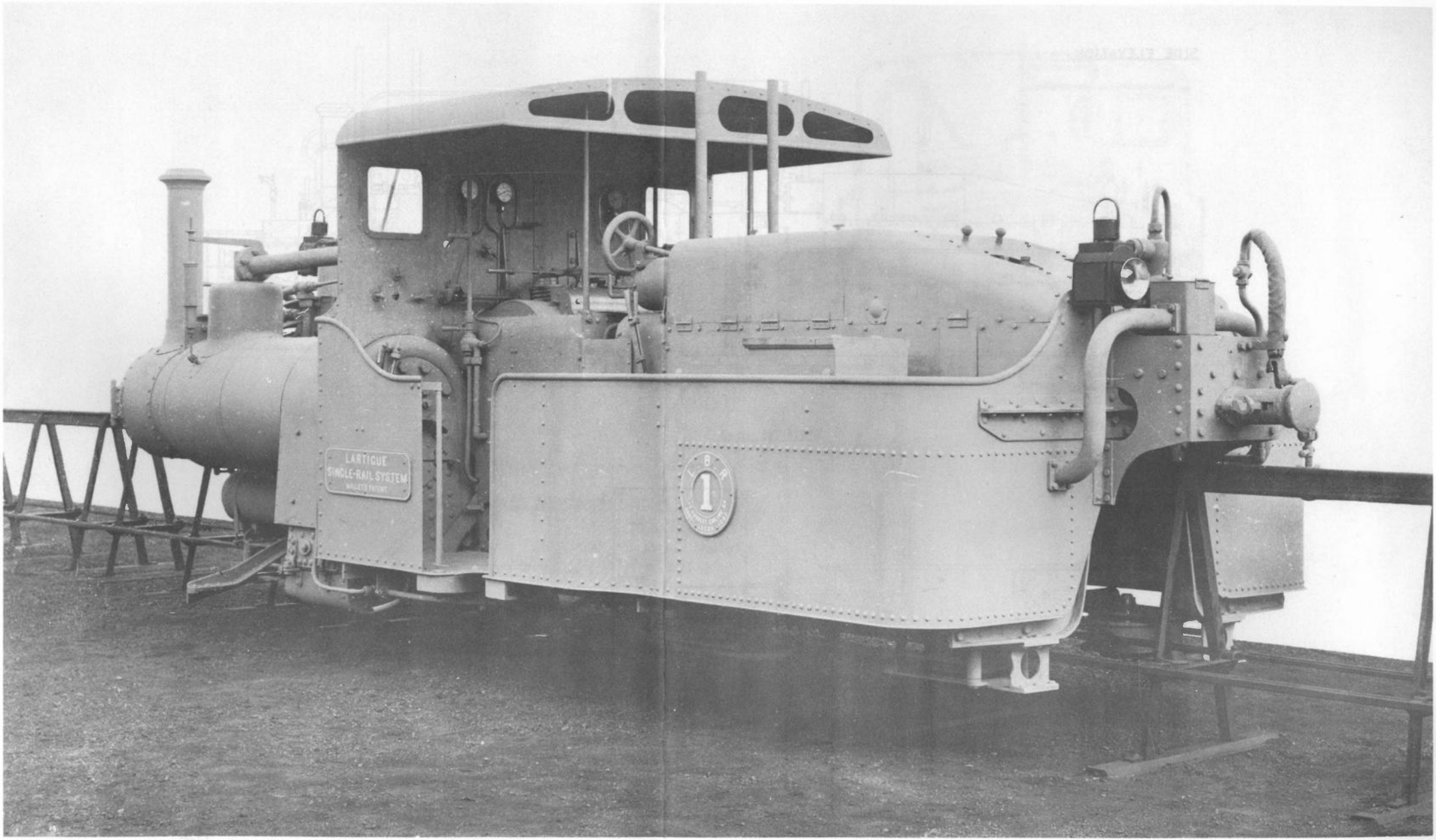
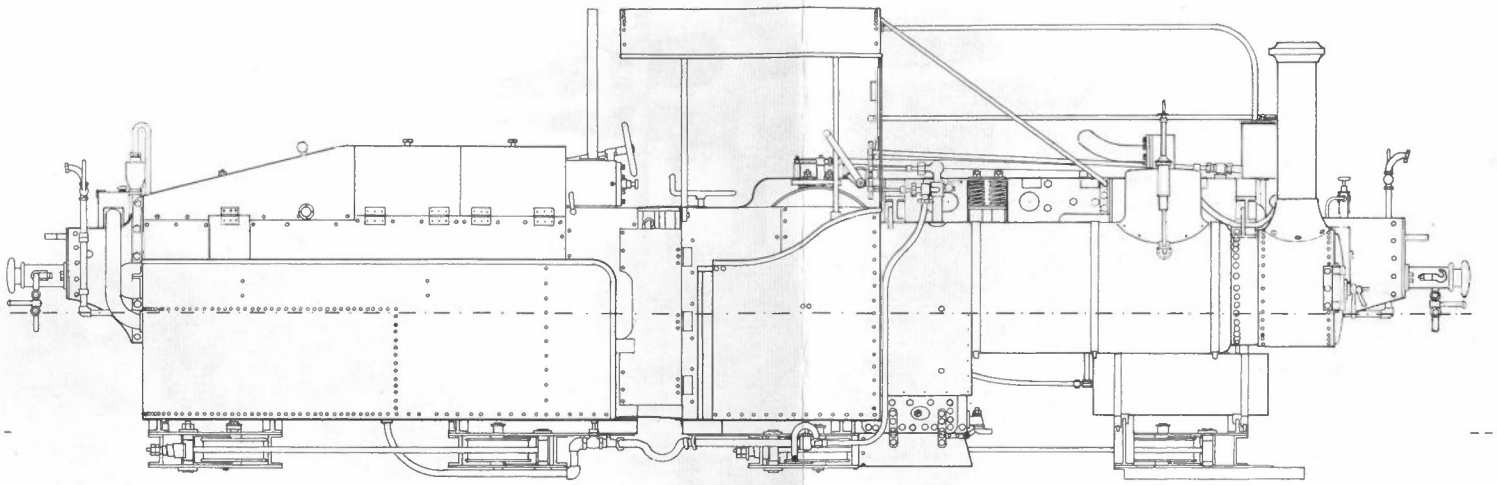
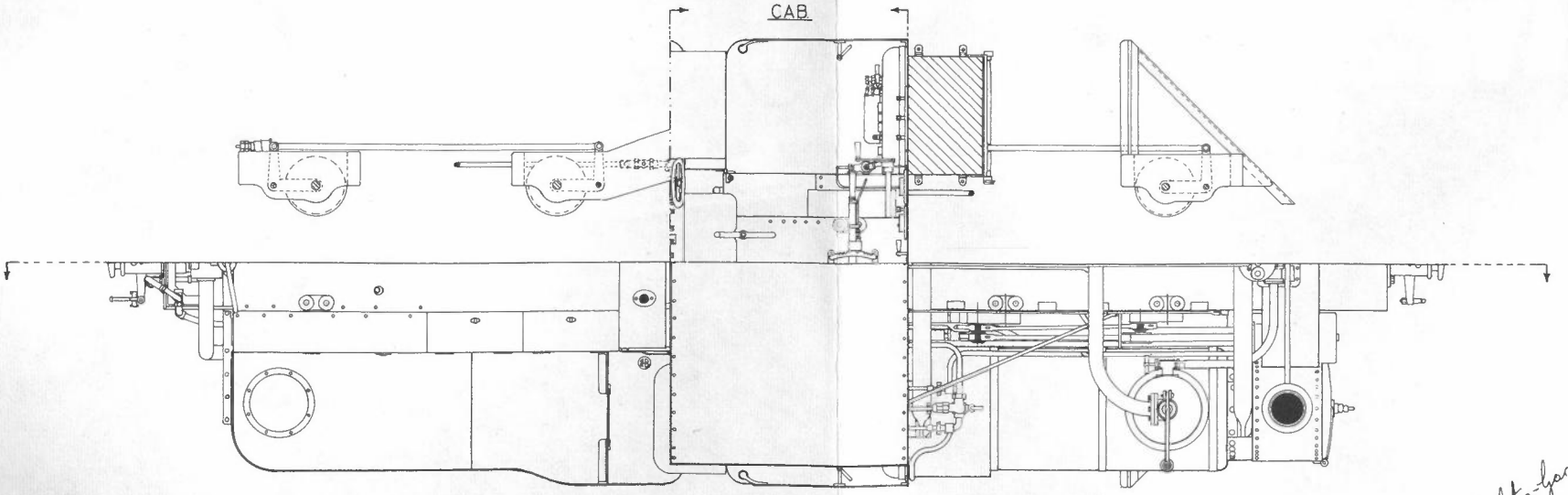

LARTIGUE
SINGLE-RAIL SYSTEM
1

SIDE ELEVATION.

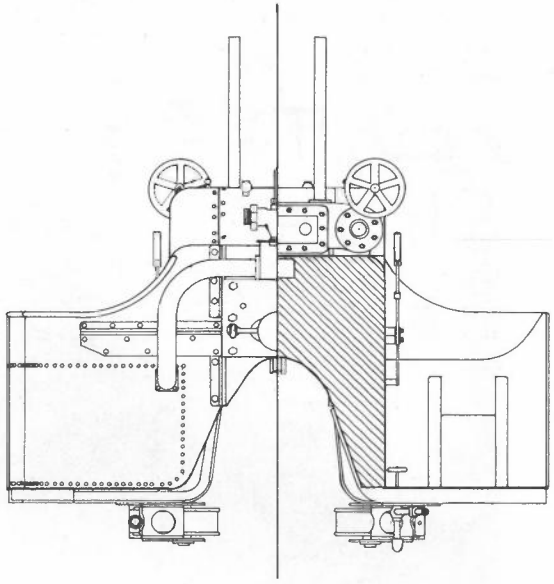


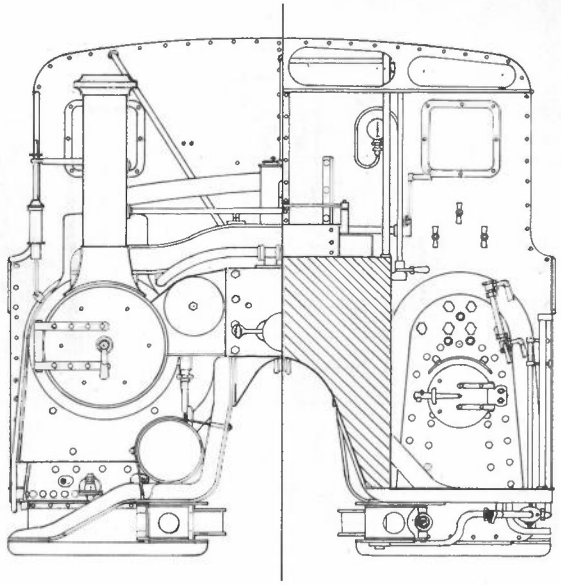
SECTION A-A



PLAN.

A. Stapleton-Gamar '68.





LISTOWEL & BALLYBUNION RLY.

NOS. 1-3.

Lartigue Single-rail System: Mallet's Patent.

Hunslet Engine Co. Nos. 431-3.

Built 1887.

ENGINE.

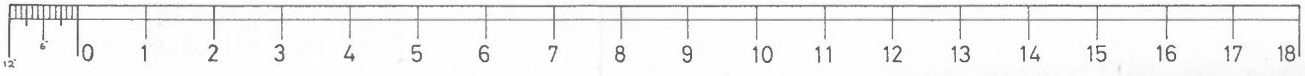
Cylinders 7"x12".
Coupled Wheels 2' dia.
Boiler Pressure 150 p.s.i.
Heating Surface 143½ sq. ft.
Grate Area 5 sq. ft.

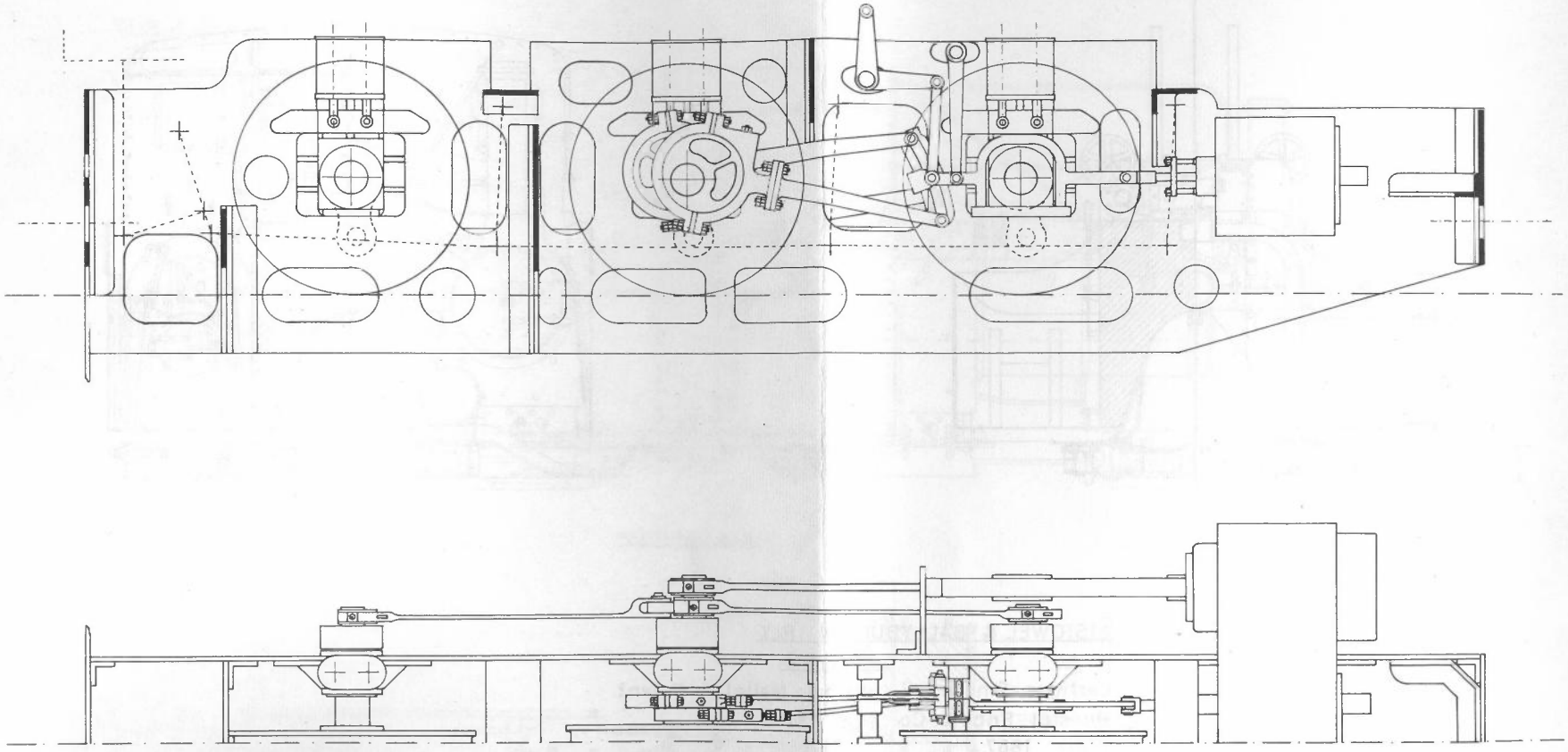
TENDER.

Cylinders 5"x7".
Coupled Wheels 2' dia.
Capacity of Tanks 200 gals.
Coal Capacity 18 cu. ft.

(Combined Dimensions.)
(Drawn as built, but Hunslet tail lamps not shown.)

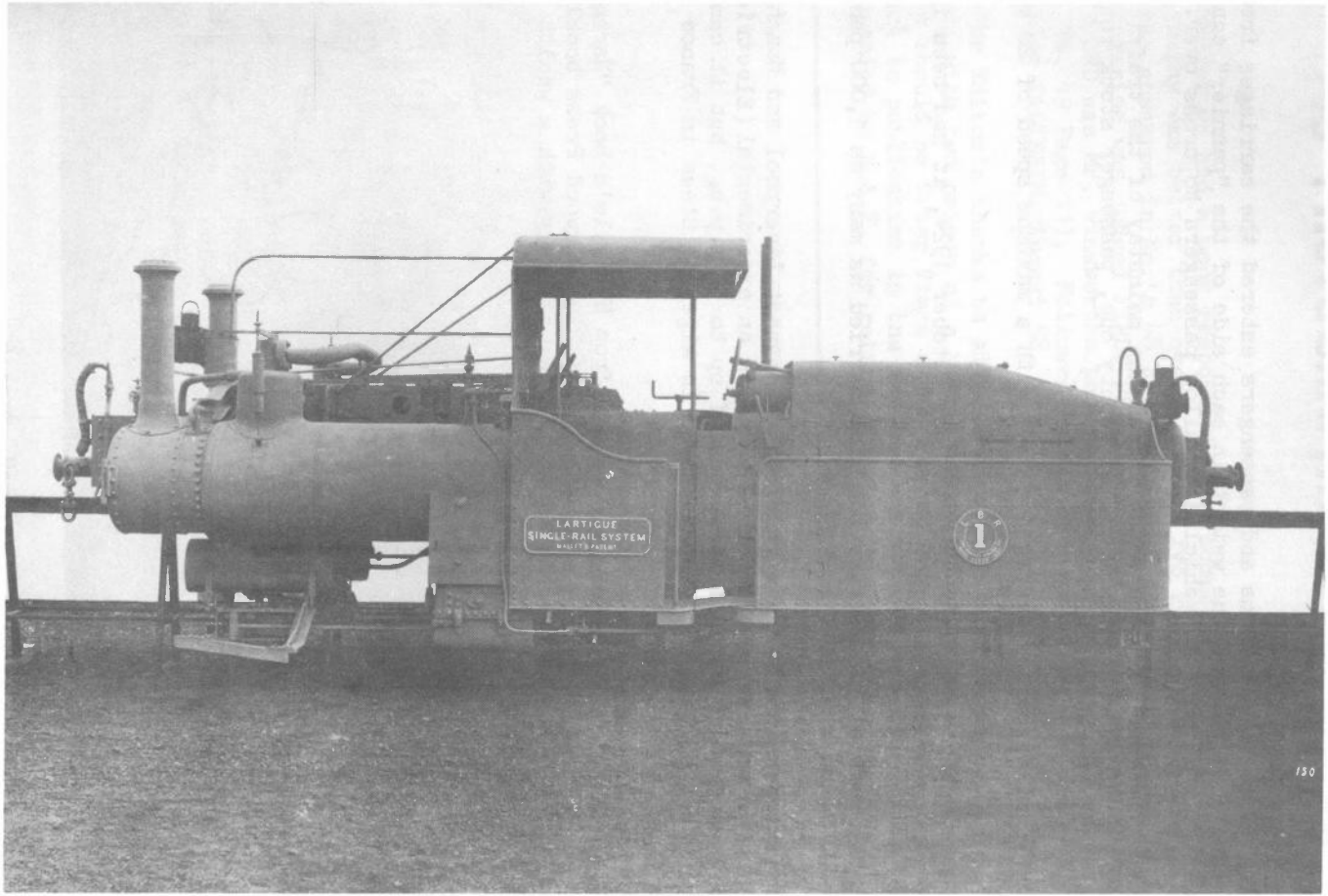
A. Stapleton Lyons '68.





Internal drawing of Listowel & Ballybunion Rly. Locomotive showing main frames, valve gear and the position of the brake gear. (Pipes & angle plates holding boiler not shown in order to preserve clarity.)

A. Stapleton - Gaynor. Jan '69.


LARTIGUE
SINGLE-RAIL SYSTEM

There were no platforms and passengers entered the carriages from ground level, to balance the weight in each side of the "pannier" coaches steps were fitted on some vehicles to allow passengers to cross over.

Freight wagons for sand which formed the mainstay of the traffic, along with cattle and sheep trucks totalled twenty one, passenger stock totalled thirteen, all on two axles.

The 9¼ mile journey averaged ¾ hour with a maximum speed of 20 m.p.h. although 27 m.p.h. was reached on test.

The closure of the line came on 14th October 1924, it had been in the care of a receiver for 27 years of its life.

At the peak of its service the line carried as many as 1,000 passengers a day.

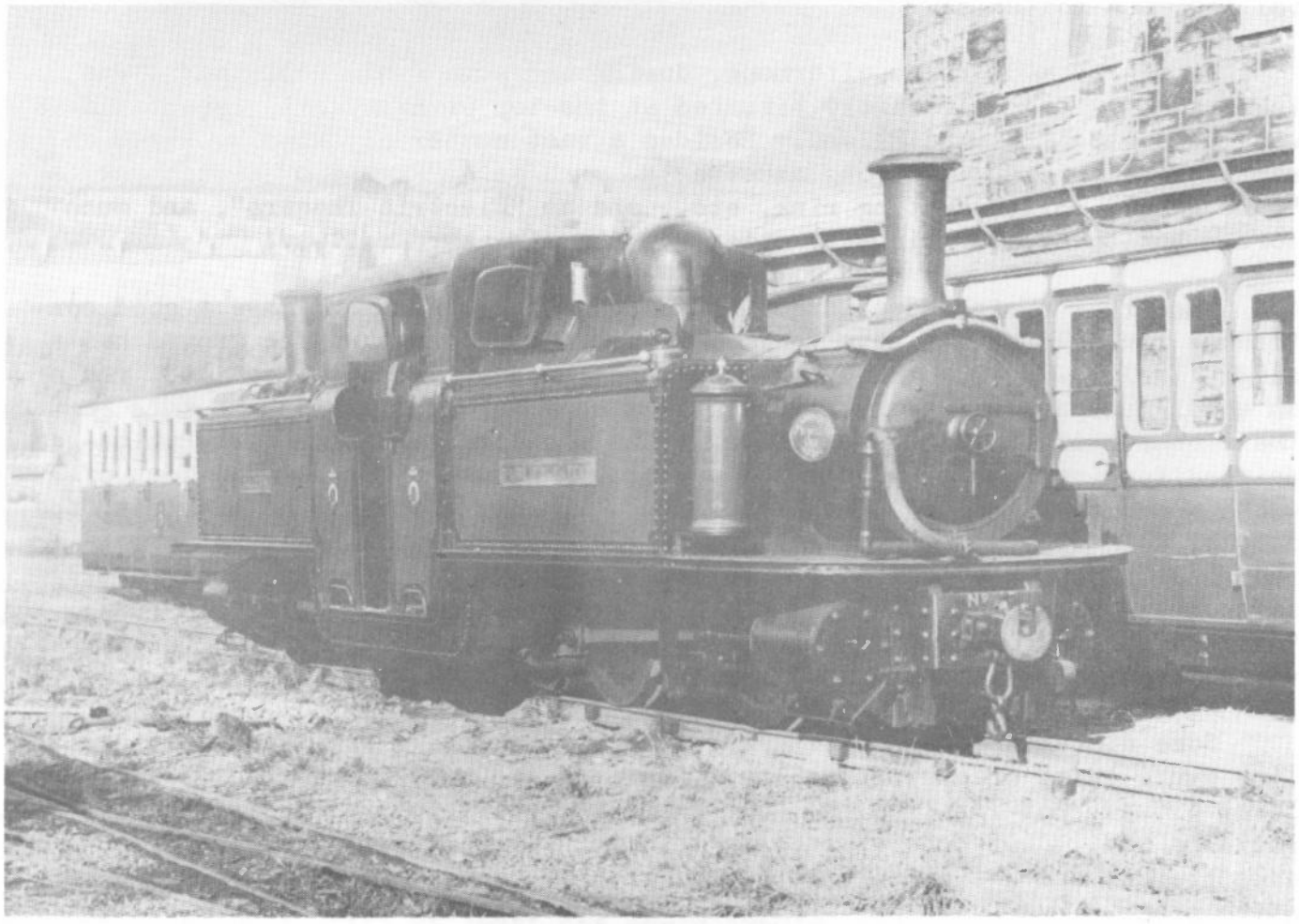
It is understood plans were afoot to connect Liverpool and Manchester with a high speed Lartigue monorail based on an experimental (**Electric**) **near** Brussels using bogie coaches at speeds of up to 50 m.p.h., but it came to naught. Other systems using horse power in Algeria, Steam in France and the Argentine were built.

(Further information can be obtained from H. Fayle's book "Narrow Gauge Railways of Ireland" and a very interesting Oakwood Press booklet (9/6d.) on the L & B by A.T. Newham published recently with a wealth of photographs and detailed information. - Editor).

1968 PHOTOGRAPHIC COMPETITION

Whilst we had a poor response to the competition the quality of the photography was better than ever. Two of Ivo Peters superb photo's have recently appeared in No.'s 48 and 49 and his third as a frontispiece to this magazine was judged FIRST PRIZE and gains a years subscription free. The SECOND was Mr. Winkworths photo of the E209 2-4+6-OT Portugese Loco (Mag. No. 49 Page 11). Followed by Ann Hatherills shot below of the Festiniog TALIESIN. August 58.

The Editor's thanks to all entrants, the 1969 Competition is now opened, with two prizes of a years subscription to the Society. Your prints should be Crisp Black and White minimum $\frac{1}{4}$ plate size. All entries subject to publication in the Mag and are sent to the library if not accompanied by S.A.E. for return, judging December 69.



LITTLE ELEPHANT

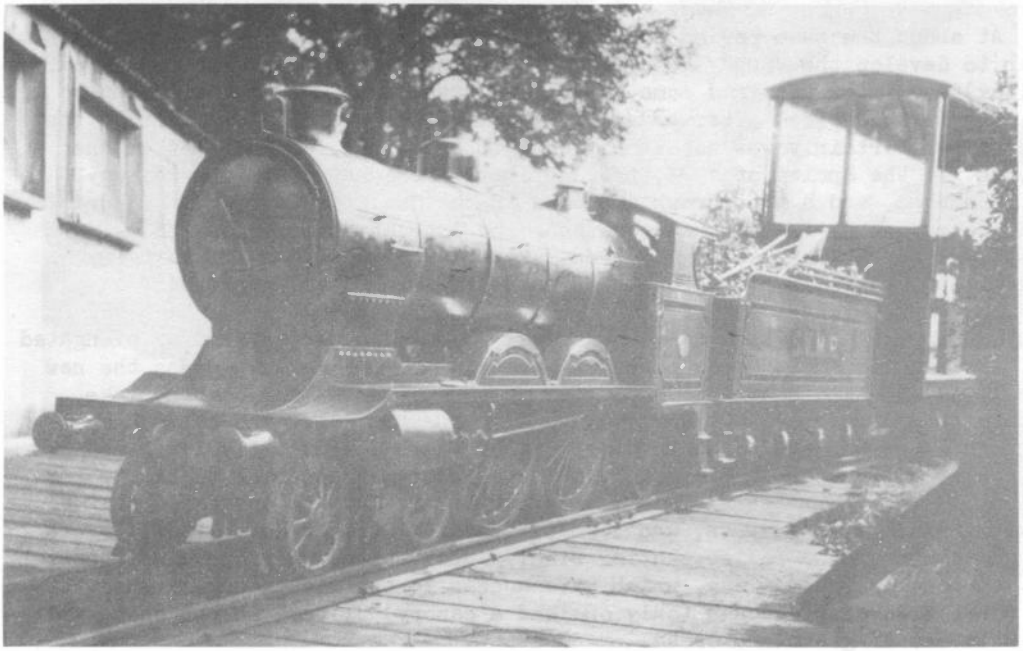
Ken Hartley

The 15" gauge miniature railway which operated (1909-1913) at the Chevin Edge Zoo, near Halifax (Yorks.), was my first actual contact with the "narrow gauge", although I was already aware of the Blackpool Miniature Railway of 1905, and its maroon 4-4-2, "Little Giant", through an article in "The Railway Magazine" for September, 1905 (Vol. 17) - which also illustrated the new "Heywood" engine "Shelagh", for the Duke of Westminster's railway at Eaton Hall.

It was on a Saturday afternoon, during the summer of 1913, that I was taken to this Zoo, pleasantly situated at the top of Exley hill, about midway between Halifax and Elland. Besides a vast number of animals, birds and reptiles, there were numerous amusements, such as a "Figure 8" switchback, a "Cake Walk", roller skating rink, etc., and an "Electric Theatre", and much more. But to me, the big attraction was the miniature railway!

The track encircled a large portion of the grounds, and gave a good continuous run, although I have no idea of its actual length. The ground had a slight fall, away from the "Lodge" entrance, hence part of the railway ran on an embankment a few feet high, and it was on a straight stretch of this that the timber-built station was located. The platform, with its neat, white-painted fencing, was approached by a short flight of steps, at the foot of which was a small wooden "Booking Office". On the afternoon of my visit, the door of this shed was ajar, and I could plainly see, on a shelf, a German-made model loco., typical of the period - a 2-2-0 tender engine, with oscillating cylinders, resplendent in the old "M.R." colours, and probably for "Gauge 1" track. Near this point, the embankment was pierced by a passage-way which gave access to the open-air roller-skating rink.

Some distance after leaving the station (in anti-clockwise direction) the line swung left, on a sweeping curve, through about 90°, and gradually came to level ground, not far from the "Old Mansion", where teas and refreshments could be had. Just before reaching this point, the inevitable tunnel was encountered, and I seem to also recall that there was a shed for the engine, quite close.



The locomotive, immaculate in green paint and shining brass, was a "Little Giant" type, Bassett-Lowke "Atlantic" - in fact, to my seven year old eyes, it looked just like "Little Giant" itself. But it was green, not red, and the name on the splashers was "Little Elephant". In 1913, I knew nothing of the technicalities of locomotive design, but this little 4-4-2 looked right "up to date". The train itself consisted of - I think four - 10-seater bogie carriages, all with canopies, and one, at least, had glass screens at the ends. The seating was "two abreast", on "reversible" wooden seats, and thus differed from the coaches used at Blackpool - these were "open", three-compartment bogie vehicles, and seated 12 persons. My father was as keen on engines as I was, and we made four trips behind "Little Elephant" that afternoon - on every one of which, he and I occupied the front seat in the leading coach, so that I could watch events on the footplate!

We went to the Zoo again in 1914, but alas! the miniature railway had gone, and, in fact, the whole place was being "run down" - a process accelerated by the outbreak of the first World War. Very soon, little remained except empty buildings, and the earthworks of the little railway - the latter could still be seen until at least the early 1960's, and indeed may remain even to the present time.

At about the same period as the Zoo was operating, the Bunce family began to develop the "Sunny Vale Pleasure Gardens" at Hipperholme (also near Halifax) and later acquired some of the Zoo equipment. Just what, I cannot say, but it transpired afterwards that the miniature railway was part of the deal. This certainly was not in evidence in the first few years after the War, but in the Spring of 1923, the opening of "the new miniature railway" was announced, and a photograph appeared in the "Halifax Courier". I need hardly say that my interest was aroused, and I celebrated the end of my first week at work by walking to "Sunny Vale" (and back!) and spending my pocket money (1/-) in riding on the "Sunny Vale Miniature Railway"!

The new lay-out was "end-to-end", and roughly in the form of an elongated "L". Not as long as the Zoo circuit, I would - very roughly - guess the new line to have a length of 300 yards, and it ran beside a long boating lake, to terminate at a small platform with a miniature building and dummy "passengers" (a rather crude and "cheap" effect, which I didn't like!) There was no run-round here, and the engine propelled its train back to the "main" station, which was situated partly on a curve, and had a stone-faced platform, with one or two seats, and a small "Booking Office" hut. (Oddly enough, again near a roller-skating rink!) Just before this curve was the only turnout on the railway, which gave access to the wooden engine shed. The three 10-seater coaches (only one had a canopy) "lived" in the open, and had a livery of green and cream.

The loco was indeed "Little Elephant", although the name on her splashers was now "Baby Bunce", and the tender carried the initials "S.V.M.R." in gold. She had been back to Bassett-Lowke's for rebuilding, earlier in the year, and had been provided with an 8-wheel bogie tender, in place of the earlier 6-wheeled one. The livery was still a pleasing green, lined in black, edged with white, and - of course - the usual polished brasswork - a brave sight indeed!

