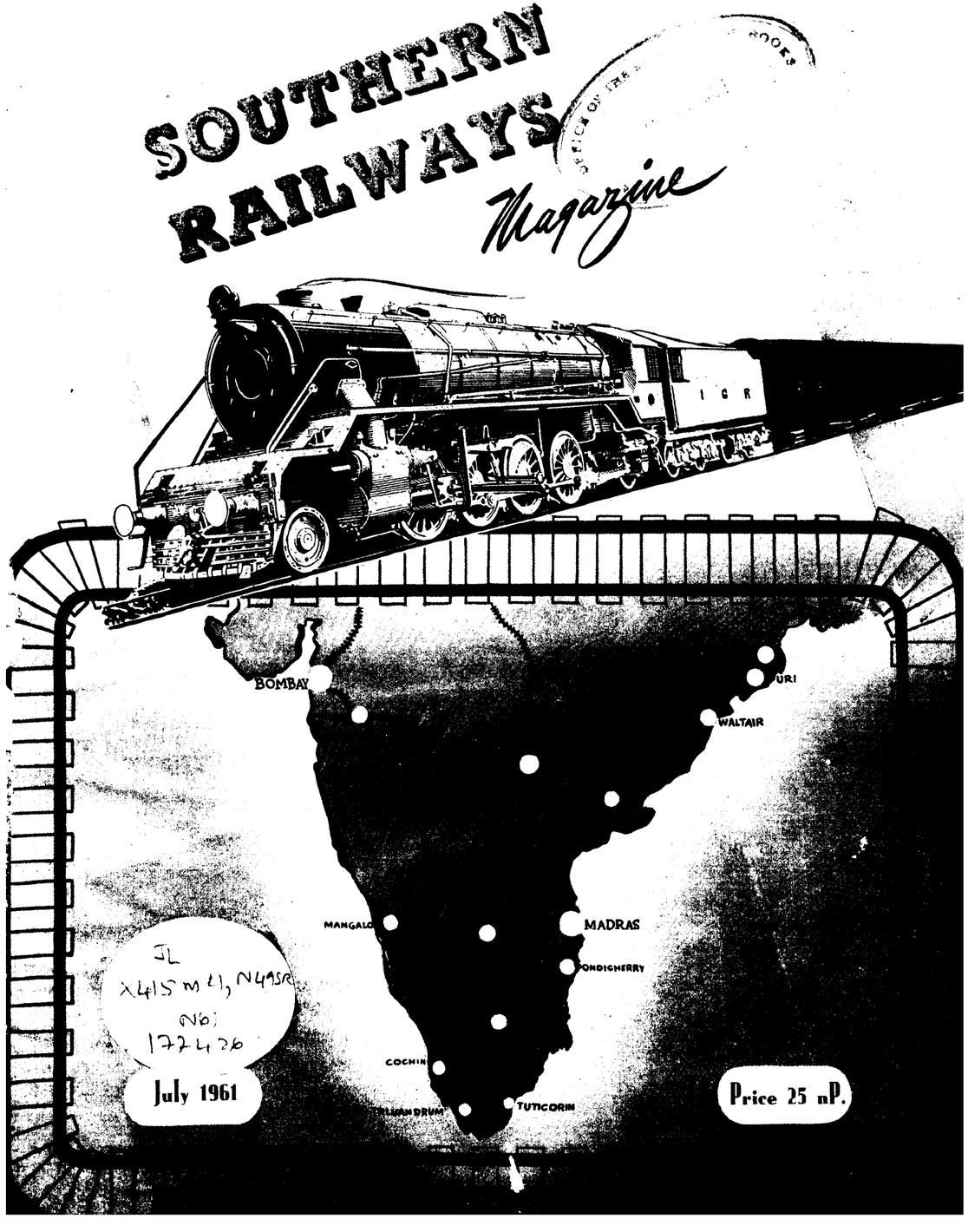
SOUTHERN RAILWAY

JULY — 196

JULY

SOUTHERN RAILWAYS *Magazine*



July 1961

Price 25 nP.

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2. Application should be made to the Station Master of your starting station at least 3 days in advance specifying the date and train by which you intend travelling and the tickets must be bought in advance. The reservation fee leviable is 50 nP. per seat or berth.
3. Reservation by I and II Class from intermediate stations by Express trains can also be made similarly, but reservation ticket can be issued only after getting an advice from the Reservation Centre that the reservation has been made.
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5. If the reserved seats or berths are not occupied at least 5 minutes before the booked departure of the train the reservation will be cancelled and the seat or berth given away to another.
6. **Reservation fee is not refundable.**
7. III Class seats are also reservable on Express and certain other important trains for long distance passengers from the train-starting stations on payment of a reservation fee of 25 nP. per seat.
8. Do not occupy a berth or seat reserved for another, as you are liable to be displaced at the last moment.
9. If you find another person occupying the berth or seat reserved for you and if he will not vacate it on demand, report it to the Guard or Station Master. They will help you.

(INSERTED IN THE INTERESTS OF TRAVELLING PUBLIC)

WRIGHTS RANGE OF MANUFACTURE

By An Engineering Correspondent

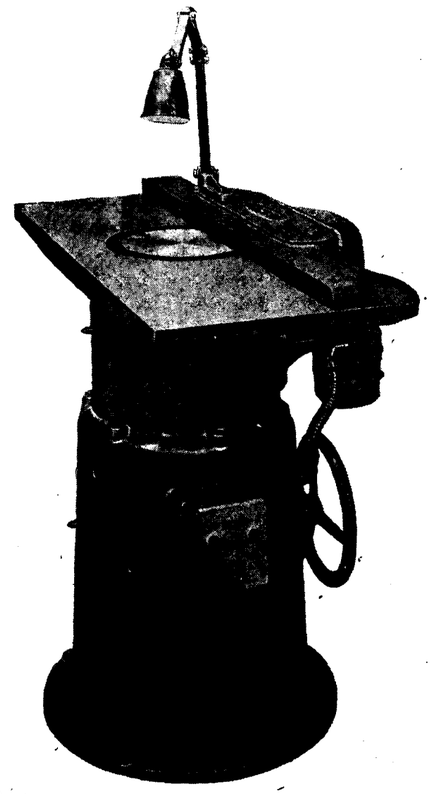
We have great pleasure in publishing below a short illustrated technical write-up dealing with Vertical Spindle Horizontal Table Grinders and Grinding attachments for Machine Tools. The manufacturer is none other than the reputed firm of Electrical and Mechanical Engineers, Messrs. Wright Electric Motors (Halifax) Ltd., who have specialised in designing and developing of Surface Grinding Machines and Grinding Attachments for Machine Tools, for the past twenty years. These Machines are already employed in various Railway Workshops all over the world. In view of several expansion programmes envisaged for Indian Railways during the Third Five-Year Plan period, and development of heavy engineering industries both in private and public sectors, we are sure this write-up dealing with technical features of the machines would be of great interest to our engineers and industrialists.

WRIGHT Electric Motors (Halifax) Limited—a firm of Manufacturing, Electrical and Mechanical Engineers, established in 1900, have for the past 20 years specialized in the designing and developing of Surface Grinding Machines and Grinding Attachments for machine Tools.

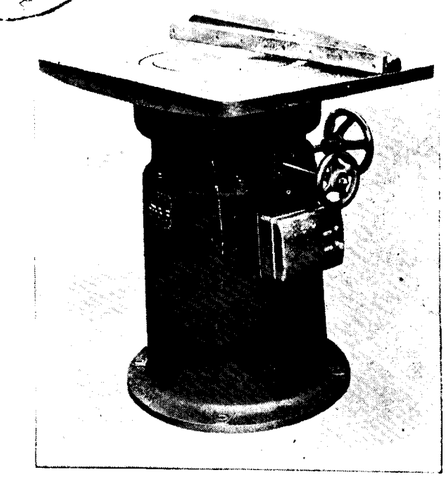
Their Vertical Spindle Horizontal Table Surface Grinders, for which Patents have been granted in most principal countries, and the range of Self-contained Motorised Grinding Heads are covered in India by Patents No. 54,338 and 55,705.

The 'Wright' Vertical Spindle Horizontal Table Surface Grinders are ideal machines for roughing and finishing operations in all Engineering Works, Foundries, Rolling Stock and Engine Maintenance Workshops, Dockyards, Garages etc. They are suitable for metals, alloys, plastics etc., and are precision built and simple to operate.

These machines are now being made in six different sizes, having grinding wheels of 8", 10", 12", 14", 16" and 20" diameter. All models are available in pillar construction, whilst the 8" and 10" sizes are also available as Bench types. These machines have a cast iron rib-reinforced rectangular working table, provided with an insert plate and a wheel centre disc made of high tensile, wear resisting, hardened steel. The whole surface of the table is accurately machined and



This photograph shows a "WRIGHT" Model 54/P14 Vertical Spindle Horizontal Table Surface Grinder fitted with motorised Dust Extractor Fan and low voltage lighting equipment.



This photograph shows a "WRIGHT" Model 55/20 Vertical Spindle Horizontal Table Surface Grinder.

ground over. A swivelling truing block, to take a diamond tipped wheel dresser is fitted. A guide fence is faced with a hardened steel strip, the body of the fence being of cast iron and arranged so that it acts as an exhaust hood, having cast-in ducts for carrying the dust to an outlet to which a dust extracting system can be connected. The grinder body is of heavy cast iron construction, giving extreme rigidity. A cup type grinding wheel is carried on a cast iron wheel hub, clamped with a steel plate screwed to hub. The wheel hub is keyed on to the tapered shaft extension of the driving motor and secured through a lock nut. Compensation for wheel wear and/or adjustment of depth of cut is obtained on the 8", 10", 12", or 14" models by vertical adjustment of the motor rotor by means of a handwheel through a pair of bevel gears. The rotor always remaining within the magnetic field of the stator.

On the 16" and 20" models the cup wheel is carried on a cast iron wheel hub, which is spigotted on to the upper end of the rotating member of the vertically

This photograph shows a "WRIGHT" Model 57/ Mic. Ex 12 Vertical Spindle Surface Grinder, provided with a grooved worktable and adjustable and removable guide fence. In this case a distorted and corroded cylinder head is being re-surfaced.

adjustable piston, the latter being of high tensile steel and carried in a double row angular contact bearing. Compensation for wheel wear and/or adjustment of depth of cut is controlled by operating a hand wheel, which engages through gearing the vertically adjustable piston. Setting of depth of cut is maintained by means of a handwheel-operated locking device. The whole rotating mechanism is dynamically balanced ensuring smooth and vibrationless operation. The driving motor, mounted vertically in the grinder casting, is of the Totally Enclosed, dust proof type, of special design having high torque and low starting current features. The rotor shaft, made of high tensile steel, is fitted with deep groove single row ball-bearing at the top, and double purpose ball-bearing at the bottom end, both being stauffer lubricated.

The principal dimensions, supply arrangements, horsepower of the Motors, speeds etc., are as follows:—

Model	TABLE Height Ins.	TABLE Length Ins.	TABLE Width Ins.	CUP WHEEL Outside dia. Ins.	CUP WHEEL Inside dia. Ins.	CUP WHEEL Depth Ins.	MOTOR H. P.	MOTOR Full load speeds	MOTOR Surface speed of Wheel FT. Per minute
"WRIGHT" TABLE SURFACE GRINDERS—INDIAN PATENT NUMBER 54,338									
Standard Supply Arrangements: A. C. 50 cycles. 2 or 3 phase									
54/B8	17¾	18	14	8	6½	2	1	2880	6030
54/P8	34½	18	14	8	6½	2	1	2880	6030
54/B10	17¾	24	14	10	8½	2	1.5	2880	7545
54/P10	34½	24	14	10	8½	2	1.5	2880	7545
54/ST.12	36	28	19	12	10	3¼	3	1440	4530
54/EX.12	36	42½	19	12	10	3¼	3	1440	4530
54/P14	36	42½	19	14	12	3¼	4	1440	5300
"WRIGHT" TABLE SURFACE GRINDERS—INDIAN PATENT NUMBER 55,705									
Standard Supply Arrangements: A.C. 50 cycles. 2 or 3 phase.									
55/16	36	38	23	16	13½	5	5	1440	6030
55/20	36	40	30	20	17	6	7.5	960	5025

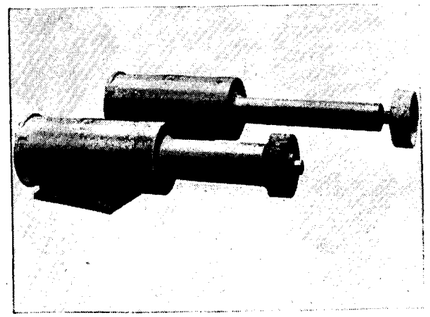
The 12" sizes are fitted as a standard with dust extractor fan units—the fan motor (developing 0.25 B.H.P. at 3000 r.p.m.) is wired to start up simultaneously with main driving motor.

For the 14" models this accessory is optional.

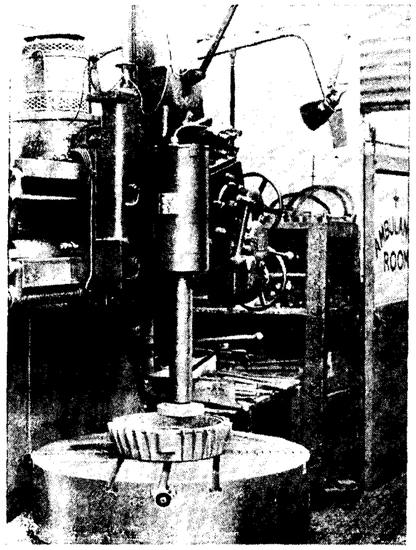
For use with the 16" and 20" machines, we recommend the adoption of a separate self-contained, motorised Dust Collector Unit, which we can supply in two different sizes, namely: No. 2—the extractor fan being driven by a 0.5 B.H.P., 2800 r.p.m. motor:

Size No. 3—the extractor fan being driven by a 0.75 B.H.P., 2800 r.p.m. motor: in these units, the fan is on the clean side of the filter; the process dust is induced through a low velocity, primary separator, which effectively traps all heavy particles: the fine dust is filtered by fabric sleeves before the air is finally passed through the fan, exceptionally high separating efficiency so being obtained.

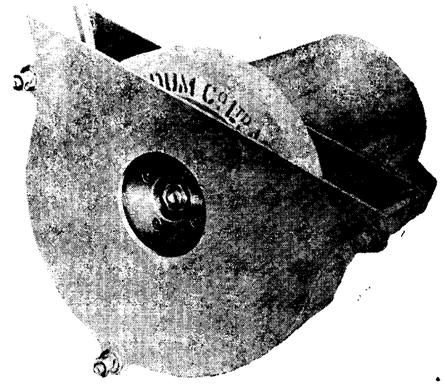
The Table Surface Grinder patent features have also been adopted in the construction of our Motorised, Self-contained Grinding Heads; these units hav proved their value as versatile attachments to Planing Milling, Boring and Turning Machines and Heav Lathes, and are now available up to and includin 4 B.H.P. For surfacing foundation steel work o



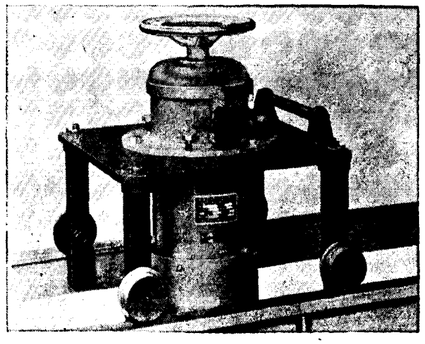
This photograph shows two "WRIGHT" Type HRF/S motorised heavy duty Grinding Spindles, fitted with side flanges for slide rest mounting, one having a 12" and the other an 18" snout extension. These units develop 2 B.H.P. at 2800 R.P.M. operational speed.



This photograph shows a "WRIGHT" Type HRT/1 motorised heavy duty Grinding Spindle, with 18" snout extension, developing 2 B.H.P. at 2800 R.P.M., used on a Webster-Bennett Boring Mill as attachment for internal grinding.



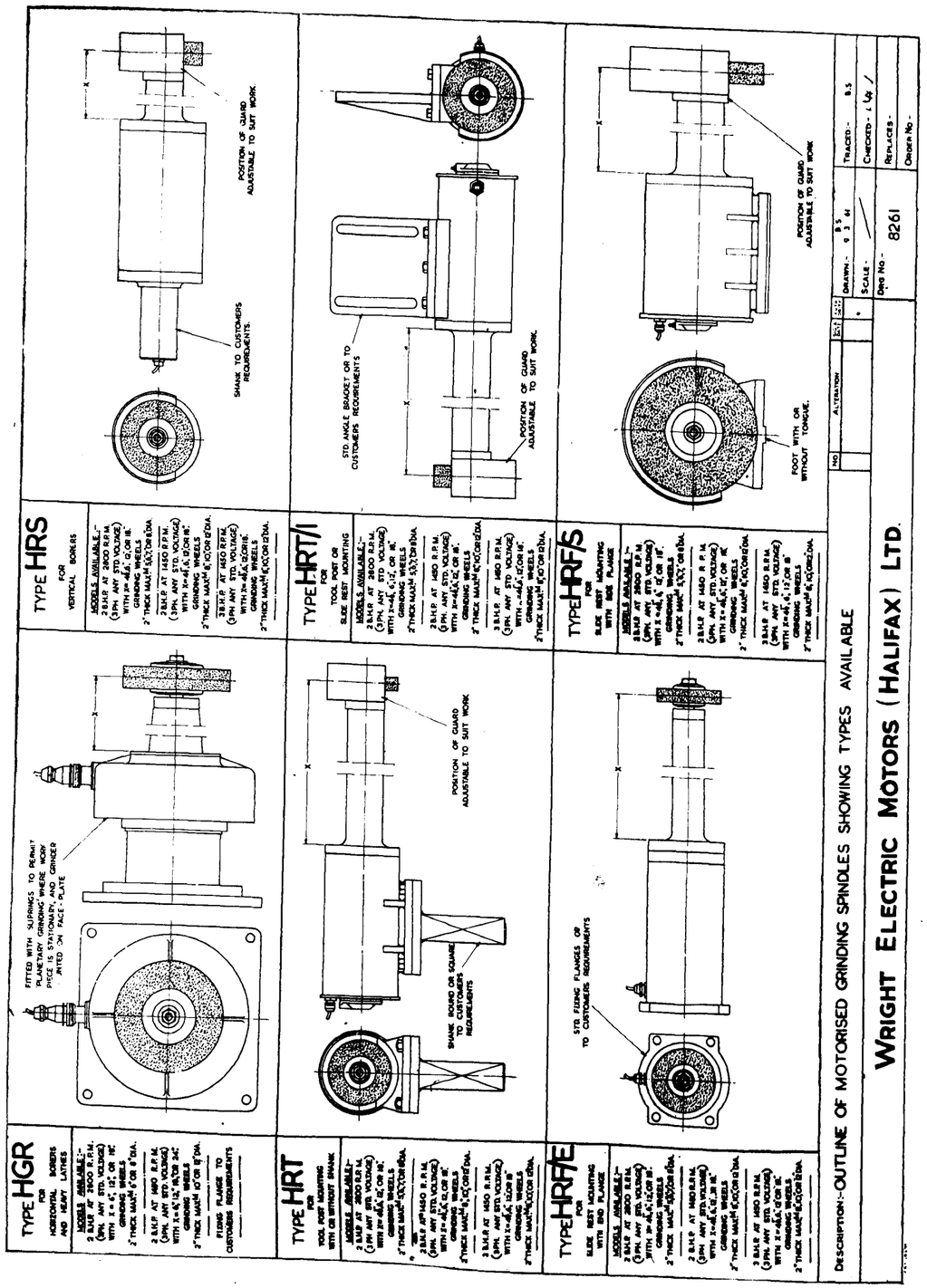
"WRIGHT" Grinder Motor Unit A3/8 fitted with special dove-tail type fixing feet, 14" diameter plain wheel and wheel guard. These types of Grinder Motor units are available in sizes up to 25 H.P.

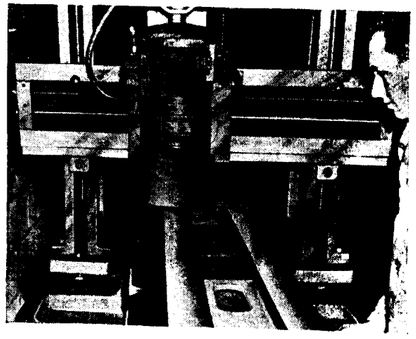


The illustration shows a Model 1.5/2P self-contained Motorised Grinding Head mounted on a four-wheeled Trolley.

Eight of these units are being used by C.A.Parsons & Co. Ltd. for surfacing foundation steel work and turbine bedplate facings on board ships.

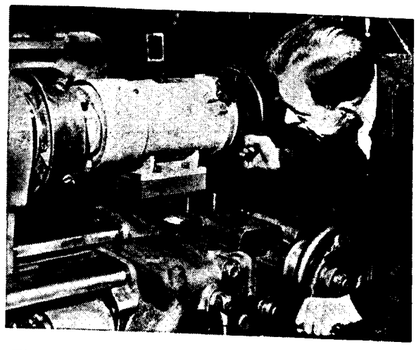
Several units are being used for a similar purpose by Davy Shipbuilding Ltd., Montreal, and Dominion Bridge Company, Edmonton, Canada.





This photograph shows a "WRIGHT" Model 1.5/2P self-contained motorised Grinding Head attached to a Fritz Werner Hydraulic Slideway Grinding Machine. A lathe bed is being ground in this case.

The illustration shows a "WRIGHT" Model 2/2P self-contained motorised Grinding Head, developing 2 B.H.P. at 2880 R.P.M., mounted on the cross slide of a Planning Machine.



The illustration shows a "WRIGHT" Model 2/2P self-contained Motorised Grinding Head, fitted to a Ward No. 7 Lathe, and used for the grinding of hardened steel distance pieces.

Building Sites of Power Stations etc., for the surfacing of turbine bedplate facing on board ship, etc., these units can be supplied mounted on four wheeled trolleys.

This photograph shows a "WRIGHT" Model 4/2P self-contained motorised Grinding Head mounted on a 12 ft. Vertical Boring Mill. The component being ground in an eleven feet 6" diameter 2" thick steel plate.

"Wrights" have recently designed and developed a range of Motorised Heavy Duty Grinding Spindles, which are finding great favour as Attachments for internal as well as external grinding on boring Mills, Planing machines and Heavy Lathes. The motors used in the construction of these Grinding Spindle Units are of the Heavy Duty Squirrel Case, Totally Enclosed Dust Proof Type and are available in rating of 2 B.H.P. at 2800 r.p.m. and 2 and 3 B.H.P. at 1450 r.p.m. A.C. 3 Phase, any one standard voltage. Designed with oversize nickel chrome spindles, carried in precision ball thrust and roller bearings; the complete rotors are dynamically balanced. The rigid steel stator can be fabricated with any shape of fixing foot (drilled or undrilled; with or without tongue), shank, bracket, end flange, etc. for slide rest mounting, tool post mounting etc, to suit customers special requirements. Snout extensions can be fitted from 4½" up to 18". The type HGR units are fitted with sliprings to permit 'Planetary Grinding' where the work is stationary and the Grinding spindle is mounted on the face-plate of the Machine Tool. The types HGR are available with standard snout extensions of 6", 12", 18" or 24".

Full particulars about the "Wright" machines and equipment mentioned in this article as well as other "Wright" products such as Grinder Motor Units (made in sizes up to 25 h.p.), 'Wright' Coated Abrasive Disc Type Surface Finishers, Cross-Swing Grinders and Bar Centring machines can be obtained from the sole distributors—Messrs. Alfred Herbert (India) Private Ltd., Post Box 681, 13/3 Strand Road, Calcutta-1.

Specification for Stationary Cells and Batteries, Lead-Acid Type (with Tubular positive plates)

The Indian Standards Institution has just published IS : 1651—1960 Specification for Stationary Cells and Batteries, Lead-Acid Type (With Tubular Positive Plates), which supersedes the previous standard on the subject No. IS : 541—1954.

This standard prescribes the overall dimensions, capacities and performance requirements of stationary cells and batteries using tubular positive plates. The tests for performance specified in this standard are to be carried out in prevalent ambient conditions.

This standard belongs to a series of Indian Standards on secondary cells and batteries, five standards having already been published in the series covering lead-Acid storage batteries for different class of vehicles.

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INSULATOR HARDWARE

The Indian Standards Institution has prepared a draft Indian Standard Specification for Insulator Hardware for Overhead Lines with a Nominal Voltage of 3.3 kV and Above. This draft standard covers the characteristics, methods of tests and acceptance criteria for the insulator hardware. The dimensions of Insulator pins suitable for different working loads have been given completely in metric system for the ball and socket coupling for disc. insulators, this Standard follows the recommendations of the International Electrotechnical Commission.

This draft standard has been circulated to interested parties for eliciting technical comments. The comments will be taken into consideration before the draft is finalized as an Indian Standard.

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SPECIFICATION FOR FIXED CAPACITORS FOR FANS

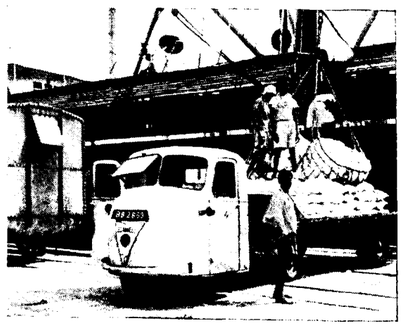
The Indian Standards Institutions has just published IS : 1709—1960 Specification for Fixed Capacitors for Fans, which covers the basic mechanical and electrical requirements and methods of tests for fixed capacitors for use in various types of fans. It also gives the preferred capacities and dimensions of the capacitors as used at present.

In the past, a large number of AC fans used in this country was of the non-capacitor type, but the present trend is towards the use of capacitor type fans, which is largely influenced by the increased manufacture of paper capacitors in the country to cater to the needs of fan industry. This standard has been prepared with a view to bringing about uniformity in the characteristics of fan capacitors in order to assist the fan industry.

RAILWAYS—ANCILLARY ROAD TRANSPORT

By An Engineering Correspondent

THE Scammell Mechanical Horse is widely used by Railway Authorities both in Great Britain and Overseas for general haulage from railway depots to warehouses and docks and for the distribution of goods to customers in towns. Two types of Scarab are available, the 3 ton and 6 ton unit with petrol or diesel engine for payloads up to about 8 tons. These Mechanical Horse units can be operated with a wide variety of semi-trailers—flat platform, van bodied, machinery carrier etc. The motive units are fitted with Scammell automatic coupling and are extremely manoeuvrable in confined areas as they can turn in less than their own length. One Scarab tractor can run 24 hours a day hauling many different types of load. While one trailer is being hauled another trailer can be loaded or unloaded ready for collection by the Scarab on its return trip. The automatic coupling gear is foolproof in operation and the Scarab can be uncoupled from one trailer and coupled to another in a matter of minutes.



A Scammell Scarab Mechanical Horse and semi-trailer of the Malayan Railways Administration being loaded on a dockside in the Malayan peninsular.

Typical of their use by Overseas Railway Authorities is the fleet operated by the Malayan Railways Administration who are at present using 25 Scammell Scarab Mechanical Horses with 72 6-ton Scammell semi-trailers.

The Scammell SCARAB Mechanical Horse for inner zone Transport

SINCE its inception in 1933 the Scammell Mechanical Horse has become one of the most familiar sights in Urban Districts throughout the world and has long since established an excellent reputation for all-round efficiency and economy. The Scarab motive unit and trailer can turn in less than its own length and can manoeuvre into positions inaccessable to any other type of vehicle. The Scammell automatic coupling gear enables one tractor to operate with multiple trailers, so that the tractor can be constantly working, hauling one trailer while additional trailers are being loaded or unloaded.

With its extreme manoeuvrability, versatility, and interchangeability of trailers, the Scarab provides a swift distributive service unequalled by any other form of road transport.

The outstanding advantages of the Scammell system of instantly and automatically coupled tractor/trailer combinations have been so appreciated both at home and overseas that leading vehicle manufacturers produce specially designed four-wheeled tractor chassis fitted with Scammell coupling gear to enable them to operate with Scammell trailers for hauling loads over greater distance than the economical working radius of the three-wheeled Scarab.

Operators in all fields of transport attest to the outstanding economy and success of the Scammell system. Users can be found in every type of trade, Government Departments, Municipalities and Railways both at home and Overseas. British Railways alone use thousands of Scarab tractors and Scammell instantly coupled trailers.

The Scammell Coupling Gear

Fitted to the front end of the trailer is the Scammell Patented retractable undercarriage. On the tractor frame are two ramps or runways fitted with shock absorbing buffers designed to take the flanged wheels of the trailer portion of the coupling gear. The automatic locking device consists of two steel double claws engaging rollers on the oscillating beam on the trailer turntable. Uncoupling is by a hand lever in the driver's cab. Coupling or uncoupling is of extreme simplicity and can be effected in a few seconds. Action of coupling automatically provides the connection for the trailer rear light and trailer brakes. Note snug and unobtrusive position of trailer jockey wheels when coupled to tractor.

Henschel DH-1420 Locomotives for the South African Railways

THE first diesel locomotives of the South African Railways (S. A. R.) were commissioned in 1958. To enable the S. A. R. to form their own opinion on the respective merits of diesel-electric and diesel-hydraulic operation under the specific working conditions encountered, they ordered diesel-electric locomotives from America and diesel-hydraulic locomotives of equal power from us. The diesel power totals 1,420 b. h. p. The Henschel diesel-hydraulic locomotives were each equipped with two General Motors six-cylinder 6-567. C engines and Voith type L. 306 r drives. The wheel arrangement is B-B, and each bogie is separately driven by its own engine through the hydraulic transmission.

The locomtives are working in the Johannesburg area, the largest and richest district in southern Africa, where live most of the millionaires of the vast gold, uranium and coal mines in the Union of South Africa. In this highly industrialized area, our locomotives have the task of handling freight traffic on lines used to full capacity at a speed and flexibility superior to that of the steam locomotives hitherto used.

All diesel locomotives have been provided with multiple-unit controls so that up to three locomotives can be coupled to form a single motive-power unit able to meet, without difficulty, even the most exacting requirements of the S. A. R. in regard to tractive effort. With this type of working, the diesel locomotives are superior to steam locomotives also in regard to saving in labour. Whilst, with multi-headed steam-hauled trains, each of the steam locomotives must be manned, the manning of diesel locomotives can be confined to the leading locomotive, where the driver is able, by means of the multiple-unit control system, to control and supervise the following locomotives as well. The fireman of the steam locomotive, who is required to carry out heavy physical labour, is superseded by the driver's mate of the diesel locomotive who is merely required, for safety reasons, to watch the signals.

Experience has shown that the best results can be obtained by running double-headed trains. Locomotives coupled in pairs are now operated from Germiston (Transvaal) shed, which also serves as locomotive maintenance and repair shop, on the main lines from Johannesburg to the capital, Pretoria, and also from Johannesburg to the port of Durban, Natal. From marshalling yards in the vicinity, these locomotives usually haul long trains of empty wagons to the mining district around Kroonstadt and Witbank in the south, from which they return with heavy laden ore and coal trains to the Johannesburg area. Such trips occupy a maximum period of 24 hours. The locomotives must not stay away from the shed for much longer, as this is their only refuelling point, and their operating range would otherwise be exceeded.

Some of these locomotives are also used for heavy shunting duties, for which they have also been found excellently suited.

Both during shunting and during the hauling of heavy trains on lines with sharp curves and steep gradients, the high adhesion coefficient of diesel-hydraulic locomotives is of particular benefit. At starting and at low speeds, the tractive effort of these locomotives can exceed the adhesion power so that wheel slip is possible. With the diesel-hydraulic locomotives, however, where the two axles of each bogie are coupled by cardan shafts and where a smooth start is ensured by the Voith starting converters, the risk of wheel slip is much lower than with diesel-electric locomotives where each axle is driven separately so that it is much more liable to slip.

When a diesel locomotive hauling maximum load is working at low speed, where trasmission efficiency is still low, a large quantity of heat is engendered. With the diesel-hydraulic locomotives, this heat is contained in the oil of the hydraulic drive and can be removed easily by heat-exchangers built into the cooling system of the engine. With diesel-electric locomotives, however, this heat appears at the traction motors, and its removal by means of blowers is more difficult, with the result that the minimum permissible continuous speed is higher. Whilst our locomotives can be worked, without misgivings, at a minimum continuous speed of 6 m. p. h., the

corresponding minimum speed of comparable diesel-electric locomotives is 10 to 11 m. p. h.

Trial runs have also confirmed the very favourable acceleration characteristics predicted by Henschel, emphasizing the advantages of the diesel-hydraulic over the diesel-electric locomotives especially in the types of workings here encountered.

If diesel-hydraulic locomotives of this power class had to be re-designed to-day, they would be equipped with a Voith drive able to transmit the full locomotive power which, for lack of such powerful drives, was not possible at the time when the locomotives were ordered. With such a design, the central output shaft of the fluid drive would be connected by cardan shafts with both bogies, where the axle drives would likewise be coupled by cardan shafts. This would result in all four axles being coupled, so that the adhesion coefficient would be even more favourable. This design would also bring about a considerable reduction in maintenance work as only half the number of oil and water level check points and lubricating points would be needed.

Occasionally, our diesel locomotives have been used on electrified lines as they are, in the event of a power failure, available as quickly as the fire brigade. In this way, the electrified Johannesburg suburban services, which carry the heavy commuter traffic from the dormitory areas in the ourtskirts to the industrial centres of the town and are thus of special importance to South African economy at large, have repeatedly been maintained without difficulties or delays in the event of engineering works on the line or electric power trouble.

LARGE EUROPEAN DIESEL HYDRAULICS

The steadily increasing use of large diesel-hydraulic locomotives has been a striking feature in railway traction in 1959/60. This fact is clearly demonstrated by the following figures:

At the beginning of 1961 there were in service, or under construction for service, in Europe a total of 390 diesel-hydraulic line-service locomotives over the power range from 1,600 to 4,000 b.h.p., plus six further 4,000 b.h.p. locomotives for operation on the Southern Pacific and Denver, Rio Grande Western Railroads in the U.S.A. Of the total of 396 locomotives eight were of 4,000 b.h.p., 79 were of 2,700 to 3,000 b.h.p., 169 were of 2,200/2,300 b.h.p., and 21 were of 1,900 to 2,100 b.h.p. The remainder, 119, were of 1,600 to 1,750 b.h.p. Of these 396 locomotives, all except 27 had diesel engines running at 1,500 to 1,550 r.p.m., and 8 of the 27 had engines running at 1,400 r.p.m. Of the 396 locomotives a total of 300 had Maybach engines, and the remaining 96 were spread over six other makes. Mekydro transmission was fitted to 186 of the locomotives; a similar proportion was found among the largest powers, for of the 396 locomotives 191 were fitted with engines of 1,350 b.h.p. or more individual output, and of these 97 were equipped with Mekydro transmission. From 1,100 to 1,550 b.h.p. there were another 472 single-unit line-service diesel-hydraulic locomotives at work or under construction, and of these about 450 had 1,500-r.p.m. engines, 170 of them with Maybach engines and the remainder divided over eight different makes.

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A. C. ELECTRICITY METERS

With a wiew to bringing the existing Indian Standard for A.C. Electricity Meters (IS : 722–1955) in line with the latest developments in the meter manufacture as well as effecting changeover to metric system, the Indian Standards Institution has prepared a draft revision in two parts. Part I of the draft covers the general requirements of all types of A.C. electricity meters of induction type, and part II relates to specific requirements applicable to single-phase 2-wire meters. The second part also contains instructions for handling the meters for preventing damage to the working surfaces of pivots and jewels as well as for mounting the meter in an appropriate manner.

The draft standard will shortly be put into wide circulation to all interests concerned for eliciting their comments which will be taken into consideration before finalizing the draft as an Indian Standard.

ELECTRIFIED RAILWAYS OF THE USSR

By E. Khrakovsky
Engineer

THE Soviet Union is a land of boundless expanses. Its rapidly developing economy calls for a continuous growth of freight turnover. The main task now confronting Soviet railwaymen is to transport greater quantities of freight and passengers, delivering them as rapidly as possible to the points of destination. This task is being solved on the basis of a radical reconstruction of railways and their equipment. In this process the main stress is being laid on replacing obsolete steam locomotives with modern diesel locomotives and electric locomotives, as well as on implementing on a broad scale automation, remote control, and electronic computing machines.

As to the rates of electrification of railways and the length of railway lines provided with electric traction, the Soviet Union is far ahead of all other countries of the world. By the beginning of 1961, the Soviet Union had already electrified almost 14,000 km. of its railway trunk lines. Any that is much more than the total length of electrified railways of the United States, Britain and France combined. In the year 1960 alone, electric locomotives pulled trains along new electrified sections with a total length of more than 2,100 km.

WORLD'S LONGEST ELECTRIFIED RAILWAY

In the Soviet Union electric traction is introduced, instead of in small separate sectors, on whole lines stretching for thousands of kilometres. Only recently a new electrified railway connecting Moscow with the Donets coal basin has been put in operation. Work is nearing completion on the reconstruction of the Western part of the great Trans-Siberian railway, and by autumn of this year electric locomotives will speed along it, pulling trains on the Moscow-Baikal line which is more than 5,000 km long. This will be the longest heavy traffic electrified railway on our planet.

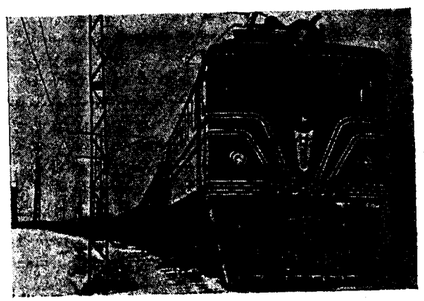
More than 200,000 reinforced concrete and metal support masts have been installed on this line. The builders have also constructed here hundreds of traction substations, reconstructed dozens of old steam locomotive roundhouses and erected a great many of other important structures.

Soviet enterprises have produced powerful electric locomotives for this line.

EFFICIENCY OF ELECTRIFICATION

The electrification of railways is connected with a great expenditure means and tremendous labour effort. Yet, the effect produced by it is really remarkable! When electric locomotives take the place of steam locomotives they can transport on the same railway line twice more freight at considerably greater speed. For instance, on the Trans-Siberiam line, which is serviced now by electric locomotives, freight trains from Moscow reach Irkutsk three days earlier. Not so long ago, on a sector with steep upgrades near the city of Krasnoyarsk two steam locomotives had a hard time pulling a 2,500-ton train. And right now a single locomotive on the same sector pulls a 3,000-ton train twice faster and with less effort.

Moreover, it should not be forgotten that electric locomotives are much more economical than steam locomotives, and their efficiency is four-five times greater. This means that, with the introduction of electric traction, it becomes possible to save vast



Alternating current electric locomotive on the Ozherelye-Pavelets line.

quantities of fuel which was formerly consumed by steam locomotives. As an example it may be said that in a period of three years, thanks to the electrification of railways, the Soviet Union was able to economise more than 30 million tons of coal. Specialists have estimated that in the seven-year period between 1959 and 1965 this figure will increase to 220 million tons.

The utilisation of electric traction will also help to reduce considerably operational costs.

CONVENIENCES

The conveniences for passengers provided by the electrification of railways are certainly very great. At present, electric locomotives already carry 60 per cent of all of the Soviet Union's suburban passenger traffic. By the end of 1965, the total length of electrified railways in the areas adjoining large cities will reach 10,000 km. Thus, the citizens of the country's 40 biggest industrial centres will be able to use this most convenient type of transport.

Passengers travelling for long distances will also benefit considerably, for electric trains go at much greater speeds, not to mention the fact that while travelling in them the passengers are relieved of the unpleasant steam-locomotive soot which turn dirty both clothes and liner.

ADDITIONAL ADVANTAGES OF A. C. CURRENT

The latest achievements of science and engineering are utilized in the electrification of Soviet railways. Extensive use is now being made in the country of the progressive system of electric traction using one-phase A. C. at the industrial frequency.

The application of A. C. helped to provide the overhead wires with a voltage eight times greater than the usual. (25,000 volts instead of 3,300 of D. C.). Thus, there appeared a possibility of installing much thinner overhead wires and thereby economizing several thousand tons of expensive copper. The number of traction substations on the railway lines was reduced by almost 50 per cent, and the equipment itself became much simpler. As a result the labour effort in the construction of power supply installations was reduced by 30-40 per cent.

And these are not the only boons provided by A. C. The new system of electrification of railways will help to supply simply and quickly electric power to the areas adjoining the railways. It is all done very easily: you install a transformer, fix wiring to it and take as much electric power as you like. With D. C. there was no such opportunity available.

And here is another remarkable novelty. All the installations built now on railways under electrification will have automation and remote control introduced on them. This means that a single man will be able to operate from his control desk all the intricate equipment of a railway section stretching for several hundred kilometres. He will only have to press several buttons on his desk and clever automatic devices will do all the necessary switching. Right after that a tiny lamp will flash up on the desk showing that the order has been carried out.

FURTHER PROSPECTS

Fourteen thousand kilometres of electrified railways is quite a substantial figure, yet it marks only the first stage of the stupendous plan of reconstruction of Soviet railways. By the end of the 7-year period (1965), electric locomotives will pull trains on railways with a total length of almost 30,000 kilometres, and will deliver about 45 per cent of the country's railway freight. And in another 5 years diesel locomotives and electric locomotives will completely oust steam locomotives.

Electrified railways will span the country from West to East and North to South. Powerful electric-locomotives will pull trains on all the major railways of Siberia and the Urals, the Ukraine and Transcaucasia, Kazakhstan and Volga regions, the Arctic area and the Baltic republics.

The Great Artery of the Ganges Valley

By M. M. Khan
General Manager, Eastern Railway

The second Plan period will go down in the history of the Eastern Rly. which is the great artery of the Ganges Valley as a period of significant changes.

It is during this period that a third class passenger secured his right to sleep during night journey without payment of an extra charge, people could receive parcels addressed to them at their doorsteps through S.C.D. and an Industrialist could send goods to their destination within a prescribed period through Q.T.S. and express goods services.

The period also saw the birth of electrification of certain sections in the Howrah division, besides completion of new rail links and yards of vital importance to the country.

IT has quite often been said that the Railways have shortened distances. But at no time in the history of the Railways was it more correct than on that trying summer afternoon in 1959 when, standing near Jim Corbett's Mokameh, our Prime Minister opened the Rajendra Pul over the river Ganga, which in her 300-mile course through the Bihar Valley had so far remained unbridged and had divided the State into North and South Bihar.