Several further visits were made to the railway during 1930-31, but in 1932 I left the Halifax district, and never again got to "Sunny Vale". I believe the line worked until World War Two, but at some later (unknown) date, the "Pleasure Gardens" closed down, and once more the little 4-4-2 vanished from sight. Many years later, she was discovered by Mr. Tate, of Gateshead, apparently beyond repair, but still carrying her "Baby Bunce" nameplates. In September 1965, fully and wonderfully restored, she ran her steam trials on the Ravenglass and Eskdale Railway, bearing her <u>original</u> name....."Little Giant"!! For the record, I append some details taken from the "Railway Magazine" previously mentioned:-

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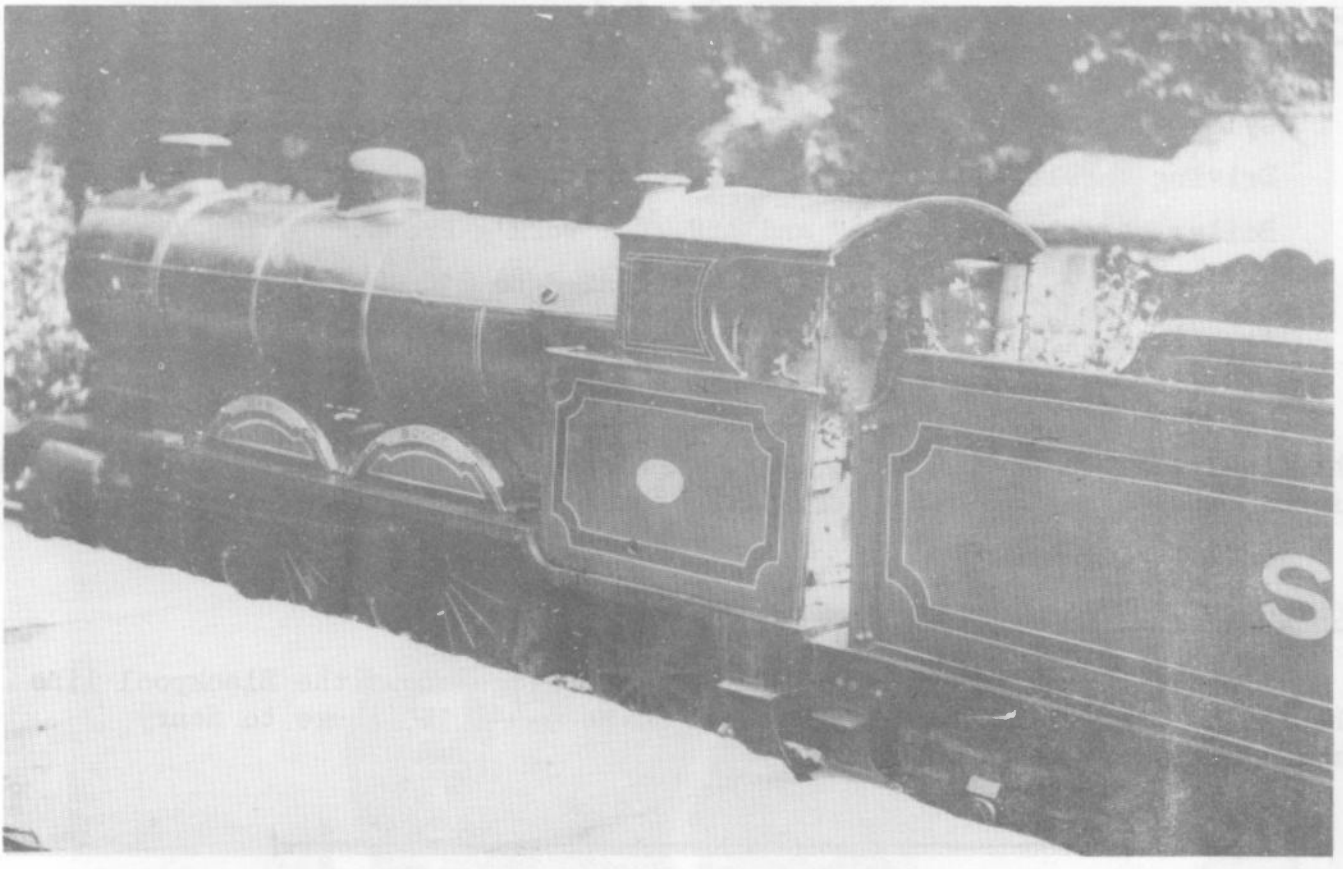
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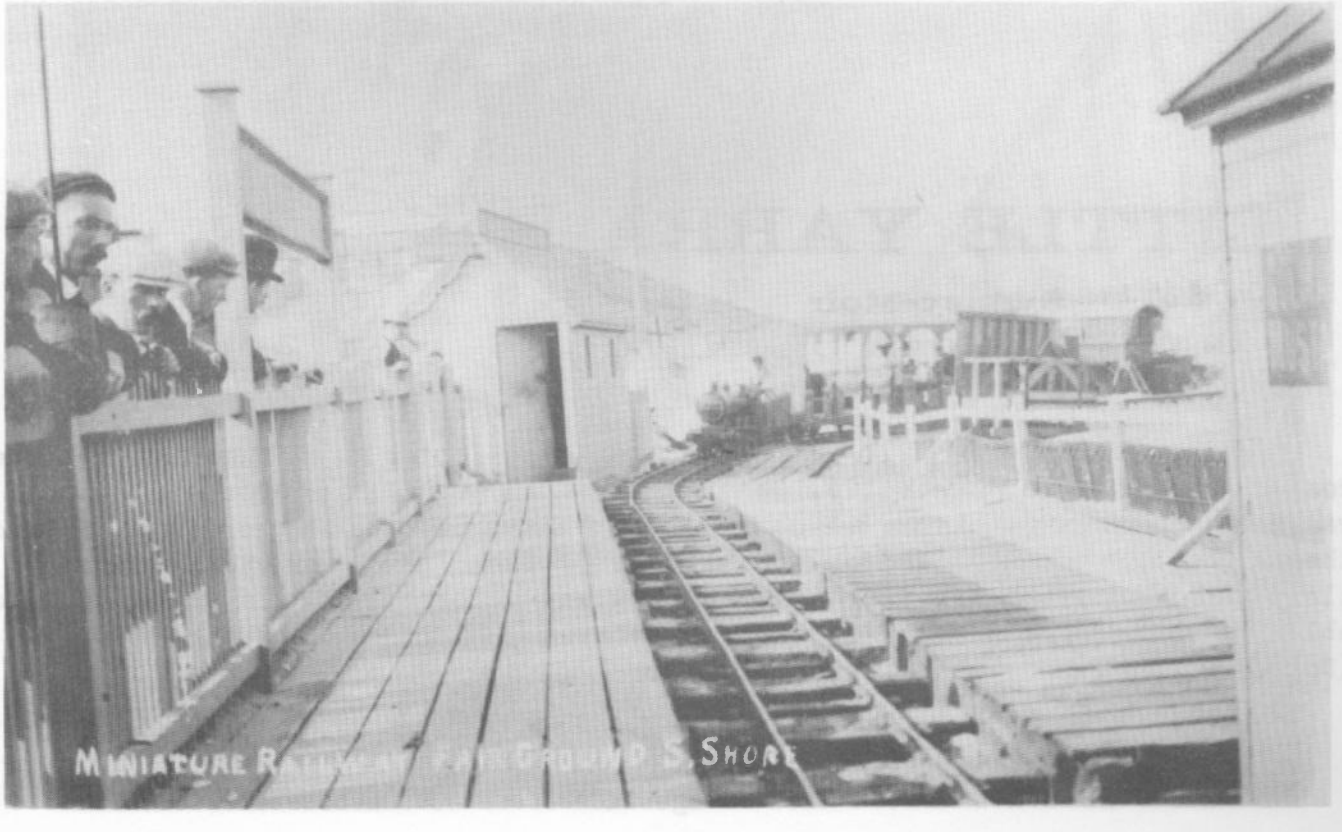

MINIATURE

"LITTLE ELEPHANT" continued

Cyls. (2), $3\frac{1}{4}$" x 6". Heating Surface, 5,270 sq.ins.
Driving Wheels, 18" diam. Grate Area, 204 sq.ins.
Boiler barrel diam., $14\frac{1}{2}$" and 15". Work'g Press, 110 lbs./sq.in.
Boiler centre line, 2' - $2\frac{1}{2}$". (Tested to 210 lbs./sq.ins.)
Ht. (Chimney Top) 3' - $3\frac{5}{8}$". Length O/A, 14' - $1\frac{1}{2}$".
Wt. in W.O., 1 ton 9 cwt.

The oak-framed (6-wheel) Tender was 5'7" long x 2'0" wide, and carried 56 lbs. of coal and 35 gallons of water. Time taken for construction was 22 weeks.

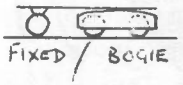
POSTSCRIPT EDITOR

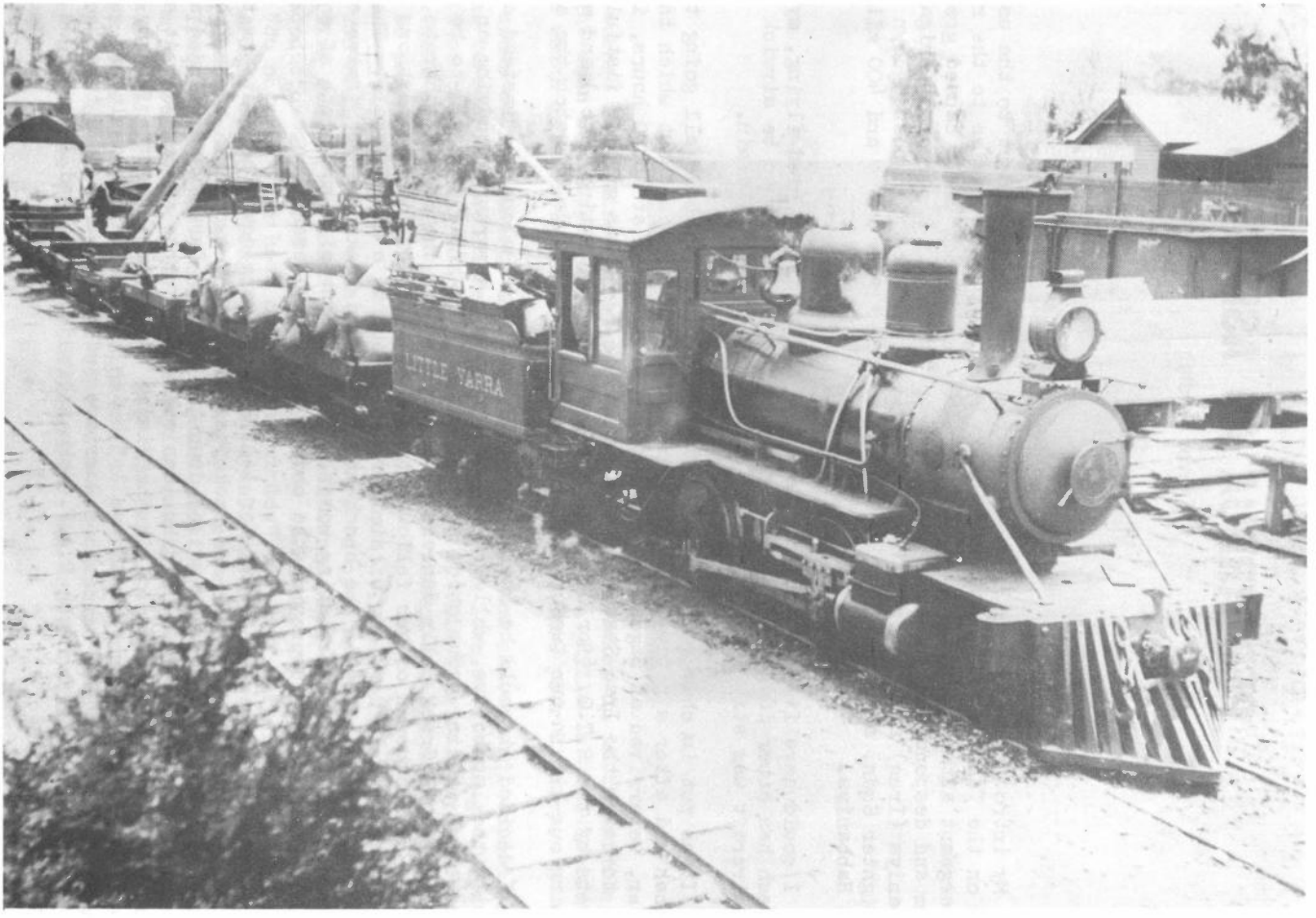
A photograph kindly loaned by Ivor Gotheridge shows the Blackpool line about 1904 with "Little Giant" Bassett Lowke 4-4-2 15" gauge to Henry Greenly design.

LITTLE YARRA

Sydney Moir

She was a Baldwin-built 2-4-0 for the three-foot gauge, owned by a timber company in Victoria, Australia. When this photo was taken, around 1925 she was down at Yarra Junction, which appears to have been the interchange between the narrow and the standard gauges. It is believed that the timber company closed down in 1940, and that Little Yarra was scrapped. Could any knowledgeable Australian reader fill in further details of her life and times? (Note unusual Tender wheel arrangement).




LITTLE YARRA

PER ARDUA AD ASBESTOS

Trevor Polding

My introduction to the narrow gauge was a little different to the usual trip on the Tally or FR. The basic cause being my meteoric rise to the rank of sergeant after some eighteen months in the Air Force. This caused great alarm and despondency among the "twelve years and still a corporal" brigade in Habbaniya (Iraq) and to forestall an incipient meeting I was posted down to 32 Fighter Sqdn. at R.A.F. Shaibah some nine miles from Basra and 400 miles from Habbaniya.

I could have fiddled a flight down but while I don't mind flying, my stomach has other ideas, I'm probably the only person ever to be airsick while the aircraft was still taxying up the runway, so I went by train.

I was put in charge of a merry little band of seven bods all going to Shaibah and after a fifty mile road journey, the less said about which the better, we arrived at Bagdad West some four hours later at 18.00 hours, in good time to catch the Iraq State Railways Train No. 2. I was given a fistful of tickets by the R.T.O. (for bedding, air-conditioning, eating, etc.) and after dumping our kit in our two compartments we stepped outside to watch the activity.

I decided it would be unwise to leave my charges alone, so instead of viewing the locomotive, whiled away the time until departure studying an interesting wedding group stood near our door. The bride appeared to be one of those gorgeous Greek belly dancers that performed in the Bagdad cabarets, and she had half a dozen of her fellow artistes with her of like proportions presided over by an older lady of similar design but to a larger scale. The bridegroom was the smallest of the bunch and just stood looking apprehensive amid these chattering, gesticulating women, this in front of a backcloth of enough Arabs milling round to provide the chorus for fifty Desert Songs.

When what passes in Arabic for 'All Aboard' rang down the platform the happy couple got in our door and took possession of a two berth compartment next to ours and immediately pulled down the blind. Darkness descended at seven and shut out the view of the less sulubrious parts of Bagdad. At seven thirty I had an excellent meal in the dining car and returned to find my charges endeavouring to bore through the wall "to see how the happy couple are going on, Sarge", fortunately The Birmingham Carriage and Wagon Works make their coaches out of better stuff than the R.A.F. make their jacknives and I persuaded them to desist.

I turned in at nine-thirty and apart from being woken up in the middle of the night when we stopped at Hilla, had a good night. Hilla is the station for Babylon which is a thought to go to sleep on if you know your history.

I awoke at five-thirty a.m. and having washed and shaved and decided about six a.m. to see if I could get some pictures of the loco as it swung across the turnouts on the passing loops. I must add that at this time railways did not occupy their present high place in my scheme of things but I was interested enough to photograph them given the chance.

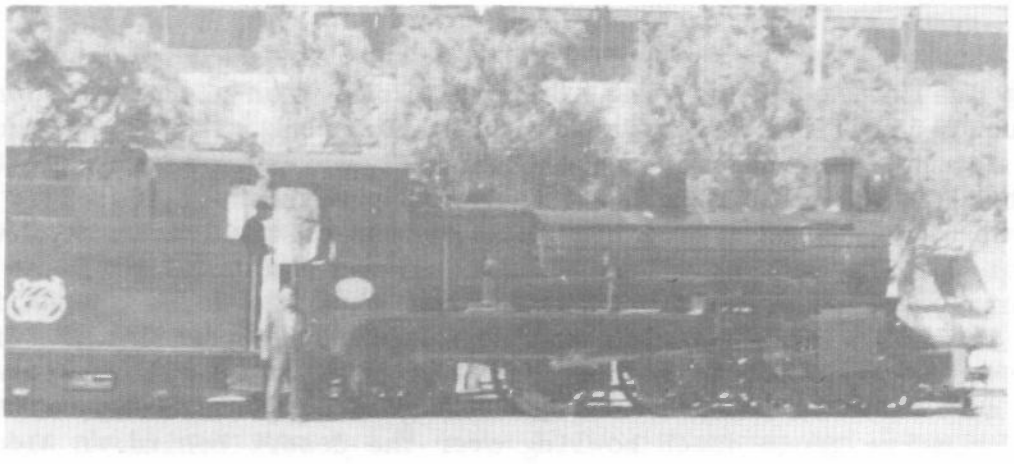
I was endeavouring, with little success, to open a window in the corridor but failing due to the coach being air-conditioned when along came our little Iraqi conductor who fired off a great volley of Arabic which I presumed to be of the "do not put your head out of the window" variety. After some talk in pigeon Arabic and sign language I found myself precariously suspended over the desert, leaning out at an incredible angle, stood on the bottom step with the little Iraqi holding onto me with one hand and the grab rail with the other while I took my pictures. What he'd been saying was that the doors opened inwards thus facilitating my being dangled over the sand at some 40 m.p.h. After I had been retrieved he vanished to reappear five minutes later with a heavenly cup of tea to put me on until breakfast time, its a good start to a day, sitting out on the step of a metre gauge coach bowling over the desert behind an Alco 2-8-2 and swigging tea.

About six thirty a.m. we rolled in UR Junction (UR of the Chaldee's for those that know) and here I saw the cause of all the noise that had disturbed my sleep at Hilla. On a side track was a row of water tank wagons for the locomotives and most of the less fortunate passengers at the front of the train lept off as we slowed and ran to these to slake their thirst from the water that dripped from them. The mad scramble when the train restarted was fantastic to see as they all tried to leap back on board at the same time, one little chap, festooned in bundles, managed to get a grip on a handrail but couldn't get enough speed up to get his feet up on the step and went bounding along beside us in fifteen foot leaps until a dozen hands pulled him aboard.

I managed to get a head-on shot of one of the big Alco Class W 2-8-2 on a typical oil field freight, mostly huge pipes on flat wagons, that was waiting in a passing loop just before we enjoyed a typical English breakfast in the dining car. Back in the compartment the bunks had become seats again and we got out kit ready as we were nearly at Ash-Shu'Aiba Junction the nearest station to the airfield.

We stood in the corridor as the train rolled slowly into the station at 9.30 a.m. some two hours late and were delighted when just before we stopped the happy couple emerged from their coupe for the first time since 6.30 the previous day, the bride is ravishing as ever but the groom's haggard expression seemed to suggest that rail travel did not agree with him.

As our train pulled away behind the Alco McArthur I presumed that I'd seen the last of railways for a while but when the following morning I emerged from my bunk the first thing I ran across in the compound was one of Newton-le-Willows finest, a class HGS 4-6-0 gleaming black in the sunlight. This proved to be the Mondays Only freight which brought jet engines, spare parts, etc., and a bogie tank wagon of fuel oil for our diesel generator every week. It shunted them over a maze of tracks that ran all over the camp almost buried in the sand and made Monday a day to look forward to instead of dreading. Thus I was introduced to the fascination of the Narrow Gauge.



The Narrow Gauge Locomotives of Hudswell Clarke & Co. Ltd.

Part 7 R. N. Redman

Narrow Gauge Mass-Production (Hudson/Hudswell)

The firm of Robert Hudson founded in 1865 at the Gildersome Foundry, near Leeds has been famous for years as light railway engineers with an international reputation, backed up with overseas stockyards and works. They have been responsible for many large contracts involving the equipping of extensive overseas lines like the Loanda and Amboim railways.

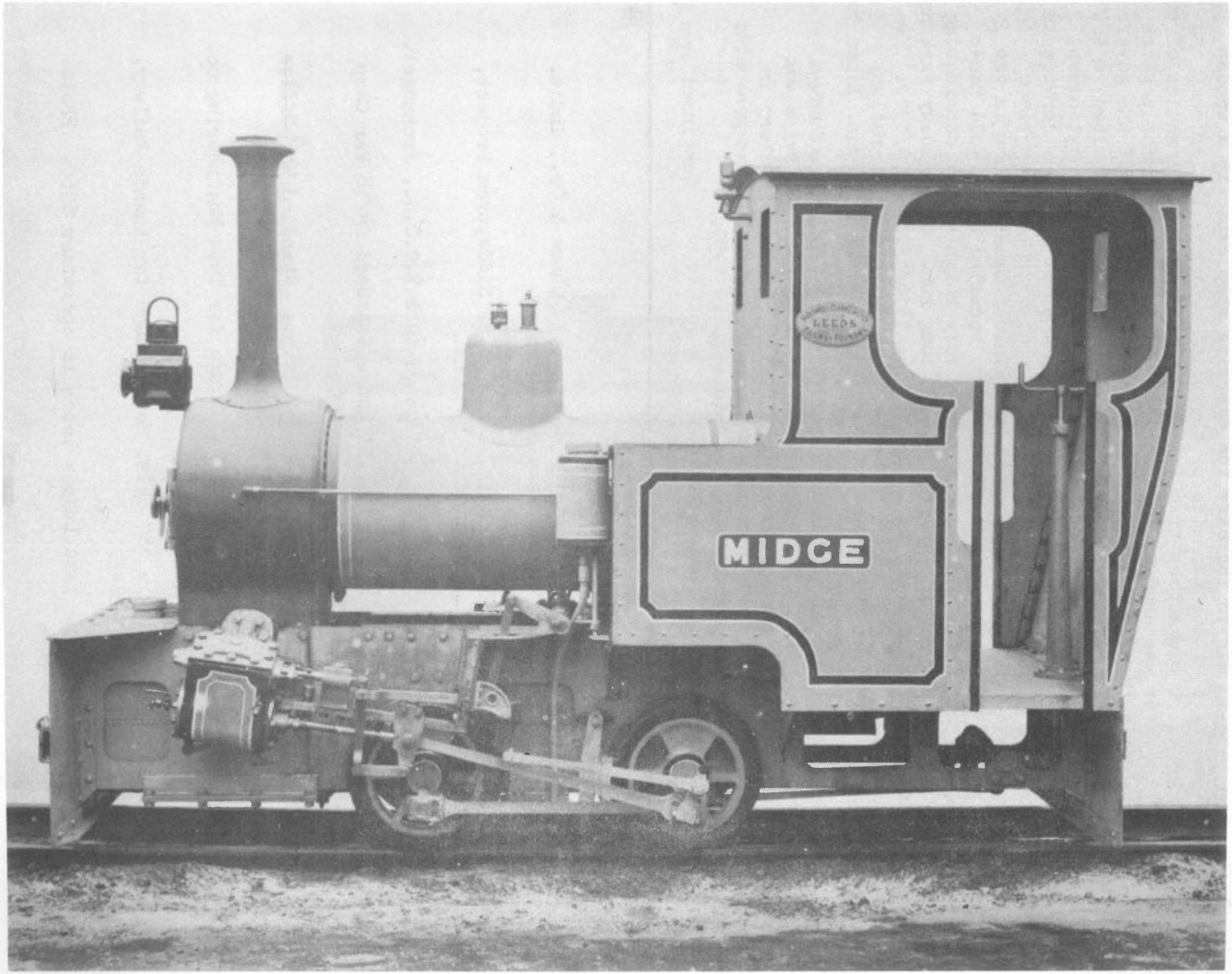
Up to recent times apart from an experimental petrol electric tractor locomotive which was not a success in the late 1920's, Hudsons have never built their own locomotives and have relied on several builders to supply all types of motive power to their customers in the form of sub-contracted orders.

After the turn of the century a need for standard designs of narrow gauge locomotives was soon apparent and an association was formed with Hudswell Clark who were to produce the designs for a complete range which Hudsons could then market as ex stock or for rapid delivery. The new designs produced in 1911 were known at the Railway Foundry as "Class Engines" the 16 basic types (Classes "A to Q") covered class "A", 5" x 8" cylinders and four wheels for 2'0" gauge rated by Hudsons at 15 H.P. up to 8½" x 12" cylinders driving six wheels on 2'6" gauge class "Q" rated by Hudsons at 55 H.P. The completed sets of drawings enabled alterations due to odd metric gauges or special fuels to be carried out in the minimum of time and as many parts as possible were interchangeable.

The majority of the just under 200 engines built for Hudsons up to 1929 were small well tank designs thus giving a stable design with a low centre of gravity ideal for working on the not too perfect temporary tracks often found on overseas light railways such as plantation and mining layouts.

Most of the engines carried Hudson works plates with Hudswells works number and date cut in, if ordered through an overseas depot such as Calcutta the engine plate carried the name of the works such as Hudson-Calcutta.

The first engine built at the Railway Foundry was Work Number 962 a 2'0" gauge, 5" x 8" cylinder well tank named "Queen Mary" (AS works photograph of "Midge") supplied to B.K. Ghose & Co., India. (Cost £300). A complete list of all the engines then built is far too long for inclusion in this article but a number of the machines are worthy of special mention; works number 1055/1914 was a 2'0" gauge 0-4-0 well tank with 5" x 8" cylinder for the Darjeeling & Himalayan Railway.


MIDGE
LEEDS

During the 1914-18 war to increase the erecting shop capacity a wooden erecting shed was built at the far side of the plant near the boiler shop and at the end of the multi gauge test track, this was built for the erection of the class engines but later was used as a stripping shed for locos in for repairs and rebuilding. When the War Department passed on Hudsons share of the government contracts the locomotive orders came to Hudswells. These resulted in the construction of 77 0-6-0 well tank engines with 6½" x 12" outside cylinders, 66 of them for 60 cm. gauge and 10 for 2'0" gauge, most of them saw service in Salonika or France. After the war the few left in more or less one piece returned to Jack Lane for renovation and were sold to private owners in the British Isles or India. The engines returned were recalled by the old hands as having shrapnel holes all over and being in a very rough state, considering they were only built for a short life many had a long run. Sir Lindsay Parkinson used three of them on construction work, 1277/1916, 1316/1918, 1319/1918. Two were converted to 2'0" gauge to work on the Leighton Buzzard light railway numbers 1377 & 8 of 1918. Number 1314/1918 went to Anderson in Devon. later to Heeth Clay, and ended up at the Standard Brick Company at Redhill, Surrey. One of the last engines of this W.D. design recorded in active service was supplied new in 1919 works number 1381 to the Purtabpore Sugar Factory in India for working the 2'0" gauge line and was supplied with a steam generator and full set of electric light fittings by Hudswells in 1955.

Continued overleaf

Photographs

No. 1 962 of 1911 5" x 8" cyls. 2' gauge to B.K. Ghose & Co., India. Renamed "Queen Mary" and Hudson plate fitted.

No. 2 1017/18 of 1912 7" x 10" cyls. 2' gauge to Siddapuram Project, Madras. Order via Indian Office Hudsons.

No. 3 1156/7 of 1915 7" x 10" cyls. 2' gauge to B.E.C.O.S., Archangel.

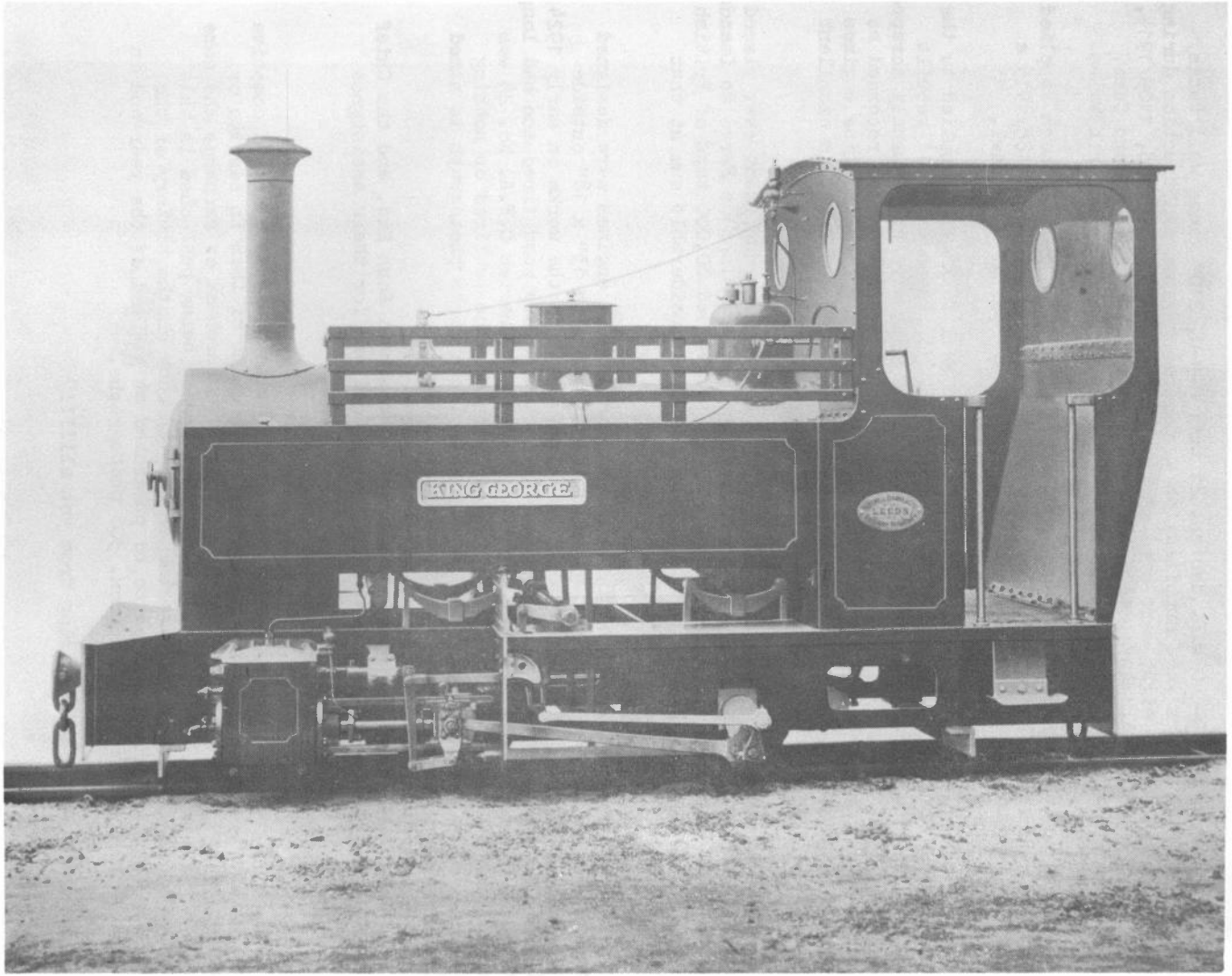
No. 4 1158/63 of 1915 5" x 8" cyls. 2' gauge Standard 14/18 War Camp Construction Loco.

No. 5 1219 of 1916 6½" x 12" cyls. 60 cm. gauge. Standard War Office Hudson/Hunslet loco.

No. 6 1395 of 1921 6½" x 12" cyls. 2'6" gauge for Tata Engineering Co. to Bombay.

No. 7 1515/20 of 1924 13" x 18" cyls. Metre gauge for Luanda Railway, Portugese West Africa.

No. 8 C.F.A. No. 24. The last Luanda locos in operation 1960. Photo c/o Robert Hudson.


KING GEORGE

Apart from the 0-6-0 W.D. design, 21 tiny 0-4-0, 2'0" gauge well tanks with 5" x 8" cylinders were supplied for aerodrome and camp construction during the first world war, eight were used at Ripon Camp, Yorkshire, 1108, 1109/1914, 1126, 1127/1914, 1141-1142/1915, 1158-1159/1915, two went to Richmond Camp, Yorkshire 1160-1161/1915 and 1129/1914 went to Abergele Camp in North Wales.

From all the Hudsons engines supplied only one looks to have been supplied new for work in the British Isles by a private company, this was 1188/1915 a W.D. type 0-6-0 for the Barry Sand & Gravel Company Ltd. at Porthcawl.

In 1920, seven W.D. type 60 cm. gauge 0-6-0 well tank were supplied to the Royal State Railways of Siam. Works numbers 1467-73, these were all rebuilt at a later date into 0-6-2 tanks engines, five of them were subsequently scrapped in 1946, 1950, 1956, 1957 and 1960, two of them numbers 7 & 9 were recorded as working a branch line on the collection of wood fuel for the main line engines as recent as 1961 and may well still be at work as they were kept in excellent condition.