If the Rajendra Pul had helped the integration of the agricultural North with the minerally-rich South, the not-much-publicized ferry service between Farakka and Khejuriaghat has also brought the two halves of the truncated West Bengal closer. Then again, the rich Ranchi plateu, so far inadequately served by a narrow gauge track, has been conspicuously placed in the broad gauge railway map of India.

There are some of the important achievements of the Eastern Railway, the great artery of the Ganges Valley during the Second Plan. These can well be regarded as landmarks in the history of Indian Railways.

The second Plan period also saw the introduction of two distinct forms of railway traction—electric and diesel—after a century of monopoly enjoyed by the steam locomotives of George Stephenson.

IMPROVING COMMON MAN'S LOT

It was during this short span of five years that the common man, undertaking a long journey, has come to enjoy the amenity of spending his first night on a third class sleeping berth without paying any extra charge. It was also for the first time since the war that he could send a chit to the Railway's contractors and ask them to collect his parcel from his doorsteps in Calcutta or in Patna.

HANDLING INCREASED TRAFFIC

Transportation today is a highly complex industry and no accurate analysis of the performance of a transport undertaking is possible without inevitable reference to such technical terms as "wagon loading" "net ton miles", "passenger miles", "engine miles per day per engine in use" etc.

During the last year of the first Five-Year Plan i.e. 1955—56, the Eastern Railway had loaded on an average 4,272 wagons every day, consisting of 2,427 wagons of coal and 1,845 of other commodities.

The total loading of goods had amounted to 29.86 million tons. In 1959—60, the originating goods traffic rose to 37.44 million tons. The traffic for the last year has been estimated at approximately 39.82 million tons.

COAL MOVEMENT

Coal constitutes about 64 per cent of the entire goods traffic carried by the Eastern Railway. Coal loading during the first ten months of 1960—61 recorded an increase of 113,647 wagons as compared to the corresponding period of the previous year.

In December 1960, 115,898 wagons were loaded with coal and coke, as against 90,843 in December 1959. In January this year 6,170 wagons were loaded daily with coal and other goods as against 5,342 in January 1960. Despite the emphasis on coal loading, the Railway, however, has not only maintained but substantially improved its performance in goods loading.

Of the total target production of 95 million tons of coal at the end of the Third Plan, the Bengal and Bihar coal-fields will be called upon to produce 70 million tons. The bulk of the increase in the coal-fields will have to be carried by the Eastern Railway.

Eastern Railway's expansion programme under the Second Plan was integrated with the rapid industrial growth taking place in the region served by the Railway, particularly the steel, coal, cement, jute industries and with increased movement of food grains.

With the steel plants at Durgapur, Rourkela and Bokaro going into various stages production, the execution of the expansion scheme of the steel industries at Burnpur and Kulti, establishment or expansion of other industries like cement, paper, jute, chemical fertilizer etc., increase in agricultural output and rapid development of collieries, goods traffic of this Railway is expected to soar new heights during the Third Plan period.

PASSENGER TRAFFIC

In spite of the vital but strenuous role played by the Eastern Railway in the movement of goods to help the planned economic development of the country, the problems of the passenger have not been lost sight of. In 1959—60 out of every 100 miles covered by Eastern Railway trains, 54.1 miles were done by passenger trains and 45.9 by goods trains.

Against the target increase of 15 per cent in passenger trains miles set for the Second Plan, the Eastern Railway has already provided an increase of 15 percent on non-suburban and 26.9 per cent on suburban services, thereby achieving an overall increase of 13.8 per cent. The target for the Third Plan is only an increase of 15 per cent in seat miles and there should be no difficulty in achieving this target.

About 229 million passengers—more than half the population of India had borded Eastern Railway trains in 1959—60. During the year just ended 248 million used this Railway.

ELECTRIFICATION

Thanks to the electrification of Howrah—Burdwan and Shooraphuli—Tarakeswar sections, more people are now living in the outer suburbs of Calcutta than previously. Ten years ago (1951—52), the Howrah division of the Eastern Railway was carrying daily on an average 72,680 suburban passengers. It is now carrying 1.75 lakh suburban passengers every day.

The number of trains on the electrified sections has been nearly doubled. There are now 126 electric trains, against 66 steam trains before the introduction of electrification. The time taken for the journey has also been considerably reduced.

The carrying capacity of the EMU trains is also much higher than the older trains. During the peak hours, a three-unit EMU train provides seating and standing accommodation to 1680 passengers, as against 650 in a conventional steam train. This has gone a long way in reducing over crowding on these sections.

Despite the unprecedented increase in its passenger traffic the Howrah division is still far behind the performance of the Sealdah division, which had carried 107 million suburban passengers in 1959—60. The Sealdah Division still handles 64 per cent of the total suburban traffic on the Eastern Railway. The problems of this division are being tackled vigorously. The electrification work of this division on 25 kV single phase AC system is going on. In the meantime, the Rs. 89-lakh Sealdah station and yard remodelling plan has made satisfactory progress.

The existing system of signalling in Sealdah division is not adequate to deal with the increasing number of trains that would be run after the completion of electrification. The two cabins at Sealdah will be replaced by an electrically operated automatic cabin working on the route-relay system of interlocking.

NEW RAIL LINES

Out of the total anticipated cost of Rs. 79.97 crores on Second Plan works, the construction department's share was Rs. 28.55 crore plus Rs. 7.46 crores which this department was called upon to spend on provision of rail facilities required by the new steel industries.

Of the new lines, the 133-Km. Chandrapura-Muri-Ranchi section has already been opened to both passenger and goods traffic. Nearly 9 Km. of the line from Ranchi to the extreme end of Hatia yard has also been completed. The construction of Hatia-Bondamunda section has been included in the works programme of the Third Five-Year Plan. When complete, the new line will be used for the movement of coal from the Bokaro and Jharia coal-fields to the Bhilai and Rourkela steel plants.

The 53-Km. Baraset-Basirhat-Hasnabad broad gauge line in West Bengal is being laid through the area which was once served by the now-defunct Baraset-Hasnabad Light Railway. The estimated cost of the project is Rs. 25.6 crore. Passing through the outer suburban area of the city of Calcutta, the line will provide an outlet for the agricultural and forest resources of the Sunderbans. Formation and bridge-work of the line are nearly complete and linking of the track has been started. The line is expected to be opened towards the end of 1961.

In South Bihar the Eastern Railway is spending Rs. 25 million to lay a 53 Km. railway line, which will connect Bukhtiarpur with the ancient city of Rajgir, sanctified by Gautam Buddha. The line will thus link up Patna with the Rajgir and the ruin-studded international university of Nalanda. This line is also expected to be opened towards the end of 1961.

A stretch of 13 Kms. of railway line between Damodar and Kalipahari has already been opened to goods traffic. This is helping the heavy ore traffic for Durgapur to bypass the busy yard at Asansol. The remaining 2-km. stretch of the line, with a 150-fly-over across the main line, is expected to be opened to traffic shortly.

Of the seven lines in the Karanpura and allied coal-fields, each with a big yard at the colliery site, five have been completed and opened to traffic. The work at Sayal Siding has also advanced substantially and loading has started on this line. The Tildanga-Faraka line with a broad gauge wagon ferry between Farraka and Khejuriaghat has also been opened to goods traffic.

NEW RAILWAY YARDS

Of the new yards, the exchange yard at Hirapur, the coke oven plant yard for the steel plant at Durgapur have been completed and commissioned. The yard to serve Dugda washery is also ready except for some minor works which will be carried out when the washery goes into production. The construction of the yard at Patratu has also been progressing satisfactorily.

With the satisfactory progress of the Second Plan works some of the works earmarked for the Third Five-Year Plan have also been taken up in advance. The aggregate cost of these works is roughly Rs. 20 crore which includes the construction of the 161 km. Hatia-Bondamunda section, with a branch to Purnapani, doubling of the 93-km. Barkakana Loop between Patratu and Tori and between Kumandih and Barwadih, and the Patratu-Damodar Branch.

The second phase of the remodelling of the Andal yard and the exchange yard to serve the Indian Iron & Steel Company at Hirapur will also start in the current year. Necessary survey for the construction of a line to serve the Patratu thermal power station has recently been carried out and the work will be taken up shortly.

IMPROVED SIGNALLING

In the coal-field area improved standard of interlocking and token-working have been introduced with a view to increasing line capacity. As coal traffic during the Third Plan will be much greater in volume than that of the Second Plan, the sectional capacity of the Railway will be increased by providing standard III interlocking, tokenless working and also by doubling the single line Patratu-Tori and Kumandih-Barwadih sections.

On the main line, additional safety measures have been provided by introducing lock and block working between Mathrupoore Block Hut and Mughalsarai. All non-interlocked stations on the Sahibganj loop have been interlocked. Similar measures are being taken on the Bandel-Barharwa loop and the southern section of Sealdah Division.

Track circuits are being provided on the platform lines at Sealdah, Patna, Asansol, Naihati, Kiul and Sitarampur stations. This will reduce the chances of accidents within the station areas.

The important marshalling yards at Mughalsarai and Andal are being mechanised. The electrified Howrah-Burdwan section has been provided with colour light

signals. Similar work is in progress on the Asansol-Dhanbad section.

The public address system at Howrah and Sealdah stations has proved a success. During the Third Plan more stations will be provided with loud-speakers.

DIESEL TRACTION

The introduction of diesel locomotives on the Eastern Railway was another significant march in the Railway's bid for modernisation during the second Plan. These 1,950 HP locomotives have set a new pattern in the movement of goods traffic on certain busy routes of this Railway. In the beginning, the diesels were made to work 2,300-ton goods trains between Gaya and Gomoh/Dhanbad. This section has a stretch of 14 miles in a gradient of 1 : 80. Later, with the arrival of more diesels, working of goods trains hauled by diesel locomotives was extended to Mughalsarai and to Barkakana *via* Sone Nagar and Barwadih. Each of the diesel locomotives has been earning an average mileage of about 7,500 miles a month. The engine miles per day per engine in use have been of the order of 250.

Diesel traction will be expanded during the Third Plan period. A new shed is being set up at Patratu in the heart of the Karanpura coalfields which are being developed by the National Coal Development Corporation.

The diesel locomotives to be based at Patratu will not only meet the increasing transport requirements of the Karanpura coalfields, but will also move heavy coal trains of 3,600 tons over the new link between Garhwa Road and Chunar, now under construction. This will reduce the pressure of moyement to up country direction over the Sone-Nagar–Mughal Sarai section.

RAILWAY WORKSHOPS

The major workshops of the Railway at Kanchrapara Jamalpur and Lillooah are playing an important part in the repair and maintenance of rolling stocks. A system of payment by results has recently been introduced on a limited scale in the Jamalpur workshops. This system will be gradually extended to all the railway workshops.

The Jamalpur workshops have started production of 40-ton steam cranes. The manufacture of the Box type wagons has been taken up in the Kancharapara workshops.

QUICK TRANSIT SERVICE

The Express Goods Service is available between Howrah on the one hand and Patna, Gaya, Dhanbad, Bhagalpur and Ramporchaut on the other. A similar service is available, every alternate day, between Patna and Howrah. Quick Transit Services with guaranteed time of delivery have been introduced between a large number of stations.

It was during this period that the Eastern Railway diversified its activity by participating in the Bihar State Road Transport Corporation.

In its desire to serve those areas which are away from the railhead the Eastern Railway opened five out-agencies during the Second Plan period. Proposals for opening out-agencies at several other points in West Bengal, Bihar and U. P. are being examined.

STAFF WELFARE

The performance of any organised industry is, in the ultimate analysis, a reflection of the sincerity and efficiency of the man who run it. With an army of 1.73 lakh men the Eastern Railway is ready to attack the problems of the Third Plan so that the Rail transport capacity may keep pace with the demand.

The health and welfare of the staff and their family is one of the major concerns of the Administration. The Railway is at present running 8 hospitals, 75 health units, 10 chest clinics, 10 dental clinics. Two hundred and forty beds in sanatoria have been kept reserved for T. B. patients. Another 76 patients are receiving treatment in other sanatoria at the expense of the Railway.

The Railway is running 119 schools of different types. A subsidized hostel has also been opened at Patna for the sons of employees. Three technical and vocational training centres impart training to staff, their children and dependents.

As a measure of economic assistence to the railway men's families, the Mahila Samities on this Railway are being encouraged to fabricate hospital and other staff uniforms and thus supplement their family income.

About 55,000 quarters have already been made available to the staff and more will be built during the Third Plan. Seven mobile libraries are now running on this Railway to supply books to the railwaymen at wayside stations. Cheap Holiday Homes at healthy places situated in congenial environs provide opportunity to the railway staff to get away periodically from the stress and strain of their daily lives.

Lading Damage from Slack Travel in Draft Gears

By W. D. Wallace, Member ASME
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SLACK in railway freight trains has always been an operating hazard because if it is excessive the runs between groups of cars cause break-in-two's, or, short of that, can cause repeated impacts which, because of frequency of occurrence, are a source of cumulative lading damage. There are several elements of present-day train operation which indicate the great importance of an accelerated program to get rid of slack. These include compliance with and tightening of the present rules for removal of free slack, the retirement of defective draft gears, and maintenance of only those types which are characteristically efficient in cushioning impacts and able to permanently prevent development of slack action in the draft gear pocket.

A certain amount of slack is fundamental to economy because a given locomotive can start twice as many cars by picking up the total drag car by car, thereby overcoming starting resistance by mild dynamic impact. Ample slack is found in the standard 3/4 inch play between cars coupled with two Type E coupler knuckles. With efficient draft gears this amount of play, plus attachment slack not to exceed 1/4 inch per car end, is harmless. It is excessive attachment slack added to draft gear pocket slack that causes the trouble. Free slack at each car end is determined by pulling the coupler out with a bar, then sledging it back solid. Proper maintenance should call for correction when the total slack from coupler horn to striking casting exceeds 1 inch.

However, manual procedure cannot determine the responsibility of the draft gear action for undesirable slack action when the car is running in the train and is subjected to the alternate buff and draft forces set up by varying air brake pressures and other effects, such as passing over humps in the track gradient. Most draft gears, regardless or design of condition, will not respond to manual slack tests. Therefore it is necessary to know which draft gears have reliable efficiency and to avoid the use of any type which, because of deficient initial action, fails to properly resist these running impacts until its travel is almost or completely exhausted. If in bad enough condition, the draft gear will have a train slack potential of twice its travel free to solid, about 5-1/2 inches per end (assuming a gear travel of 2-3/4 inches), or about 11 inches per car. Such "flat tire" gears are not only a serious source of train slack, but have insufficient cushioning capacity at the end of the slack run. The longer the run of slack in any part of the train, the greater the relative velocity attainable between the adjacent groups of cars. This means that draft and buff impacts, although usually of secondary magnitude as compared with those of coupling, are repetitious, thus providing a cumulative source of damage to certain types of lading.

Cars equipped with the better approved types of draft gears are free of slack, give up little of their travel during the slack runs, and make no contribution to unnecessary total slack. They have high reserves of capacity to cushion the bad effects of neighbouring cars equipped with poor draft gears. It is obvious, therefore, that it is of the greatest importance to get rid of any "flat tire" draft gears.

The current trend is to equip new cars with all-rubber draft gears. Until recently not many owners realized that the requirements of Association of American Railroads Specifications M-901 A-53 for all-rubber gears were not nearly as exacting as those of Specifications M-901-53 governing friction gears. It should be pointed out that an all-rubber gear, which costs about one and a half times as much as a friction gear, has investment value only when it is capable of meeting the friction gear specifications.

The two most important waivers incorporated in the original all-rubber draft gear Specifications M-901-53 were directly related to slack. There was no requirement for the minimum amount of work to be done by an all-rubber gear in the first half of its travel, and proper requirements for half travel and total capacity efficiency after the endurance and sturdiness tests were missing. Most manufacturers standard draft gear pocket and come anywhere near the found it impossible to make an all-rubber gear for the friction gear requirement which stated that the capacity at half travel should not be less than 25 per

cent and should not be less than 20 per cent of the capacity at full travel, to say nothing of the 40 per cent average of the approved friction gears.

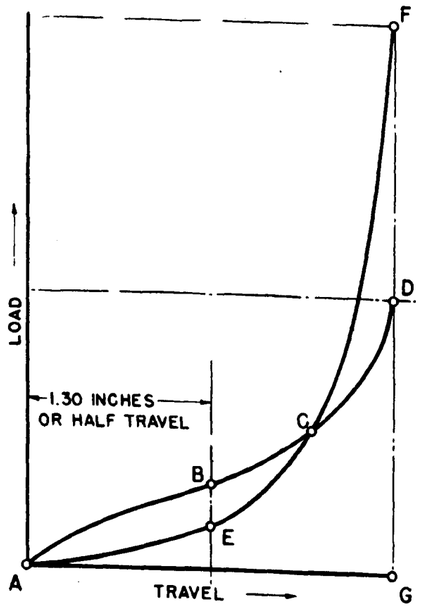


Fig. 1

Since there were no requirements in Specifications M-901 A-53 for capacity at half travel for all-rubber gears, there were no official figures for this item. This situation as regards train slack can be easily explained by the amount of movement in the draft gear resulting from the very lowest of the impact unit used in A. A. R. testing, namely, the 0 inch free fall of the 27,000 pound hammer. The hammer just touches the gear at the exact pocket length, with none of its weight imposed thereon. When the hammer is released the extent to which the resistance of the gear is less than the 27,000 pound force of the hammer will determine the amount of movement. The wise owner interested in an all-rubber gear will be sure to specify a design which does not travel excessively when subjected to this test.

This important consideration is evident from a study of Figure 1 which shows how the gear with positive initial action (line A B C D) increases its resistance from left to right through full travel to develop total capacity. This action is far superior to that characteristic of rubber (line A E C F) because the final pounds of load G D are much more tolerable to lading and car structure than load G F. The action represented by line A B C D does exactly the same amount of work as line A E C F, the areas under each line being the same. It will be noted that the gear with line A B C D gets much more work done at half travel, consequently it will effect a desired minimum of movement under the 0 inch drop and prevent slack. The low initial work performance characteristic of line A E C F means maximum hammer movement and maximum contribution to slack. Since the actions of the graph are on the basis of equal work for the same impact value, it is evident that the gear with positive initial action will have much less final pressure than the gear with the negative initial action, therefore gears with poor initial action are poor shock absorbers.

Because of "from service" reports on different makes of all-rubber draft gears, the A. A. R. very wisely made obsolete the separate set of specifications governing all-rubber draft gears. Proper performance characteristics, regardless of the make of the draft gear, should be the same. In May 1959 the A. A. R. passed new Specifications M-901 D for draft gears—friction, rubber, and combinations thereof—with standard 24-5/8 inch pockets. This means that all draft gears, regardless of design, must meet the same specifications. This new specification covers gears having a 2-3/4 inch nominal travel, and a minimum capacity in buff of 18,000 foot pounds as provided in the obsolete Specifications M-901 and M-901A. There is also a very valuable requirement in this new specification which states, "As a further requirement, each gear must develop a minimum capacity of 4,500 foot pounds at 1-5/16 inches travel in both draft and buff."

There is another specification governing high capacity draft gear having a minimum capacity of 36,000 foot pounds. This specification, too, includes friction gears, rubber gears, and combinations thereof. There is also a valuable like requirement in this specification which states, "As a further requirement of this test, each gear must develop a minimum capacity of 6,000 foot pounds at 1-5/16 inches travel in both draft and buff."

Rubber gears are generally promoted for their effectiveness in reducing the shocks of ultra-high speed switching. But it is time that owners realize that it is poor economy to use rubber or any other kind of gear *unless it has a permanent positive initial action to prevent the damaging effects of slack action.*

Refixing Screws and Spikes in Wooden Sleepers

By K. McCabe
Member of the Permanent Way Institution

RAILWAY engineers are faced with many problems involving the fixing of one or more materials to others. One of these many problems, which can give rise to trouble, is that of sleeper fastenings. Even if a secure fixing is achieved when the track is first laid, maintenance is important, and with the increased speed and weight of modern trains the importance of the matter has become accentuated, and applies equally to both old and new sleepers.

When spikes or coach screws work loose the most common practice to correct the trouble is either to fill the hole with a wooden plug and rebore, or to move the sleeper a few inches, drill new holes, and make a new fastening. The former seldom lasts very long and the latter costs much in time and manpower.

In 1936, Philplug Limited, now a subsidiary of Expandite Limited, England, produced Philplug Sleeper Compound. This is a cementitious asbestos material, and since its inception it has been used in ever increasing quantities by railway engineers throughout the world.

It stands to reason that with any method of refixing the sleeper itself must be in reasonable condition. However, provided it is not rotten or badly split, successful can be achieved. If, for instance, the screw or spike hole is situated in a split, a clamp can be fitted to prevent the split opening further when the method of refixing is carried out.

In using Philplug Sleeper Compound only two additional tools are required over and above those normally used by maintenance gangs. One of these is to form a thread, commonly called a "former" and the second, a ramming and piercing tool. It is not possible to say before hand whether a former will be necessary, but this can be determined once the screws had been tested. Special formers can be supplied, if necessary, and to enable this to be done two screws should be available to enable tests to be carried out. As far as the piercing tools are concerned, since these must be capable for use with either screws or spikes they are available in various sizes.

Philplug Sleeper Compound was initially only produced in a loose fibrous form, but as the result of development work it was later found possible to manufacture this in the form of a rope. Both types are still available and it is a matter of personal preference as to which is used, the rope form having the advantage of faster application. Apart from the secure fixing achieved with this material one of the main advantages is that it is not necessary to move the chair in order to refix the screws.

The manufacturers supply full information on the method of use of the material, but in order that readers can assess its relative merits with other methods it is proposed to set down the sequence of operations as concisely as possible as the technique may be completely unknown to many.

On removal of the screw it should be carefully examined and if found to be broken the part remaining embedded in the sleeper should be driven through into the ballast. Preparation of the sleeper compound for use is relatively simple. In the case of the rope form, a length of about 1 ft. would be broken off and dampened by placing it in the hand, which has previously been immersed in water. Pressing the material in the hand will then cause the former to absorb the water in sufficient quantity for hydration of the cement content. In the case of the loose type of material, it is thought that the best method to employ is to empty the contents of a tin into a bucket and add only sufficient water to make a semi-dry mix. Since opinions will vary on the question of whether sufficient water has been added, it is probably useful to have a simple test available. If, therefore, some of the damp material is squeezed hard in the hand, no

water should emerge. If it does the material is too wet, and conversely if the material does not pack together, it is too dry.

The next operation is to take sufficient damp material to fill the hole, and having fed this in, it is rammed to the bottom with the appropriate tool. It is, perhaps, worth mentioning that when the loose type of material is used a "plug" smaller than the hole should be formed in the hands, in the first instance, so that this can be fitted in on the same lines as the length of rope. It is not necessary to exert undue force during the ramming operation as the weight of the tool itself should be sufficient. If, however, the hole has become enlarged or elongated, extra ramming will be necessary to achieve proper compaction.

Having previously stated that it is unnecessary move the chair it is obviously desirable that the refixing screw should not wander from its desired position, and in order to prevent this the compacted sleeper compound should be pierced with the piercing tool, keeping the latter in the centre of the ferrule or hole in the chair. After removal of the piercing tool it may then be seen that the use of a former is necessary, in which case it should be inserted in the hole and tightened down on the chair. The use of the former will cause the thread to be cut into the contours of that previously in the timber and when it is withdrawn the screw can be inserted and tightened down.

It goes without saying that the operation described above should be carefully and conscientiously carried out. If, for instance, a hammer were to be used to drive either the former or the screw into the hole instead of allowing these to cut their path, there would be a danger of the walls of the hole being destroyed, ultimately leading to a poor fixing being made.

When refixing spikes the process is somewhat simpler, in that it is merely necessary to use the piercing tool, and after this has been withdrawn the spike is inserted and driven home with a sledge hammer.

It was suggested earlier that one of the main advantages of the material is that it is unnecessary to move the chair. Possibly, however, an even greater advantage, particularly from the operating point of view, is that no delay whatsoever is necessary after the fixing of screws or spikes before traffic may be run over the track. This is due to the fact that when the spike or former was used it compressed the compound hard against the sides of the original hole, and the fixing becomes effective immediately.

With curved tracks it is sometimes found that due to the sideways force exerted by trains the rails are pushed "wide to gauge." When this occurs it is, of course, merely necessary to ensure that the rail is repositioned before the piercing tool is inserted into the sleeper compound. In instances where the rail has been pushed excessively wide, perhaps ½" or more, it is probably advantageous to fix a tie bar in position and to leave this for about 24 hours.

Finally, it is perhaps worthy of note that the sleeper compound becomes part of the timber, and since the screw or spike is completely sealed off it is protected from corrosion. This is doubly important as not only is the life of the screw or spike considerably lengthened, but it may be withdrawn and reinserted at any time. Philplug Sleeper Compound remains unaffected by exposure to continual changes in temperature and even under extreme tropical conditions will provide a firm and secure fixing, which can add years to the useful life of a sleeper.

Indian Technicians at New U.K. Airport Engineering Centre

Three radio technicians from India are among those working at a new U. K. Ministry of Aviation telecommunications engineering establishment just opened at Gatwick airport. The new establishment will deal mainly with field engineering of air safety devices. It has cost about £ 350,000, and 270 people will eventually work there.

The centre will provide an immediate major repair service and be responsible for installation programmes and major overhaul of equipment in Ministry of Aviation airports and radio stations throughout Britain. Small, specialized quantities of equipment, models, and prototypes will also be produced there.

Several separate units are brought together in the new centre. Before the war there was a civil signals organization in the Air Ministry, and in 1946 a small installation test and repair unit was formed. A Ground Control Approach maintenance and inspection unit was formed in 1947, and from it came proposals resulting in the precision-approach radar system now being constructed at the Gatwick establishment. These units will work in future from Gatwick.

SCHAERER—LATHES

By An Engineering Correspondent

SCHAERER-Lathes are built since about 60 years. Today the programme includes Universal Lathes, Production Lathes with automatic working process, Semi-Automatic Copying Lathes, and special attachments for non-circular copying, particularly glass-molds and cam-shafts of Diesel-Engines and similar machines.

The special feature of the SCHAERER-Lathe are the underslang saddle guideways, arranged in such a way that they are well protected against damage by swarf. Their Vee shape guarantees that a permanent oil film is maintained. This ensures a long life for guideways and extra-ordinary resistance against warping. If high pretensions are made, these guideways even may be supplied as hard-chrome steel gibs.

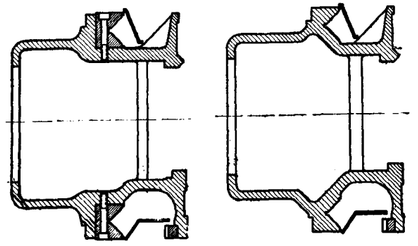
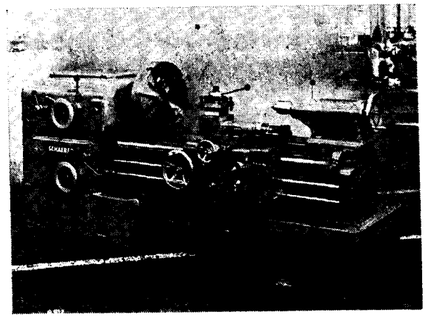
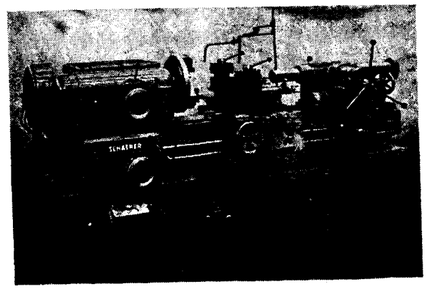


Illustration of SCHAERER-Guideways. At the top normal execution, at the bottom hard-chrome gibs.

Furthermore the SCHAERER-Lathes are characterised by their large drive capacity in comparison to the height of centres, by their important speed range (universal lathe = 1 : 200), and by their various special equipments. Regarding the SCHAERER Lathe Programme, it's easily possible to choose production lathes being particularly economic and suitable for special operations. As to the universal cutting, the SCHAERER Universal Lathe is fitted with all equipments, capable to execute a great range of work. As shown on the photos, the machines possess but some control elements in order to facilitate their operation. The quick change control lever is used for the rapid setting of all standard metric, inch and module threads as well as for the feeds. Settings can be read instantaneously from the control drum. Neither tables nor calculations for machine regulation are necessary.



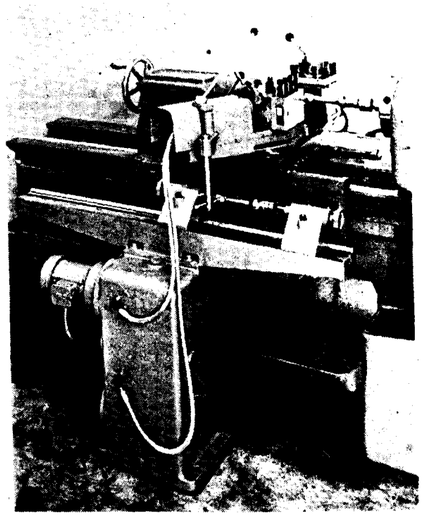
SCHAERER-Lathe in standard execution, centre height 320 mm. drive capacity 20 to 30 H.P.



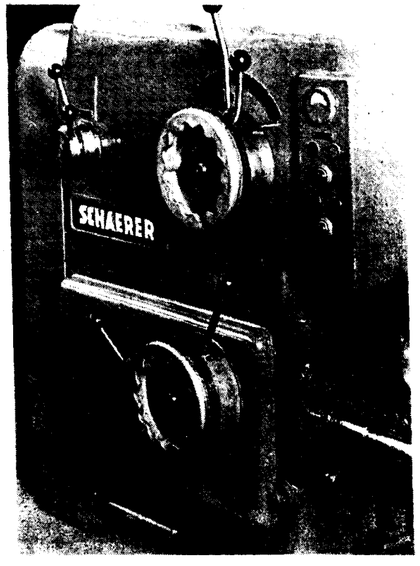
SCHAERER-Lathe, 320 mm. centre height, with twin slide and one independent front and rear cross slide, boring tailstock, and pneumatic chucking attachment.

Today SCHAERER-Lathes are installed in leading factories throughout the world, where high precision and great cutting capacity is required.

The Hydraulic Copying Unit "SCHAERER-PROFILE D9", suitable for fitting to lathes of all



Copying Unit "SCHAERER-PROFILE D 9" suitable for fitting to lathes of different types.



View of main drive and feed box. Setting of speed, feeds, and threads by hand wheels.

types, is remarkable, too. This copying unit distinguishes itself by its high accuracy. In all cases, where special copying lathes will not pay—because of the low output capacity—SCHAERER-Lathes with hydraulic copying attachment are preferred.

The blocks illustrated will give an impression of large manufacturing programme and the variety of application possibilities of SCHAERER-Lathes. They are well-known in the whole world.

PELS Straight Sided Crank Presses

Satisfy all claims for technical perfection. They are built in three different series, i. e.

type PIKs mainly for stamping, cutting, and shearing purposes, of small operational capacity and high speed,

type PIK for a wide range of operations and small table area,

type P2K for a wide range of operations and big table area, for press powers of from 100 or 125 tons respectively up to about 1000 tons.

Presses of types PIK and PIKs have single point suspension, those of type P2K double point suspension.

The press frame consists of bed, header, and uprights fabricated of heavy steel plate and stress relieved after welding. These components are joint by welding to form a single-piece body, or, in the case of presses above 250 tons and with large table area, by preloaded steel tie rods. The boxshaped components are properly stiffened by ribbings to increase their strength against dynamic stresses. Both the uprights are made of folded plate sections with welded-on tension plates and allow to provide openings to make the tooling accessible from 4 sides.

The ram slide is also welded of heavy steel plate and its boxlike shape stiffened by adequate ribbings. It is guided by long adjustable prismatic gibs along the 4 inside borders of the uprights. The vee gibs of the small size crank presses are adjustable and fitted to the ram slide, while those of the bigger size presses are mounted to the uprights. The adjustable gibs are armed with plastic foil, the

opposite ones of special quality cast iron. The weight of the ram slide and partly that of the tooling is balanced by compressed air cylinders. A reversible electric motor actuates the ram slide adjustment transmitting its power through a gear to one or two threaded spindles which are guided in cylinders. Accordingly, only axial pressure stress is put on these spindles. The ram slide adjustment way is limited in

Copying of cams of a Diesel engine camshaft with 2 hydraulic copying slides.

both directions by limit switches. In case the ram sets on tool parts during the adjustment operation, the drive of the regulating gear will be automatically stopped by a safety device.

To protect the tooling and to safeguard the press against overload, an oilhydraulic overload safety device can be fitted. A pressure pad below the small ends of the connecting rod can be adjusted by preloading to any desired load within the admissible range of pressing force. A pilot lamp mounted on the control panel flashes immediately the adjusted press power has been reached. When the predetermined pressing force has been exceeded by 20%, the overload security cuts off the press automatically.

In case overloading takes place within the range of before 40° before lower dead center, the press drive will be automatically declutched. The ram slide is then to be brought to top position in the reverse direction. Will the press, however, be overloaded in a position closer to the lower dead center, the crank drive will continue its way through the bottom center with blocked ram slide. Only during the return of the connecting rod, the ram slide will again be carried along and stopped in the topmost position.

Sometimes, a mechanical overload security in the place of the hydraulic one may be sufficient. It works on the principle of measuring the elongation of the press frame or of two tie rods diagonally opposite to one another.

The press is fitted with a detachable bolster plate, which will get Tee slots for tool fixing. In accordance with conception adopted on principle for all PELS Straight Sided Crank Presses, the press has cross shaft drive. The crankshaft liable to bending and breakage, has been omitted. In its place, gear wheels with cast-on eccentric hubs running on fixed wheel pins in closely mounted gearings form the crank drive.

The complete drive is arranged inside the head of the press. The flywheel and the first driving shaft run in roller bearings, all the high speed wheels have helical gearing assuring an almost noiseless operation of the complete drive. By mounting the flywheel on a hollow shaft bearing flanged to the press body, the driving shaft rotating inside the hollow shaft bearing is completely relieved from flywheel weight and belt pull.

The single disk friction clutch has given full satisfaction for a good number of years. It is electromagnetically controlled and actuated by compressed air. The friction blocks can be exchanged without any considerable dismantling work. Also, the single disk friction brake is electromagnetically controlled, released by compressed air and rapidly and dependably engaged by spring pressure. It is designed for very high operating frequencies, the renewal of the friction blocks takes little time.

The press is controlled by an electromagnetic two-hand safety engaging gear. A selector switch allows three settings :

1. *inching,*

   by pressing down the push button, the ram slide can be moved up or down over short bits of the stroke, the ram remains in motion as long as the key is kept pressed.

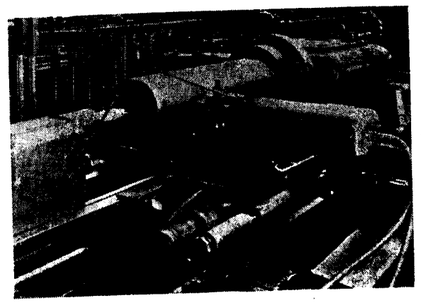
2. *single stroke,*

   by actuating the switch-on key during the down stroking of the ram slide, the latter performs a full stroke cycle and remains stopped in top position.

3. *continuous run,*

   after engaging the press works till it is stopped by pressing a switch-off key, the ram slide returns to top position.

During "single stroke" and "continuous run", the ram slide can be stopped in any position by pressing an emergency key. The ram slide movement is indicated by the hand of a dial in the control panel. In the right side upright, a cam shaft with 10 cam disks will be installed, out of which 6 cams are available for the synchronous control for the transport and working movements, when the press is inserted in a production train.

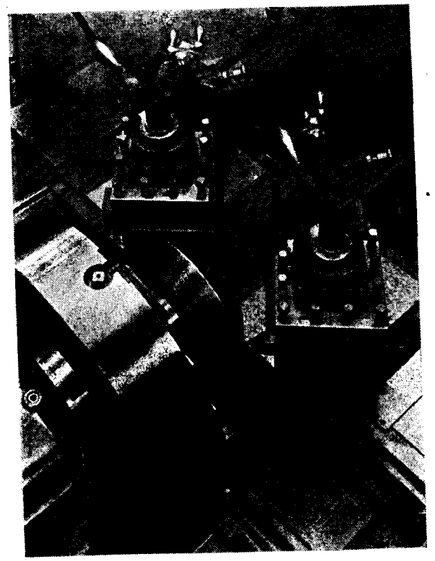


Copying of a four-edge mold with the hydraulic non-circular copying unit.

In the ram slide a number of knock-out bars are incorporated brought into action by adjustable stops on both sides of the press headpiece.

A flywheel brake stops the flywheel within abt. 15 sees. after switching off the motor.

The press is equipped with the so-called cascade circulation lubricating system. Thereby, the lubricant is pumped from a tank in the press bed through filters and two pressure adjustable distribution lines to the sliding faces, bearings and gear wheels. The quantities can be regulated by time switches with impulsing device. The oil flowing from the lubricating



Machining of a taper with twin slide and power traverse.

points is caught in the headpiece, the overflow is conducted over connecting rods and ram slide back to the collecting tank. In case of failure of the lubrication, the press is automatically stopped, while a pilot lamp flashes on the control panel.

Particularly marked lubricating points are fed in the usual way by hand guns.

To avoid accidents during continuous run of the press, we recommend to instal light barriers in the front and at the rear of the press. Strip lights are fitted inside the press opening on both uprights to improve working conditions. The headpiece with the press drive can be made accessible by inspection platforms and ladders.

It is also possible to instal a pneumatic drawing cushion in the press bed, either of the uncontrolled type, or of the controlled type with control slide and electrically regulated stroke adjustment.

IWK Hydraulic Self-contained Straight Sided Plate Shaping and Deep Drawing Presses

These presses are built with a maximum press power of from 160 up to 1000 tons. They are either single acting, for ordinary shaping, stamping, flanging, beading and pressing work, if necessary equipped with hydraulic cushion or ejector, or double acting with downstroking blankholder.

The press body consists of bed, header and uprights, these parts fabricated of heavy steel plate are stress relieved after welding. They are joint by welding to form a monobloc press frame, or in the case of presses above 315 tons and with large table area, by preloaded tie rods of steel. To make the uprights specially resistant against transversal and torsional forces and dynamic stress, they are made of folded steel plate reinforced by ribbings and welded to form bok shaped bodies. The bolster plate of forged steel is screwed on to the bed and has Tee-grooves for tool fixing, a centering hole and an arrangement of holes for the drawing cushion pins.

The ram slide being rigidly fixed to the piston shaft is a welded boxlike structure and extremely resistant against bending and twisting forces. It is guided by 4 prismatic gibs along the 4 inner borders of the uprights. The guide gibs are adjustable, they allow to work with the smallest possible clearances guaranteeing a high degree of accuracy. Its bottom surface bears Tee-grooves and a centering hole. In accordance with capacity and table breadth of the press, a number of knock-out bars are fitted inside the ram slide, their movement can be regulated by spindle stops on both sides of the press frame. The press power is exercised on the ram slide by one or two pistons, their cylinders are mounted inside the header. Oil pressure below the piston disk effects the return movement of the ram slide.

Moving below the ram slide and guided along the same 4 gibs as the ram slide, the blankholder is pressed down by 2, or, in big size presses, by 4 cylinders, the return movement being effected either by 4 adjustable spindles or by 2 separate push back cylinders. The blankholder can be coupled to the ram slide by bolts, the press power of all downstroking cylinders acting jointly.

The blankholder satisfies all demands in regard to self-adaptable downholding. The central opening is reduced by annular plates forming part of the tooling. The guide gibs are adjustable. During the drawing operation the downholding pressure is maintained by oil escaping from the annular space below the main piston and can be infinitely varied.

All the cylinders for ram and blankholder are made of cast steel and have a polished interior surface. Long guide bushes for the piston shafts are fitted, the cylinders are sealed by multiple packings with bilabial rings of wear resisting synthetic material.

The pistons, whether of the disk type or the plunger type, are made of chilled cast iron of high surface hardness or high quality steel. All differential disk type pistons bear bronze guide rings and packings to prevent leakage from one cylinder room to the other and dropping of the ram during a stand-still of the press.

Below the bolster plate the hydraulic cushion is fitted. Piston or pistons and pressure platen are rigidly fixed to one another. The pins standing on the pressure platen and penetrating the bolster bear the drawing cushion ring clamping the rim of the blank during the drawing operation against the annular face of the die. A special pressure regulating valve is fitted to the cushion. Generally, the cushion works as a passive one, during the downstroking of the ram it is pressed down by means of the pressure pins and follows the raw again on its way upwards till its upper adjusted position is reached and the top of drawing cushion ring and drawing stamp lie in the same plane. During active work the drawing cushion is controlled by a slide connected to the electromagnetic controls, it can then be used as ejector or for reverse drawing.

The operative oil pressure is produced by a multi-piston axial pump with dependable capacity regulator. In the place of the formerly common slide valve for distribution, a reversing control system is employed offering the advantage of a smooth reversal of the ram movements in the stroke end positions.

The capacity regulator varies the stroke of the pump plungers in relation to the pressing resistance. Rising resistance reduces the pump output, the motor input remains thus practically constant. The motor drives the pump by a flexible coupling. The pump works without valves or packings and owns its convenient lubricating system regulating the lubricating

pressure in accordance with the load put on the press.

The press power of ram, blankholder and drawing cushions can be varied within wide limits. All adjusted pressures are to be read off on the gauges jointly fitted to the manoeuvring board. The pressure regulating valves we employ have an uncommonly wide range of adjustment.

In accordance with the respective height of tooling and drawing depth, the ram slide stroke can be confined at liberty in chosen top and bottom positions. In this way, it is possible to realize for every stroke cycle the shortest and most economic lengths of stroke. Any exceeding of the maximum stroke length is impeded by solid stops.

When performing punching or trimming operations intermediate pieces are put on stops making the ram slide or blankholder to set on them immediately the punch has broken through the material and avoiding any percussion in the hydraulic system.

On the manoeuvring board fitted to the right side upright are arranged, beside the pressure gauges, the push buttons and an emergency switch, up to 3 selection switches, one for selecting the desired operation cycle: "inching", "single stroke" or "continuous run", one for switching on and off the drawing cushion or putting it on active or passive operation, and one for connecting or disconnecting the backside control panel.