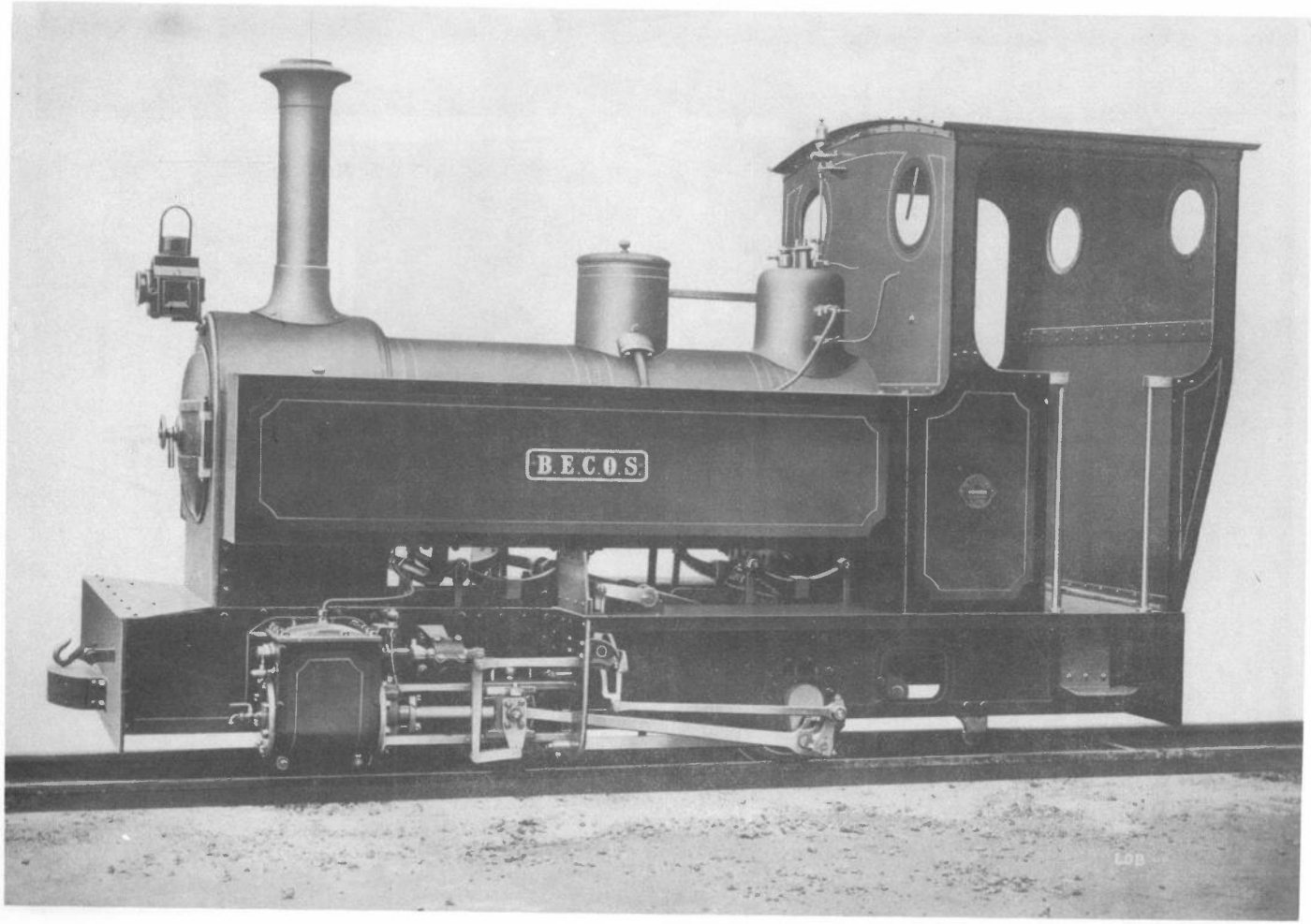
In 1924 Hudsons landed the largest order for railway equipment ever placed as a single order up to that date for the Metre Gauge Caminho de Ferro de Luanda (Luanda Railway) in Portugese West Africa, this involved 80,000 tons of British steel for the rails alone and was worth £200,000 a considerable sum at that time!

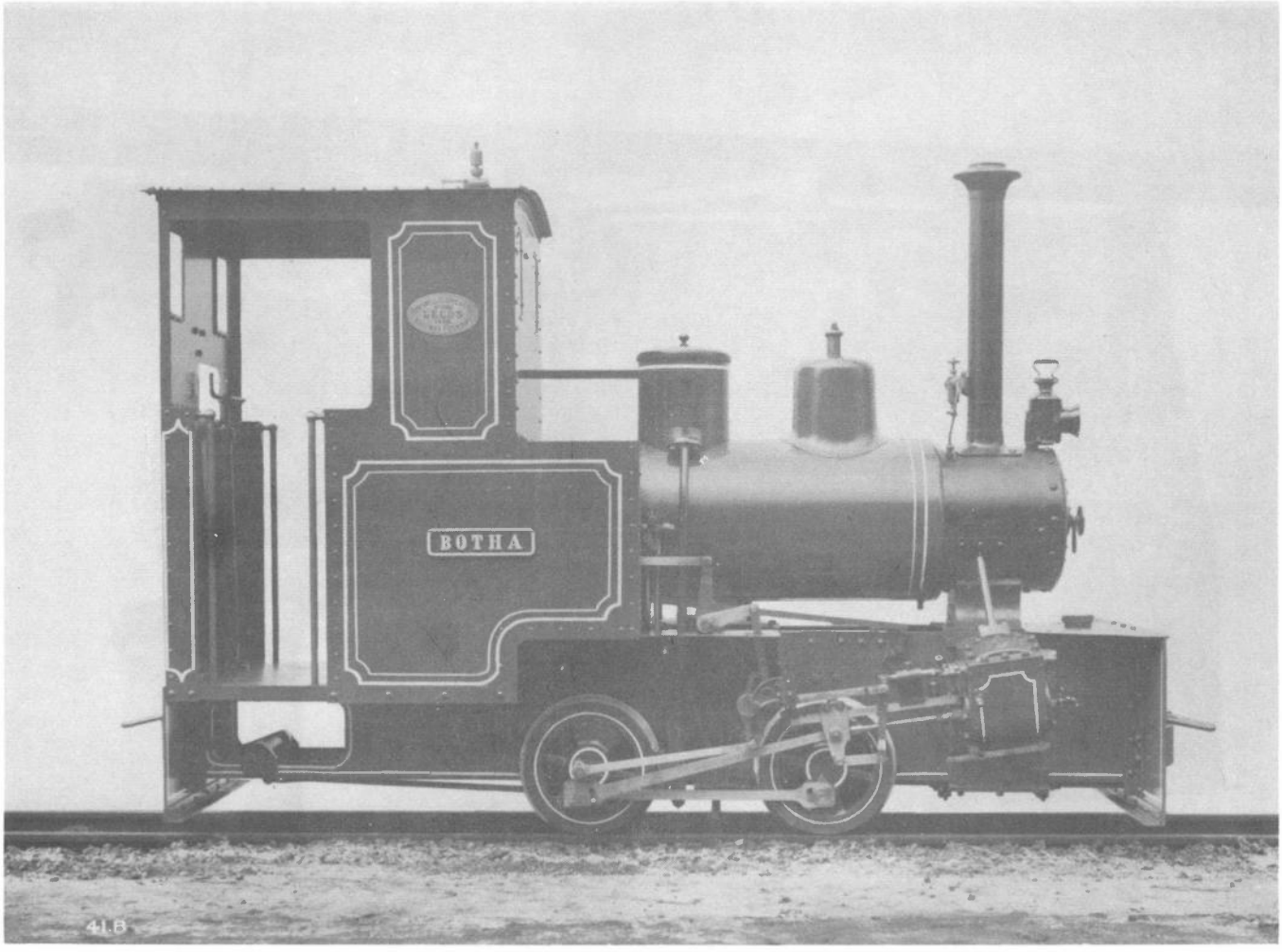
For working the new line six large 2-6-0 side tank engines were designed and delivered by Hudswells, works numbers 1515-1520 with 13" x 18" outside cylinders 3'0½" & 1'11½" diameter wheels, they all left the works in early 1924. It is interesting to note that these large machines were wood fired and had long racks on the tank tops to carry the fuel, one of the series C.F.A. No. 24 was still in service in 1960 and from available photographs is fired on nothing better than brush wood but still going strong (note works photograph is named "Loanda").

In closing I would like to thank Robert Hudsons & Sons Ltd. and the Chief Mechanical Engineer of the State Railways of Thailand for their assistance with photographs and historical facts.

P.S. May I please ask any members and friends with Hudswell Clarke locomotive photographs at home or overseas, in particular shots of them in service or preserved to please contact me. I would like to purchase or exchange the same with a view to any special photographs of interest being published in this series of articles for the magazine or for the book on the history of the Railway Foundry which is hoped to be published at the end of the year and in which we hope to reproduce approx. 300 photographs.

Looking forward to hearing from you all!!!!


B.E.C.O.S.



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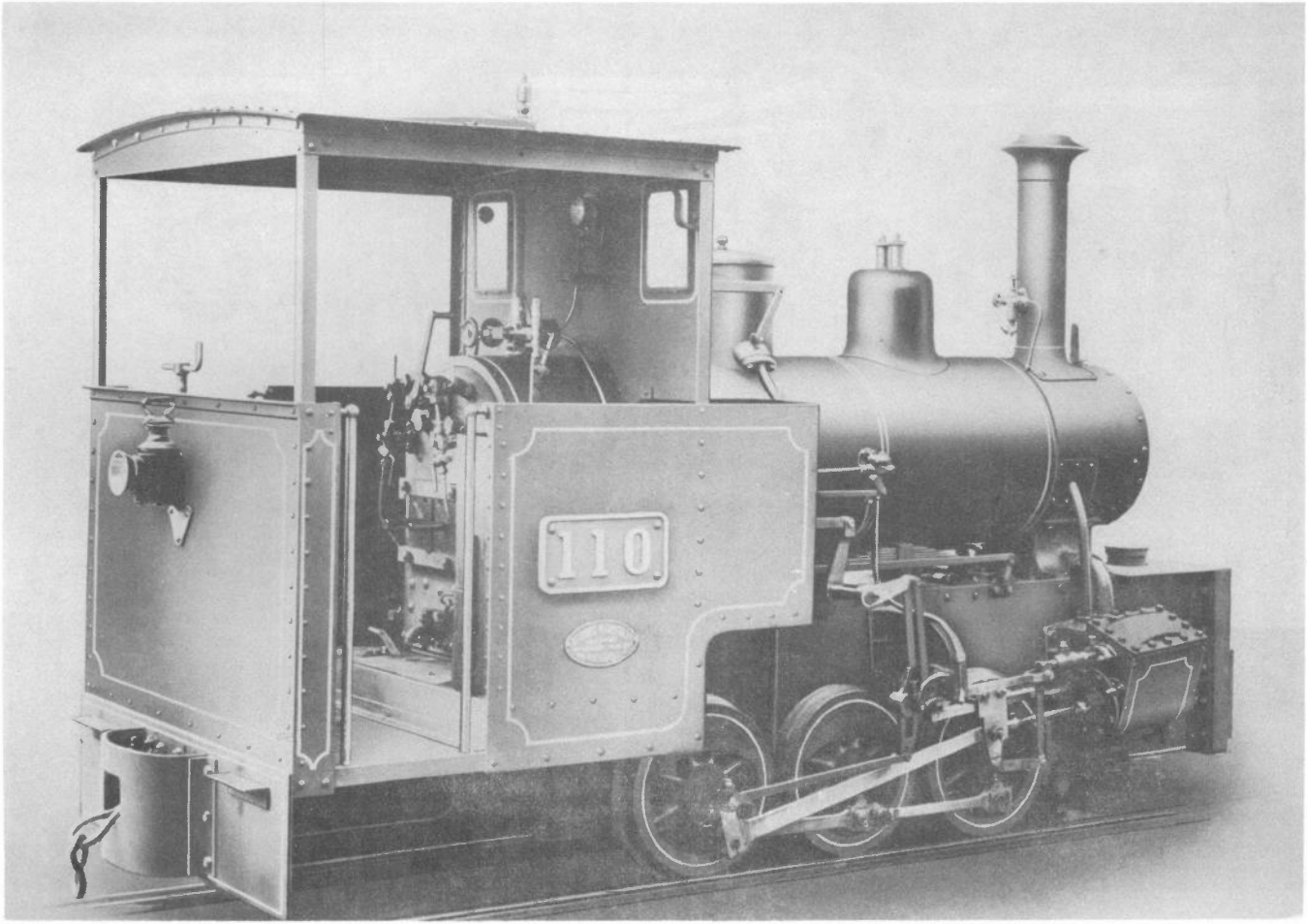
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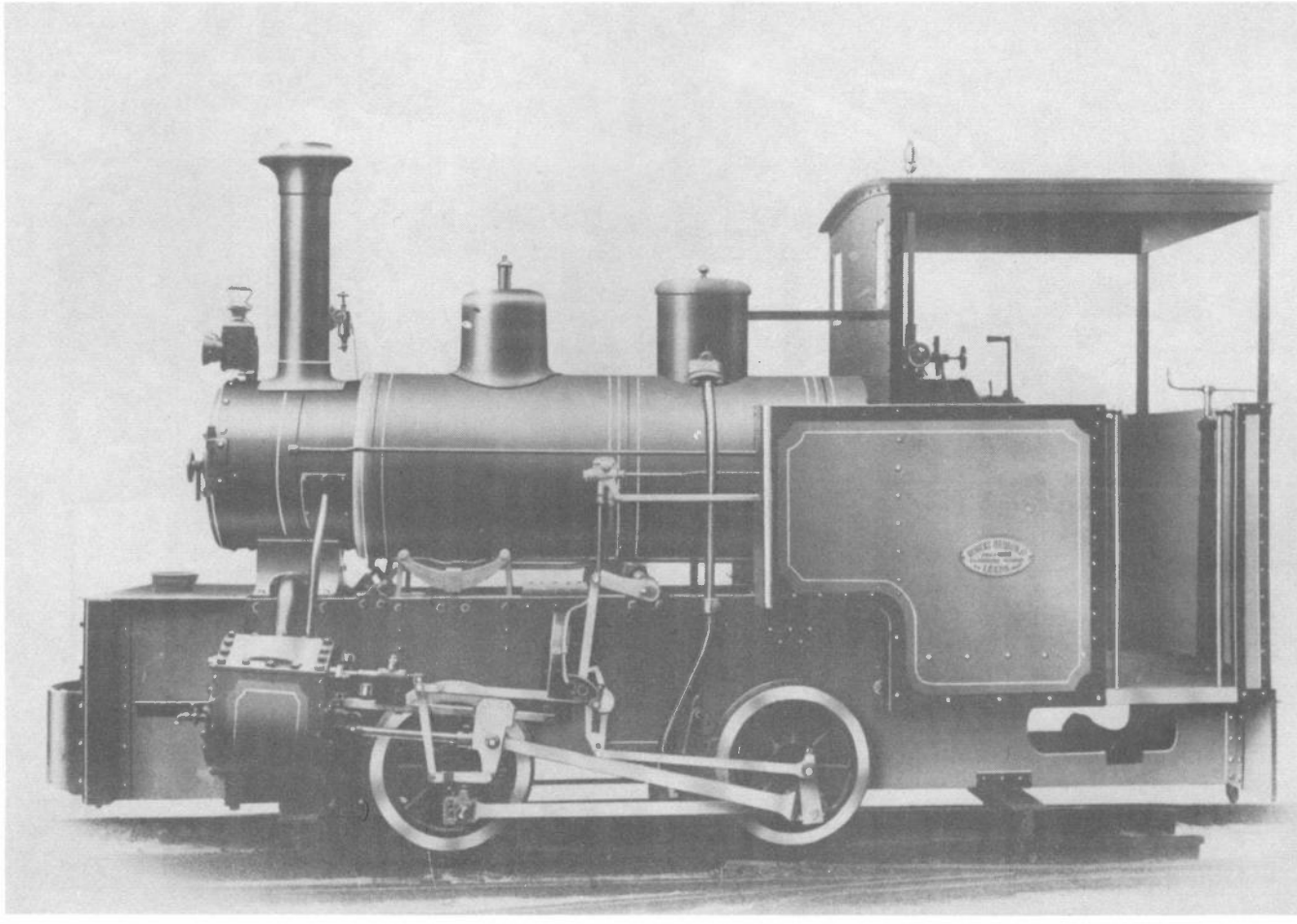
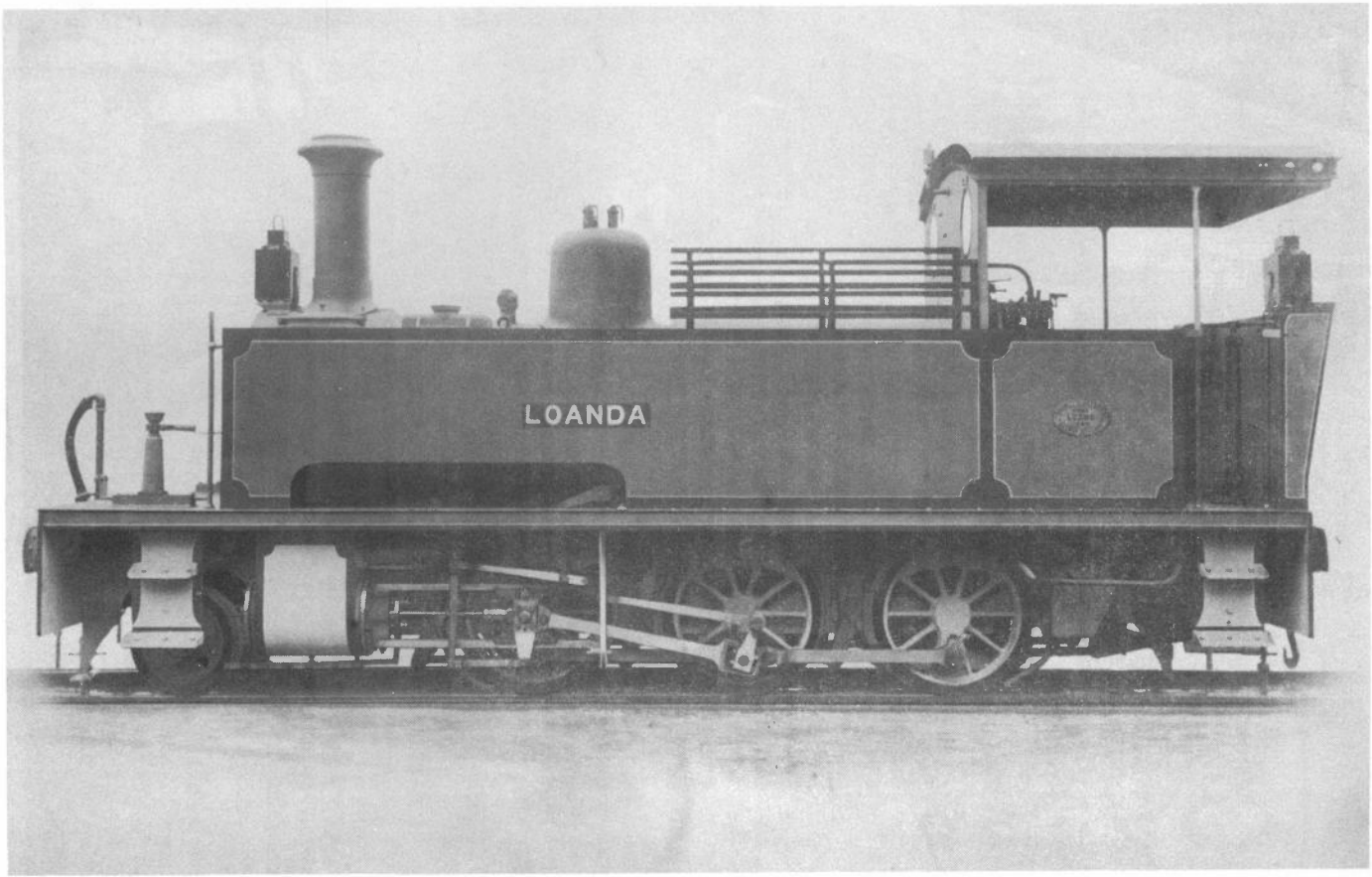



LOANDA

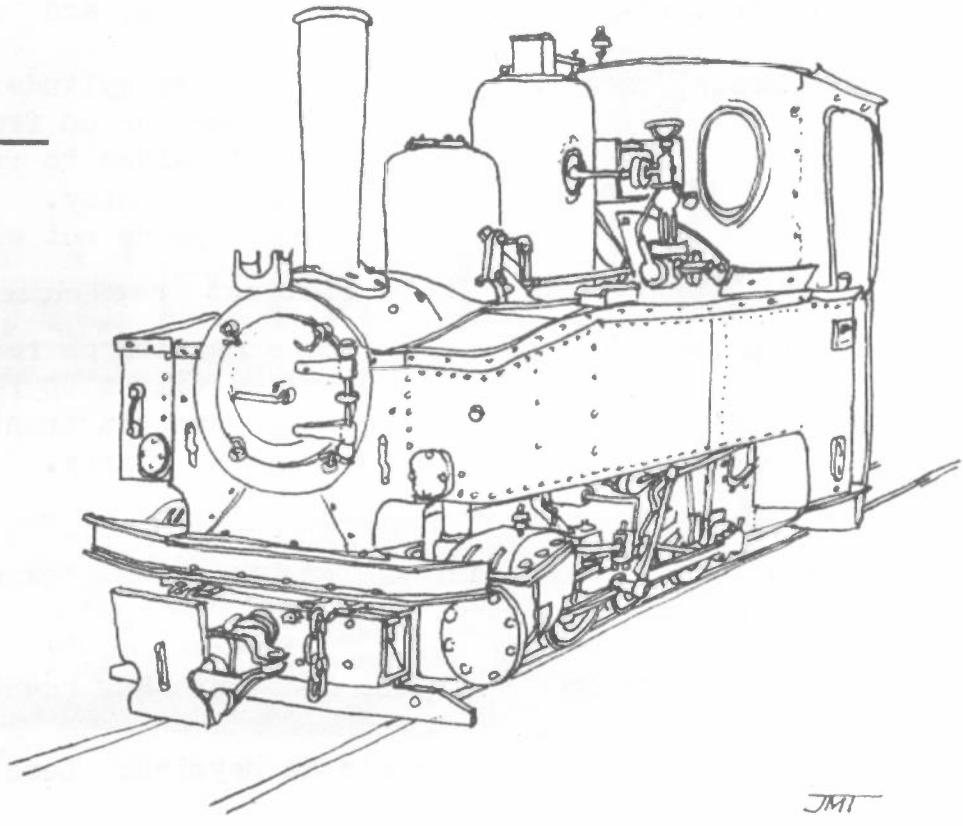

CFA
24

—FELDBAHN—

THE GERMAN ARMY

FIELD RAILWAYS

By Peter Halton



Article & Drawing - Peter Halton.

Sketch - Jane Townsend.

Information - Mike Swift & Friedrich Kemper.

Photographs - Editor & Ron Redman collection

The drawing depicts one of the very numerous first World War locos built for the German Army field railways. Every loco builder in Germany contributed to the total and I hope that before too long our Editor can persuade some knowledgeable person to contribute an article on their history.

This article is concerned only with the drawing and some of the interesting points brought out by the research. First of all the amount of variation is almost legion. In fact it is almost impossible to find two photos alike and anyone contemplating building a model would be well advised to get hold of a particular photograph and model that. By way of illustration the following points have been noted:-

Works Photographs: Vulcan Werke, Stettin, Loco 901. As the drawing except that safety valves are to the rear, and "dustbin" chimney.

Borsig, loco 224
(1) Cover over cylinders.
(2) Hose carrier on front dome.
(3) Safety valves to rear.
(4) Dustbin chimney.
(5) Tank tops do not slope at front.

(Regret this photo will not reproduce- Editor)

Henschel, loco 526
(1) Hose carrier on rear dome.
(2) Safety valves to rear.
(3) Large pump on front of steam dome.
(4) Dustbin chimney.

Observations:- Variscourt. The locos here, ex Maizy Sugar Works, have small rear bunkers added.

Bourron. One loco here has the forward sand dome removed.

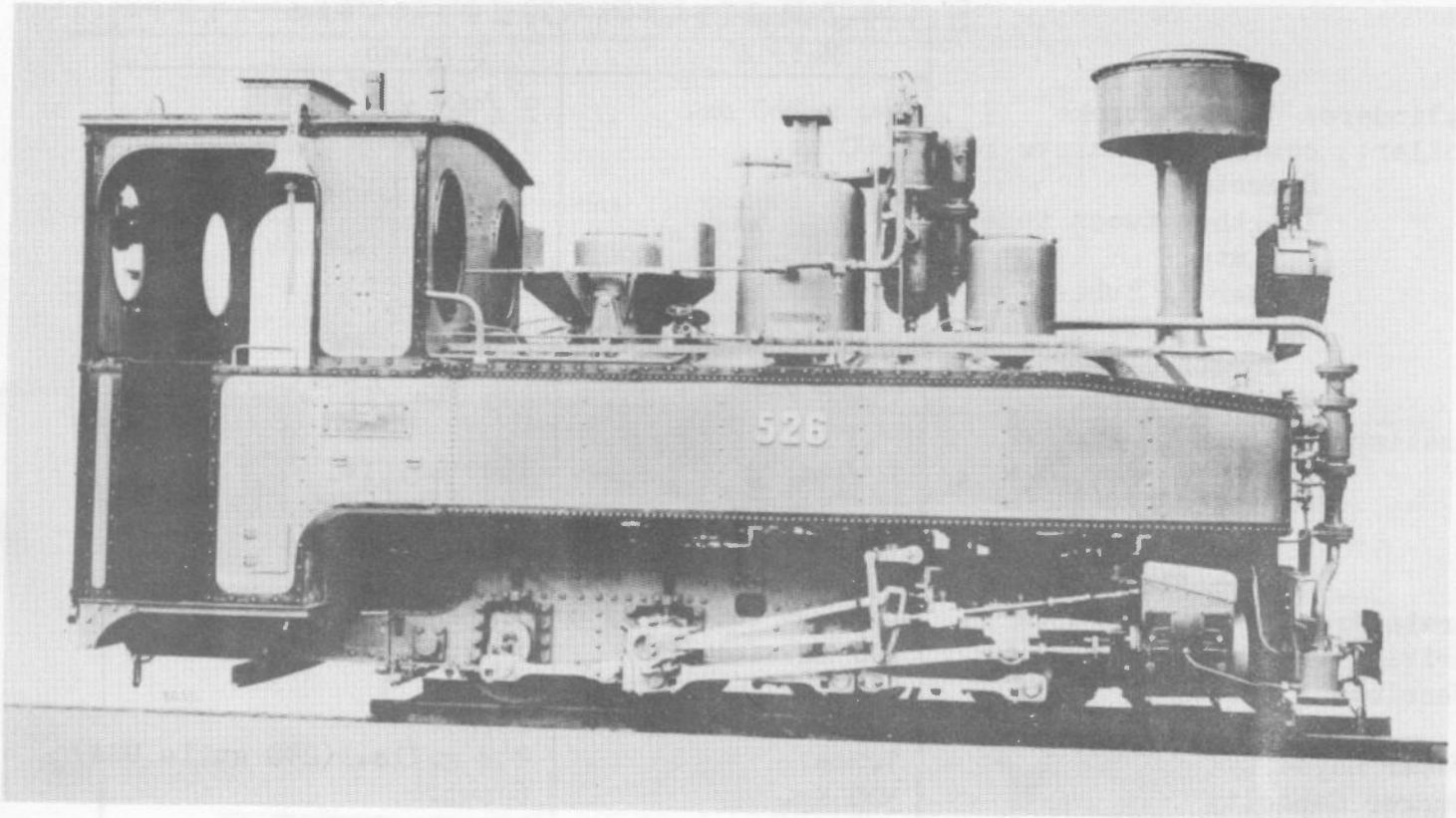
C. F. Touriste de Meyzieu. Loco "Bourgoyne" has numerous slight modifications.

All the locos had the Krauss-Lindner truck which gave greater flexibility on curves. This system comprised two fixed axles - centre pair - with linked outer axles. These axles had a central fixed portion around which was a sleeve integral with the wheels, and pivoting on a spherical portion on the fixed part. Thus the outer wheels were able to swivel a certain amount whilst the axle itself remained fixed.

All the locos were equipped for a separate tender, the one shown being measured at Bourron. Here again there are variations and No. 313 which was at Bourron and is now at Pithiviers Museum has a number of additions not to be found on 508. These tenders were standard equipment and reference to "Namib Narrow Gauge" shows drawings of smaller earlier versions dating from the early 1900's.

Perhaps the most interesting feature in the foregoing list is the presence of a superheater in these locos. The boiler pressure of 215 lbs./sq.in. must run it a close second.

Finally, to those who have not seen one of these machines I would add that they are really worth going to see, and their fascination seems to grow on one.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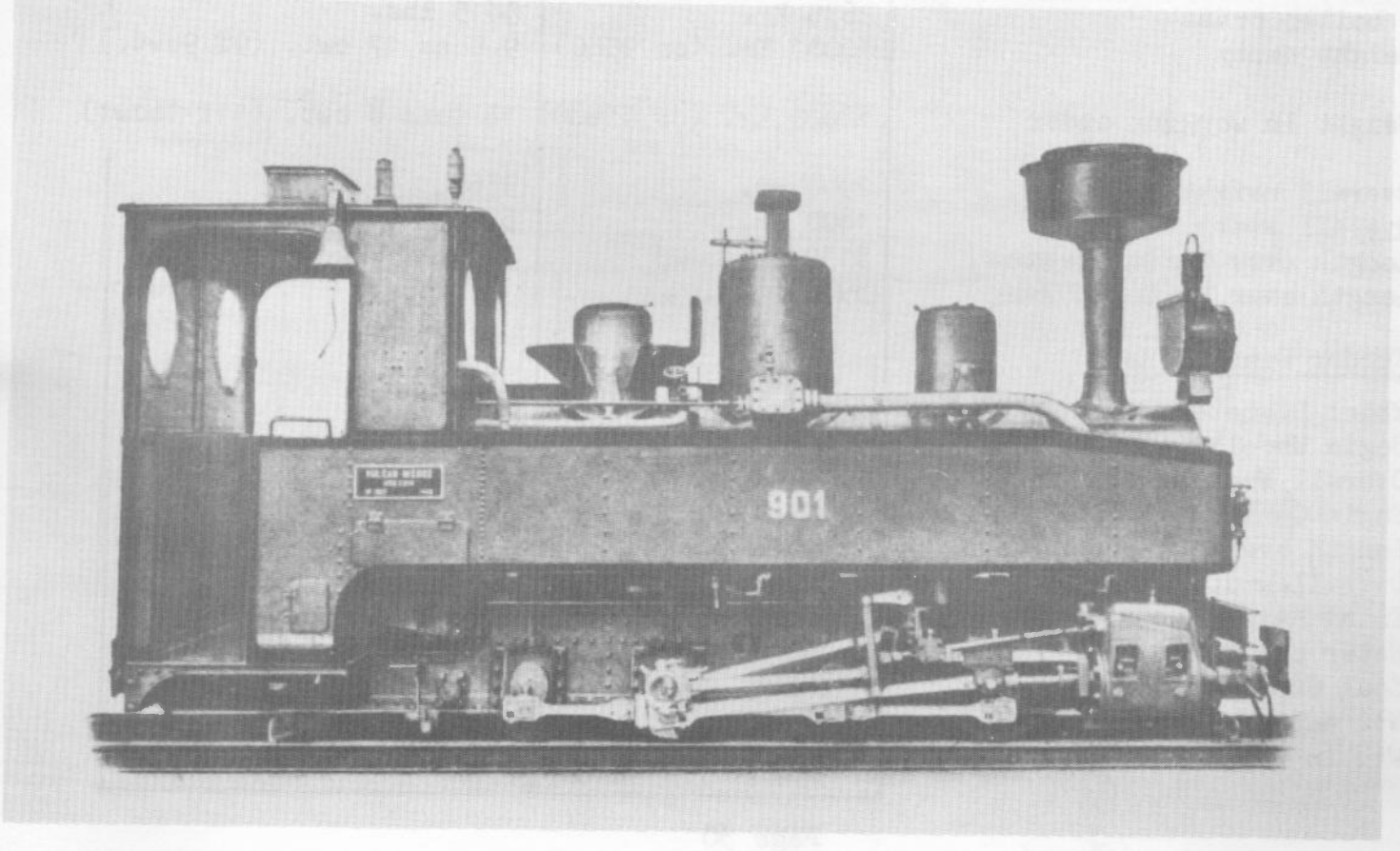
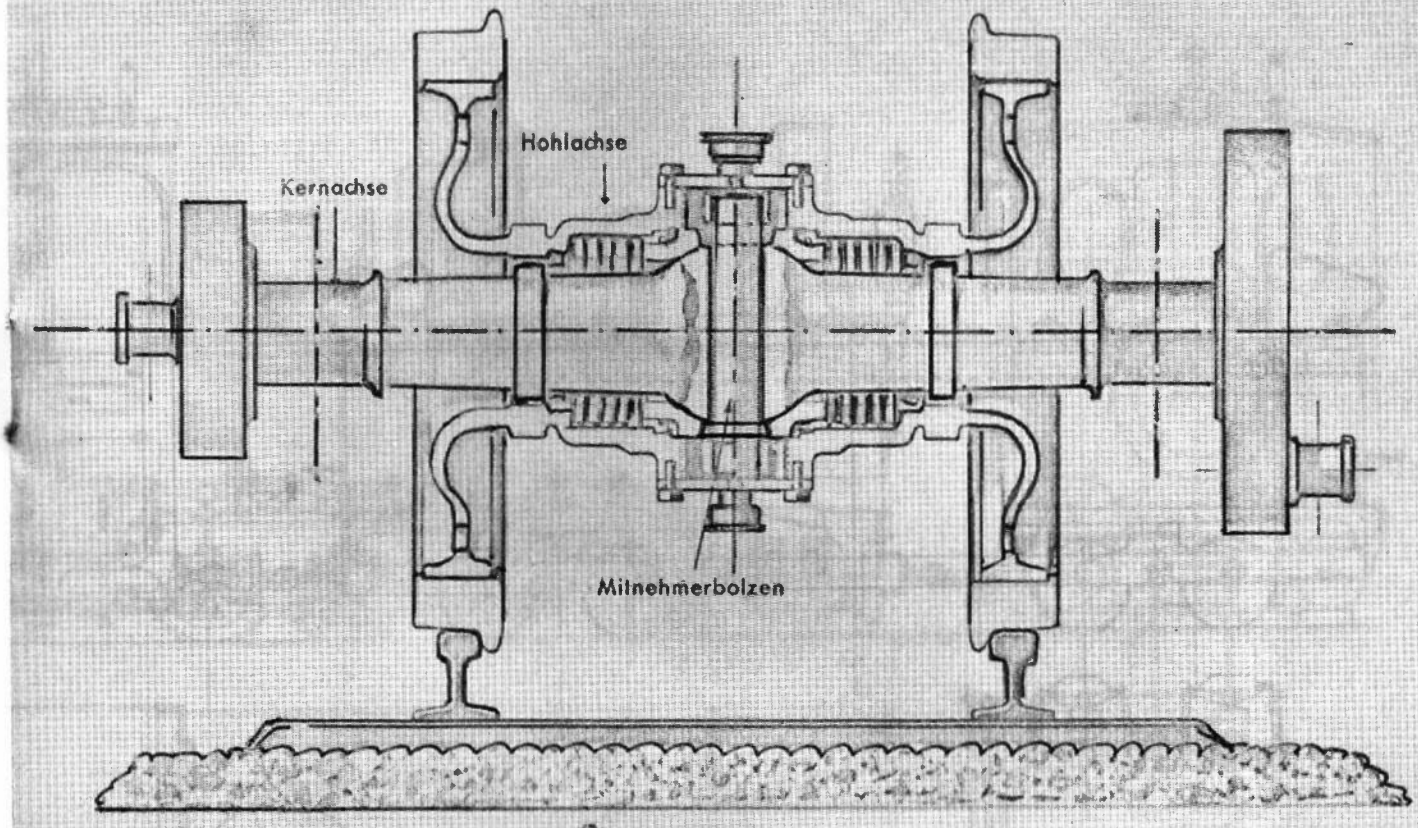
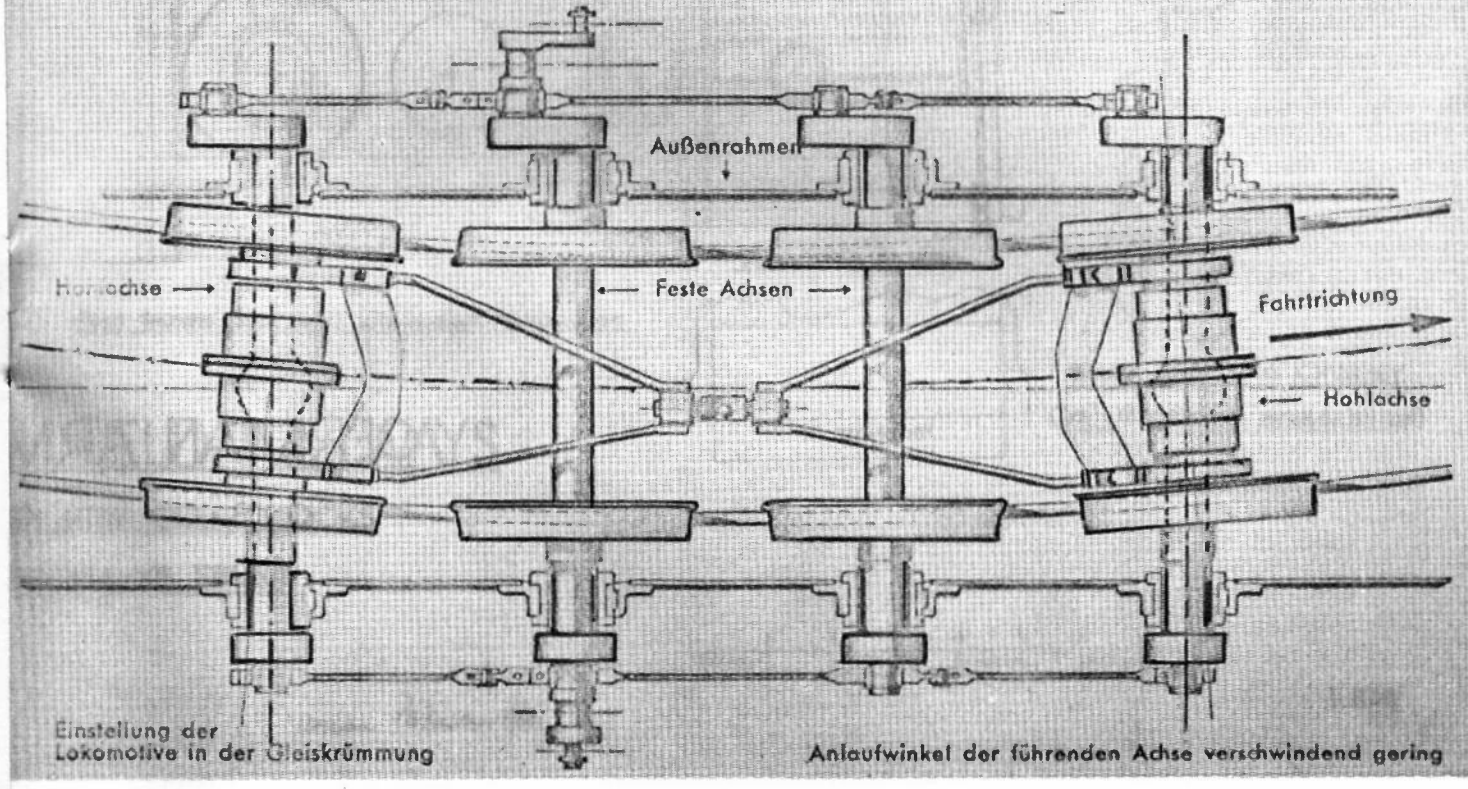