"Inching" is mainly used when setting or trying out tooling. When "single stroke" has been selected, one complete stroke cycle will be released. By a time-log relay the ram slide can be kept for a short predetermined period in the bottom position. This is particularly important for coining work. Once the press has been regulated for "continuous run", the succession of stroke cycles will go on till the press is stopped. The duration of the feeding will be determined by the time-lag relay for the top position of the ram.

To protect the operator against accidents, we recommend to instal two hand; two men or four men safety controls, light screens or electric interlock guards. Light screens are automatically switched off during ram return and feed periods.

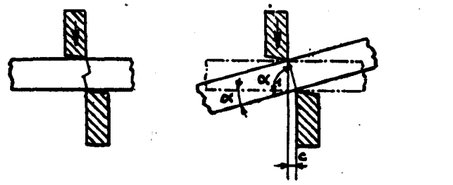
In order to catch the ram and blankholder slides while downstroking in rapid motion, before they set down on the material, an electromagnetic guide motion slide is closed and the descending slides braked by turning the pump back to its central position. At the end of the return stroke, the ram slide is braked too.

Oil filters are provided to keep the circulating lubricant clean and to protect it against the effects of deterioration by ageing. If operating conditions demand it, oil cooling or oil heating can be fitted. These are thermostatically controlled.

Due to the excellent finish of all components, the minute deflection of the press frame and the perfect parallelity of bed, ram slide and blankholder, work-piece sizes can be most accurately held and maintained. Owing to this fact, to the rigidity of the press and to its oscillation-free working, tool life is uncommonly long.

PELS Billet and Slab Shears

Billet shears are wanted for high numbers of cuts and uniform evenly cut surface on the sections as they can be obtained by sawing. Billet Shears which cut on the diamond, usually do not allow to achieve uniform cuts with perfect rectangularity and free of burrs and core protrusion, without blade changing when cutting steel of different composition and a tensile strength of from 55 to 140 tons/sq. in. The reason for it lies in the bending of the off-cuts during cutting which produces obliquely cut faces. The smaller the tensile strength, the more oblique the cutting plane. This inconvenience was tried to be removed, already in former years, employing so-called up-clamping devices, they did, however, not give full satisfaction; as the up-clamping forces were too small.



CUTTING WITHOUT CLEARANCE

CUTTING WITH CLEARANCE AND ANGULAR FEED

At this new PELS billet shears, blade beam and up-clamping device form one pincer-like system. The design is protected to IWK by patent rights in Germany and foreign countries. Due to the high

downholding pressure and an up-clamping power proportional to the cutting force, the face of the off-cuts shows the properties mentioned below. No supplementary mechanical power or working capacity is needed for up-clamping.

This new type billet shears works with simple rectangular blades. They produce almost square off-cuts with negligible deformation and without core protrusion. The shears is designed in such a way that the up-clamping device cannot impede the cutting operation. The big number of cuts to be obtained with this shears gives a comparatively high efficiency.

The advantages of the newly developed PELS Billet Shears are focussed and explained below :

(1) High production figure by automatic working. The working cycle is automatically performed by the new PELS billet shears. Having engaged the roller table drive, the inserted billet is fed into the machine, knocks against the back stop and releases the cutting cycle, causing in quick succession clamping down by the downholder, withdrawal of the back stop and cutting. After throwing out the off-cut and stopping the blade beam in the upper dead center, the cutting cycle is repeated. It is not necessary to engage the shears by hand each time the material is put against the back stop. Hand operating will unavoidably cause time losses and rejects when the wanted exact length of the off-cuts has not been maintained.

While the idling speed of the shears of 315 and 630 tons shearing force are 28 and 26 per minute, the production figures vary with the off-cut length. Considering idling times, the number of cuts will be abt. 12—15 with an off-cut length of say 4″—5″, and 5—7 per minute when the off-cut length is 20″ approximately. The output figure in tons per hour is consequently increasing with the length of the cut pieces.

When cutting on the diamond, loss of time occurs owing to bent billets which impede the performance of the cutting operation and require readjustment of the downholder. Such disturbances are unknown for shears with horizontal blades, because the billet can be turned on the roller table and put on that one of its four faces on which it lies almost flat.

(2) Outstanding quality of cut. The excellence of the cuts depends on a conveniently big upclamping force, on the correct selection of the clearance between upper and lower blade and on the pre-determined cutting rake, i. e. the angle between blades and severing plane vertical to the billet axis. If upclamping force is lacking or insufficient, the material when cut will be bent, torn or curved. The horizontal clearance between upper and lower blade edges must be regulated in accordance with the height of the section and the quality of the material, as a rule the clearance amounts to some 7 to 10% of the height of the section.

A sketch shows the actual conditions. Cutting without clearance gives a broken face. If the billet, when being cut with the required clearance, is fed horizontally, the cutting plane in the billet runs obliquely, as shown by the dotted line. In order to achieve a square cutting face, the billet is to be introduced with a slight inclination.

Experience teaches that proper cuts can be obtained, when cutting on the diamond, provided.

(a) the blade is relief-ground over the full breadth of the material, what is obviously feasible for one section only.

(b) the Vee-shaped edges of the blades must have an angle of more than 90°, the correct size of the angle depending on the elongation of the material. This means cutting on the diamond can be achieved just for one section of material of a certain quality. Already slight deviations from that section or differences as to the elongation cause improper cuts. In case, the rounding-off radii of blade and billet do not coordinate, a burr or even a core projection will be squeezed out which is rather an unwanted impediment during a further transport. This formation of burr or core projection is generally the rule for cutting on the diamond, because it is practically impossible to adapt the blade section to the varying rounding-off radii of the billet.

(3) Off-cuts to close limits. From automatic cutting performed by the PELS Billet Shears with upclamping device and backstop result off-cuts with unusually close longitudinal tolerances, since the shears engages immediately the material contacts the backstop. For billet shears, which are not started by means of the backshop, generally far bigger tolerances must be admitted for the off-cuts.

(4) Simple blade shape. The shape of the blades for the new PELS Billet Shears is rectangular. For square steel bars, the upper and lower blades are, as a rule, interchangeable and possess 4 cutting edges each. Contrary to this, cutting on the diamond demands a special set of blades, and further more with relief-ground backs for different qualities of the material, if properly cut faces are to be obtained.

Nevertheless, off-cuts produced by cutting on the diamond show rather varied cut faces. The face on the remaining billet gets nearly always curved, while the opposed face on the off-cut becomes concave, besides, it shows an obliquely severed face due to lack of upclamping.

The curvature on the face on the remaining billet is sometimes that big, that the upper blade cuts into it forming a nose, which is undesirable and demands eventually to be removed in an additional operation.

When cutting round sections of low tensile strength, also the new PELS Billet Shears has to be equipped with relief-ground profilated blades. Due to the most effective upclamping device, however, proper and square cuts will be achieved. Extreme core projection and forming of a nose on the cut face by the upper blade—as mentioned above—will certainly not occur.

(5) relatively rapid blade exchange by effective measures. The backstop and the downholder of the PELS Billet Shears are pivoted on hinged in order to change the blades with ease and to change the shears from smaller to bigger billet sections. Once the personnel have got accustomed to this work, they will take 20 to 30 minutes to perform it.

The blade clearance, too, can be rapidly set, owing to the special design as described above, simply by inserting or removing shims under the lower blade.

The obvious advantages of the new PELS Billet Shears lie in the high quality cuts that can be obtained, the accuracy of the length of the off-cuts, the high effective output and the easy maintenance.

MATISA BALLAST CLEANERS

EASTERN REGION, BRITISH RAILWAYS, have just taken delivery of the first of three of the latest model Matisa Ballast Cleaners, type 8CB5 to be ordered by British Railways. This type ballast cleaner has a higher rate of output than previous models, is mounted on motorised traction bogies, the excavating chain is hydraulically driven and powered winches are provided for handling the heavy excavating gear and conveyors.

In WESTERN GERMANY, an order for the 31st MATISA B-60 Automatic Ballast Tamper has been placed. It will be fitted with the MATISA Automatic Levelling Equipment.

The BRAZILIAN NATIONAL RAILWAYS have ordered numerous items of MATISA equipment, in particular 81 Lightweight Ballast Tampers with motorised trolleys and 6 B-60 Heavy Ballast Tampers, destined to mechanise important track works.

In MAURITANIA, a MATISA Flash-butt Welding installation for welding rails into long lengths is in operation. The welding of 75,000 rails in 30 months has been entrusted to MATISA for a new mineral ore railway, in the construction of which numerous other items of MATISA equipment will be used.

The EGYPTIAN RAILWAYS have taken delivery of 6 MATISA Heavy Duty Automatic Ballast Tampers.

Train Lighting of Integral Coaches as Furnished in the Integral Coach Factory

By D. R. Naha
District Electrical Engineer, Integral Coach Factory, Perambur

THE Integral Coach Factory was designed to manufacture passenger coach shells of the Integral design and the intention was that the furnishing work would be economically distributed over the existing Railway Carriage Workshops. With the ever increasing traffic demand for more coaching stock, it was not possible to spare any of the coach building capacity of Railway workshops for furnishing all Integral coaches. Hence, interior furnishing and provision of lights and fans in shell coaches is undertaken by the I.C.F. Furnishing Annexe, south of Shell Factory.

Electric lighting of coaches on trains was introduced in England in 1894 by employing axle driven Dynamo which is still the basic system in general use to-day all over the world. Electric lighting of coaches was first introduced in our country in 1920 with individual equipment. Block system of train lighting with axle driven generator and double battery equipment is adopted on the Indian Railways. Tourist cars, Inspection Coaches, Postal Vans, Air-conditioned coaches and Restaurant cars have their independent train lighting equipments with straight through wiring.

The Train Lighting of the Integral Coach employs the 24-Volts, double battery system. With this system, the battery is divided into two sections, one section is being charged from the Dynamo whilst the other floats at the requisite voltage for lighting and fan loads. In recent days there has been considerable increase of amenities to passengers and thereby heavier and variable electric load have to be catered. The third brush generator in combination with controlling equipment combines the functions of automatically controlling generator output lamp voltage and precludes battery over-charging.

The Generator is a shunt-wound, totally enclosed, variable speed, reversible machine of 24/32 volts, 100 amps. capacity specially designed to operate on Railway Carriage underframe and driven from one of the axles, is of rigid construction and of minimum weight and bulk, besides being vibration and shock proof and weather proof. The Generator when connected to the battery has inherent self-regulating properties due to the provision of the third brush. The out-put of the generator is at its maximum at low speeds and it drops at high speeds. The phenomenon is particularly valuable for both slow and express services (i.e.) the battery charge in ampere hours over a given period is approximately same for either type of service. The brush gear of the Generator is designed with an automatic pole changing device to ensure constant terminal polarity of the Generator with relation to rotation.

Each of the two batteries comprises of 12 lead acid cells of 300 ampere hours capacity, iron clad type housed in metallic battery boxes suspended from the underframe. The cells are of special design to withstand the hazardous duty in moving coaches. The batteries are charged alternatively by the Generator by the function of the battery change-over mechanism which is incorporated in the auto cut-in and cut-out switch. Generally, in the Train Lighting shops of the Indian Railways, motor Generator sets are installed for charging batteries. Metal rectifiers of modern designed with all facilities for smooth charging and fine adjustments (Fig. A) are installed in Integral Coach Factory for charging batteries with a view to conserve space.

Fig. A

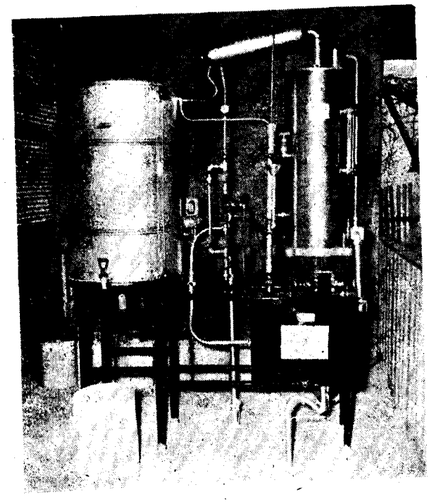


Fig. B

Electrically operated Water Distilling plants are installed (Fig. B) in the Train Lighting Shop for distilled water required for the preparation of electrolyte to guard against contamination and to conserve space as against the out-moded coal fired Distilling plants with elaborate arrangements adopted in the Train Lighting Shops.

A combined over-charge and over-voltage relay is provided on the Switch Panel suspended from underframe. The over-charge relay obviates over-charging of the battery from the dynamo circuit and reconnects the same when the voltage of the battery falls below pre-set value, generally set at 29 volts. The over-voltage relay usually set at a higher value—say 40 volts—is intended to isolate the dynamo from the battery circuit in the event of any undue rise in the generator voltage. This protects the armature, field coils, etc., from over heating and consequent damages.

A magnetic load switch which is mounted on the Switch Panel controls the operation of fans and lights in the coach. The load switch is controlled by the Three-Push Button control switch fitted at one end of the coach externally to operate fans and lights in an individual coach by the Guard of the train. Fans and lights for use by night or fans only for use by Day and OFF can be operated by the operation of the three-push button control switch provided in the Guard's compartment which operates all the magnetic load switches throughout the train. Every fully equipped feeder coach is provided with one three-push button switch.

The lamp resistance mounted behind the switch panel of the coach is intended to regulate the lamp voltage. The Resistance comes into circuit only when the fans and lights are switched ON and automatically shunted when the fans and lights are OFF so that both the batteries get discharged in parallel.

A combined auto cut-in and cut-out switch is mounted on the Switch panel and incorporates also a battery change over mechanism. This gear controls supply from the Dynamos to the batteries.

The wiring of the coach can be divided into three sections :—

(1) Main Roof wiring from 24 Way fuse and junction box to 15 way link junction box with connected branch wiring for the control of fans and lights.

(2) Wiring to inter-vehicle coupler male and female.

(3) Underframe wiring.

Main Roof Wiring : This comprises of 5 Mains and 4 auxiliary mains. The 5 Mains are intended for Block-Rake systems of working. The auxiliary mains are intended for the operation of equipment in that particular coach only.

Inter-vehicle Coupler : This wiring is provided at the two end walls of the coach and are intended in conjunction with the couplers for Block-Rake operation.

Underframe Wiring : This comprises of all wiring between the Generator, control gears and batteries which finally terminates at the 24 way fuse and junction box.

The fittings provided in the integral coach of various types are of the latest design. The external lights are automatically controlled through auto Cut-in and Cut-out switch, so that the lights are ON when the train is slow or at stand still and go OFF when the train picks up speed of 12 to 15 miles per hour. These lights assist in lighting up of platforms that are not electrified and also serve as external illumination of the coach and light the vicinity of the train when stops between stations for signals, etc., and also helps in

Fig. C

security measures. An interior view of a Third Class Sleeper coach can be seen at Fig. 'C'.

The wiring of the Integral coach which is all steel requires suitable modification over the system employed in the conventional timber-bodied coaches. Special care is taken to see that all cables are completely isolated from metal work. The Roof Mains are run in the centre of the coach from end to end and suitably cleated and encased. The branch wiring to the fan and light points are suitably clipped to the timber car lines. The wiring between the junction boxes and inter-vehicle couplers is run through G. I. pipes suitably bushed.

Dis-similar to the usual practice of running underframe wiring on wooden cleats, the wiring in the underframe of shell coaches is taken in steel conduit with necessary inspection boxes, etc., and terminated in the Switch Panel on the underframe. This has the advantage of eliminating pilferages of cables on the underframe, as experienced on coaches wired otherwise.

This Factory is at present engaged in the manufacture and furnishing of Third Class, Third Class Sleepers and Guards Compartment with Third Class coaches. The furnishing of First Class coach has just been taken up.

The furnishing and provision of electric lights and fans in the Integral shell coaches manufactured in the Integral Coach Factory was started in May, 1957. It is proposed to furnish 300 First Class coaches during 1961—62 and 350 First Class coaches during 1962—63 under Third Five-Year Plan. It is also anticipated that the furnishing of Upper Class, Electrical Multiple Units will also follow in the years to come by which time with the wide experience gained on Train Lighting and Furnishing, further advancement is expected to be achieved.

PVC Insulated (Heavy Duty) Electric Cables

The Indian Standards Institution has just published an Indian Standard Specification for PVC Insulated (Heavy Duty) Electric Cables, IS: 1554 (Part 1)—1961, which covers the requirements of both armoured and unarmoured single core and multicore PVC insulated and sheathed cables with an outer sheath, for electricity supply and control purposes.

The cables specified in this standard are suitable for use on AC single phase or three phase (earthed or unearthed) systems for rated voltages upto and including 1100 V. These cables may be used on DC systems for rated voltages up to and including 1500 V.

This draft standard is one of a series of Indian Standards for insulated wires and cables, eight standards having already been published on the subject, which have been prepared for the guidance of the fast-developing cable industry in the country.

***

NEW TYPE OF RAILWAY CAR

Nikolai Labutin, a Soviet engineer, has designed a new type of passenger railway car. The compartments having the shape of a parallelogram are arranged in the new car on both sides of the passage. This has permitted to increase the number of accommodations by a third.

Moreover, this has been attained without affecting in any way the passengers' convenience; on the contrary, the cars are fitted with an air conditioning system that is more efficient than it used to be and with comfortable upholstered seats. There is a cabinet in each compartment for keeping food and travel accessories. Such a layout of railway cars had formerly never been applied to either Soviet or foreign car building practice. It will make for reducing transportation costs and for better servicing of passengers.

CLEANLINESS LEADS TO HEALTH AND HAPPINESS

Clean orderly habits contribute to general health and welfare and as such to happiness and prosperity; they are more important than medicines.

Cleanliness prevents disease: medicine only attempts to cure.

Cleanliness of the person, of the houses and colonies, reflects discipline in the individual and the community. Discipline is the foundation stone for progress of oneself and the country. Cleanliness is a good habit. It is also cheap.

All Railwaymen should set an example of cleanliness. This will help others and themselves.

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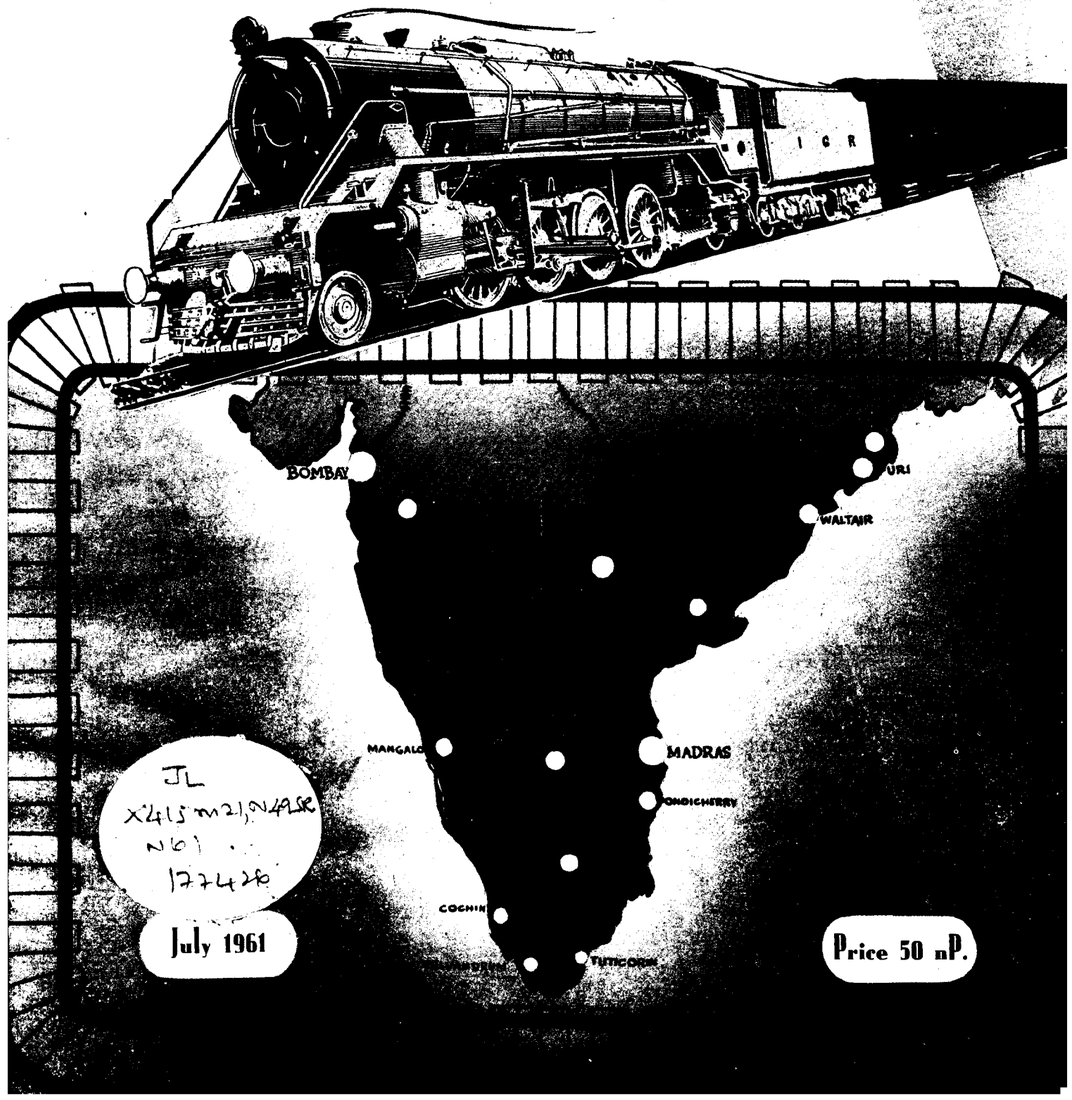
Edited & Owned by: T. S. KRISHNA RAO

CLAIMS SUPPLEMENT

SOUTHERN RAILWAYS *Magazine*



July 1961

Price 50 nP.

HOW TO RESERVE ACCOMMODATION ?

1. Unless you reserve your berth (I Class) or Seats (II and 3rd Class long distance) in advance, you may not be sure of getting accommodation on the train you wish to travel by.
2. Application should be made to the Station Master of your starting station at least 3 days in advance specifying the date and train by which you intend travelling and the tickets must be bought in advance. The reservation fee leviable is 50 nP. per seat or berth.
3. Reservation by I and II Class from intermediate stations by Express trains can also be made similarly, but reservation ticket can be issued only after getting an advice from the Reservation Centre that the reservation has been made.
4. Tickets will be issued only if accommodation is available.
5. If the reserved seats or berths are not occupied at least 5 minutes before the booked departure of the train the reservation will be cancelled and the seat or berth given away to another.
6. **Reservation fee is not refundable.**
7. III Class seats are also reservable on Express and certain other important trains for long distance passengers from the train-starting stations on payment of a reservation fee of 25 nP. per seat.
8. Do not occupy a berth or seat reserved for another, as you are liable to be displaced at the last moment.
9. If you find another person occupying the berth or seat reserved for you and if he will not vacate it on demand, report it to the Guard or Station Master. They will help you.

(INSERTED IN THE INTERESTS OF TRAVELLING PUBLIC)

LETTERS TO EDITOR

P. K. M. Calicut writes :—

An R/R for a wagon-load of raw rice from Tadepalligudem to Calicut was endorsed in our favour. The only remarks on the R/R was "*L and U by Owners; Bags in Single Gunny*". At destination it was found that some bags had been damaged by water, which on survey by the Southern Railway was described as "*Caked, discoloured, mildewed and producing a foul smell*". The stuff damaged was separated and weighed and shown in the certificate as 75% lost in value. A claim was preferred as per original puttial and the Certificate of damages. The Railway has repudiated the claim in the following terms :—

> "The subject consignment, which was (1) directly loaded into the wagon by the Senders and (2) sealed in their presence, (3) has been carried through to destination, where (4) the unloading was done by the Consignees. (5) All the forwarding station seals were intact, and (6) the wagon was tested and found intact. Further, (7) the damaged bags were found in the bottom layers, thereby showing that the damage has been caused due to the *inherent vice of the stuff*. In these circumstances, I regret my inability to entertain your claim."

Please tell us what to tell the Railway.

Answer :—

From the nature of the R/R it is evident that good sound dry bags of rice had been tendered for carriage; else there would have been in the R/R remarks adverse about the quality of some or all the bags.

It is evident that the damage was wrought by rain water, to the few bags (not all). How rainwater got in is the only point for investigation.

Points 1 to 5 have no bearing to the point at issue and are therefore irrelevant. Point 6 is worthy of examination,—What is meant by the Railway's statement :— "wagon found intact"? *Water-tight*? or *Not gone to pieces*? Tested by whom, when and where? It is all very dubious. The chances are that the test is unreliable, and dose not afford conclusive evidence as to the soundness of the wagon.

Point 7 is the most bewildering—to say, and that for the Central Government Authority to say that rice suffers from the inherent vice of deliquescing (i. e. emitting water, self-watering, auto-watering, like common salt) and damaging itself—this is strange news, which even the common man as well as the Scientist will summarily reject and even get angry with.

Further, how is one to load rice bags in a wagon without bottom-layer—this baffles us also. We suppose it was the consignee that did the unloading at destination, and hence the most competent person to say and certify whether these damaged bags were found in the bottom layer or some other place. It is a bad repudiation.

RAILWAYS TO ASSUME COMMON CARRIER'S LIABILITY

The Deputy Minister of Railways, Shri Shah Nawaz Khan told the Lok Sabha that the recommendation of the Railway Freight Structure Enquiry Committee that the Railways should assume liability of a common carrier instead of that of a bailee had been accepted.

According to the existing law, the liability of the Railway for shortage or damage to the goods in transit was that of a bailee. Shri Shah Nawaz Khan added that necessary legislation was being sponsored in the near future and the change over would be given effect to as soon thereafter as possible. The Deputy Minister gave this information in a written reply to a question by Shri Sadhan Gupta and two other Members.

Visual Test for water-tightness of Wagons

Of late we find that several goods-booking stations on the railways making endorsements on the Rail Receipts

> "Wagon *jointly* examined *by visual test* by *sender* and *Goods Clerk or Station Master*, and found water-tight."

Often this remark is shortened into

> "Wagon *jointly* examined *by visual test* with *sender* and found water-tight."

The implication of such a remark does not appear to have been understood aright either by the sender or by the Railways.

2. On the strength of such remarks on the Rail Receipts, the Claims Superintendents of the Destination Railways proceed on the assumption that the wagon is perfectly water-tight, though several bags of stuff like cereals, sugar, and other commodities damageable by water, unloaded from the wagon at destination, were actually damaged by water — rain water having entered the wagon — damaged to the extent of caking, clotting, discolouring and foul-smelling, according to the Destination Railway's own Survey, Assessment and Certificate granted to the Consignee. The Destination Railway repudiates the claim for compensation though asked for only according to the Railway's own Certificate of Damages. They repudiate more or less in the following terms:

> "The wagon was jointly examined jointly by Senders and Railway Staff, and found water-tight. A remark to this effect was also made on the Railway Receipt, which was accepted by the Senders (!) It is therefore evident that this consignment was carried in water-tight wagons only, and the alleged (!) damage is due to causes beyond the control of the Railways."

Sometimes, the Claims Superintendent goes further and adds:

> "Such being the case, it goes only to show that the damage in this case is due to *the inherent vice* of the stuff."—

or he goes one step still further, and adds:

> "As such, the alleged (!) damage must have been already there at the time of booking and loading at the forwarding station itself." (though the Rail Receipt is clear and clean and unqualified).

3. We merchants have been taught in the past by the Railways themselves that the proper test for the water-tightness or otherwise of a wagon was to be conducted by a technically competent person (expert) of the Mechanical Department (a Train Examiner or a Carriage Examiner, as they call him), who himself never trusted his "naked eyes" for the test, but invariably got the wagon in question placed under the Water Column (water-spout for filling the engine-tender with water) and the water-stream turned on to the roof of the wagon—this for the roof-test. And then he used to play the forceful hose-pipe in all possible directions against the sides of the wagon—this for the walls-test. After each operation he used to get into the wagon and see if water has entered, and then declare in writing his observations as to whether the wagon (quoting wagon type, number and owning railway) was water-tight or not. It used to be honestly and efficiently done, and we merchants had developed a great faith and trust on railways. Thus, even the Mech. Expert never used to trust his mere naked eyes; for, he knew that wagons are made up of metal sheets partly overlapping the neighbouring sheets, that the water-proofing material placed between sheet and sheet may have through lapse of years disappeared, leaving crevices, through which rain water might enter.

4. Now, here is a new kind of test, introduced within recent times, called the VISUAL TEST (test with naked eyes). And for this new test no experts of the Mech. Dept. are necessary. Two individuals of "human shape, of woman born" completely unarmed and bereft of all implements, are enough and more. Their vision need not even be of the C. 3 class. (N. B. On the Railways eye-tests for Drivers, Guards, Station Masters, etc. have been classified into A-1, A-2, A-3; B-1, B-2, B-3; and C-1, C-2, and C-3). The nearest and handiest men are sufficient—say the Merchant-Sender, who can hardly sign his name, and for aught we know, may be having shortsight of *minus 11*, who has never been told since his birth how wagons are made, and the Asst. Goods Clerk (Class C-3) who is to write out the RR, are enough to make this test. We believe they walk round the wagon arm-in-arm in happy conversation over their pet subjects, or perhaps also get into the wagon and look up to see if the sky is visible from there, but fail to see it; therefore walk right into the latter's office to record "wagon tested by visual test and found water-tight". Or perhaps the Sender has had no part at all to play, and was entirely unaware of the endorsement made in his name by the AGC/SM. Whatever may have actually taken place, the remark is made on the RR "wagon jointly tested by Sender by visual test and found water-tight."

5. As any human being will admit, except perhaps the CCS of the Destination Railway, these two individuals are mere but complete laymen, absolute ignoramuses of wagon-construction or repair-technique—the Sender, who at best is only a merchant, whose only knowledge of a wagon is that it is a vehicle used for the carriage of his goods, and that it moves on wheels, whether the number of wheels is 3 or 4, he may not be quite sure—and the Booking Asst. Goods Clerk (big station) or Station Master (minor wayside station), whose brains are perfectly blank or vacant of all wagon-technique. This lay opinion of 2 laymen (assuming their visions to have been normal) is banked upon by the CCS (Head of the Commercial Dept.) of a most modern Govt. Ry. in this advanced Scientific Age, Atomic Age, to treat the wagon as perfectly water-tight, and (aye, even) to repudiate our claims for compensation for damages wrought by rainwater entering wagons, containing our precious goods, damage which the very CCS or his trusted lieutenants saw, surveyed, assessed and certified in writing (which he chooses to call '*alleged damage*' even after the certification!). Not only to repudiate the compensation, but also to go beyond his depth, and cast aspersions (make libels, defamatory remarks) against the poor honest and innocent Sender—that he had loaded already damaged bags at the forwarding station, implying 'with the fraudulent motive of making a claim for compensation'—akin to the dog in the fable, which, not satisfied with eating up the woman's dinner, also bit her,—the innocent Sender, whose only fault so far as we know is that he sought railway transport, promising to give the CCS a big bag of money as freight.

6. Normally all wagons placed at the disposal of the Traffic Dept. are placed after mechanical test as water-tight. The need for a further test arises only when the goods carried in it are found damaged at destination. So, usually the need arises for a re-test at destination. And wagons are not as a rule re-tested except when the need arises. These re-tests are made by the experts of the Mech. Dept. either at the stations where they are for the time being, or the wagons are marked sick and worked to the nearest Depot station, where an expert is stationed. But here, *the VISUAL TEST BY LAYMEN*, is said to take place at the Booking or Forwarding Station, before booking or loading, i.e. before the need for a test has arisen!

7. This new VISUAL TEST BY LAYMEN is considered superior to the old Mech. Expert's Test; it is being superseded by the visual test by 2 ignor-amuses. For, suppose the Mech. Expert gives a different verdict! The CCS will get non-plussed. Or the Consignee will want the Test by the Expert at destination, even on payment of a fee. If the test at destination by a TXR or CXR is ever made, it is only to confirm the first visual test; but the Consignee has no right to ask for it. The CCS will say "The Railway is not bound to....." The Railway can invite the Sender to join the AGC/SM to *make* and *do* the visual test at forwarding station; but the Railway will not invite the consignee at destination even to *witness* the test at destination by the TXR/CXR, though the consignee is only just a few yards off from the testing place!

8. We suffering consignees have been asking for Copies of (i) Forwarding Notes bearing the so-called endorsement about his "visually discovered water-tightness", and (ii) copies of the Wagon Test certificates obtained either at Booking Station or Destination, and (iii) passage particulars of our consignment, so as to see when and where transhipped what wagons used for carriage, whether there has been change of wagon en route, etc. But no, none of this will be complied with, though they are bound to give in fairness. Even reweighment of our goods at destination is refused; we must accept their weights and pay for that; else "wharfage will accrue"!

9. This visual test business is perhaps now current not only on one railway zone, but on all railway zones. It looks as if the plan is for the

Forwarding Railway—to endorse RRs with visual test, and found wagon water-tight; and

Destination Railway—to repudiate claim, because water-tight wagon was supplied, as per senders' own declaration.

If we merchants had done anything of the sort, we would have been prosecuted and severely punished. Perhaps this is a happy expedient, specially devised by some genius to tide over the crisis noticed in the post-independence days of almost all wagons being in a leaky condition. The Railways must be really thankful to that Brain Wave of that Great MAN, who so shrewdly hit at the *paying* or *saving* idea. For, very huge is the sum that has been saved for the Railways by way of non-payment of compensations for damage by rain water to hundreds of merchants all over India under the now-famous VISUAL TEST, which (strangely enough) discovers only water-tightness, never once discovered non-water-tightness (!) That Great Man may take pride over his novel idea, that is paying the Railways for the time being; he may have got his promotions too.

10. But what is the kind of Commercial India he has left as legacy behind him? Several hundreds of poor merchants have lost heavily and are still losing on this stake of a visual test by two ignorant laymen. Some of them have gone out of the field of trade. Some families have been ruined. All of them are seething with discontent; a kind of bitterness is growing and smouldering within their honest breast; they have the bitterness born of a feeling that they have been constitutionally and perhaps also legally "duped". The average trader hates going to Court. Courts will not certainly allow this VISUAL TEST BY TWO LAY IGNORANT MEN pass muster. But court or no court, there is the public opinion mustering strong, public opinion, which is the ultimate judge, Judge of Judges. This accumulated and accumulating bitterness against the Railways, which have already lost all the high esteem they were once held in, what will it do? What will it not do? Time will show. And yet, we pride ourselves, all those both inside and outside the Railways, that we are citizens of REPUBLICAN INDIA, bearing aloft the torch of freedom, truth and good government!—Followers in the very foot-steps of Mahatma Gandhi!!

11. How many tons of food grains have been so damaged, made into putrefied pulp of gram, gramdall, caked, clotted, mildewed, foul-smelling, sometimes, not fit even as fodder or manure, by such carriage? And is that of no concern to the FOOD MINISTRY, whose perpectual slogan has been and is "Grow more food" campaign? Is more food to be grown only to be destroyed by the Railways in their visually-water-tight but really-leaky wagons? Will the FOOD-MINISTRY call for statements from all the railways of claims made and claims paid for destruction of food grains by their carriage during the years 1956 to 1960. So far as we know, many wagon loads of 20 tons each booked from North to South alone, during the year 1956 alone, were destroyed to a high percentage by damage by rainwater—How many more despatched in the other three directions, and how many more during the succeeding years? What a colossal loss and waste of essential and vital foods by the Railways only! And yet a Genius has invented a method, wherewith payments can be prevented, but not causes of claims rooted out! Is there no Real Genius within the whole ambit of the Railway World, who can discover a method by which the root causes for claims can be rooted out? Our salutations to him.

(Continued on page 19)

Important Goods Sheds on the Southern Railway—Hours of Working—Extension of—

With effect from 1—12—56, the working hours of some important Goods Sheds on the Southern Railway have been extended as follows:—

(a) For loading and unloading of wagons:—
Originally 6 to 18 hours; *extended 6 to 24 hours.*

(b) For acceptance and booking of outward traffic:—
Originally 8 to 18 hours; *extended 8 to 22 hours.*

(c) For delivery of inward (received) consignments:—
Originally 8 to 18 hours; *extended 8 to 22 hours.*

2. We are food grains merchants. A large percentage of the goods consigned to us arrive at Royapuram; and we take delivery of the same almost daily from the Royapuram Goods Shed.

3. When the Hours of Working were extended as above from 1—12—56, we doubted very much whether it would work satisfactorily, in view of the fact that merchants do not generally find it convenient to take delivery of the goods after 18 hours, by which time they close their godowns and also close the business of the day. We, however, wanted to watch for sometime as to how the new arrangements worked before lodging any complaint with the authorities concerned.

4. Now the Revised Hours of Working have been in force for about 2 years; we are in a position to state that from the point of view of merchants the disadvantages far outweigh the advantages, if any.

5. The following will give one an idea of the disadvantages of the new arrangement (i. e. Extension of Working Hours as stated above):—

(a) Provided the wagons are placed on the siding before 18 hours, none of us, who are actual consignees, would experience any difficulty in clearing the goods before 18 hours. And none of us stand to gain by the extension of time from 18 to 22 hours.

(b) If the goods are unloaded from the wagons after 18 hours, it is not possible for any of our representatives to be present at the time of unloading, and therefore if goods are unloaded between 18 and 22 hours, such unloading almost always takes place without the representatives of the consignees being present.

(c) In case goods are unloaded between 18 and 22 hours on any day, and the consignees go to the Goods Shed for taking delivery of the goods on the next day, they are not able to know, in cases in which the condition of the goods is not satisfactory, whether the condition of the goods was the same at the time of unloading from the wagons, or not.

(d) Since, as we have stated above, in a majority of cases the representatives of the consignees are not able to be present at the time of

(Continued from page 18)

unloading, and since the goods are lying in the sheds from the time of unloading till they are actually taken delivery of by the consignees, it so happens that occasionally there is pilferage and also damage to the goods, which one could easily guess must have occurred at the time of unloading and after.

(e) *Wharfage.* Under the new arrangement, for the purpose of levying wharfage, goods unloaded upto 22 hours, will be treated as unloaded on the same day. This places the merchants, who do not take delivery of the goods after 18 hours, at a great disadvantage. Supposing goods are unloaded at 19 hours, the free time of 48 hours for delivery without wharfage would be calculated from 19 hours. This means that the consignee loses 13 hours (from 19 hours on the previous day to 8 hours the next day) out of the 48 hours free time allowed.

(f) *Demurrage.* It is stated that free time for the purpose of leveying demurrage charges should be reckoned as 5 (five) working hours. Since the working hours for the unloading of wagons have been extended up to 24 hours or Naught O'clock (Midnight), supposing the goods remain in the wagon, say from 18 to 23 hours, and they are unloaded at or after 23 hours, according to the revised working hours, the consignees stand to lose the benefit of free time of 5 working hours, and consequently demurrage charges would accrue untill such time as the goods are unloded after 23 hours.

6. From the above it will be seen that the present arrangement causes a lot of hardship to the consignee like ourselves, who have never found any difficulty in getting consignments cleared from the Goods Shed before 18 hours, provided the wagons were placed on the siding in time.

*7. We would also in this connection like to mention that the storing of goods in what is known as Granary or the Old Grain Shop causes a lot of inconvenience to the consignees, for the access to the Granary for handcarts or lorries is roundabout and rather difficult. The Granary is also located at one end of the Station Yard, and the chances for pilfering are greater, because the place happens to be rather aloof.

8. We are inviting your attention to the above so that you may be pleased to revise the working hours and arrange for the delivery of inward consignments and the unloading of wagons to be stopped at 18 hours. We shall also be obliged if instructions could be issued to the effect that in no case consignments of foodgrains be stored in the godown known as the Granary for the reasons mentioned above.

9. As we are experiencing a lot of hardship and inconvenience on account of the present arrangements, we shall deem it a great favour if you could kindly issue the necessary instructions at your earliest convenience.

Thanking you, etc.

Sd/-
Food Grain Merchants, Madras

——

Reply to the above from the Southern Railway Administration

Sub : Request to stop unloading on Sundays and after 18 hours on week days

With a view to make more wagon space available for wagonload traffic during the plan period, the working hours of Goods Sheds at some stations wherever necessary have to be extended. Hence I regret your request cannot be complied with, as it will hamper the quick turn round of wagons.

Sd/-
for General Manager.

*Para 7 — Not replied to.

——

Proceedings of the Meeting of the Zonal Railway Users' Consultative Committee.

Subject No. 40 — Proposed that :—

"The present extended hours of working of certain important Goods Sheds, which were introduced in 1956 be reviewed and modified, where necessary, with a view to remove the difficulties experienced by the Trade in respect of unloading of wagons, checking the conditions of goods so unloaded, reckoning of periods for levy of demurrage and wharfage, etc."

Reply to the proposal

"The hours of working were extended to step up the release of wagonloads and to ensure maximum clearance of unloaded goods from goods shed. It will be appreciated in the present context of inadequacy of wagons, we cannot contemplate any step that would tend to reduce the quick turn round of wagons."

——

Editorial Comments

The Working Hours of Royapuram Goods Shed (Madras) of the Southern Railway — we find from the foregoing — were extended upto 22 and 24 Hours from 1956 onwards. At first sight it seems such a great facility and amenity to the Trading Class of Madras City. But looking closer and into the thing one finds it is not a blessing but an infliction, on the merchants, and an inducement to "Go Slow" for the Railway Staff.

The reason put forth by the Authorities for the extension of the working hours seems very laudable ; for, it is said in effect :—

"we haven't got enough wagons to meet all demands ; with a view to make more wagon-space available for wagonload traffic during the period of the Five-Year Plans, the working hours have been extended at some stations. We cannot comply with your request to cancel them and revert to the old hours of working, as it will hamper the quick turn round of wagons."

But how can you force merchants to work against Nature during midnight hours ?

There was one thing that could have been tried before introducing midnight working of goods sheds and stations. Fuller use of the daylight hours could have been tried. Suppose there were more siding-accommodation, more wagons were placed in position for loading and unloading, and the cooperation of the trading class was sought, rather solicited, and staff geared upto higher speed for their rate of working such as for shunting in and shunting out of empties and loads, weighing, receipting, etc.etc. That would have achieved the same purpose—quicker turn round of wagons—without the need for Merchants to keep their godowns and offices open past midnight (for, if Goods sheds work till midnight, godowns and offices of the Merchants must work till 2 or 3 A. M. and then again be ready for work at 6 A. M.). We suppose this feasible altern ative has not been tried out by the Railway Administration. We commend it for their consideration.