901

Leading Dimensions (per Mike Swift).
(Alternative information also shown in brackets).

	Metric	English
Cylinders: Dia x stroke	240 x 240 mm.	$9\frac{7}{16}$" x $9\frac{7}{16}$"
Boiler: centre line above rail	1200 mm.	3'11¼"
Diameter	700 mm.	2'3½"
Length between tube-plates	2300 mm.	7'6½"
Number of tubes	43	43
Outside dia. and length of tubes	46 x 2800 mm.	1¾" x 9' 2"
Working Pressure	15 Kg./cm^2	215 lbs./in^2
Heating Surface:		
Firebox	1.49 m.^{2}	16.1 sq. ft.
Tubes	16.64 m.^{2}	178.4 sq. ft.
Total	18.13 m.^{2}	194.5 sq. ft.
Superheater	7.3 m.^{2}	78.5 sq. ft.
Grate Area	0.5 m.^{2} (or .425)	5.4 sq. ft. (or 4.6)
Driving Wheel Diameter	590 mm. (or 586)	1'11¼" (or 1'11 1/16")
Wheelbase: Total	2260 mm.	7'5"
Rigid	790 mm.	2'7½"
Water Capacity	1.1 m.^{3}	242 galls. (290 galls.USA)
Bunker Capacity	300 Kg.	6 cwt.
Tractive Effort at 65% boiler press	2282 Kg.	5045 lbs.
Tractive Effort at 75% boiler press	2635 Kg.	5815 lbs.
Weight empty	10000 Kg. (or 9560)	9 tons 17 cwt. (9T 9cwt.)
Weight in working order	12600 Kg. (or 11980)	12 tons 8 cwt. (11T 16cwt)
Overall height	2900 mm.	9'6"
Overall width	1800 mm.	5'10½"
Length over buffer beams	5130 mm.	16'10"
Length over buffers	5980 mm.	19'7¾"
Tender Dimensions		
Wheel Diameter	450 mm.	18"
Bogie Wheelbase	700 mm.	27½"
Overall Wheelbase	3600 mm.	11'9¾"
Bogie Centres	2900 mm.	9'6¾"
Length over Buffers	5840 mm.	19'8"
Overall width	1650 mm.	5'5"
Total height	1950 mm.	6'3⅞"
Water capacity	5 cub. metres	1088 gallons (Imp.)
Coal Capacity	1.8 cub. metres	
Wt. empty	4300 Kg.	4.2 tons
Wt. in working order	11200 Kg.	11.0 tons

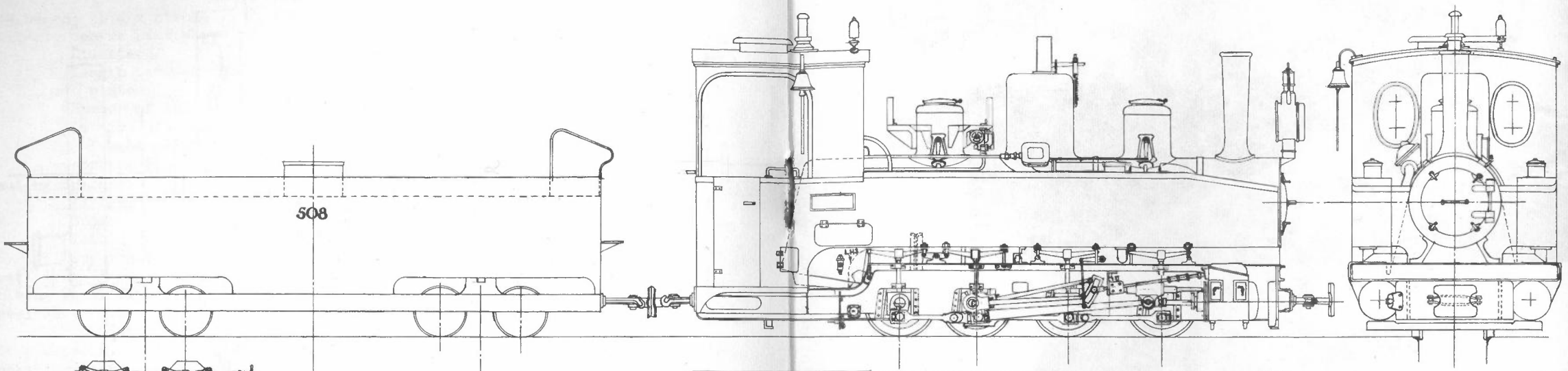
KLIEN-LINDNER-HOHLACHSE

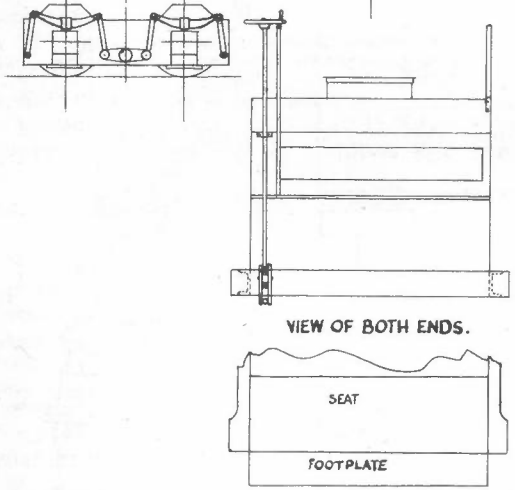




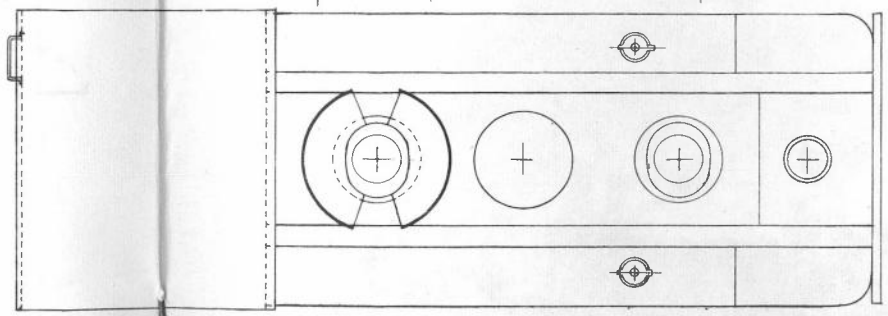
Einstellung der Lokomotive in der Gleiskrümmung

Anlaufwinkel der führenden Achse verschwindend gering

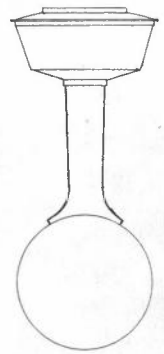




VIEW OF BOTH ENDS.



PLAN SHOWING SAND DOMES & TANK SHAPE DETAILS ONLY.



SPARK ARRESTING CHIMNEY

(THE DUSTBIN OR WASH BASIN TOP)

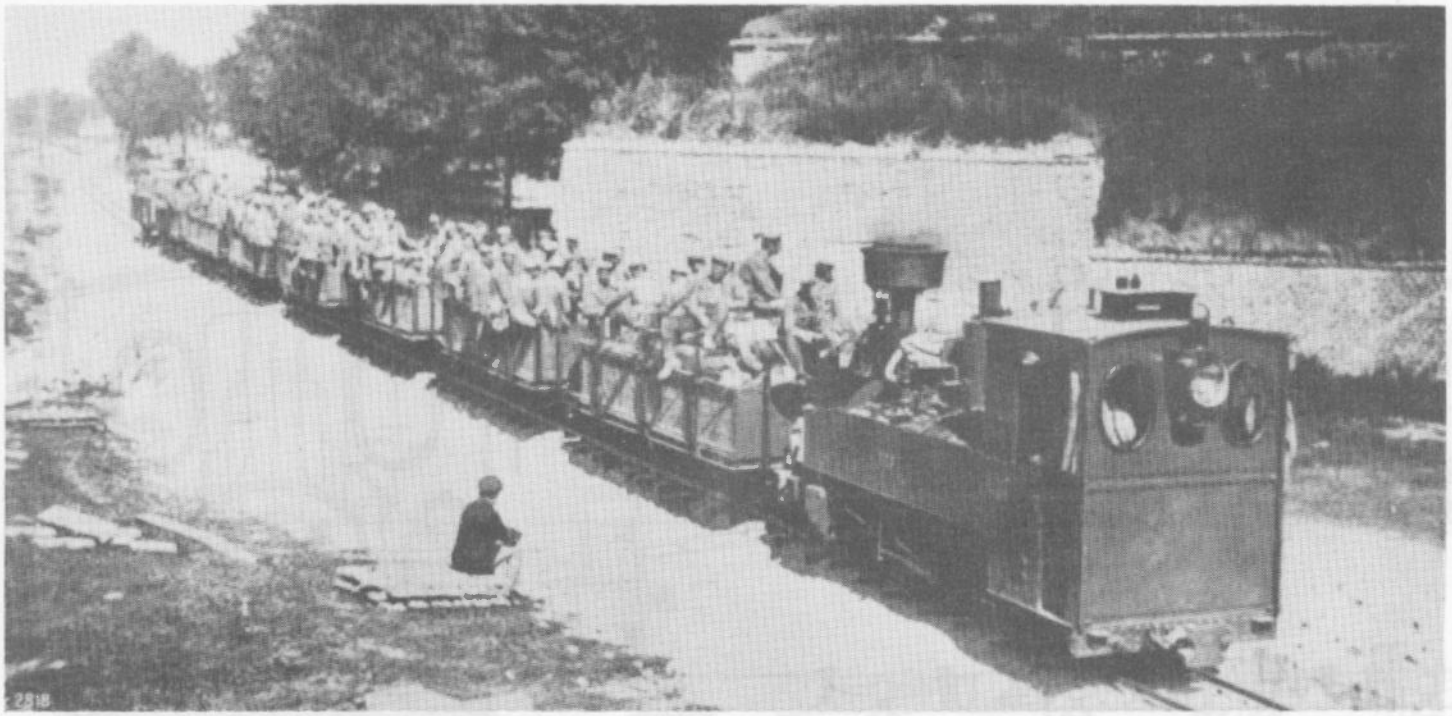
GERMAN ARMY FIELD RAILWAYS

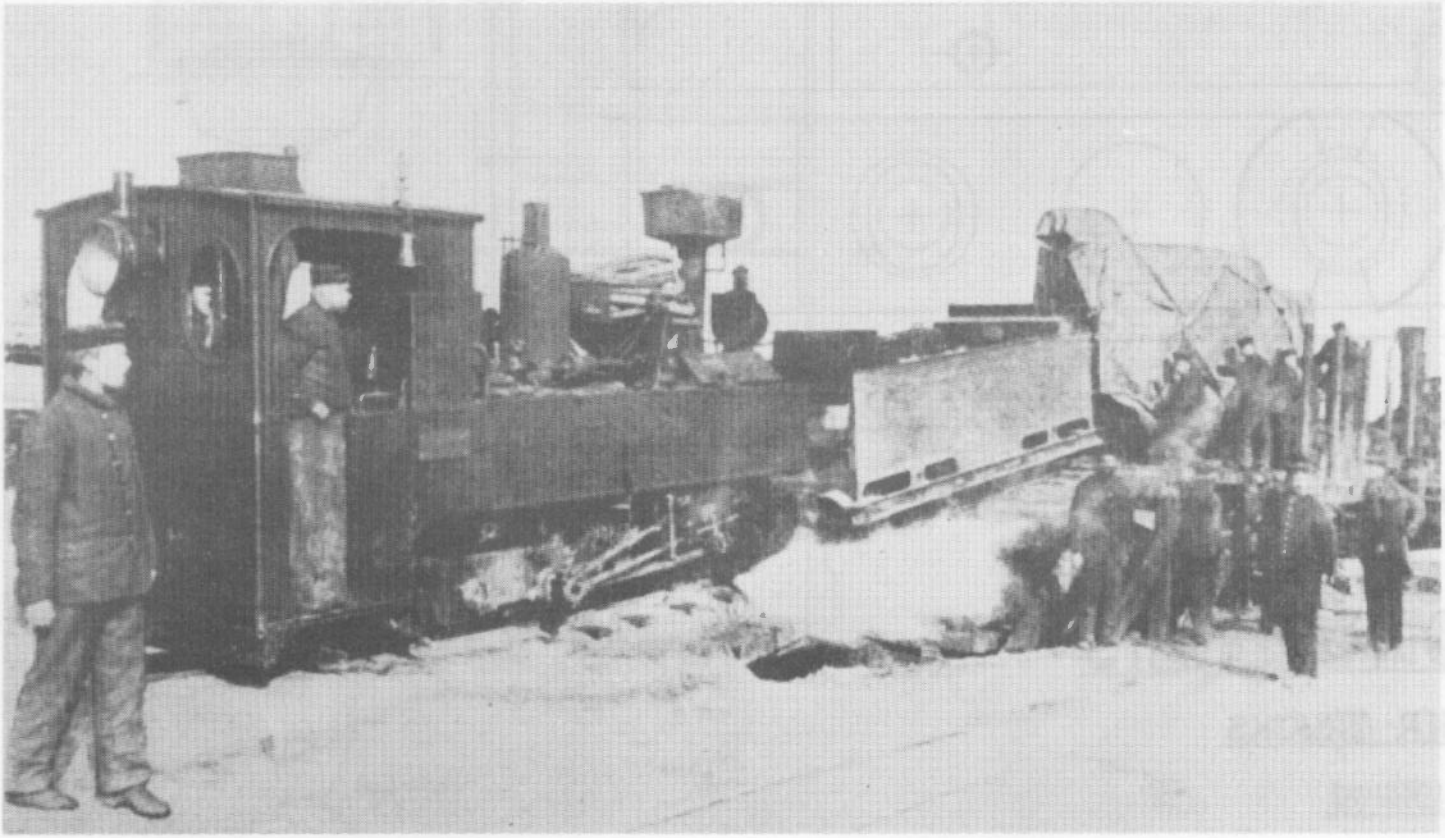
0-8-0T WITH KRAUSS-LINDNER TRUCKS

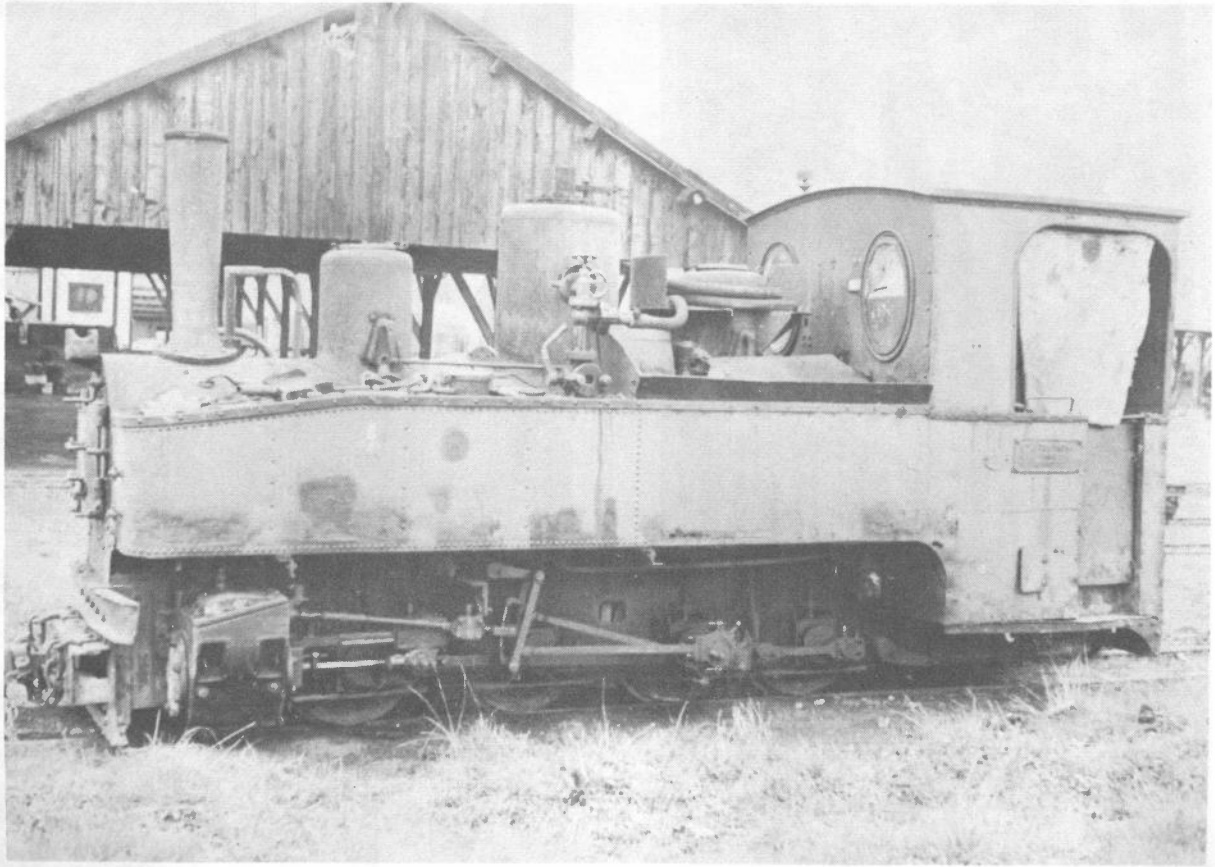
BUILT BY ALL GERMAN FIRMS 1914-19.

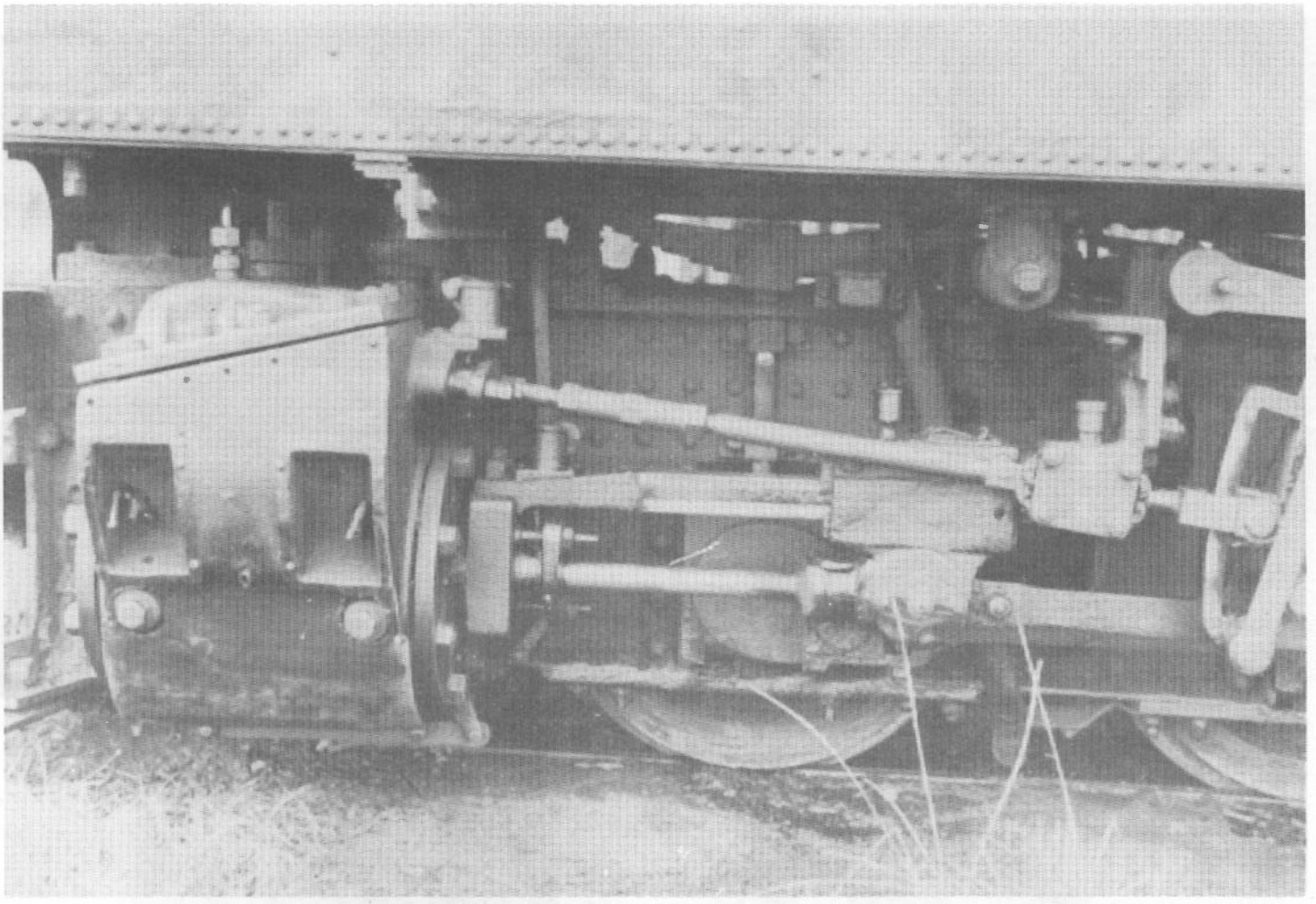
DFB.1.

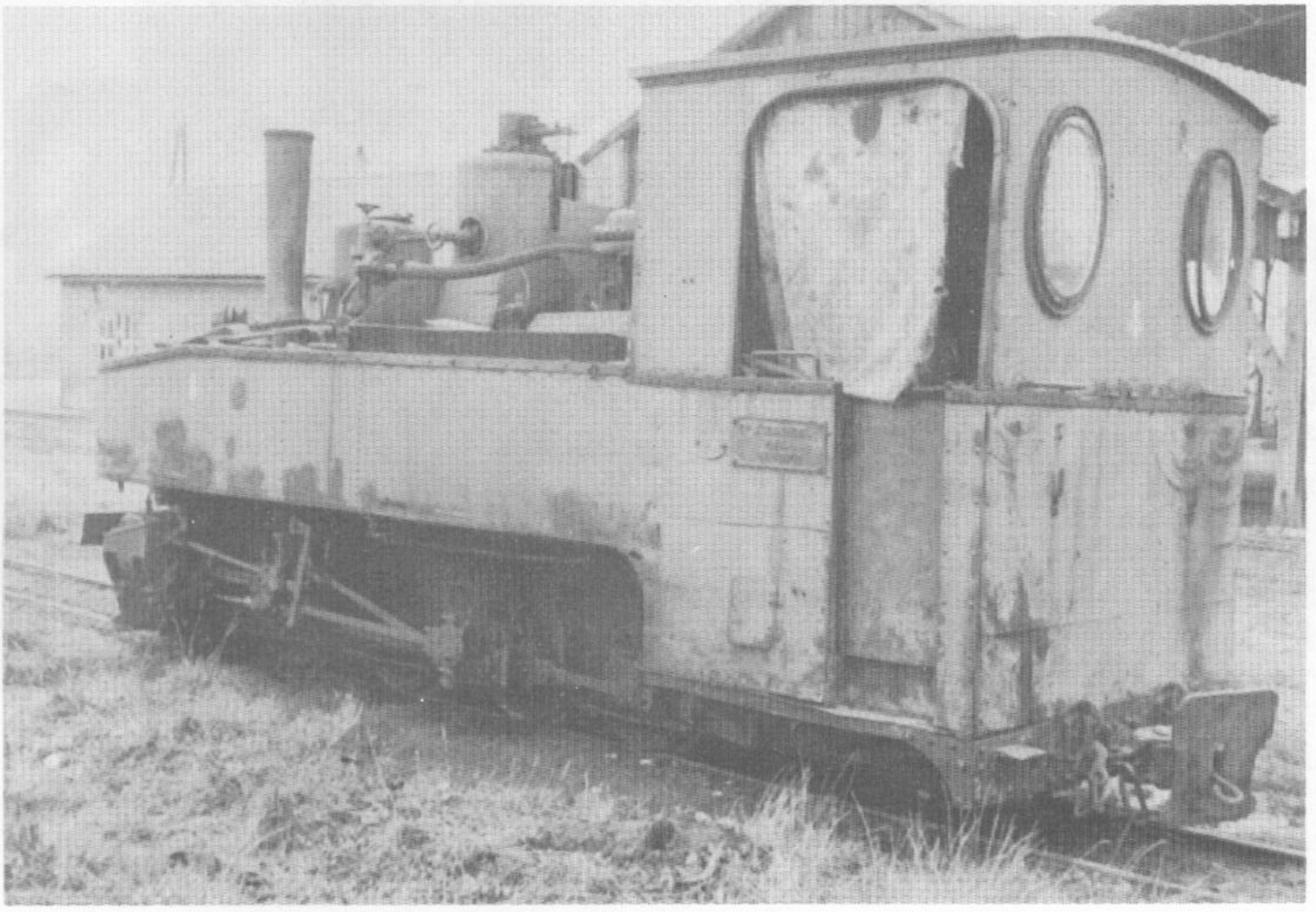
Drawn P.S.Hallon 1/69

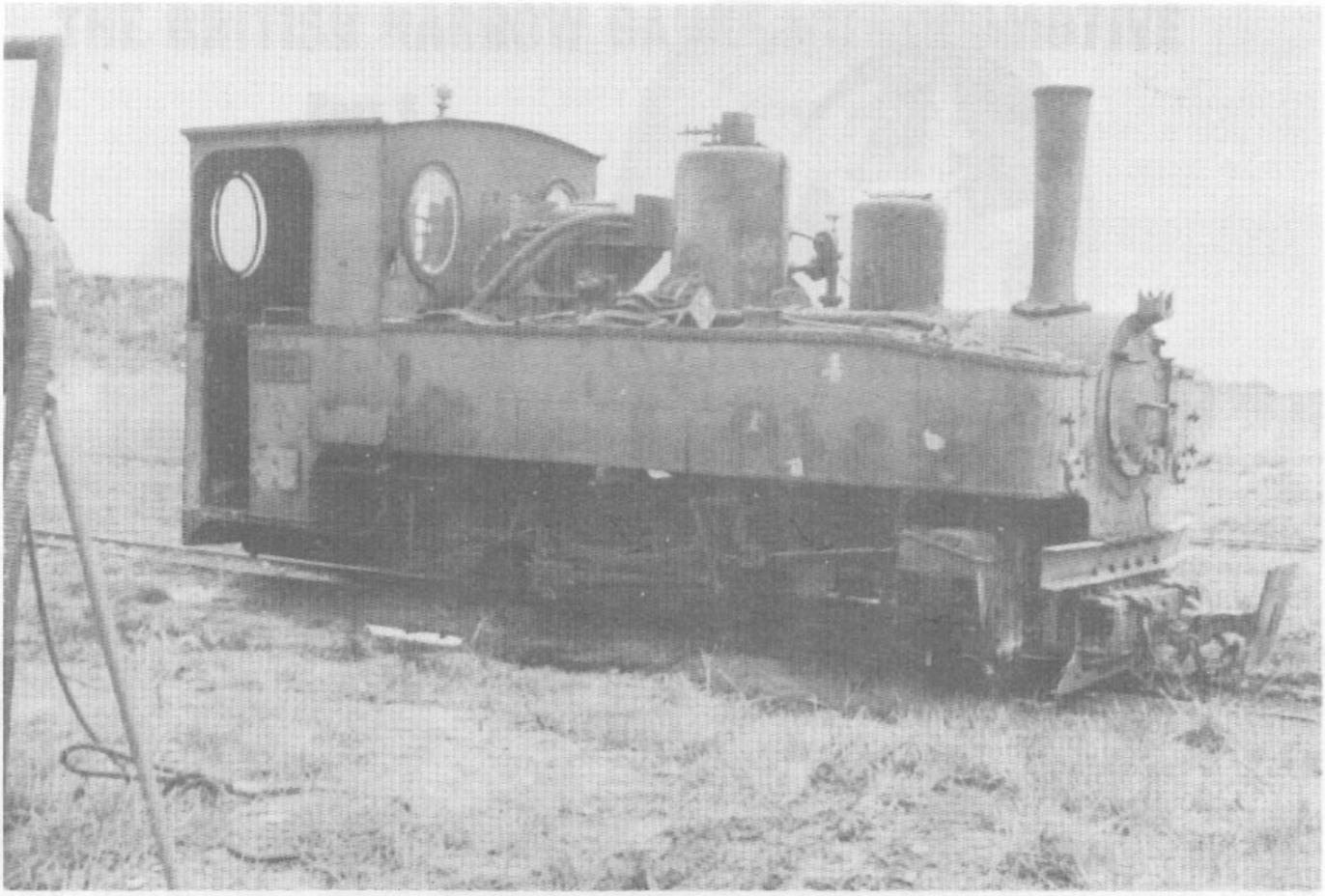


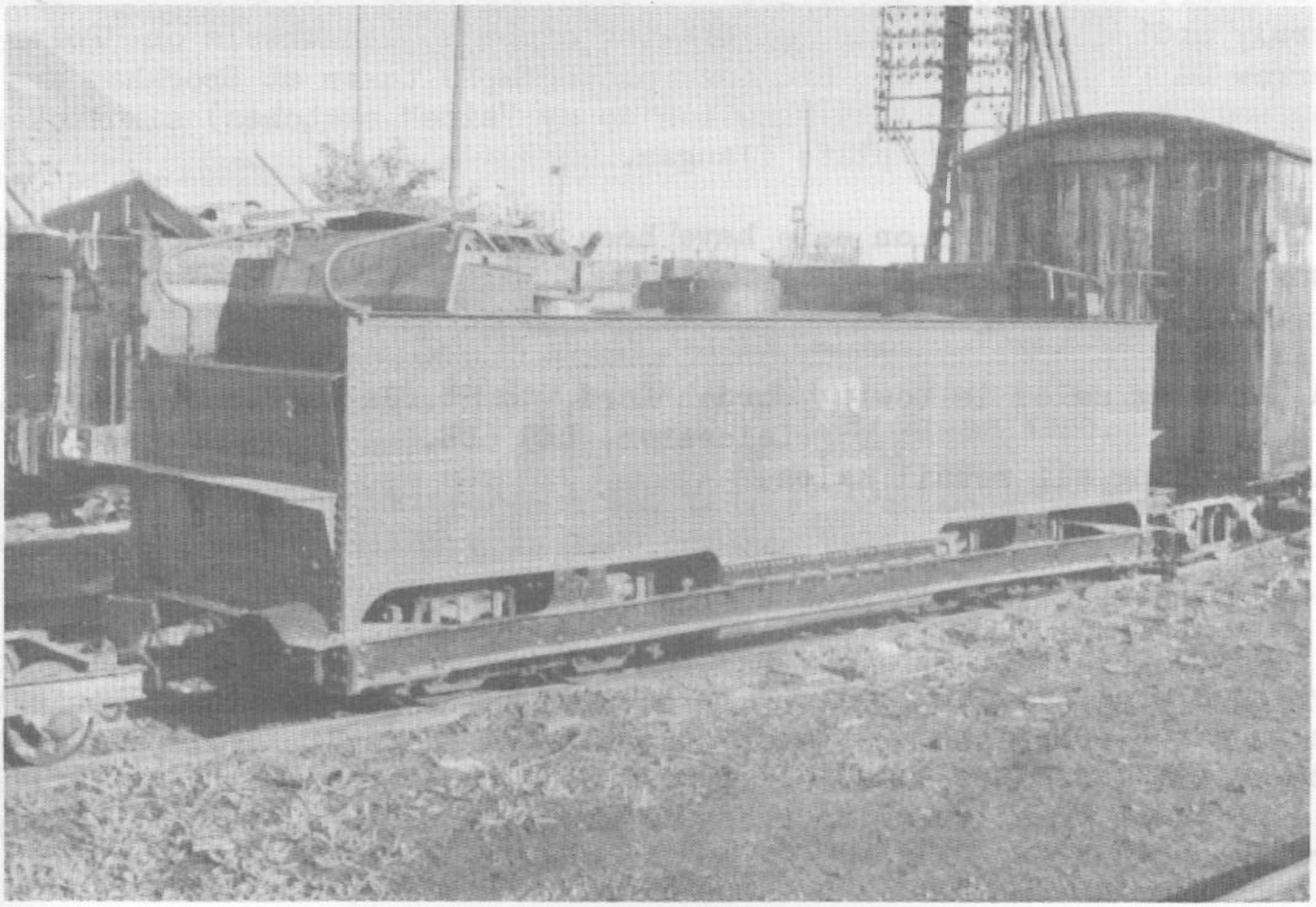


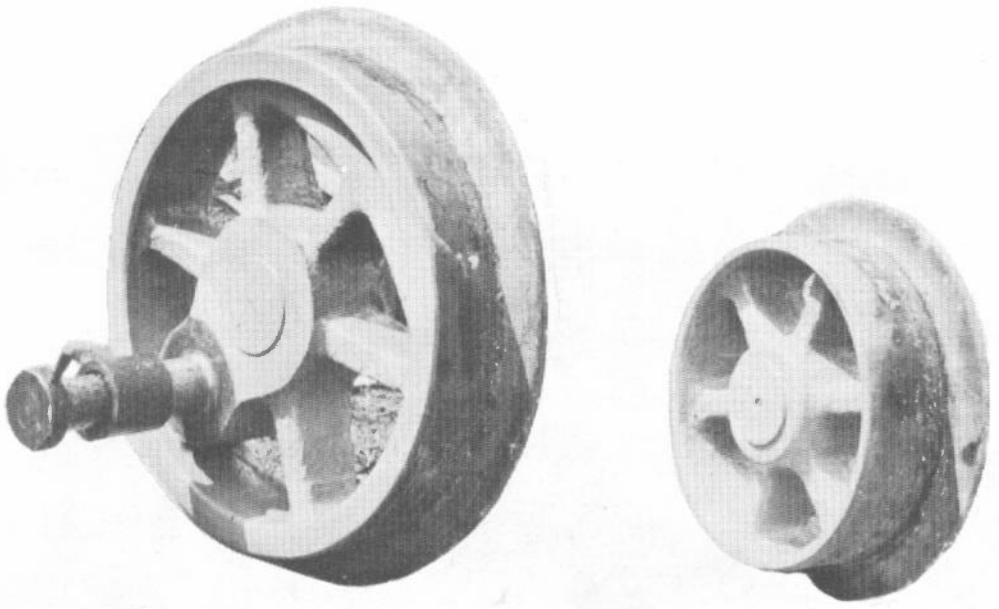












LETTER TO THE EDITOR

From Bill Strickland - Brentford.

In an effort to improve and maintain both quality and accuracy of drawings which are published as records in the Narrow Gauge, I have obliged with objective opinions of drawings when asked to do so; therefore some reverberation from a clanger of my own is to be expected.

While rivets, etc., are all present and correct I consider myself well and truly shot down in flames for drawing eight spoked wheels on "Polar Bear" in Narrow Gauge No. 48. The enclosed photographs taken at Brockham are of the actual wheels and clearly show (as do my "site" sketches) six spokes, also the thin **tyres** and dinner plate flanges.

The 1" scale prints on sale have been withdrawn and new correct prints are now available.

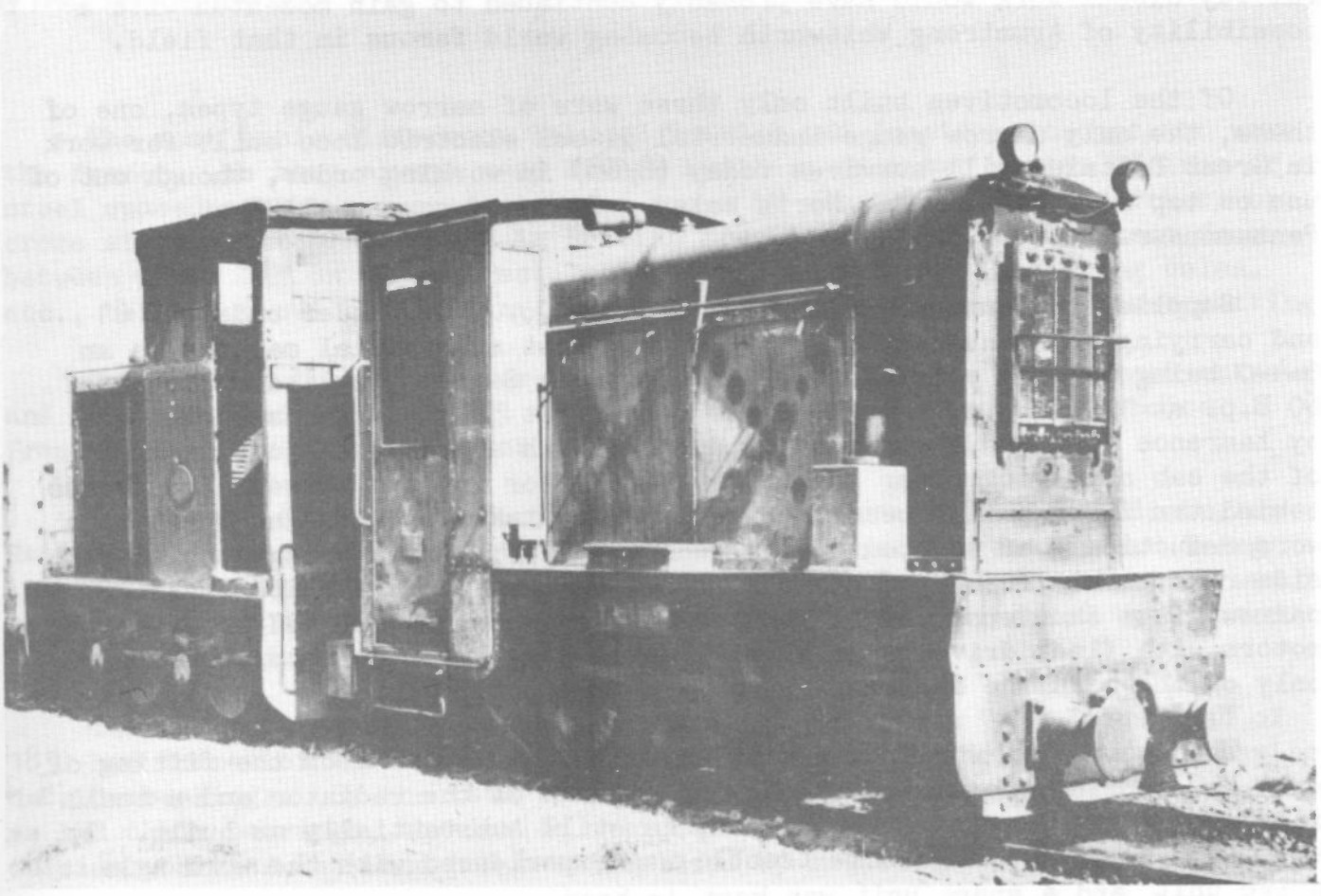
B.M.A. Drawing sales is now: Gordon Lord, 18 St. James Close, Huncote, Leicester, LE9 6BE.
who is handling all retail sales.

Quick note, could you please find space to announce:-

By kind co-operation of Sydney Moir we are able to offer a selection of 12 drawings from "24" and "Namib" comprising 3 locos, 5 coaches, 2 bogie vans, 6 ton accident crane and previously unpublished Composite Trailer, all to 8 m/m scale. These are available from Gordon Lord at 25/- the set of 12 and should prove of great value to those interested in South African railways and rolling stock.

THE BRITISH NARROW GAUGE I/C LOCOMOTIVE

Part 8 Brian Webb



A 3'0" GAUGE DIESEL ELECTRIC

By Brian Webb.

Sir. W.G. Armstrong Whitworth & Co. Ltd. of Scotswood on Tyne who had recommenced locomotive building in 1920, opened their Diesel Department in 1932. The work of the new department included locomotives, railcars, railbuses, suburban trains, luxury trains all powered by Scotswood built Armstrong Sulzer or Armstrong Saurer diesel engines and using in all cases electrical transmissions. A range of very large road lorries was also introduced as part of the departments work.

Up to 1938 over seventy orders had been carried out on the railway diesel side including mainline units of up to 1700 h.p. Unfortunately further development work was cut short by the return of the works to munitions production and had it not been for the then impending war the railway diesel work would have probably continued to gain momentum with a possibility of Armstrong Whitworth becoming world famous in that field.

Of the locomotives built only three were of narrow gauge types, one of these, the only narrow gauge industrial diesel electric loco built for work in Great Britain still survives today (8/68) in working order, though out of use on top of a mountain in North Wales. It is of course ALICE at Penmaenmawr.

Supplied to Penmaenmwar & Welsh Granite Co. Ltd., under order DT 61 and carrying works number D53 of 1935 this most substantial machine is an 0-4-0 being powered originally by an Armstrong Saurer 4 cylinder diesel of 60 h.p. at 1700 r.p.m. though set to operate at 58 h.p. Transmission was by Laurence Scot and Electromotors and includes a generator just in front of the cab supplying power to one traction motor mounted between the frames behind the front buffer beam. Drive was then taken by a cardan shaft to a worm reduction gear mounted on the rear axle, both axles being coupled with side rods. This method of drive was used by Armstrongs for its small narrow gauge shunters, larger shunters employing frame mounted traction motors with final drive by jackshaft. Axle hung traction motors were used only on the mainline designs.

The locomotive was in use until mid 1967 and apart from the fitting of an A.E.C. engine, requiring the moving forward of the radiator and a small increase in the length of the bonnet, is still substantially as built. It gave good service though some trouble was experienced with the worm axle drive unit and a spare unit was kept in hand.

Main details are:- Weight in working order 9 tons, length over buffers 14'10", overall width 5'6", overall height 8'4", wheel diameter 2'3", wheelbase 3'6", fuel capacity 40 gallons, top speed 24 m.p.h. maximum tractive effort 4,500 lbs.

This unique locomotive is without doubt a suitable candidate for preservation. Thanks are due to Kingston Minerals Ltd. for permission to inspect the locomotive.

They Built 'Em Different in America

By Ivan Stephenson

The most basic difference between British and American locomotives were the frames. We have always used frames built up from two plates of iron or steel spaced at the required distance apart by usually robust stretchers or cross stays. The plates used in British practice ranged in thickness from between $\frac{5}{8}$" to $1\frac{1}{4}$" on the largest locos, the horngaps and lightening holes, etc., being cut out by drilling and hand chipping or by profile flame cutting.

Not so over the water, for in that land plate frames were almost unknown and were only built to special order on locos for export, if the choice of frames were left to the builder bar frames would be supplied.

It is said that Edward Bury, Loco Sup't of our own London & Birmingham Railway was one of the first to use wrought iron bars for frames and being lighter and easier to build than plate frames this form of construction was quickly adopted as standard in the U.S.A. after being introduced by Richard Norris of Philadelphia.

The earliest American locos such as M. W. Baldwin's "Old Ironsides" of 1832 had frames of wood reinforced with strap iron, the driving wheels having outside bearings. By the late 1840s the frames had moved inside the wheels as had their bearings, the inside cylinders had adopted their future standard outside position and wood had been replaced by rolled section wrought iron.

A typical frame for a 4-4-0 type loco of c1850 is shown in Figure 1, you will notice how light and flimsy it looks to British eyes, in fact frames of greater strength and rigidity were soon required and were built as larger billets of wrought iron came to hand and improved machine tools were devised.

The frame of a 3 ft. gauge "Denver & Rio Grande" 2-8-0 of 1882, shown in Fig. 2 has been constructed for the most part of 3" square iron bars and consists of a top bar or "rail" and a bottom rail with horncheeks or "pedestals" secured to it by driving fit countersunk bolts. Until about 1900 this form of wrought iron bar frame was spaced by the front buffer or pilot beam, by the cylinders and motion plates, plus the front fire box cross stay and the intermediate dragbox or "rear sill". As this kind of frame was held together by the many fitted bolts it was generally a rather flexible structure which remained rigid if everything remained tight, if maintenance was lax however heavy usage soon started the bolts wearing their holes with obvious results and by the end of the century the wrought iron cross stays, etc., had been superseded by steel castings.

By 1900 it was possible to produce a completely welded bar frame, however the leading section or "front rail" was made to be detachable to assist in repair work in cases of breakage or collision damage. The welds used on these frames are interesting in that they were made by heating the frame sections in coal fires and after the welds had been started by hand-hammer the job was taken under a heavy power hammer to be completed. This form of "Super Blacksmith splice welding" called for a high degree of skill and craftsmanship on the part of the framesmith who was paid the highest wage of all, being a highly prized employee.

By 1905 the cast steel side frame had come into use and had superseded all other forms of bar frame remaining king until the introduction of the first cast steel one piece bed frame some twenty years later. The cast steel bed was later cast with integral cylinders and smokebox saddle, but it is doubtful if they were ever used on narrow gauge locos below 3 ft. 6 ins. gauge.

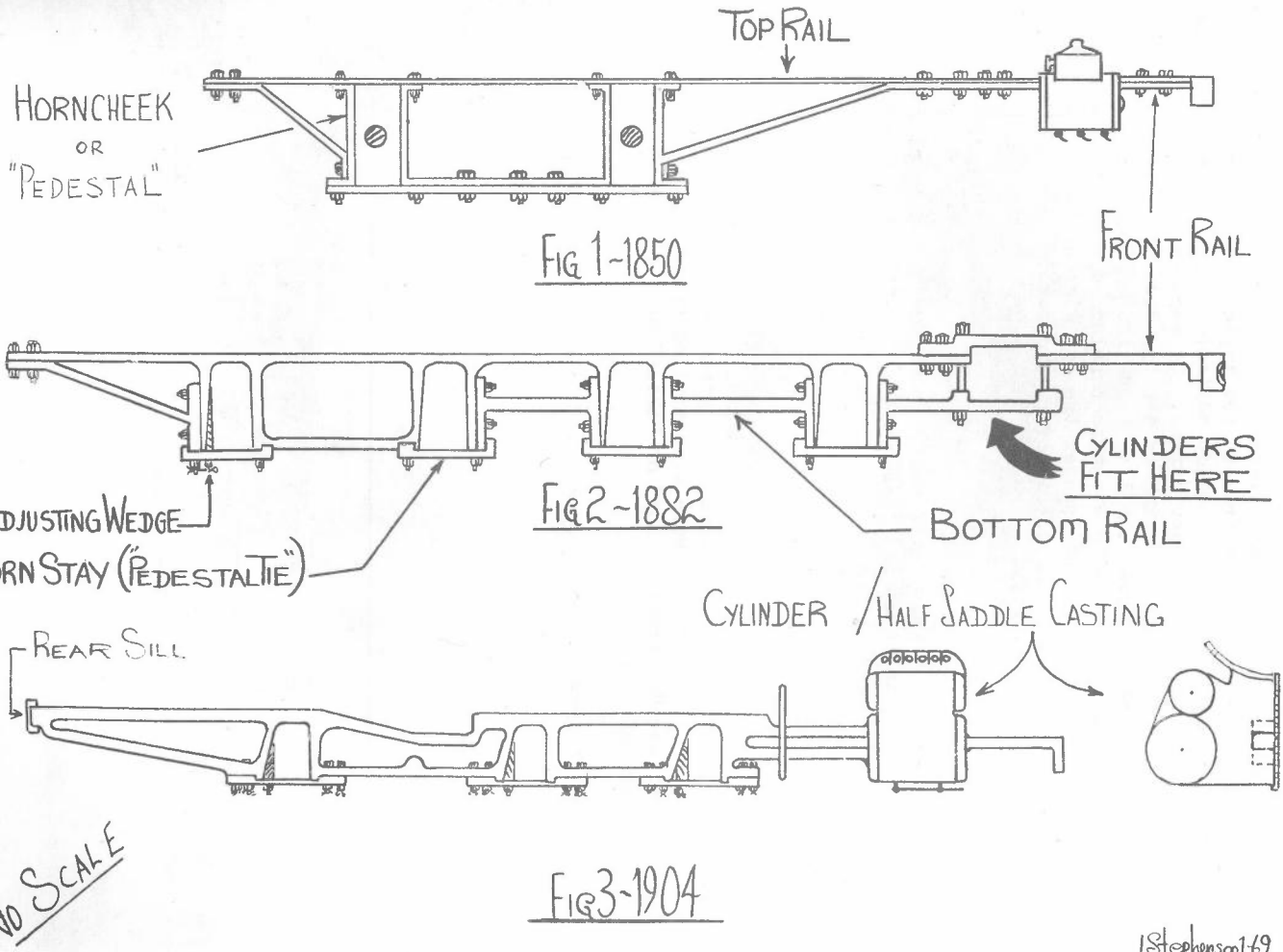
A cast steel side frame of 1904 is shown in Fig. 3, it was made by Baldwins for a 3 ft. 6 ins. gauge 4-6-0 built that year for New Zealand's Wellington & Manuwatu Railway, this and two sister locos (Nos. 19 and 20, NZR 464-65) had the largest driving wheels (58") ever used in New Zealand on 3 ft. 6 ins. gauge.

The frame consists of side members of cast steel, the top rail being joined to the bottom rail by vertical members with rectangular faces spaced at suitable distances to suit the axle centres, the gaps for the axle boxes are provided by two closely spaced uprights, these faces forming the horn gaps are machined and one face is fitted with a channel shaped liner, firmly bedded down to form one side bearing for the axlebox. The opposite face is similar except that it is fitted with an adjustable wedge used for taking up any side wear on the axlebox faces. Below the horngap there is a heavy horn stay or "Tie" machined to make a taper fit on the frame, it should remain tight and well fitted at all times for here lies the weakness of the bar frame for whilst being very strong transversely, it is rather weak vertically.

The side frames are spaced apart, with the centre line of each side frame in line with of the axlebox-jornal (an important advantage of bar frames), the spacers being of cast steel with machined ends are bolted to facings machined on the inner sides of the frames.

The cylinders used with bar frames are made from two castings, each carrying its steam chest and half a smoke-box saddle. When bolted together on the centre line of the engine a complete semi-circular base for the smoke box is thus formed by these two castings. The cylinder assembly is made so it fits through the frames and at the same time is carried by them being bedded against abutments formed on the top and bottom rails, a large key is fitted to relieve the driving fit cylinder bolts of the shear stresses set up by the piston thrusts, the bolts pass through the frames and the flanges on the cylinder castings and when everything is aligned and tightened up a very robust and secure front end is assured.

BAR FRAMES

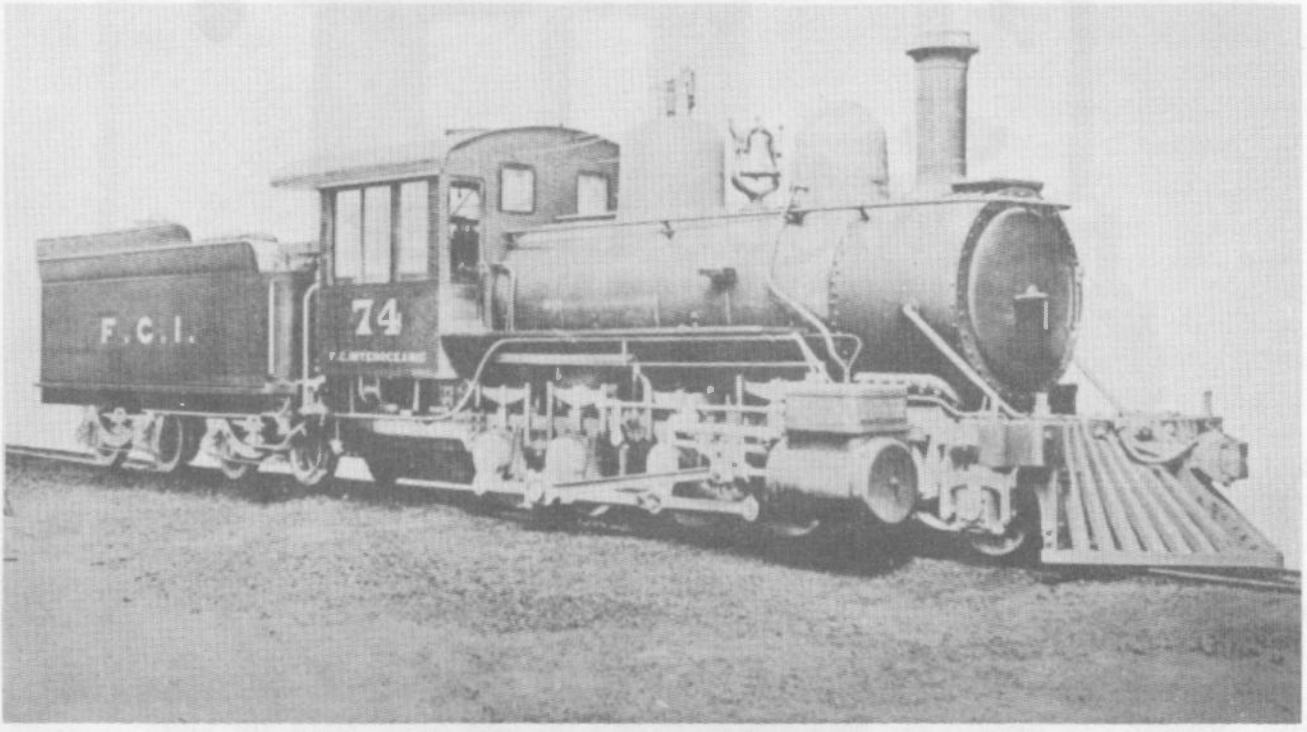


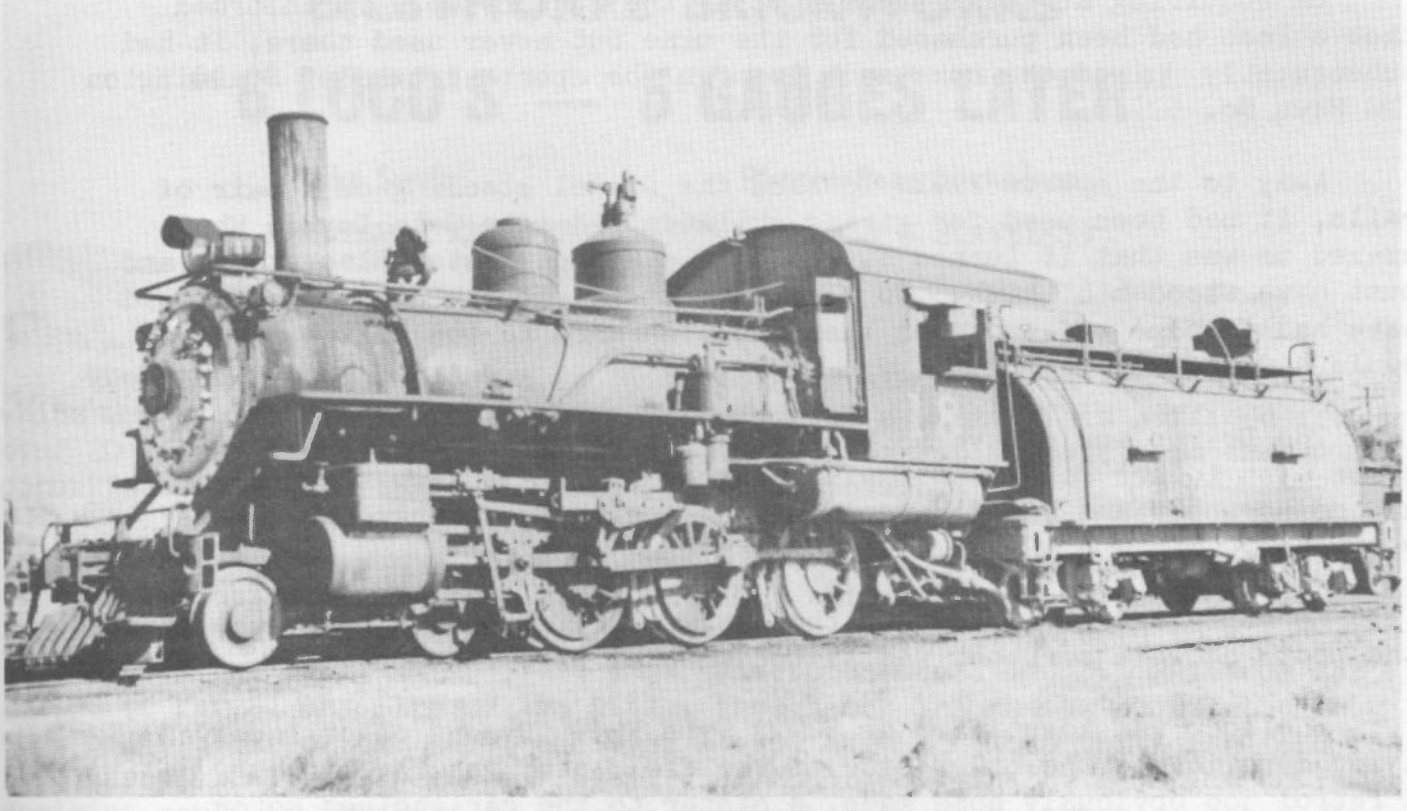
Very few inside cylinder locos were ever built in the U.S.A. due mainly to the lack of space between the frames, the typical outside cylinders used widely until the early 1900s had outside admission slide valves in oblong steam chests on top of the cylinder barrel. On earlier locos the flat "D" valve relied on steam pressure acting on its top side plus gravity in order to make a steam tight face over the live steam and exhaust parts. In later years many locos were fitted with Richardson Balanced slide valves which had spring loaded packing strips between the top side or "back" of the valve and the under side of the steam chest cover in order to promote freer running and reduce valve face friction.

The slide valve cylinder/half saddle castings were made of good close grained cast iron with cored out inside passages for live and exhaust steam, they were thus a very intricate affair calling for skilful design, pattern making and moulding and were also difficult to repair if cracks were later found in the passages.

With advent of superheaters the slide valves were abandoned and piston valves, usually inside admission were adopted to overcome the lubrication problems associated with high temperature steam and slide valves. Being "modern" however piston valves were also applied to saturated steamers whose owners were either "superheater shy" or "skint" as our modern slang describes the lack of cash.

At first the new cylinders were made of iron and in two pieces as before, again Fig. 3 provides the example (she also carried saturated steam), soon the old practice was replaced by making the cylinders of cast steel in one piece or a "monobloc" casting. As steel cannot be used as a rubbing surface cast liners or bushes were pressed into the castings to form the cylinder barrels and valve sleeves.


F.C.I.
74



A UNIQUE LISTER

Doug Semmens

Photo courtesy of T. G. Boddy—M.E. Engineering Ltd.

J. & J. Dyson Ltd., Wheatsheaf Fireclay Mine, Ughill, Nr. Stannington Yorkshire.

On arrival at the site we were surprised to find no surface lines except the few yards of cable incline leading from the mine.

Descending the mine, with only 4'6" headroom in parts, we found tubs at the bottom but no loco. Contractors men on the site told us that mining operations had ceased in favour of open cast quarrying in the vicinity. Rails and some tubs recovered from the mine were stacked up on the surface.

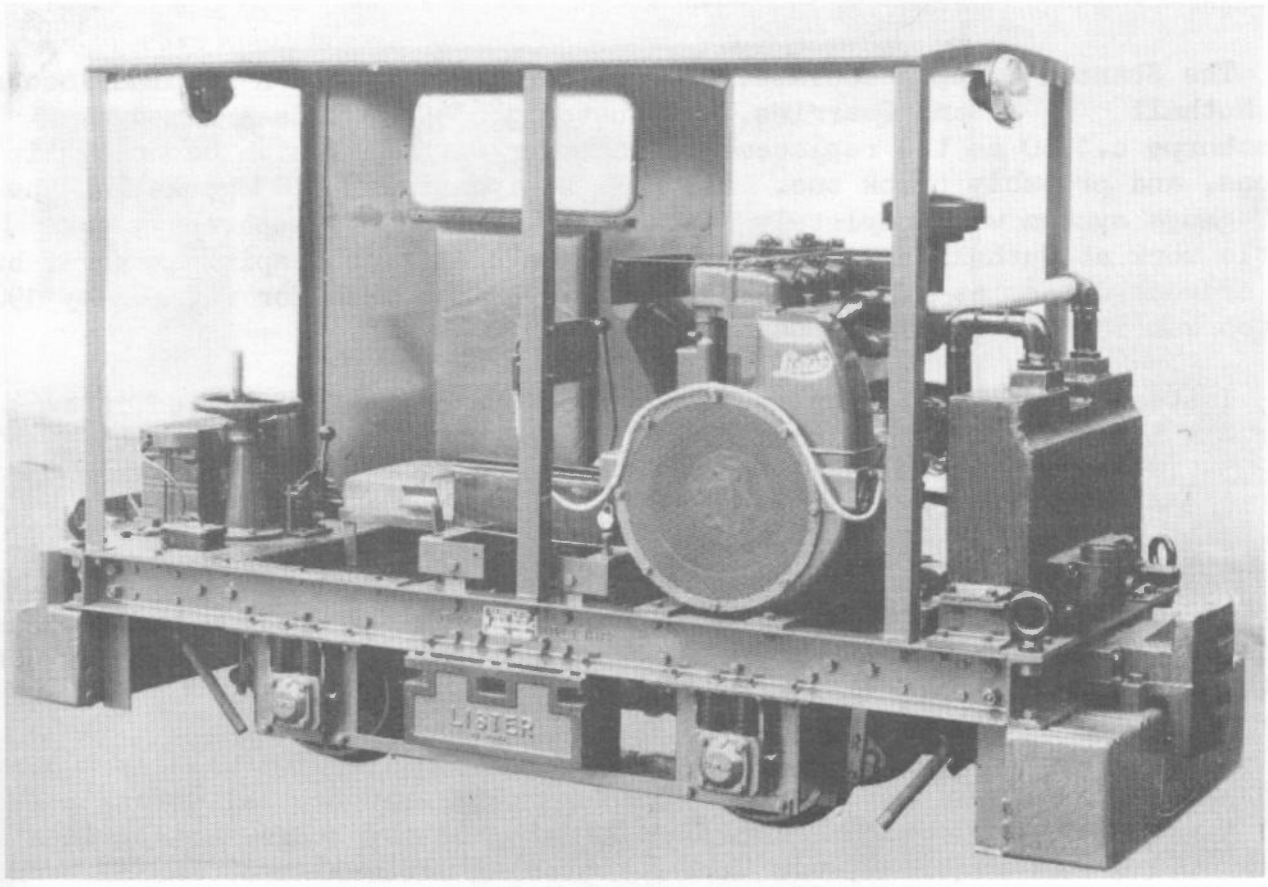
On enquiring at the Fitters Shop at the Factory we were informed that a loco had been purchased for the mine but never used there, it had subsequently joined the home-made loco on the sports ground at Stannington (NG News No. 52).