At any rate, co-operation of the Trading Class is the thing required in such exigencies ; it must be solicited for ; you cannot enforce it by Rule or Law. Such enforced Rules or Laws will not work. They will only breed pain and hatred and bitterness. Was it Dr. Johnson who said "One man may take a horse to the river, but twenty cannot make it drink."? Drink it must of its own free goodwill and accord.

Another serious objection we see to the "Midnight Hours Extension" is that the work of the railway staff by day would get seriously slack. Already we hear cries on all sides of "Slack Work.", "indiscipline amongst staff" etc. Now under the revised hours of working, the staff may easily think "Why should I be in a hurry ? The Sun is not going to set on my work ; all time is mine ; I can weigh and receipt even after 18 hours ; I can do the shunting any time I please, etc." Thus in actual practice, things may get slower, and the opposite of the expected may result.

Surely, these extended Hours must mean to the Railway Administration extra staff for the additional shifts. We have no idea as to the exact extra expenditure caused at Royapuram on the various counts. The point for consideration is also whether the game is worth the candle, whether the scheme is economically sound ; we fear it will not be.

From the Transport-User's point of view, it is an infliction by the Railway. For, these night hours will be adjusted and set off in the Merchant's account against the free time he is entitled to in respect of Demurrage and Wharfage. Under the Old Hours of Working the penal charge, which may commence only the next day, will. under the new revised Hours, commence a day earlier, For example.

He is allowed only 5 hours free time for loading/unloading. Suppose his free time ends with 20 hours today and this particular trader has no arrangements for night-working ; he does the loading/unloading of the wagon from 6 to 9 hours tomorrow, the Railway will levy on him a demurrage for the period 20 to 9 hours.

Again, as the goods were made available for delivery today, rather tonight, today is set off as the first of the 2 days free time he has to take delivery ; one day less free time—means—one day more for wharfage.

(Continued on page 22.)

REPUDIATIONS

THERE is something rather strange and queer about the modern repudiations by railways of merchants' claims for compensations for shortages and damages.

1. *If complete bags are short-delivered* at destinations, for which claim has been placed by the owner with the railway, the railway says, "it is suspected that the loss was due to theft from a running train, a contingency beyond the control of the Railway Administration; hence your claim is not admissible." It isonly their suspicion at first, in their first letter. In the second letter, it becomes a confirmed fact, and "the repudiation already made stands". The Railway itself designates the occurrence, if any, as RUNNING TRAIN THEFT. On what evidence, at which place, between which two stations, night or day, what were the precautions the Railway had taken to avert such, how could it happen when they maintain such a large Protection Force and Police Force, patrolling the trains, whether the bags were found on the track, and attempts made to recover the stolen goods, whether the culprits have been caught, are they being prosecuted, etc. various details that the claimant is eager to know, details which alone will give him a correct idea, and the evidence on which the conclusion of "Running Train Theft" is based and not ordinary theft — these are a sealed book; the claimant is not furnished with these, he is not entitled to have them; for, "I am satisfied, and that is enough."

OR

'It is a case of short loading by senders. You may look up to the senders for your relief."

2. *If several bags are partially short*, then remarks about the shortages, such as signs of tamperage, reweights of the individual bags, whether stuff was found on the floor of the wagon, etc. are as a rule required to be made in the Delivery or other Books kept at the destination station. Consignees would naturally like to remark and state full particulars of their observations in the Books. But these Books are in the custody of the Railway Staff. Some stations staff do not allow the making of remarks at all. The few stations that allow it, stipulate what remarks may be written and what not. "You may remark 'So many bags loose; reweights so and so against so and so of a sound bag.' You cannot write 'Bags torn, or cut and loose".—so say and insist the staff, in their own interests. With the result that the Chief Comml. Supdt. or the Claims Officer, when the claim comes up to him, invariably says "Bags were merely loose. Mere looseness does not indicate theft, misconduct or criminal interference. Hence your claim is inadmissible." The staff would not allow "cut or torn" to be written, though it was a fact. For, if that were written, claims would have to be paid. The total amount of claim paid against a station will affect their fair name, or would affect their promotions, when the time for it comes. But the Claims Officer would not pay without the words "Cut or torn" or any other sign of tamperage. Now between the Goods Clerk and the Claims Officer, the claimant-merchant is between the Devil and the Deep Sea, and has to lose his compensation.

3. *When the claim made is for a Damage*, caused by rain water entering into the leaky wagon, the Railways

(Continued from page 21)

Thus, those Merchants, who cannot or will not make arrangements for night-working, and fall in line with the Railway's plans and schemes, will have to pay heavy sums in the shape of demurrage and wharfage. And the rates of these demurrage and wharfage charges now-a-days are several times the old rates; they mount up like rockets.

Summing up therefore, what is likely to be the nett result of the New Innovation? Added slackness of staff; inefficiency given a fillip; slower turn round of wagons; greater claims for compensation for thefts (night working being just the thing that the anti-social fellows, that hang about in hordes round Royapuram goods shed, want); heavy penal charges (wharfage and demurrage) on "the Goose that lays the Golden Egg"; growth of bitterness and antipathy towards the railway, etc., etc. that we cannot visualise all at once.

Any way, the question needs re-examination by those who can foresee. and see with sympathy from the other man's angle too.

—*Editor*

have several ways of repudiating the claim. At destination at the time of unloading the bags, it may be that a few bags or many bags were found damaged. They are so badly caked, clotted, discoloured, mildewed and emitting a foul smell, that the consignee is often tempted to leave the bags with the railway itself for such disposal as it pleases, and claim the full value of those bags. But they say, Law says that delivery should not be refused, esp. when the Railway agrees to a Joint Survey and Assessment of the Damages. And the Railway also does not want to keep within its premises the "Dead Baby"; the consignee must somehow be persuaded to remove the dead baby from out of the Railway premises. So they agree to and even volunteer to do the survey and assessment of damage, of course "without prejudice".

Incidentally, this "without prejudice" when expanded is "without prejudice to the legal position of the Railway", happen what may to the legal position of the Owner! Commercial Organisations loving equity justice and fairplay invariably say "without prejudice to the legal rights of either side." But as between Railway and Merchant-Owner-Consignee, the position is different—what is the merchant by the side of the Railway? What legal rights can be have to be jeopardised? (!)

The Survey is done. The Railway's Inspector or Officer does it with labour, to supply which is the duty of the Consignee at his own cost. The consignee must simply stand and witness. It may have been called "Joint Survey and Assessment", but is invariably done unilaterally by the Railway. Bags are mercilessly cut open, and the cakes and clots separated, and weighed. Then the Railway estimates the damage at some percentage, say 40%. The consignee pleads, "Sir, the damage actually is far more than that. Please put it down as 60%." The Railway's Representative says, "Nonsense, do you want it at 40%. Or I am going away, I have more important work to do elsewhere." The Consignee curses his fate and affixes his signature to the Certificate, reluctantly. Thus ends the so-called JOINT SURVEY, unilaterally done.

Armed with this certificate, the consignee puts in his claim strictly accordingly to the terms of the Certificate. The Claims Officer's reply, normally very belated, reads: "The wagon in which your consignment was carried has been tested and found to have been water tight. The damage therefore could not have taken place in transit. Hence your claim is inadmissible." Some times he stops with that. Sometimes he goes further and adds, "The damage in question" or better still "the *alleged* damage must have already existed at the time of booking and loading, for which the Railway is not responsible." Sometimes he modifies this addition into, "The damage is due to the *inherent vice* of the goods", though the goods often is Rice, Gram, and the like. It is for experts to say whether commodities like Rice, Gram, and the like foodgrains do suffer from this *inherent vice*, that can cause damage as if by self-water, i. e. whether rice, gram etc. do self-water, deliquesce, like common salt.!

As sometimes these causes appear insufficient to the Railway itself, they have hit at a new idea altogether, The Booking Station, taking advantage of the Senders' anxiety to get the Rail Receipt in order to raise money on it through Banks, goads him to accept "wagon visually tested and found water-tight" whilst really the wagon may be anything, and issues the RR with the remarks "*Wagon jointly tested with the Sender by visual test, and found water-tight*". The sender unwillingly and unwittingly submits to it, as he has "no other go". This seems to be according to plan, judging by the numerous forwarding stations that have adopted the same and uniform phraseology. In most cases the wagon is leaky, and the contents reach destination with many bags of foodgrains, sugar etc. badly damaged by rainwater, "caked, clotted, discoloured, mildewed and emitting a foul odour". Of course, it is readily assessed by the destination railway "without prejudice", and the routine certificate is issued to the consignee. So that the 'Dead Baby' may be taken away. Poor consignee dreams his claim is going to be paid by the kind railway aware of its liability in the matter. But lo! comes the repudiation "the wagon was sound and water-tight as per test conducted by the Sender and the Railway staff. Vide remarks on RR accepted by Sender. The Railway, having supplied and carried in a water-tight wagon, and having exercised due care and caution, as become good bailees, is not liable for the alleged damage. The causes for the *alleged* damage are thus beyond railway control. Hence your claim is inadmissible." All this seems according to plan, the unwary sender utilised to-"cut the throat" of the consignee; the sender blissfully ignorant of how he has been used by the railway, which has "earned" and pocketted the full freight.

The Destination Railway affirms the wagon was sound, knowing (i) that the Sender is just an ordinary

merchant, a perfect layman so far as wagon tests are concerned, absolutely ignorant of wagon-technique, quite incompetent to make the test, (ii) that the Booking Goods Clerk or Station Master is also equally so, (iii) that *visual test* (test with naked eyes i. e. merely seeing, or blinking with eyes that may be short-sighted or long-sighted) is not test at all for the water-tightness or otherwise of a wagon, (iv) that test with mere naked eyes is not resorted to even by experts of the Mech. Dept. (v) that the proper test lies in placing the wagon under the Engine

We invite an article depicting the other side of the picture.

—Editor

Water-Column, turning the stream of water on to the roof of the wagon, and then after some minutes of flow examining the inside of roof, or the roof test; and then directing the forceful hose-pipe against the walls of the wagon for some minutes and then examining the walls inside of the wagon.

If the wagon was sound, then they repudiate "Wagon was sound. How could the damage occur? Either your goods was sufferring from an inherent vice, or your sender must have loaded bags already in a damaged condition without the notice or knowledge of the staff at the sending station"—thus making a scientifically untrue statement or casting aspersions on, the innocent sender, whose only offence perhaps was that he chose to transport by rail.

If the wagon was not sound, then also it is repudiation, "Knowing that the wagon was not sound, your sender loaded in it, fully aware of the consequences; hence it is regretted that your claim is inadmissible"

Thus, Dear Readers, that is where we Railway-Users stand today in the matter of claims in Republican India under the Gandhijian type of Freedom, we have secured at great pains. Our own kith and kin, are misguided, perverted—let us pray for their betterment and change of heart. In any case, let the Sender beware. Let him not yield to spread the trap for his own consignee. Let him refuse to be a party to the now notorious VISUAL TEST FOR WATER-TIGHTNESS of wagons. Consignees must advise their senders suitably. Consignees should not honour the Hundi and clear the RR from Banks, if RR bears such remarks. The Consignees must guide and control the senders, must protect themselves against the NEW but DANGEROUS INVENTION.

— Suffering Claimant

MACHINE FOR ADHESIVE APPLICATION

A fully automatic solutioning machine for preparing metal components for bonding with rubber has been designed and built in the U.K. The machine will process medium to large batches of small components at fast rates and may be used to give one or two coats of adhesive. It can handle flat, cylindrical or irregular shaped articles up to 5 ins. diameter × 6 ins. high at the rate of eight per minute, or articles 2½ ins. × 6 ins. high at 16 per minute. Both the internal and external surfaces can be coated and work-holders may be used to mask areas to be left uncoated.

Components are loaded onto work-carriers located on trays, immersed in a degreasing tank, and while still warm are fed onto solutioning machine conveyor, passing through a pre-heat oven usually controlled at approximately 80°C.

The trays dwell at the first spray station while the work carriers are raised and rotated as automatic spray guns are traversed to coat the required areas. The work carriers are then returned to the trays which pass through a drying oven onto a return conveyor. This carries them to the second spray station, and through the drying oven to the unloading point.

To conserve floor space and labour the machine has been compactly designed to allow one operator both to load and unload as well as cope with the degreasing if the tank is conveniently situated. Control panels are provided at each spraying station, while all movements are controlled from a centrally positioned camshaft provided with simple adjustments.

THE MAMMOTH CASE

(A Claims Short Story)

By T. A. Narayana Iyer

IT was the South Indian Railway Company days, the year of our Lord 1930 or so. Nanu, the Goods Supervisor, had hardly three years of railway service to his credit; he was one of the new Goods Supervisors, but was widely read in the files of the office and in railway literature generally from the Central Circulating Library. The Goods Supervisor of those days correspond to the Claims Inspector or Commercial Inspector of the present day.

One day Nanu received a telegram from his boss, the General Traffic Manager, "Attend Office ten hours tomorrow," and he attended.

At that time the Traffic Department was being bifurcated into two Departmets—the *Commercial* and the *Transportation* Departments—for the sake of greater efficiency in working. The whole office was very busy, and Nanu was directed to meet the Deputy.

The Deputy told Nanu, "Nanu, I am giving you a mammoth case; you must make your mark on it; then, you rise like the rocket; else you fall like the stick."

"Yes, Sir," assented Nanu.

"Then hear me, "said the Deputy, "An English lady, a dancer, who was giving performances in Bombay, moved into Colombo by rail some days back, via the GIP, MSM, SI and CG Railways. She has put in a claim for Rs. 35,000/-, the value of her missing handbag containing her jewelbox, which she says was one of the 18 articles of luggage, which she had booked at Victoria Terminus for Colombo Fort. Her declaration is that only 17 articles were delivered to her at Colombo, and that the missing one is her handbag. The claim has been made with the Ceylon Govt. Railway, who have telegraphed to all the railways to trace the handbag.

"You can get hold of the file from the office" continued he, "study it carefully, see what the different railways have said. Some inter-railway correspondence, including telegrams, has already taken place. You have to get on that job and trace the handbag. You shall have an Inspector from each of the railways to work in collaboration with you, and make your work on those railways easy."

"Right, Sir, I'll do my very best." said Nanu.

"That isn't what I want," "said the Deputy, "I want the handbag with the jewelbox, or its whereabouts. I want that you succeed in tracing it, so that the credit of it all will go to you and this railway."

"I understand, Sir", affirmed Nanu.

"Right then," winded up the Deputy, "meet me whenever you need to, and keep me informed of the progress from time to time."

Nanu bade good-bye and left the Deputy. He took charge of the file from the office, studied it from wrapper to wrapper critically. Telegraphically he arranged that all the four Inspectors should meet and discuss the lines of action at Madras. The meeting came; all available records of all the railways were scrutinised, and notes taken. That night in the Retiring Room at Madras Egmore Nanu pored all alone over the Delivery Sheets of the Bombay-Madras Mail for the sections Bombay—Raichur, and Raichur—Madras; of the Indo-Ceylon Boat Mail, Madras—Dhanushkoti; of the Steamer Service, Dhanushkoti—Talaimannar; and of the Colombo Mail, Talaimannar—Colombo.

It was a fact that this English Lady had booked 18 articles of luggage at Bombay VT and had taken a receipt therefor. The Delivery Sheet bore the entry correct. But at Raichur when the GIP Guard made over the parcels and luggage to the MSM Guard, the latter had discovered a shortage in the number of articles, which the former could not satisfactorily explain, and the MSM Guard had signed only for a lesser number than due. So, it became definite that the shortage must have taken place between Bombay VT and Raichur, on the GIP itself, who therefore became technically responsible.

This was pointed out by Nanu to the rest at the next day's meeting, who accepted it. "So, this is purely a matter for the GIP," so said the MSM Inspector, and desired to be relieved from his special duty. Nanu met his boss at Madras Central Office the next day, and the MSM Inspector was withdrawn.

Nanu was not for similar action, to get withdrawn from the case; he called together the GIP and CGR Inspectors, and said "I am not for deserting you at this juncture. You, Mr....., are the Inspector of the GIP, which to all appearance is now liable; and so must be feeling the burden of the case. You, Mr. ..... are the Inspector of the CGR; it is on your railway that the claim has been made; and so actually the burden sits tight on your shoulders. I shall stand by you both to the finish; but first I shall work with the GIP Inspector at Bombay and then come to Colombo, if necessary, and work with the CGR Inspector": So saying, Nanu desired the CGR Inspector to get back to Colombo and await him there. Nanu and the GIP Inspector together proceeded to Bombay to unravel this mystery.

On arrival at Bombay Nanu got the GIP Guard in question placed on special duty, and practically lived with him every hour of the day for some days, using one of the retiring rooms at VT for the purpose. The GIP Inspector was with them often, coming there off and on to help and know the current position.

Nanu had a vague notion that the GIP Guard must know something more than he had divulged or had been able to say, in reference to the particular train in question, and his transactions of parcels and luggage on that trip, and that therefore a close association with him, making himself worthy of the Guard's confidence, might make the Guard blurt out some useful information. Nanu also thought that, if the Guard had forgotten certain vital links, the Laws of Psychology, which he had learnt at College, might be put in motion to enable the Guard to remember the past events in all their details, as it was then nearly three months since he worked the train in question.

"Guard", said Nanu, when he got a suitable opportunity, "this case has vexed many officers of the four railways, and it is imperative that you should be of the maximum help in solving this tangle. Technically you become responsible, because of the short-delivery at Raichur, and through you the GIP railway becomes responsible to pay such a heavy claim. But don't get perturbed at that. I give my word to save you from all the evils you are afraid of. Take me as your sincere friend and confide in me all that you have in mind, and try to remember the important events on the fateful journey you made working this Bombay-Madras Mail up to Raichur. Think about it all intensely, after one or two iced drinks, if necessary." Nanu remembered his old granny advising him this trick to remember forgotten things.

"When did you come for duty to the station", continued Nanu. "Whom did you meet en route or on arrival? Were you late or on time? Do you remember the Parcel Clerk, who came to you to make over to you the parcels and luggage? Did you lock the van after you had taken over? Try to remember the very spot on the platform where the van stood, where you stood face to face with the clerk checking and taking over, nay even the very parcel porters and hamals that stood around, etc. etc. the various details of that day. We shall even make a dummy trip to Raichur in imitation of the trip you made. What are the various little acts or major acts that you did that day, or did not do, though usually done? Had you any special friend that day travelling by that train, or travelling in your van, say an Officer or Inspector—the Underguard for instance? By these questions I am just making you think more intensely."

In this manner Nanu worried the Guard with questions and suggestions of multifarious nature, all of which had the effect of making the Guard intensely tax his brains, until at last he began actually to re-live that day again in his imagination.

Nanu had in the meanwhile arranged for himself and the Guard to make a dummy trip from Bombay VT to Raichur in the Brake Van of the Bombay—Madras Mail in order to make the re-living more complete. So Nanu and the Dummy Guard accompanied the real Guard in the van on a Madras Mail, all the three being wide awake up to Raichur, the two Guards acting like one Guard all through—delivering parcels and luggage, taking over parcels and luggage, starting the train, etc.

Dhond was reached in the early hours of the next morning. The breakfast for the Real Guard came to his van. Nanu and the Dummy Guard went to the Refreshment Room for their breakfast.

The breakfast did the trick. The Dummy Guard suddenly jumped from his chair with a loud "Sir, I remember, I seem to remember ..... that English Lady is a rogue, ... is a scoundrel ..... that day she gave me a breakfast in this very Refreshment Room ..... *this very dish* ....."

"What do you mean, Guard?", remonstrated Nanu, his breakfast badly disturbed. "Calm yourself, and tell me coolly. What is the idea now?"

"Sir, that day at VT as I was about to start my train....the first bell had gone....I was about to blow my whistle....when an English lady, young and fair in form and features, came to me near the van almost running and said gasping for breath, 'Guard, my man has mistakenly put my handbag also in your van as luggage; I must have it with me in my first class; do please let me have it back!' Before I could say yes or no, a man had already opened the van, got into it, taken out the handbag and delivered it to her; it was her own man, who had previously loaded the luggage. She ran off to her compartment on the train, breathing lightly a word of thanks. She travelled by my train; yes, master, she was bound to Colombo; she appeared like an actress; her forwardness, forthrightness, etc. all indicating her race and rank. She ordered a breakfast for me too at this very Dhond Refreshment Room. This very dish was served that day also. Now I remember it all very vividly....."

"Guard," interrupted Nanu, "try to remember it still more vividly. Shall we break journey here, and get back to Bombay? Or is it necessary to go up to Raichur?"

"Not necessary, Sir, "rejoined the Guard, "I never met her after that. I am positive she took her handbag herself at VT."

So Nanu and Guard travelled back by a Passenger train to VT, discussing the matter in greater detail.

"Her jewel box is with herself, master. Do help me, master; in the name of God, help me from this devil, who has had no scruple to claim for the box of jewels, which she has with herself."

On arrival at Bombay Nanu wrote out on a GIP letter paper the statement of the Guard, had it signed by him, of course assuring the Guard all the time that nothing serious will happen to him, and that he would see to it. Nanu met the GIP Inspector, and his boss through him, duly apprising them both of the position, and adding that the next scene of his activities would be Colombo, where the English lady was said to be still giving her performances.