Away to the sports field to find the Diesel standing on a pair of rails, it had been used for giving children rides on Gala Days. What amazed us was that it turned out to be a canopied Lister Blackstone, and must have stood 6'6" high. To have used it in the mine the canopy would have had to come off and even then the clearance to the engine mounting would have been doubtful.

The Driver would have to be a midget wearing a crash helmet with crabs eyes to see round the Engine he drove!! Apart from this the engine had no scrubber and would have asphyxiated all the underground staff very soon.

ME Engineering carried out the conversion for underground use and as the photo shows a scrubber was fitted when ex ME workshops.

The loco was identified as 52971 Type RM3. Dysons other loco was lying derelict at the other side of the field near the Pavilion.
A Petrol job obviously home made, a sister to the car engined motor roller parked nearby.



BILSTHORPE BRICKWORKS

"6 LOCO'S — 5 GAUGES LATER"

Mike Swift Photos Pete Nicholson

BRITISH STEEL CORPORATION (STANTON & STAVELEY)
BILSTHORPE BRICKWORKS

The works was established in 1928, working clay from an adjacent pit, which was brought to the works by a chain worked system. This sufficed for over 20 years, but by about 1953 it was in need of raplacement, and the opportunity was then taken to change to loco haulage.

The new system was 2'0" gauge, and a reconditioned 4wD Motor Rail 8621 of 1941 was obtained to work it. About 1959 this loco was in need of repair and went away to Stanton Ironworks, from where it was later sold to a quarry operator in the Kirby-in-Ashfield area said to be named Gaunt. (Research has failed to reveal any firm of the title, though our informants at Bilsthorpe were quite clear on the name, and even stated that the loco still remained in the quarry!) A further 4wD was hired from Motor Rail in the meantime until a decision could be obtained to purchase a further loco as a replacement.

The Stanton Group associate, S & L Minerals Ltd., had a surplus loco at the Nuthall Sand Quarries, 4wD Ruston 186340/37 this arrived at Bilsthorpe c.1960 as the replacement, together with four high capacity tip wagons, and probably track too. All this equipment was 3'0" gauge, so the 2'0" gauge system was completely replaced. The loco had apparently done little work at Nuthall and was in first class condition despite its age, but the arduous duties at Bilsthorpe must have been too much for it, for by 1964 it too was in need of replacement.

Instead of the hoped-for new loco, two more cast offs arrived in 8/64 from S & L Minerals South Witham Mines. These were both 4wD's. Rustons 170205 (1934) and 174140 (1935) and of 2'8½" gauge!

To accommodate these new arrivals, the track was therefore relaid to 2'8½" gauge and the wagons altered to suit by pressing in the wheels and cutting away the frames to clear. The Nuthall loco remained on the site as a source of spares, and its dismantled remains were finally removed for scrap by the Ilkeston Scrap Metal Co. in 1968.

By 1968 the two locos were getting worn out, and 170205 was taken away to Stanton Ironworks in the Spring for overhaul at the central workshop, but this never progressed very far beyond the dismantling stage. So again replacements were required, and this time (being nationalised) cash was available for new equipment!

Rustons, having dropped out of the locomotive business, the order for the new loco went to Motor Rail and in mid June a 40 h.p. 4wD (40S323) arrived brand new in smart yellow livery, and complete with cab and electric headlights. About the same time 3 new high capacity steel tip wagons were delivered from Robert Hudson's.

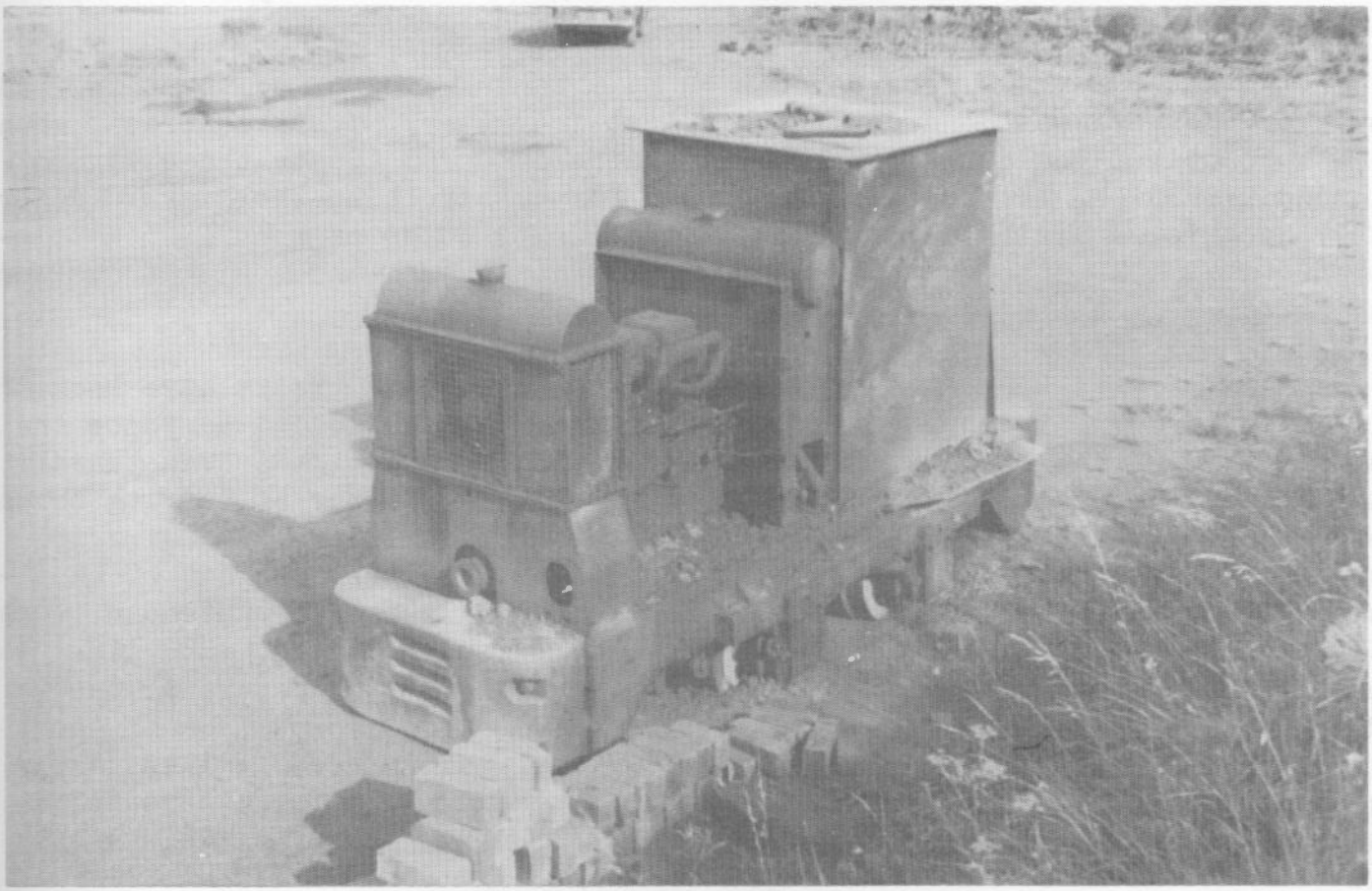
During the last week in June a start was made to change the gaugeyet again, as the opportunity had been taken to standardise on 3'0" gauge equipment. The line from the face is about 250 yards, and this was altered in one day, together with the loco shed road. The track serving the kilns and drying ovens has been left at 2'4" gauge for the time being to accommodate the 4wBE transfer car which is of yet another gauge!!

The remaining 2'8½" gauge Ruston 174140 was dumped in the yard to await disposal, but the redundant wagons remained on the track (27.7.68)

It is doubtful if any system underwent so many gauge changes as that at Bilsthorpe.

Photographs- Top, Simplex 40s323

Bottom,Ruston 174140



RAILWAYS IN ICELAND

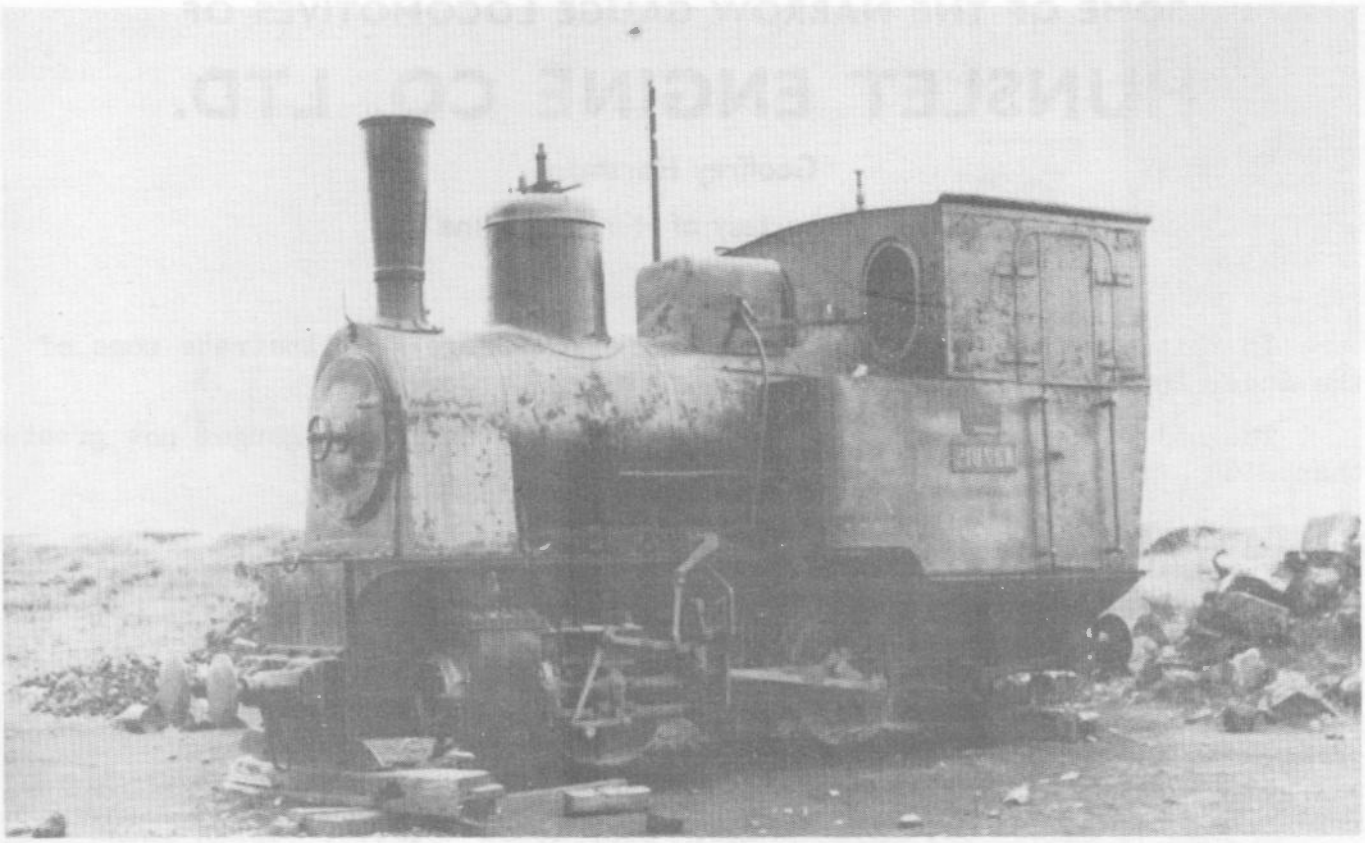
Neil Pitts

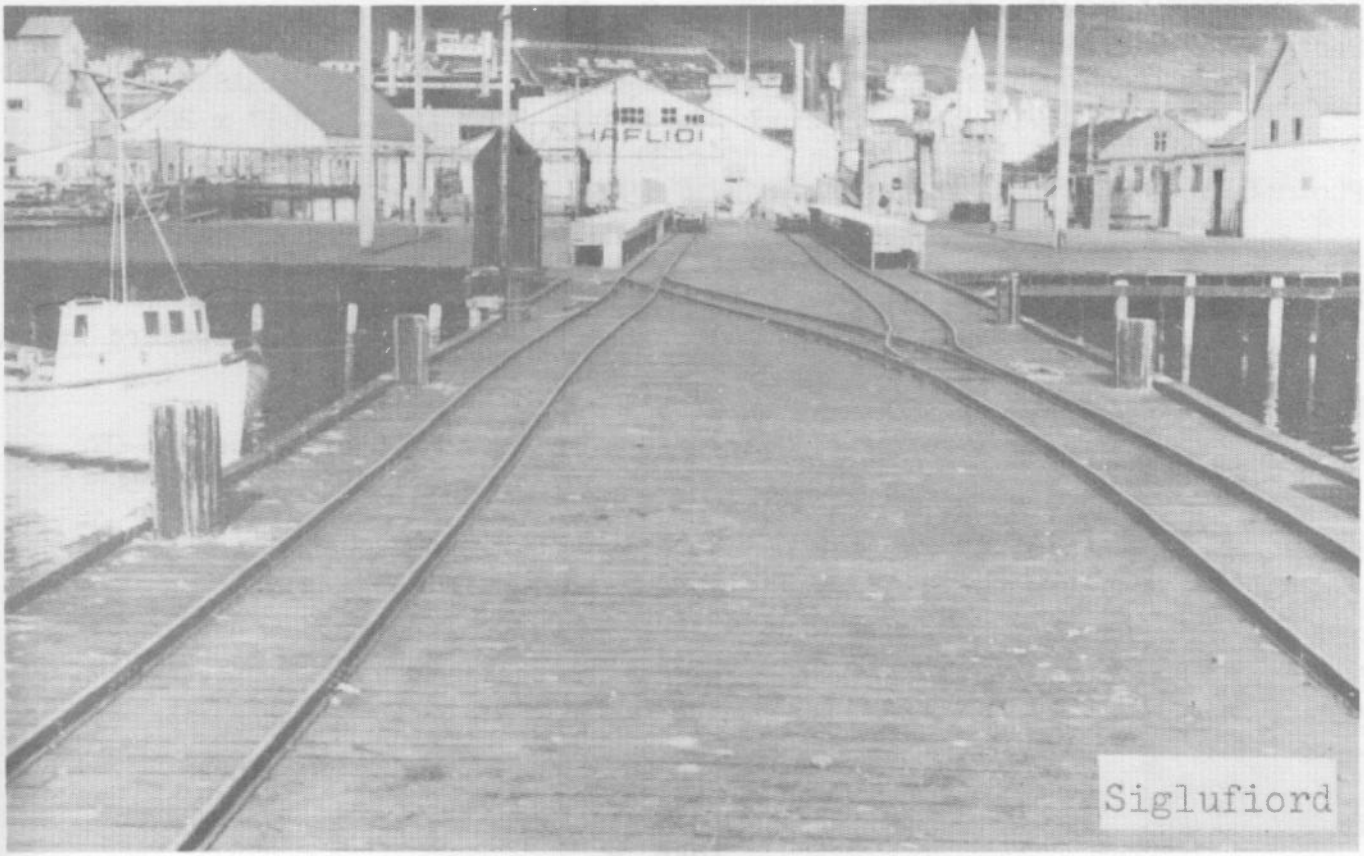
There are several reasons why Iceland has never had commercial railways. The topography of the country does not lend itself to railway construction, approximately half the population is concentrated in the Reykjavik area with the remainder scattered round the coast, there is no mineral wealth, and since fishing is the main industry there is little call for bulk transport overland. Consideration was nevertheless given at one time to the construction of a railway. In 1927 a Norwegian company proposed building a line in the Reykjavik area, mainly for the conveyance of agricultural produce. It is difficult to see how such a railway could have paid its way, and therefore not surprising that no construction took place.

However Iceland did have a steam worked railway, albeit a very short one, for about twenty years. In 1913 the shipping services of the country were developing rapidly and the small harbour at Reykjavik was proving inadequate. Large scale works were initiated resulting in the fine modern harbour which the capital now possesses. A railway was laid by the contractors from the hill Oskjuhlid, which is beside the present airfield, and from which quarried stone blocks were taken down to the harbour, a distance of about two miles. The line was laid to a gauge of 85 centimetres and motive power was supplied by a pair of 0-4-0 WT's by Arn. Jung of Jungenthal bie Kirchberg, Germany. One of these engines is now preserved in the folk museum at Arbaer on the outskirts of Reykjavik. It bears the builder's number 1591, and is dated 1910. It also carries the name "Pioner" on a cast plate on the tank side. The other locomotive is believed to be still in existence but unfortunately could not be located and its number is not known.

The harbour works were undertaken by a Danish firm of contractors, and the bulk of the work was done during the first four years of the contract, when the locomotives could be seen hauling trains of up to twenty three wagons loaded with stone blocks which were used for constructing the quays. After 1917 occasional trains were run until the construction of the port was completed in 1933. The line was then dismantled and presumably all wagons were scrapped, as none seem to have survived.

As far as is known the only other place where rail tracks have been used is Siglufiord. This is a fishing port on the north coast and was once the main centre of the herring industry, before the shoals migrated eastwards. In its heyday Siglufiord was the home port for a large number of herring boats, though only a handful remain today. In order to facilitate unloading the catches several wooden piers were built out into the harbour, and 60 centimetre tracks were laid along these. Four wheeled trucks were used to transport the fish from the holds of the boats to the processing sheds. The lines were mostly about fifty yards long, and of course "mandraulic" power was used. With the decline in landings at Siglufiord little use is now made of these tramways, although the track and the occasional points are still in fairly good condition. A few trucks remain on the tracks, and some others are to be seen on some waste ground nearby, probably withdrawn from traffic.





Siglufiord

SOME OF THE NARROW GAUGE LOCOMOTIVES OF

HUNSLET ENGINE CO. LTD.

Geoffrey Horsman

Photos by courtesy of Hunslet Engine Co.

In this, and the next, issue of The Narrow Gauge we illustrate some of the Steam Locomotives built by the Hunslet Engine Co. Ltd.

The selection has been made from Locomotives built for gauges not greater than 2'6" and spans a period of ninety years.

Photo 1. "LOUISA" No. 195 of 1877.
5" x 8" OC. 1'10¾" gauge. Despatched 20.11.77. to G.W.D.A. SMITH LLANBERIS for DINORWIC SLATE QUARRIES, later owned by GLYNRHONWY SLATE QUARRY CO. LTD.

Photo 2. "ES & S CO." No. 756 of 1901.
8" x 12" OC. 75 cm. gauge. Despatched 4.7.01 EGYPTIAN SALT & SODA CO. Wady Natron Estate No. 4.

Photo 3. "SLGR 102" No. 884 of 1906.
12" x 18" OC. 2'6" gauge. Despatched 15.2.06. SIERRA LEONE 2.8.2., the second of a batch of five.

Photo 4. "RAJGIR" No. 942 of 1907.
9½" x 14" OC. 2'6" gauge. Despatched 3.8.07 BUKHTIAPUR BIHAR RAILWAY, INDIA.

Photo 5. "DIANA" No. 963 of 1908.
Power on the 2'6" gauge. Despatched 3.5.08 ANTOFAGASTA (CHILE) & BOLIVIA RAILWAY which was then a 2'6" line. 16½" x 20" OC. Loco 44 ton 5 cwt. Tender 29 ton 17 cwt. in working order.

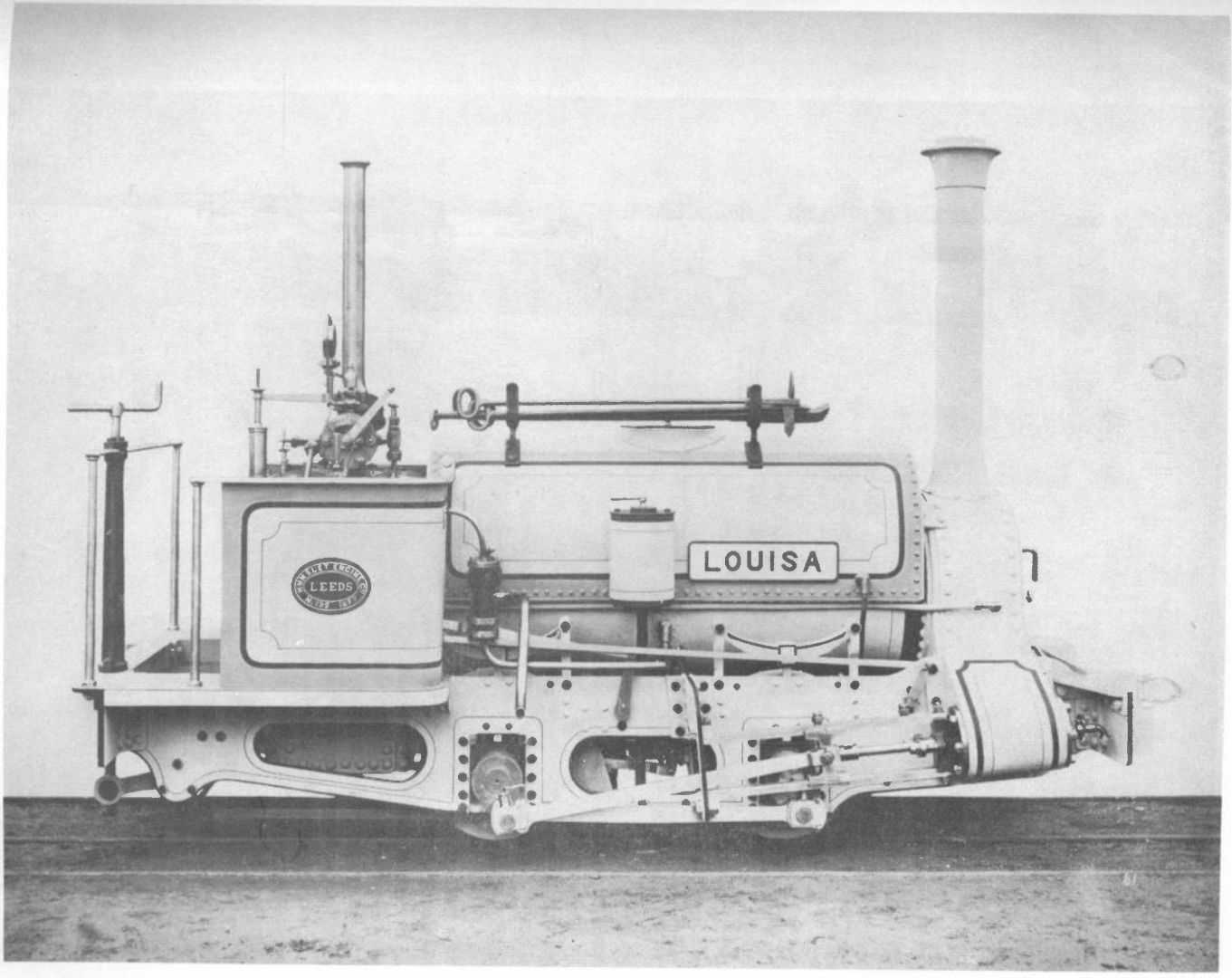
Photo 6. "SLGR No. 40". No. 1014 of 1909.
Another Sierra Leone locomotive, one of the many 2-6-2Ts built for this system. Left works 25.10.09. 10¾" x 15" OC.

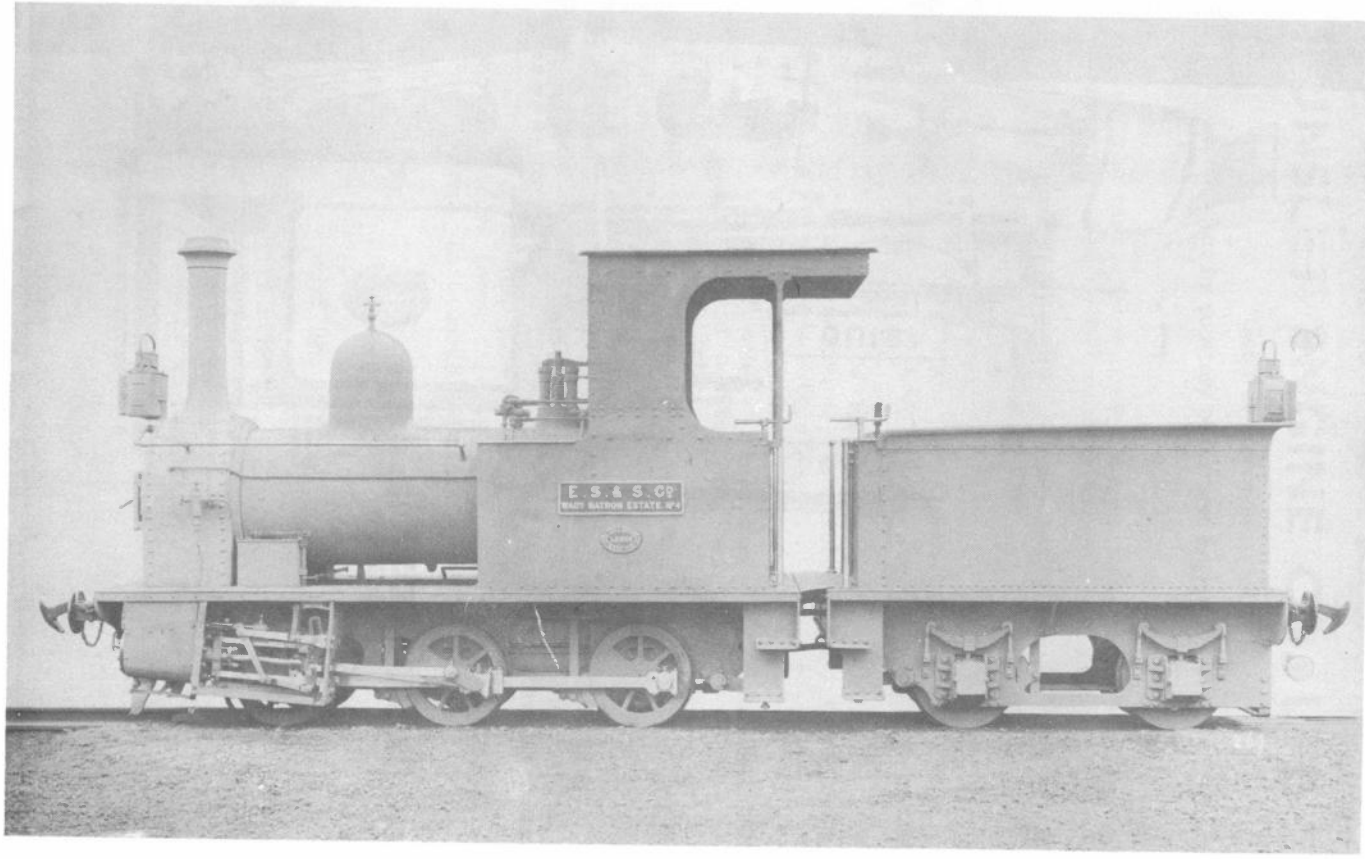
Photo 7. No. 1198 of 1915.
One of twelve 1'6" gauge built for the War Office, Deptford during World War I. Despatched 3.6.15. 6½" x 8" OC.

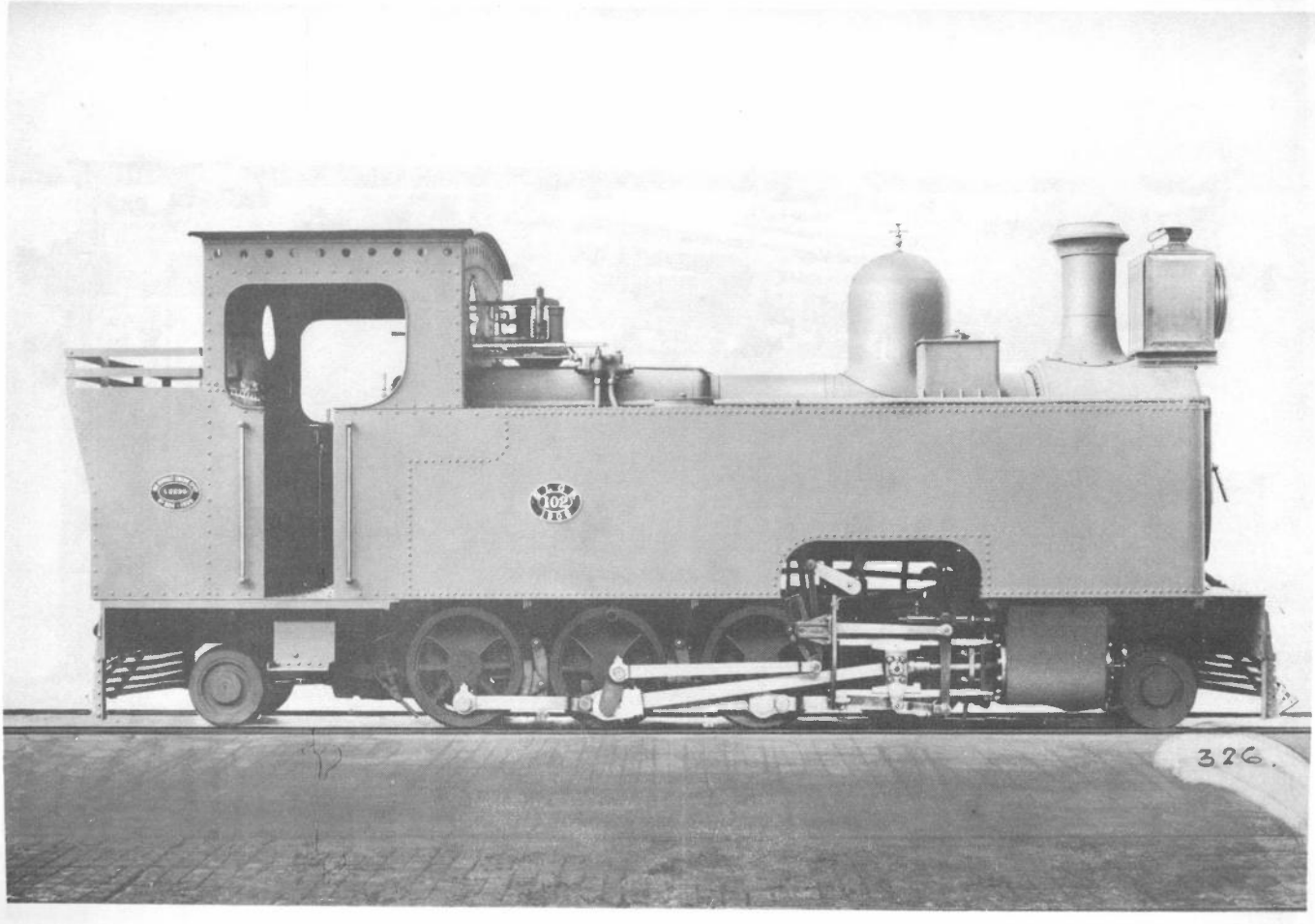
Photo 8. No. 1216 of 1916.
One of the renowned "War Office" class. 155 of these 4-6-0Ts were built between August 1916 and November 1919.
60 cm. gauge. 9½" x 12" OC.

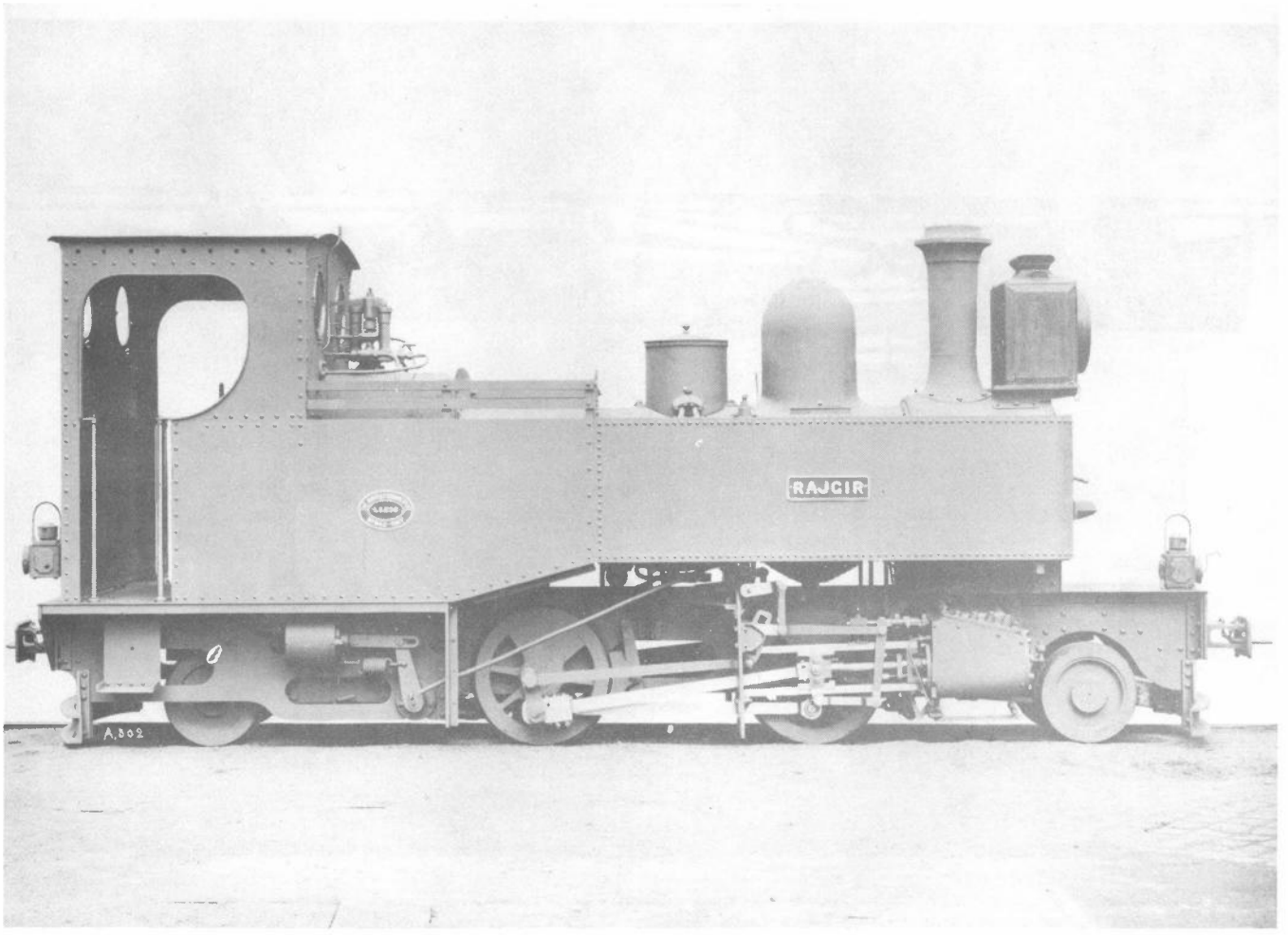
Photo 9. "WLADIMIRO" No. 1481 of 1924.
The largest 2'6" gauge locomotives built by Hunslet.
16½" x 20" OC. Engine 46 ton 16 cwt. Tender 34 ton 11 cwt.
Two of these oil burners were built for a Nitrate Company in Chile, 10.9.24.

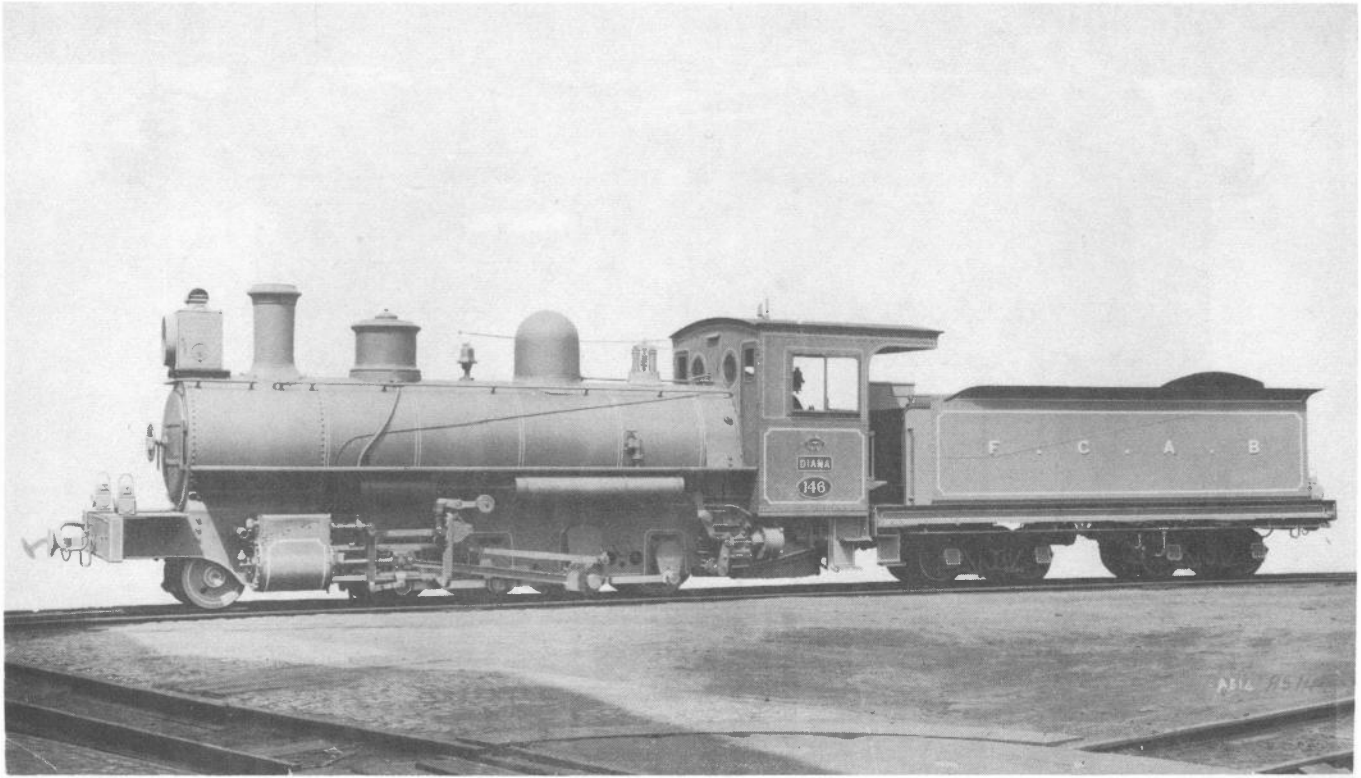
To be continued.

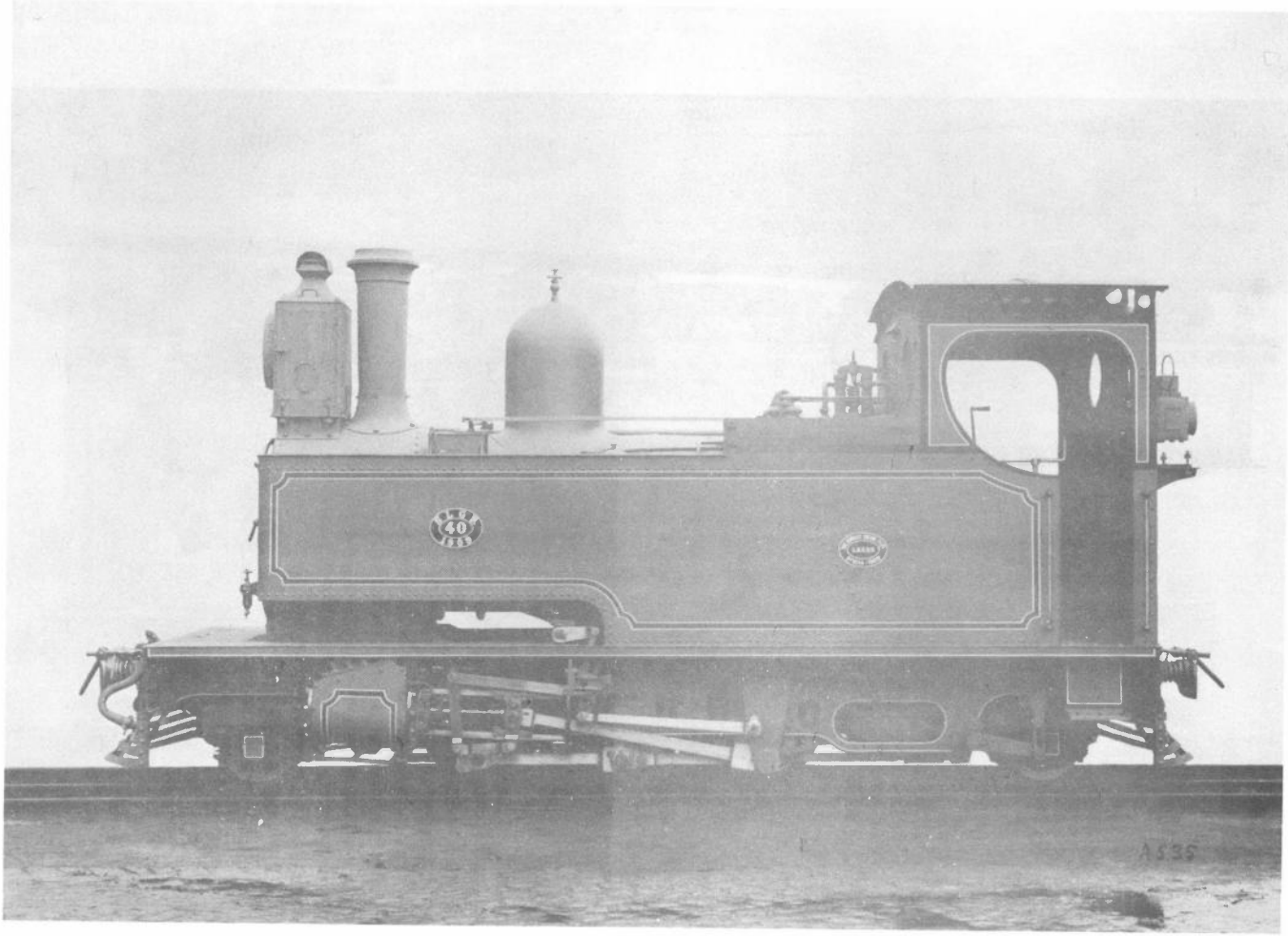

LOUISA
LEEDS


E.S.&S.Co
BALDY BATSON ESTATE No 4


102
326.


RAJGIR
A.302


DIANA
146
F . C . A . B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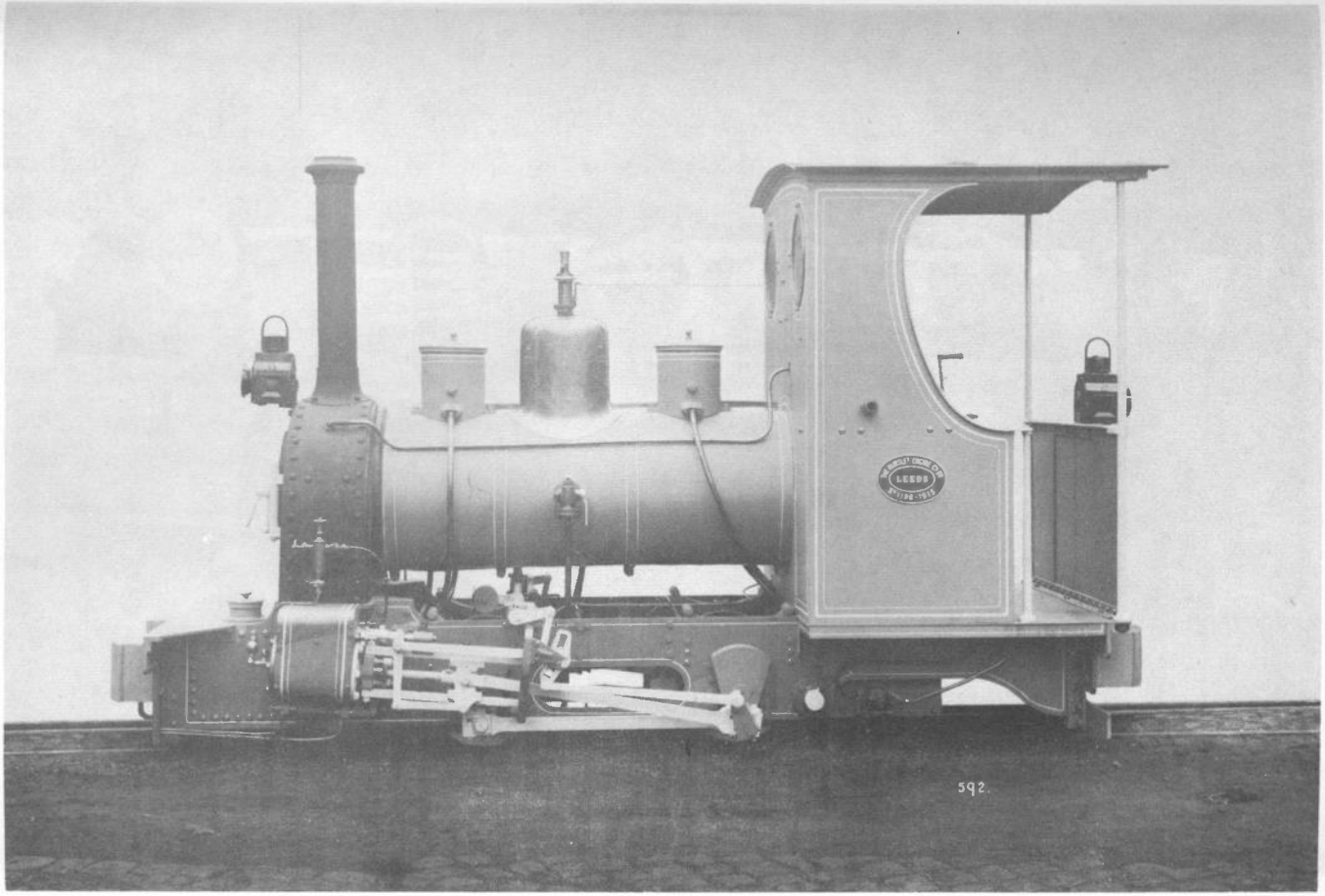
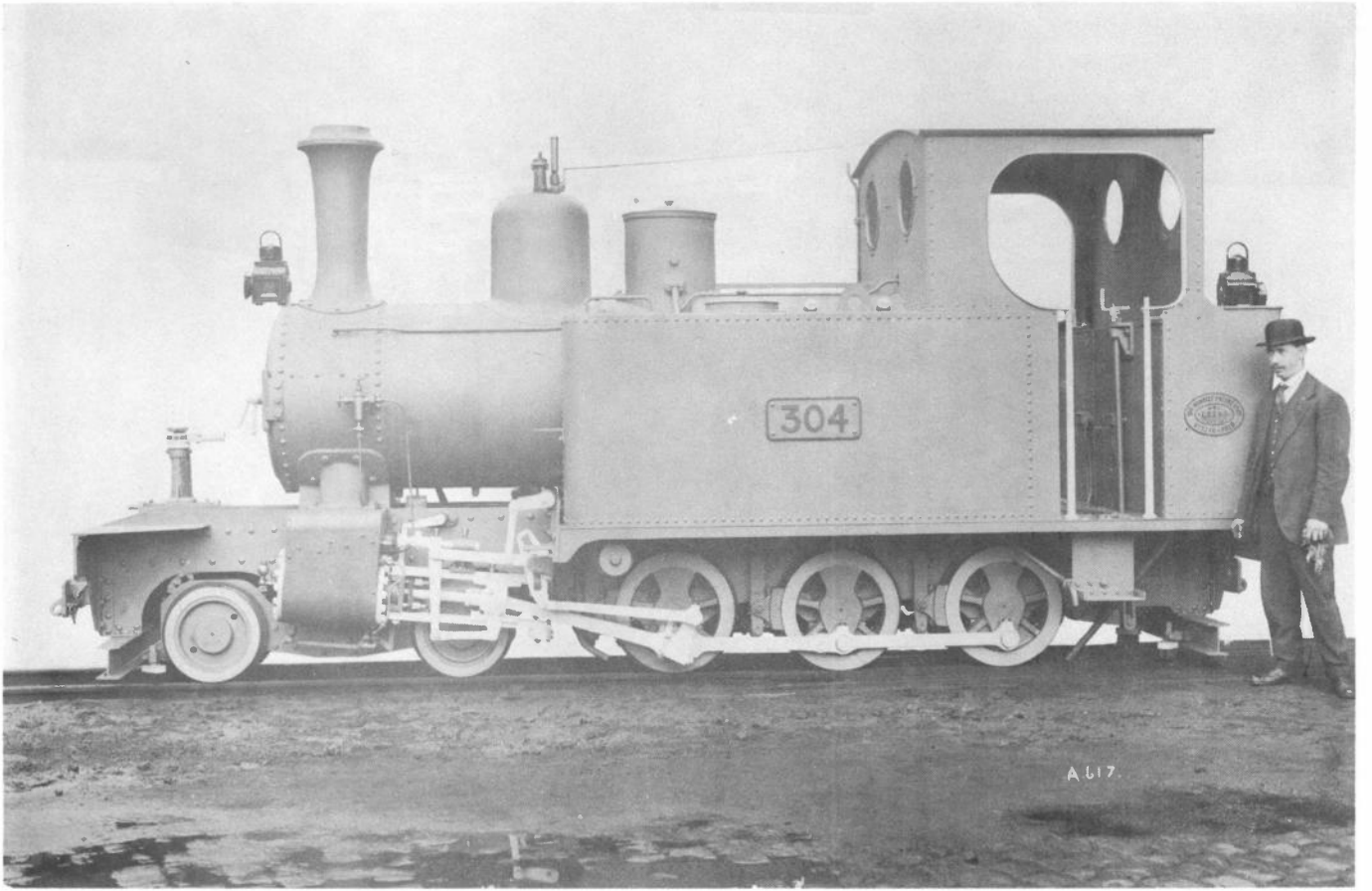
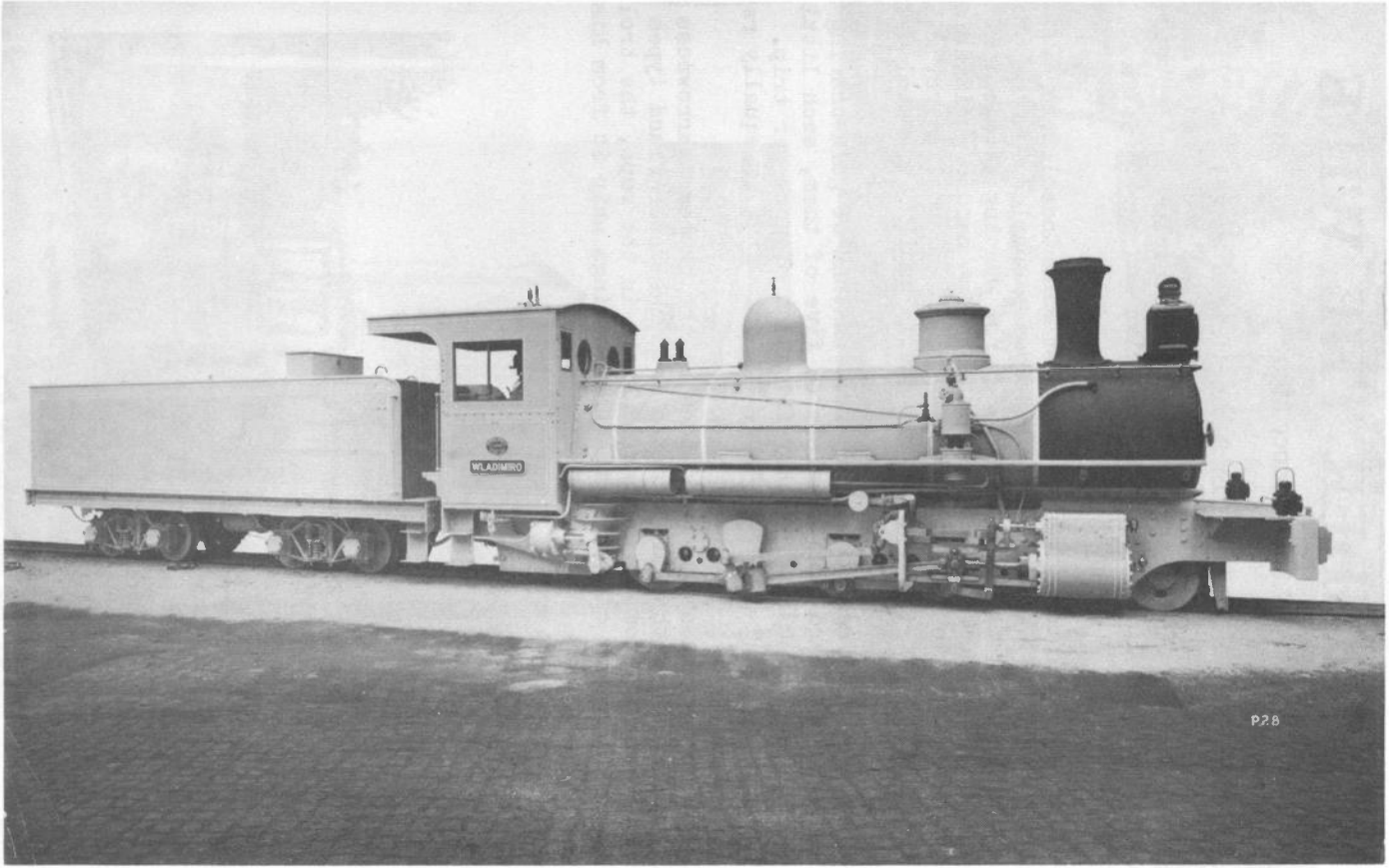

LEEDS
592.


304
A.617.


WLADIMIRO
P.2.8

24" UNDER THE WIRE

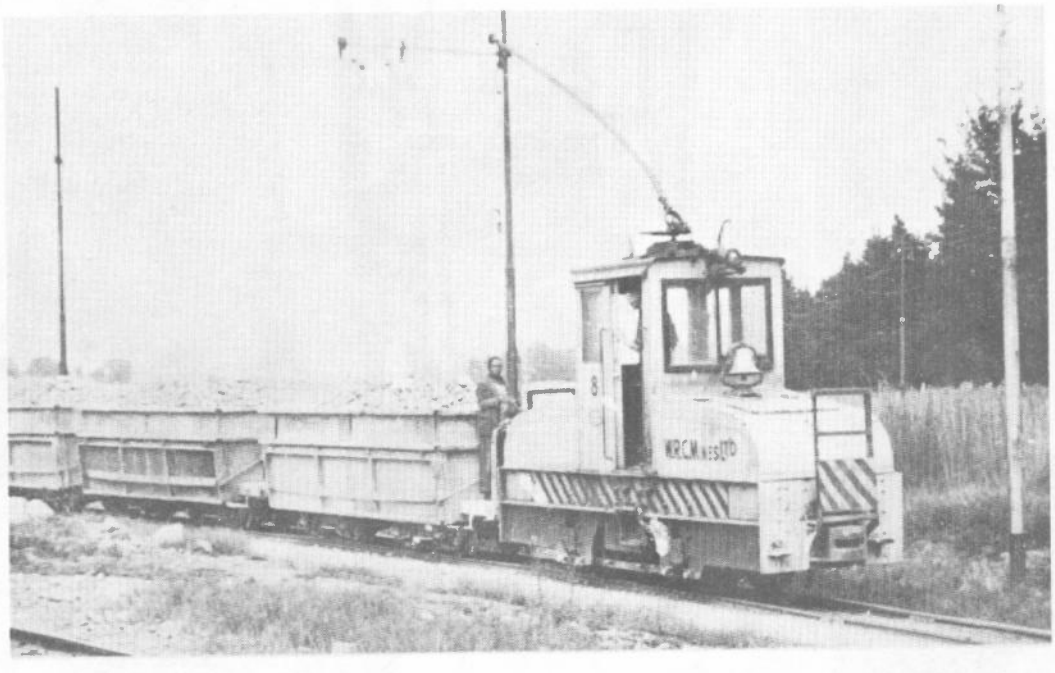
Sydney Moir

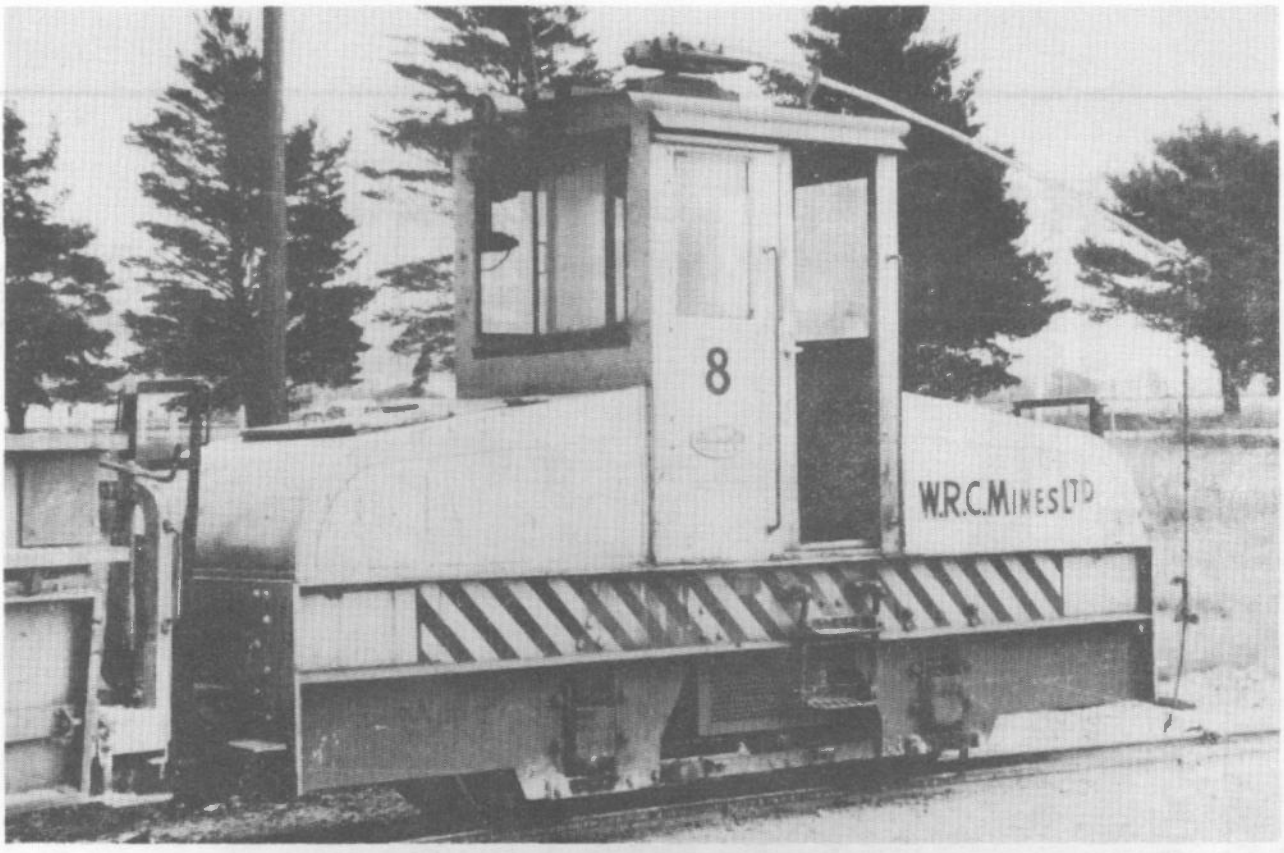
Though Frank Jux mentioned, in South African Survey Part II (Issue No. 38), the electric locomotives working over the 3'6" tracks of the Luipaardsvlei mine, he said nothing about the steeple-cab electric locos of the West Rand Consolidated Mines. The plan and photos given here will rectify the omission.

The little grey locomotives of the West Rand Consolidated ... there are nine of them all told ... shuttle up and down a couple of miles of track. Usually seen at the head of a rake of hoppers, running between the outlying shafts and the central reduction works, they also handle engineering stores and explosives. The latter is carried in small red containers, filled and sealed at the magazine, and mounted on equally small four-wheeled wagons.

The hoppers trailing No. 8 carry fifteen tons of gold-bearing rock apiece. Since a standard rake consists of five of them, each little locomotive is capable of handling seventy-five tons of rock per trip. Loading is rapid, being by chute from the bins, and unloading is equally rapid.

This picture gives a very good idea of the extreme narrowness of these little locomotives ... they are adapted from the underground types by the same maker. Judging from the number of knots in the rope, the trolley-tender has no intention of having the boom-springs whip it from his hands.

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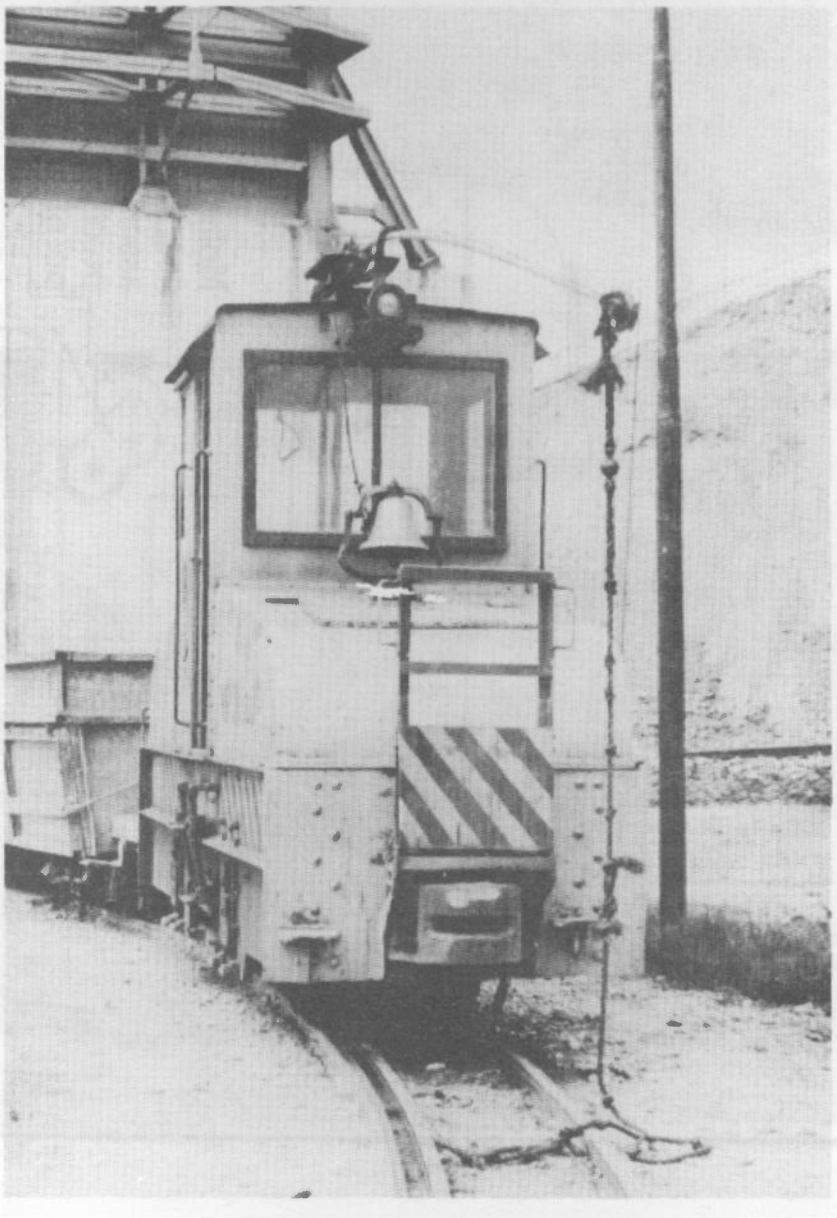
W.R.C. MINES LTD



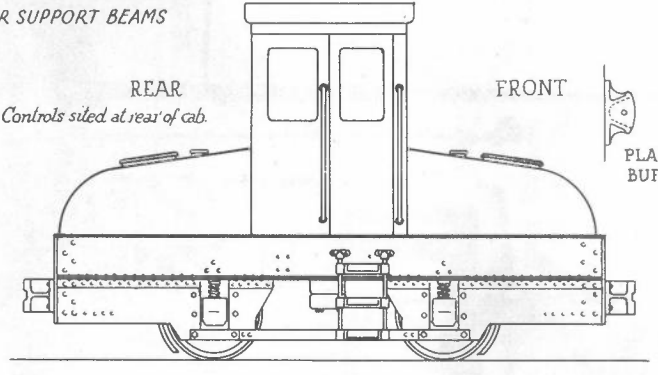
WEST RAND CONSOLIDATED MINES LTD.

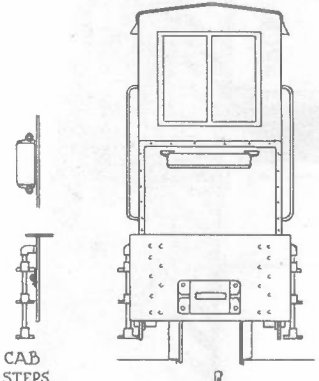
Goodman 2ft. gauge Electric Locos, Nos. 1 to 9.

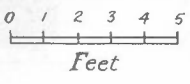
15 tons working weight : 500 volts D.C. : 2 motors : 80 h.p. total

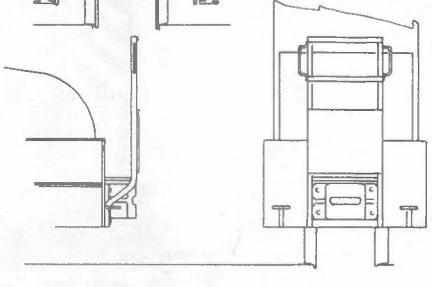
NO DRAWING AVAILABLE FOR TROLLEY POLE, HOOK, OR SUPPORT BEAMS

REDUCED FROM GOODMAN MFG. Co. DRWG. 21296 DATED 2-8-1927

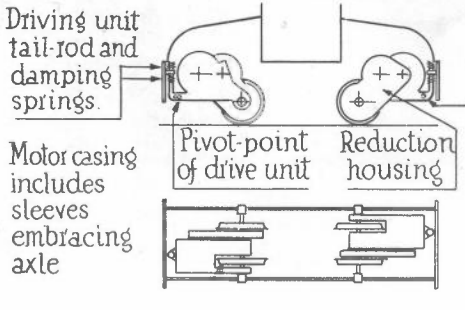




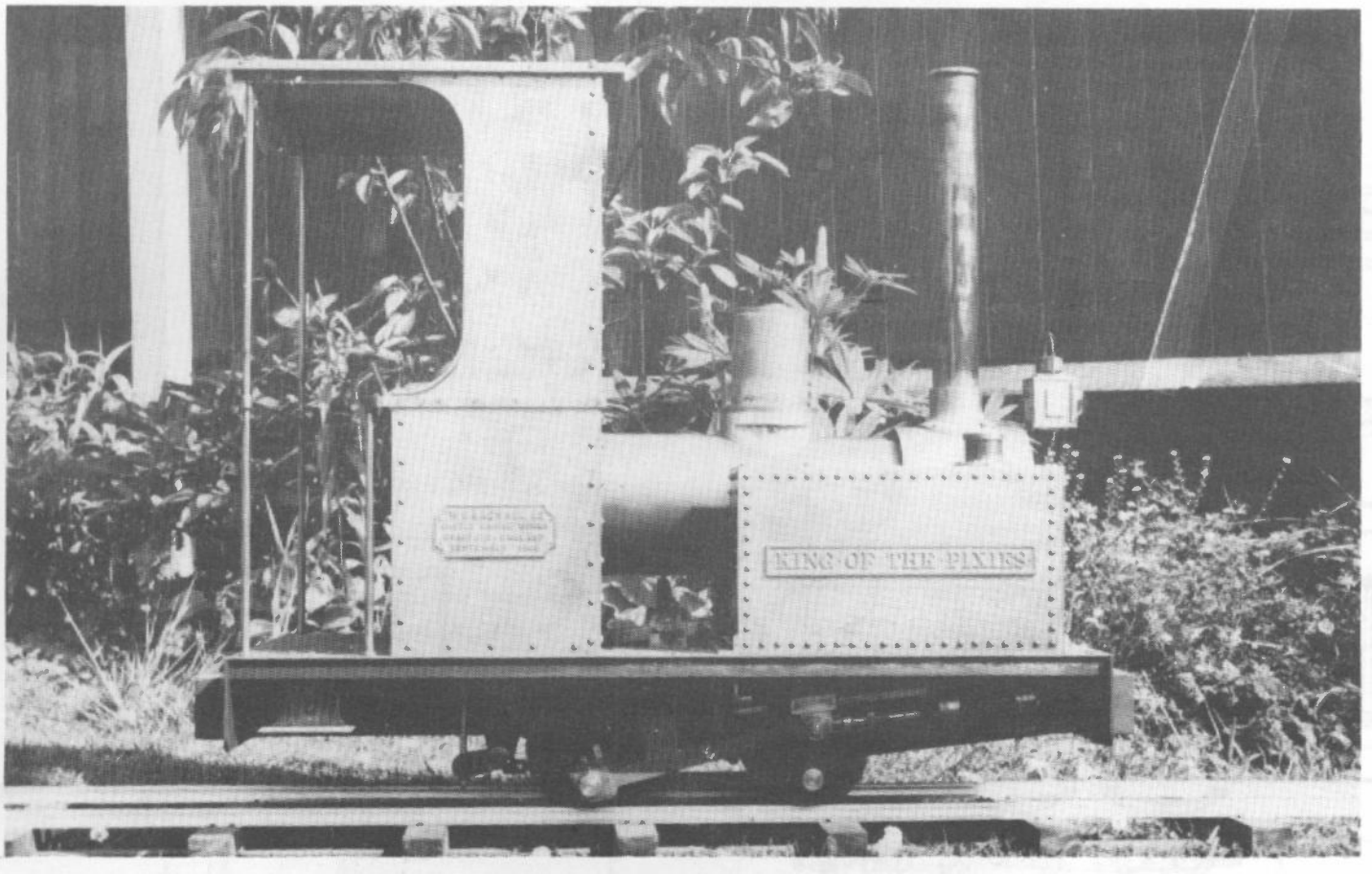




Trolley-tender's step, as added to WRCM locos. *(Drawn from photos.)*



S. Moir, 1966.



From Gordon Hatherill - Croydon.

I am sending you a photograph which you may like to publish in the "Narrow Gauge". It shows the 3" scale model Bagnall Wing Tank which my wife and I are building. It represents an engine with 5" x 7½" cylinders of 1888 vintage, and the model is about 2'4" long over the buffer beams.

When this model is finished we hope to build "Rough Pup", the little Hunslet from the Dinorvic Quarry, and wandered if you could put a note in the "Narrow Gauge" asking if anyone has any photographs of her as she is a rather rare bird.

THE BAUCHI LIGHT RAILWAY

Peter Halton

This line which closed sometime during the 1960's gave access to the Bauchi tin fields in Nigeria. It was replaced by extensions to the 3'6" gauge lines in the area, which cut across it and made it redundant.

Starting at Zaria it ran for 133¼ miles to Jos; connection with the Nigerian Railways was made at Zaria on the Lagos to Kano line. The gauge was 2'6".

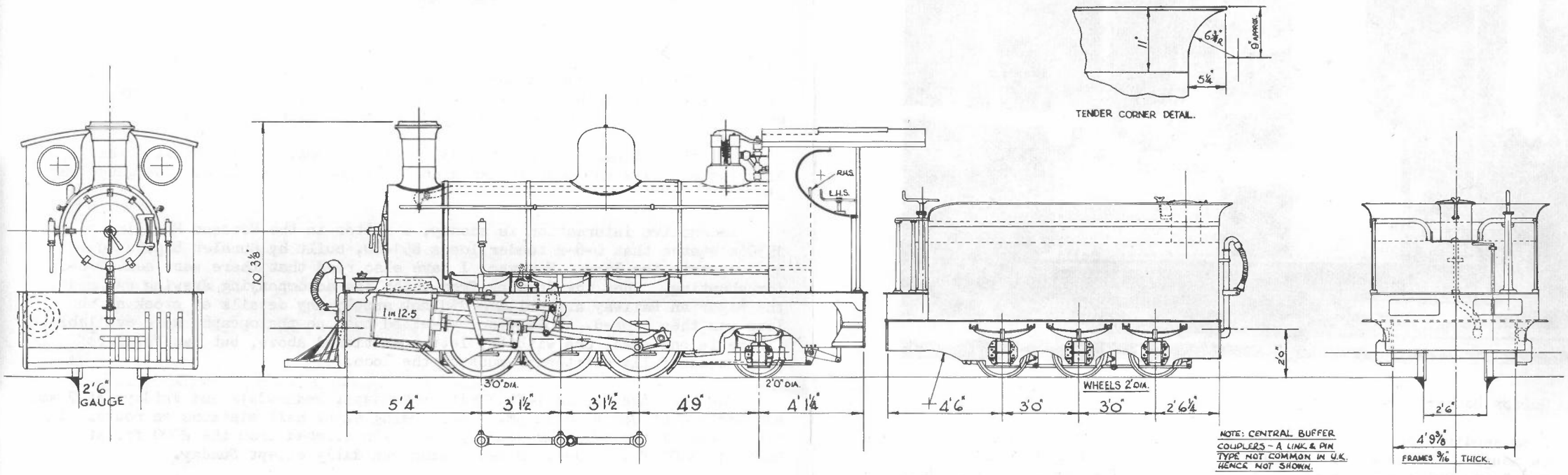
Locomotive information is scanty, a letter in the Meccano Magazine of the 1930's states that 0-6-2 tender locos B51-60, built by Hunslet Engine Co in 1921 operate the line. However, I have also read that there were some 0-6-2T for shunting. When the drawing from which the accompanying drawing was made, the Nigerian Railway authorities did not supply any details of stock as the line was then closed. They also regretted that no photographs were available. (There is one small one with the letter mentioned above, but two "gaffers" very successfully obliterate much of the loco.)

The passenger train left Zaria on Mondays, Wednesdays and Fridays at 7 am. and arrived at Jos at 8.30 pm., there being eight halt stations en route. In the course of the 13½ hour journey the train climbed from the 2000 ft. at Zaria to 4000 ft. at Jos. Mixed trains ran daily except Sunday.

I apologise for this scant description of the line, but it was situated in a fairly remote part of the country and it did the job for which it was intended quietly until developments in the area brought an end to its usefulness. Consequently I don't suppose it was visited by many - if any - gricers.

In conclusion I must thank the Nigerian Railways who supplied, very quickly, the general arrangement drawing.)

(If any member has further information on these attractive little locos we should be pleased to hear from them - Editor)



TENDER CORNER DETAIL.

NOTE: CENTRAL BUFFER COUPLERS - A LINK & PIN TYPE NOT COMMON IN U.K. HENCE NOT SHOWN.

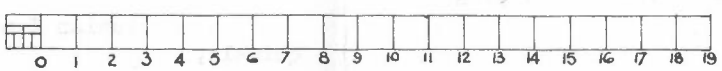
RAIL TO TOP OF CAB 9' 11⅞"
BOILER ℄ 5'0" TO RAIL
CYLINDER CRS 5'8½"
DISTANCE BETWEEN FRAMES 3'10½"
FRAMES ⅞" THICK.

WIDTH OVER PLATFORM 7'4"
HT OF CHIMNEY 2'7¼"

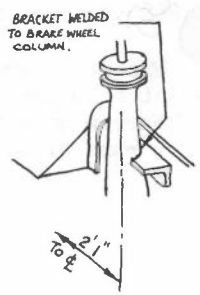
BAUCHI LIGHT RAILWAY 0-6-2 Nos 57-60

KITSON 5326-9 of 1921

GAUGE: 2' 6"

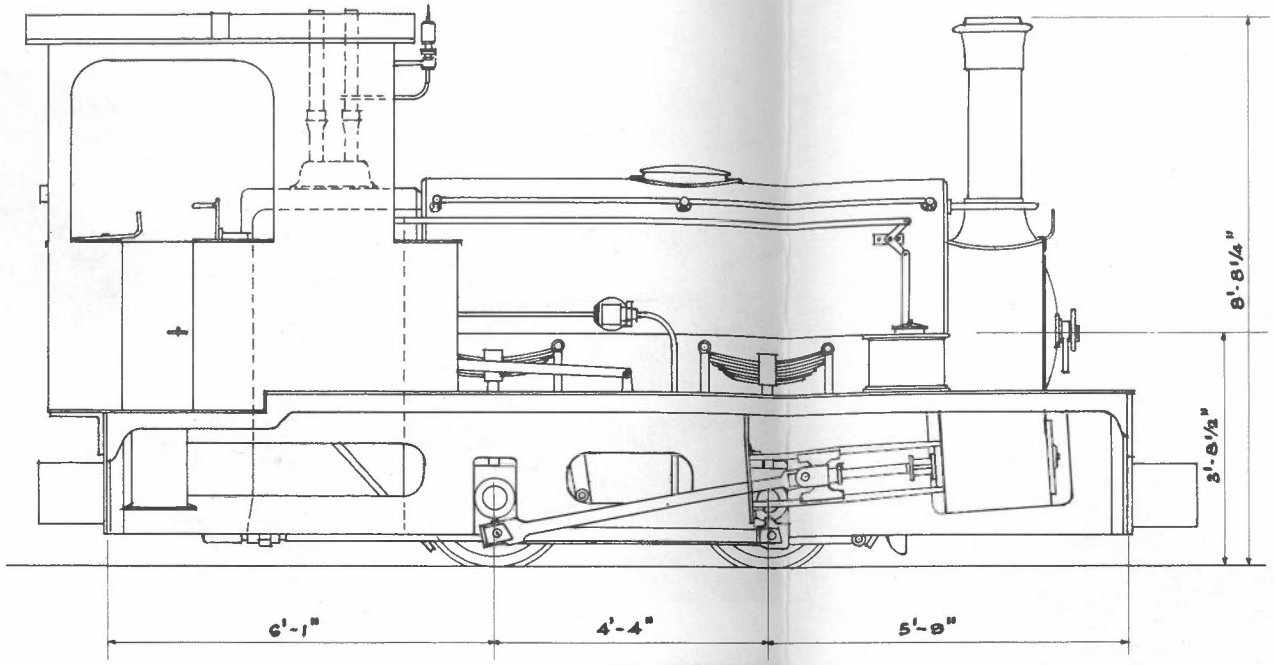


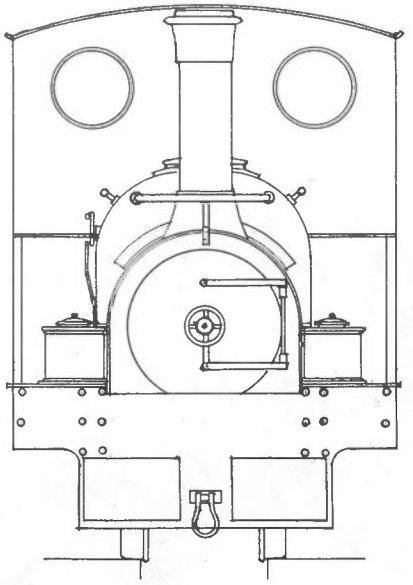
SCALE OF FEET.

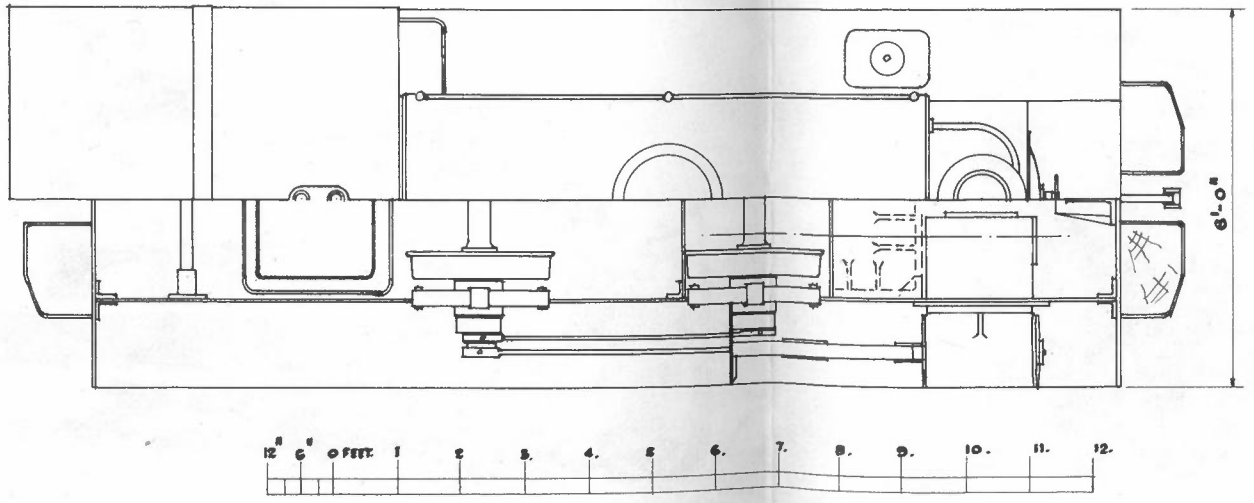


NGR(B).1.

Drawn by P.S.Halton 11/62 ©







MANNING WARDLE & CO.

0-4-0 ST. JUBILEE 1897.

NO. 1382. 1897.

CYLINDERS. BORE 9" STROKE 14"

WORKING PRESSURE. 150 LBS. SQ. IN.

TANK CAPACITY . 250 GALLONS

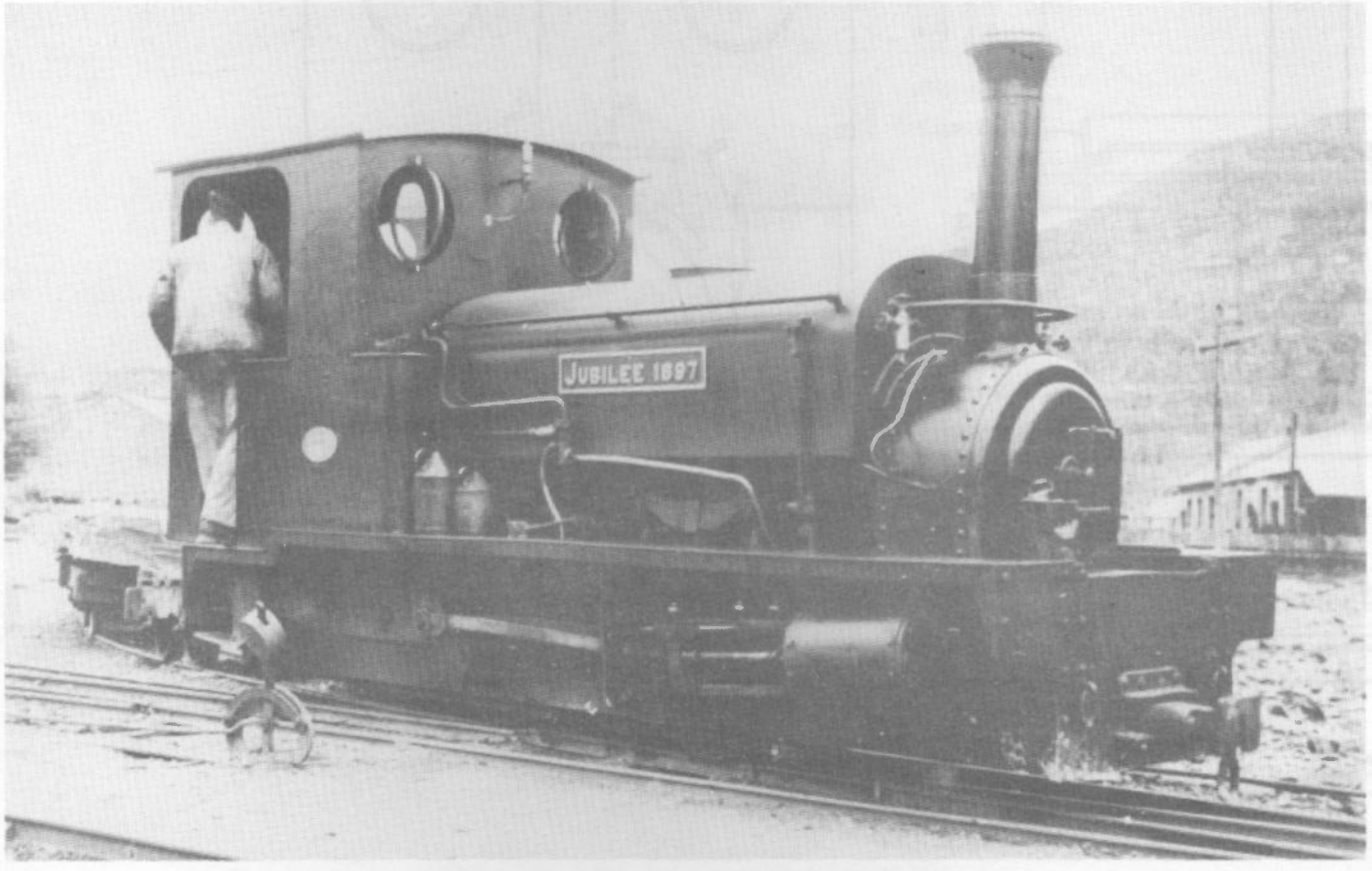
GAUGE . 1'-11 1/2"

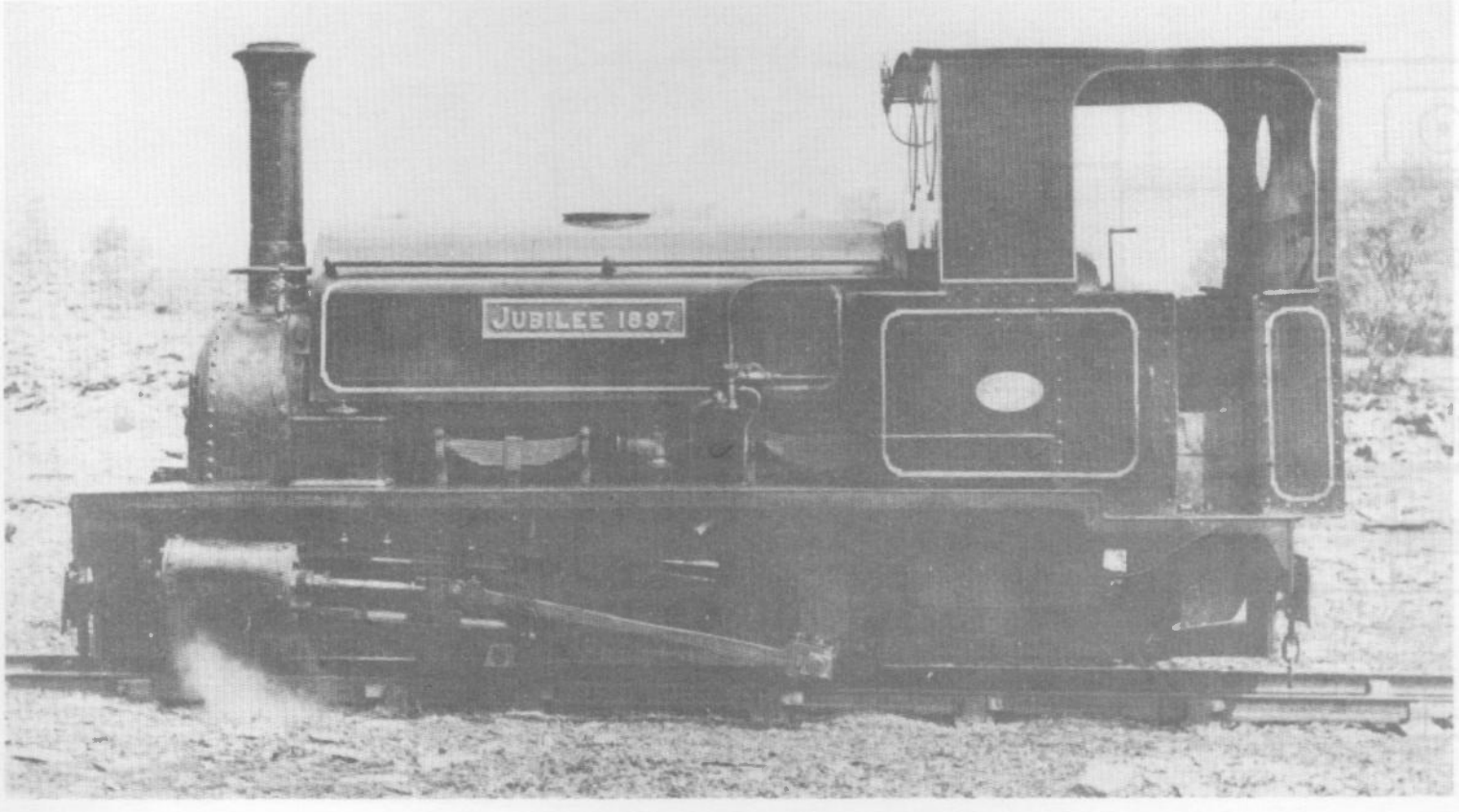
DRAWN BY G.R.PAGE NOV 1958.

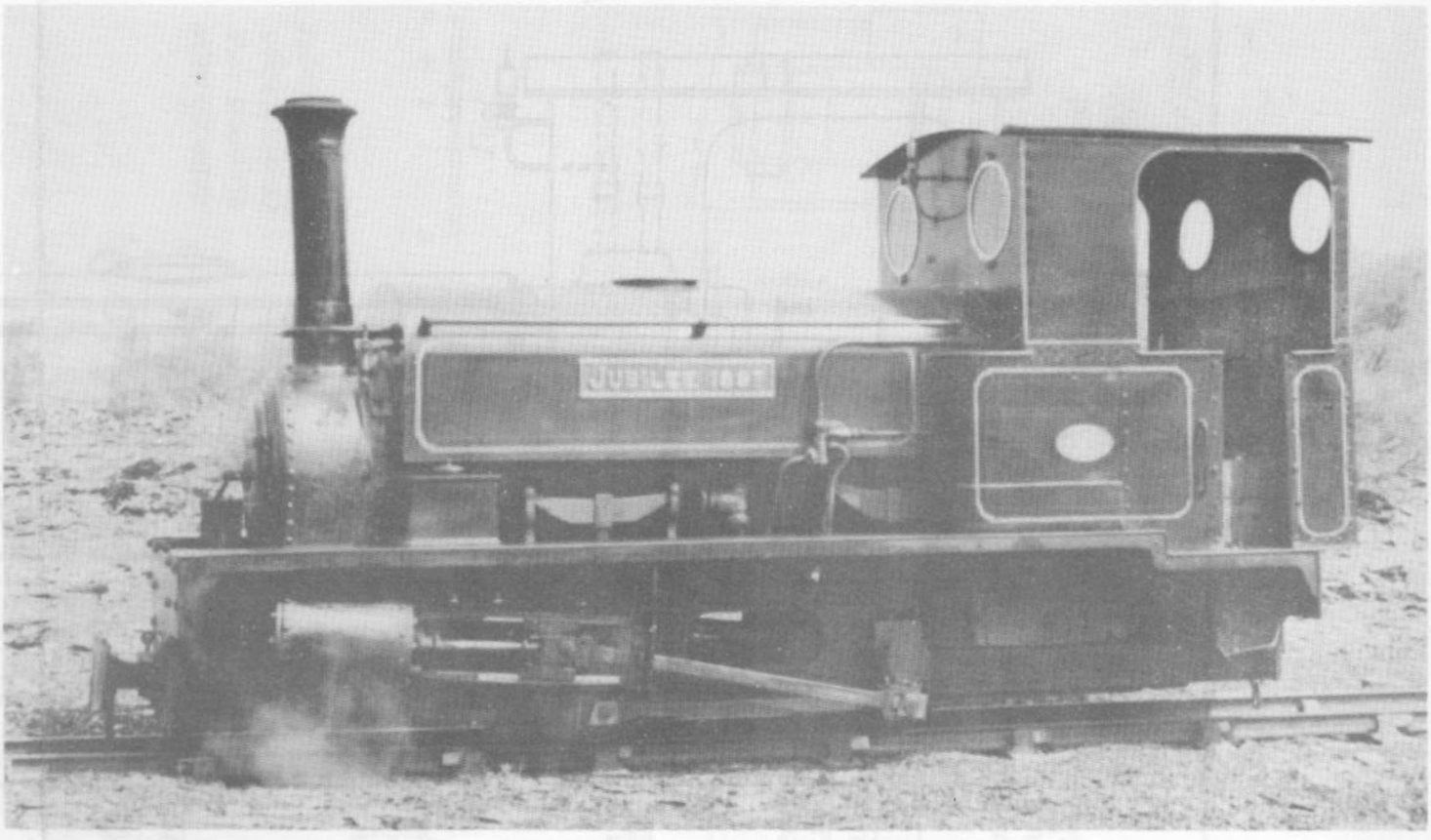
JUBILEE

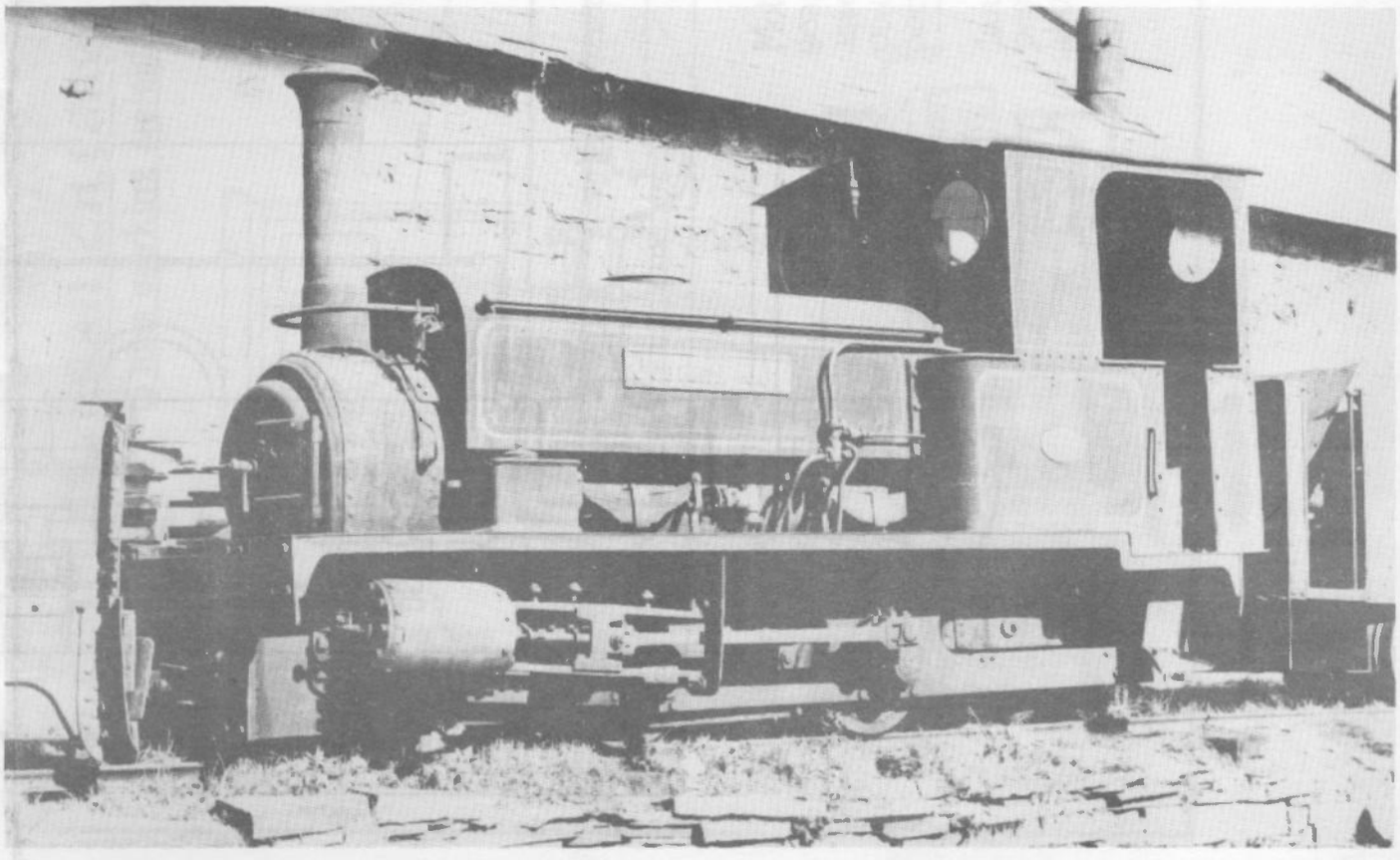
MANNING WARDLE & Co. **No. 1382 of 1897**

Drawing by G. R. Page









LETTERS to the EDITOR

om R. F. Behn - British Columbia, Canada.

I would like to comment about two articles in the November issue of the row Gauge which arrived just after New Year's Day.

First, an addendum to I. K. Hutchinson's "Cyprus Railways". The loco-ives for the Cyprus Mines Corporation railway were supplied initially by dwin. They were:-

No. 1, 0-6-2 ST, Baldwin No. 54647 of 1921.

No. 2, 0-8-2 ST, Baldwin No. 56766 of 1923.

No. 3, 2-8-2 ST, Baldwin No. 57790 of 1924.

No. 4, 0-8-2 T, Baldwin No. 60344 of 1928.

1 and No. 3 were described with drawings by R. E. Tustin, "Modelling row Gauge Railways", Model Railway News, April 1947, pp. 78-83. This icle also had drawings of three freight cars of the Government Railways cribed by Mr. Hutchinson. (NGRS Library has an interesting file on the lway).

The second article is Sydney Moir's, "Midget Mallets". Minera Mexicana oles No. 2 is one of two and were featured in Trains (US), June 1963, 23-26. They were described as being 'coal burning articulated compounds' lt by Orenstein and Koppel. Building date was probably between 1905 and , which are the most likely dates for the building of the 60 cm. railroad used to run on. Measurement of the locos was said to give cylinder surements of 8" x 10" and $10\frac{1}{2}$" x 10". It is my belief that one of these ines has since been brought to the U.S. for preservation. It would be eresting to know where and by whom.

LETTERS to the EDITOR

From Barrie McFarlane - Brighton.

Referring to my drawing in Magazine No. 49.

"MOY" is Thomas May Ltd. of Peterborough, who are big coal merchants in East Anglia. They built Southwold Railway wagons 24 to 36 inclusive. "MOY" 1507 to 1509 became S.R. Nos. 37 to 39 when "MOY" 1510/1511 were built in 1922. With such a big fleet of wagons, I suspect that they were mine owners as well. Houses in MOY Street, Aberfan were demolished in the disaster.

From Allen Civil - Basford.

Re "Fernilee" in the last magazine WB 1669 was built in 1901 and had 9" x 14" cylinders - I should query whether 1669 ever worked at Fernilee as my records do not show it.

A note from ADRIAN GARNER who put the superb drawings at our disposal and proposes to model "The Shotgun" in 16 mm. to the foot -

You may be interested to know I have obtained copy patents for the vertical boilered wonder also, this would make a fantastic model, sometime in the future I will prepare drawings.

There were patents taken out in the 1860s for a Rack Monorail!! Using the Lartigue system as the L & B but with rack bolted to the side of the main rail, even Mallet 0-2-2-0 locos were proposed - food for thought.