That same night Nanu left for Colombo, breaking his journey en route at Madras and Trichinopoly to tell the Railway Chiefs there of the current position, only to find that the English Chiefs in charge did not quite like the idea that an English lady should be indicted. But the claim of Rs. 35,000/- had to be decided; so Nanu was allowed to go his own way.

Nanu arranged telegraphically for the CGR Inspector to meet him on arrival at Colombo Fort. The two took up a Retiring Room and discussed plans of action. The lady was still at Colombo giving performances. The CGR Inspector at Nanu's bidding arranged for two tickets for that night's performance; both of them attended the performance; they saw some jewels on her person. "She seems to have all the jewels with her; or could she have bought them afresh....." such thoughts passed through their minds. Anyway the two decided to meet her and talk out. CGR Inspector was to find out the Hotel where she lived, what time would be most convenient to meet her, etc.

She was living in Galle Face Hotel, a few miles drive from the railway station. Just a little after ten the next morning the two together drove into the Galle Face Hotel, and presented their cards. The servant announced to the Lady, "Two Police Officers", for both of us were in Khaki.

"Come in" rang out a silvery voice. Both walked in, and wished her a serious Good Morning, which she returned with a suave smile.

"We are from the Railway, Madam, in connection with your claim for the handbag. Could you kindly tell us more about your handbag?" began the CGR Inspector just to broach the subject and commence. She began a description of the handbag. its superior leather, its colour, size, etc. how she selected it from out of a dozen in Piccadilly, and so on and so forth. And then commenced a description of the Jewel box that was kept inside it along with the purse, and so on.

"If your purse was inside the lost handbag, Madam", interrupted Nanu, "how did you manage to travel without it all the way to Colombo?"

"O-o-oh, I had loose money outside", said she.

"Have you found your jewels, Madam?" ventured Nanu a bold question.

"No, how can I—them that were inside the handbag entrusted to the railway—what an awkward question?" retorted she with a twitch of her face.

"The jewels you had on last night, we saw you dance with—wherefrom were they?" put in Nanu with a stern demeanour.

"So, you saw my performance last night—did you? How d'you like it?"

"That is beside the question, please answer me straight", snapped in Nanu.

"Oh, they are new ones."

"Madam, will you please think well before you answer" cut in Nanu and gained a superiority complex over her, "if they are new ones, where did you buy them? In Colombo? If so, where are the bills or receipts? How did you find money to buy them? You had the jewels on the very first performance in Colombo. Your purse was inside the handbag."

"Oh, can I not get credit in Colombo? and can I not pay off with each day's performance? I am not so bad as you seem to think, If you will please call on me a few days later, I shall show you the bills and satisfy you on every point you want me to. Let my Secretary come."

CGR Inspector nudged Nanu, implying they will call again later, and that that was enough for the day. But Nanu was not quite willing to leave it at that.

"Right, Madam, we'll call again and you will please keep things ready, as soon as your Secretary comes", volunteered the CGR Inspector and Nanu had simply to acquiesce in.

As Nanu and the Inspector walked down the steps, a burly Sinhalee Porter of the Hotel met them for bakhsheesh. Nanu gave him a rupee and whispered into his ear, "More awaits you if you can send the Secretary of that actress lady to meet me in the Retiring Room, Railway Station, Colombo Fort."

The actress lady was badly perturbed by the brief interview by the "two Police Officers". She was pacing up and down the floor of her room immersed in thoughts when the secretary, who had gone out, came in. She called in the Secretary, and told him all that had transpired during his absence. When he went down next, the burly porter told him that a Police Boss in the Railway Retiring Room at Colombo Fort, who had called to meet Lady Sahib, had desired him to go and meet him urgently.

The Secretary smelt a dead rat in the whole affair and decided to meet Nanu at Colombo Fort station. "The lady need not know it, now" he thought within himself, and managed to find the time.

The Secretary called on Nanu at the latter's room.

"I am here, Sir, according to your bidding," began the Secretary.

"Right you are—you did well in coming over" replied Nanu. "Your lady seems to have got into a mess. She will get out of it unscathed, if she will simply obey me; otherwise God help her. I want you to communicate this to her, before she commits further mistakes and make her mesh complete."

The secretary seemed to have understood it all, and to have realised the serious consequences, and advised Nanu to come to the Hotel the next morning at about eleven.

When the Hotel Clock struck eleven, Nanu sent in his card and was called in. Soon the Secretary also joined.

"Madam, let me plain with you," began Nanu seriously, "it is no use mincing matters. I come to you with all the facts and truth up my sleeve. It was a fact that your 18 articles of luggage including your handbag were, through the mistake of your Bombay servant, brought to VT station and booked and loaded into the Brake van of the Madras Mail. You found out the mistake of the servant; you and the servant hurried to the station, reaching it almost at the last minute; in frantic frenzy you desired of the Guard to let you have the handbag back; your man opened the van, got into it, took out the handbag and delivered it to you on the VT platform itself; you ran off with it to your compartment. You dismissed your servant with ten chips and the train moved off. Your Bombay servant is in custody and has confessed; the Guard also has confessed; you ordered a breakfast for the Guard at Dhond station Refreshment Room. The rest of the story you know. What say you now?"

The lady bit her fingers, looked aghast and might have shrieked at her own fears, but the Sinhalee secretary, stepped up and told her there was a way out, if she was willing,—a graceful way out.

"Yes, Madam, there is a graceful way out" spoke Nanu in firm tones. You must now and here withdraw your claim, stating whatever reasons you like; else the police will take charge of you and all your present jewels, bills, vouchers, etc. And God knows what will happen to you and your South East Asia and Australian programmes. If you agree, I know how to protect you and your honour, and let you go scot-free. The answer is with you now."

"Inspector", she sobbed out, "you are to me like an elder brother: I speak to you as to an elder brother; I am guilty, do please save me, save my honour," and she burst into a flood of tears, catching hold of Nanu's both hands, "promise me that you will save me, that there will be nothing on record to show.....that I will not be molested by the police...."

"Madam, weep not like a child" said Nanu assuringly, "you have erred like a child; you shall be forgiven, I 'll see to it. You now end the affair by a withdrawal letter."

She took out her letter-pad and wrote out under the guidance of both her Secretary and Inspector Nanu:—

To all concerned:—

Re: My claim on the C. G. railway for Rs. 35,000/- dated so and so for the loss of my handbag and jewels.

As I have since got back my handbag with the jewel box, all intact, and as I am satisfied, I beg to withdraw my above claim for Rs. 35,000/- on the Ceylon Govt. Railway dated .....

Galle Face Hotel,

Sd/-

Colombo, Dated..... *Miss So and So*

Witnessed by

Sd/-

Secretary to Miss So and So.

The letter was handed to Inspector Nanu, who secured it in his person, and said "I take no action against you; and that means you are free." Nanu bade her good-bye.

"Inspector", she implored, "have a drink please; twice you have visited me; on neither occasion did I welcome you as I should a good friend and virtual brother; kindly accept my hospitality; and if you have no objection, please accept a small present too, do please."

"No, Madam, thank you very much for having made my work so easy. I cannot take either your drink or your present. Cheerio." And Nanu left.

Lunch over, Nanu appeared himself before the Chief Commercial Manager, C.G.Ry., at Colombo Maradana, and narrated his win. That was a British Officer, who was overcome with joy, and nearly embraced Nanu, but wanted the letter for his file. Nanu said he was in duty bound to deliver it to his Chief at Trichinopoly, who will send it to him.

Coming out of the CCM's room, Nanu met the CGR Inspector, to whom also he narrated the morning's interview and showed him the Letter of Withdrawal. That Inspector of course complimented him, but was sorry he did not get a share of the credit.

Nanu found himself narrating the story to his own Deputy at Trichinopoly two days later. The Deputy danced in ecstasy, and immediately took him to the Chief's room; the chief complimented him warmly more for saving the honour of an English girl than for saving for the Railways a claim of Rs. 35,000/-. Both of them were Englishmen. The letter was taken over by the Chief: to what fate it went God alone knows. A number of demi-officials passed between Trichinopoly and Colombo, Madras and Bombay.

Nothing was heard of the case afterwards, but Nanu was promoted soon after to Grade I Goods Supervisor, getting an additional Rs. 70/- per mensem.

Six months later came a letter from the lady-at-Melbourne to Nanu's Chief requesting the latter to make over the enclosed cheque for Rs. 1000/- on the Chartered Bank to his Inspector that called on her at Colombo, duly filling in the Inspector's name, which on being permitted was accepted.

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What is a CLAIM ?(2)

[The first instalment summarised below appeared in our April Issue—ED.]

SUMMARY OF 1ST INSTALMENT

A Claim is a *written demand* on Carriers for a *specified amount*, whether compensation or refund, indicating the liability of the Carriers. The Demand should be made (in the case of Railways) by REGISTERED POST/ACKNOWLEDGEMENT DUE, on *all* the Railway Administrations involved in the carriage, (General Managers preferably, failing which the Chief Commercial Superintendents) so as to reach them *within 6 months from the Date of Booking*, under Section 77/Ry. Act.

The Postal Acknowledgement (AD-form) duly signed by or for the addressee concerned must be looked for, received, examined on receipt for proper signature and date, and preserved on the file. This AD is the proof that you have served Section 77 Notice on the Railway, which has an important part to play in Lawsuits later on when they become necessary.

If it is not received, press the Postal Authorities for it. Next, look for the Official Acknowledgement of your claim-letter by the Addressee; for it is the rule that every letter must be acknowledged by the Railway; the more so REGISTERED Letters. If the Official acknowledgement is not received within a reasonable time, say one month, you must remind the Railway concerned and get it.

If your Consignment has travelled over more than one Railway, then *Section 77 Notice of Claim must be served on each and every Railway Administration involved.* There may be the Booking Railway A, the Destination or Delivering Railway D, and two intermediate Railways B and C,—all of which 4 Railways have carried your consignment—Section 77 Notice must be separately issued to and served on each one of them.

Most Railways in India have been nationalised (taken over by the State for state management), but there are still a few minor ones under company management. It is absolutely essential that separate Section 77 Notice should be served on the Company-managed Railway, if involved.

The dispute is still going on *whether* it is enough if Section 77 Notice be served on one State Railway General Manager, seeing that all State Railways are one, coming under the Govt. of India *or* different State Railways require separate Notices. One High Court held that Notice on one of the State Railways, say the Delivering Railway, was enough, but other High Courts have taken the other view. So, to be on the safe side, let us act as in the Old Company Days, by serving separate 77 Notices on each Railway's General Manager (representing the Union of India).

A suit was filed in a Dist. Munsif Court for Damage to a Consignment by water—Consignment from a station on Western Railway to a station on the Southern Railway, carried via the Central Railway. The Dist. Munsif said in his judgement :—

> "The plaintiff has admitted that Notices under Section 77 were not sent to the Western and Central Railways, who are the 1st and 2nd Defendants. Notices under Sec. 77 of the Railway Act have to be sent to each Railway Administration before a suit is filed. *The Statutory Notice not having been sent to the 1st and 2nd Defendants, the suit is not maintainable against both of them.*"

Hence the suit was tried only against the 3rd Defendant. It failed for the Plaintiff, who appealed to the District Court. The Sub-Judge declared in his judgement :—

> "As regards the Lower Court's finding on the Issue (Section 77 of Rly. Act) it is now apparent from the Bench Decision in *P. R. Narayanaswami Iyer versus Union of India (by General Manager, Southern Railway)* reported in 1959 (2) M. L. J. page 479 that *no separate Notice need be given in respect of each of the Railways.* Their Lordships have dealt at great length with the scope of Section 77 and also Section 80 of the Indian Railways Act. This position was conceded by the learned Advocate for the Defendants, and so *the finding of the Lower Court on this Issue has to be reversed. The Suit is therefore maintainable against Defendants 1 and 2 also.*"

Several instances can be quoted on the divergent opinions on the Section 77. To be always on the safe side, it is therefore advisable to issue Section 77 Notice on each Railway concerned at the start itself.

In one of the future issues of the *Supplement* it is hoped there will be a Special Article on Section 77 as well as on other more important Sections concerning Claims.

SECTION 80, CIVIL PROCEDURE CODE

According to this Section, you must give 2 months' clear notice to any Government Department before you lodge a Suit against it. This may be called the SUIT NOTICE. You have the Suit Notice even when one private individual brings a suit against another private individual; that notice period is what the plaintiff stipulates. But when the Govt. is sued against, 2 clear months or 60 days clear notice must be given to the Administration or Department sued against.

The Claimant has the right to issue this Notice himself; but as this Notice must set out in detail all contentions of the coming Suit, it would be advisable for a Lawyer to issue it, preferably the Lawyer or Advocate who is likely to conduct your suit.

Some experienced lawyers in fact make out the Plaint itself, and send a copy of the same with a covering letter offering the 2 months time for settlement and satisfaction of his client, failing which a suit would be filed in Court as per Plaint-Copy enclosed.

The 2 months time has been deemed by Legislators as sufficient for big administrations to consider even big questions and give their final considered reply to the proposed plaint.

This Section 80 Notice must also be served under REGISTERED POST/AD on the GENERAL MANAGER (Representing the Union of India) of *each Railway* Administration involved. The AD-acknowledgement and Official acknowledgment in this case also must be received and preserved.

(Continued on page 32)

SECTION 80 OF THE INDIAN RAILWAYS ACT

This Section tells you against which of the Railways concerned you may sue. The Section reads :—

> "SUITS FOR COMPENSATION FOR INJURY TO THROUGH-BOOKED TRAFFIC.—Notwithstanding anything in any agreement purporting to limit the liability of a railway administration with respect to traffic while on the railway of another administration, *a suit for compensation* for loss of the life of, or personal injury to, a passenger, or for loss, destruction or deterioration of animals or goods, where the passenger was, or the animals or goods were, booked through over the railways of two or more railways administrations, *may be brought either against the (booking) railway* administration, from which the passenger obtained his pass or purchased his ticket, or to which the animals or goods were delivered by Consignor thereof, as the case may be, *or against the railway administration, on whose railway the loss, injury, destruction or deterioration occurred.*"

The meaning will be clear by reading the *Italicized* portions only. You can sue either the *Booking Railway* or the *Injuring Railway*, that is if you happen to know for certain which railway caused the injury or loss. But, as you have no chance or means to know it, and because you must be on the safe side, it is advisable to make every railway involved a Defendant. The section does not prohibit that. The course of the suit will disclose who is the injuring railway.

TIME LIMITS FOR SUITS AGAINST RAILWAYS

Suits against Railways are governed by the time-limits laid down in Articles 30 and 31 of the Limitation Act, extracted below :—

Art. 30—Against a Carrier for compensation for losing or injuring the goods.	ONE YEAR from the date the loss or injury occurs
Art. 31—Against a Carrier for compensation for	

ADVICES TO CLAIMANTS

1. RAILWAY-RECEIPT REGISTER

THE Railway Receipt is an important document in Claims. A *true and complete* copy of the same must be kept by the merchants, both the Consignor and the Consignee. The remarks entered in the RR are important for claims compensation, as much as the other particulars are important for Claims Refunds.

Merchants may keep loose or bound printed Receipt Forms, wherein true and complete copies will be made and kept, as the original Rail Receipt is surrendered to the Railway at the time of Delivery, and when once surrendered it is impossible to get a copy.

Some merchants keep a Register of sheets with suitable headings, in which each line forms a copy of the RR. This register does not enable a complete copy made with all the details in the RR, and hence has not been found useful. The Register must be improved with more columns and sufficient space for all details in the RR.

Some merchants take out photo-copies of both sides of the RR—one photo of the face and another photo of the backside. This is the best way of doing it. Consignors themselves take the photo copies, and whilst the original RR is sent through the Bank for collection, photo-copies are sent by post to the consignees, so that the consignees can examine the RR beforehand.

The details nowadays omitted by merchants in their Register are often found to be of the highest importance in dealing with claims, such as *L and U by Owner*, *Railway Risk*, *Owner's Risk*, *Bagging Single and new*, *Goods fresh/damp*, *Wagon WT or NWT*, *Wagon visually tested jointly and found WT*, etc. The buying merchant must know what kind of an RR he is buying. As these remarks make claims somewhat difficult, and some times impossible, caution is required in buying consignments, judging by RR.

In any case it is highly important that the consignee should maintain a true and complete copy of the RR in his possession.

2. HAND BOOK OF CLEARING AND FORWARDING AGENT

Regular importers and exporters by rail usually have their own *Clearing and Forwarding agents*, who are known as *Brokers*, or *Carting Agents*, or *Hamals* in different parts of India. Whether the clearing and forwarding is done by the merchant-owner himself or by his agent, it is useful and advisable to keep a DIARY or Record of each transaction of clearing. It is impossible to carry in one's memory all details of all transactions of all days. The Diary is an essential and reliable Record and Remembrancer. As the Diary will be in chronological (time and date) order, it becomes good proof or evidence in Courts sometimes. Further it gives a clear and true picture of the work done by the Agent, and a true picture of the transaction (i) as between the Merchant and the Agent, as also (ii) of the transaction as between the Agent/Merchant and the Railway. As it must record every detail of the transaction (Booking or Delivery), it becomes precious for claims-dealing.

One Hand Book may be maintained for *Forwarding* (Outward Goods despatched) and another for *Clearing* (Inward Goods received), taken delivery of, and transported from railhead to godowns.

In it will be entered every transaction with the railway for and on behalf of the principal, in the order of time and date. The entry for each transaction must contain (i) reference to the RR or Invoice, or details of the consignment, (ii) full details of the despatch or delivery effected. and (iii) full details of the amounts collected, paid, expenses met, commission appropriated, etc.

This Hand Book also may be in Tabular Form with headings and numbers for the columns. It must have a fairly big Remarks Column, in which the Agent must enter all special features of the case, such as the disputes with the Railway on overcharges, undercharges, shortages, damages, wharfages, demurrages, etc. with all the essential facts and figures pertaining to wagons, times, seal cards, etc. No detail should be omitted, for we do not know which detail will become a saving or helping factor, when claims arise.

The Hand Books must be available for reference by the Merchant (Principal) for his accounts, claims with the railway, and such other purposes.

3. DETAILS THAT MUST BE FOUND IN THE HAND BOOKS

- Remarks made in the Railway's Books about Shortages, Damages, etc.
- Particulars of the wagons in which goods were despatched or received.
- Particulars of the Seal Cards or Side Labels with which they arrived.
- Cash Receipt details—freight, overcharge, undercharge, wharfage, demurrage, with brief reasons, how arrived at, etc.
- In short all the details that are not to be found in the RR.
- Monetary accounts as between Principal and Agent.
- Documents delivered to Principal—such as RR, Cash Receipt, Certificate of Damage/Shortage, Partial Delivery Certificate, True copy of remarks made, etc.

4. PARTIAL DELIVERY OF CONSIGNMENT

When the full consignment as per the RR is not delivered by the Railway, full details of the part received as well as full details of the part not received must be recorded with the Railway, so that future dispute may be averted. Also obtain from the Railway the *Partial Delivery Certificate*, recording therein the above details, to know which the Original Beejuck or Puttial may have to be produced.

5. PARTIAL SHORTAGES IN PACKAGES

A joint examination must be made and an inventory of the contents should be made out and signed. A list of the missing items also should be made out. When certain packages are delivered in a tampered condition, full particulars of tamperage also must be recorded in the Railway's Books. There must be no room for doubt or ambiguity. Signs of tamperage, such as cuts, tears, restitches, hook-holes, reweight as compared with weight of sound packages, whether there is empty space inside, how much of it, or if foreign matter is thrust in, etc. full description enabling correct inference should be recorded jointly. Disputes must be settled then and there, and entries made prior to removal of goods. If you write only the word "loose", the railway will repudiate the claim, saying "mere looseness does not prove anything against the railway—the seller may have short-packed—etc." Signs or proof of tamperage must be given.

6. BREAKAGE

Fragile goods, such as Machinery, Instruments, etc. must be minutely examined before delivery for possible breakage, or cracks or fractures, if necessary with the assistance of experts in the particular line.

7. CURRENT MARKET RATE REGISTER

It is also advisable to maintain a Current Market Rate Register of the commodities you deal in. Many merchants receive telegrams quoting the day to day market rates at sources. These may be posted in a register. In columns in the same page, the ruling rate for the day in your own market may also be posted. This will be very helpful on future occasions, when claims with the railway or other merchants have to be settled. Suitable columns may be opened for each source, for each commodity and quality, for the successive dates.—*(to be continued)*

(Continued from page 31)

non-delivery of, or delay in delivering goods. — ONE YEAR from the date the goods ought to be delivered.

For all other Claims (normally)—such as Overcharges, Wharfage, Demurrage, all months paid under a mistake (committed by either party). — THREE YEARS from the date of booking.

The Consignee has no means of knowing the date of the loss or injury. The railways, having actually carried the goods, are in a privileged position, and the information is within their knowledge. The railways often say they are not bound to deliver within any specified time. Often they also do not furnish details or information relating to your consignment and its transit. Hence this matter requires to be dealt with elaborately in another issue of this Supplement.

(To be continued)

Some Fundamentals—Defined or Explained (2)

8. THE Railway has become part and parcel of our life; almost every day we have to deal with it more or less intimately; we are either passengers by the railway, or we carry our property through the railway; hence we must know some of the fundamentals of railway working, our obligations by the railways, as well as the railway's obligations by the public. An elementary or rudimentary knowledge of the provisions of the Indian Railways Act, or at least of its principal sections, is essential for the average man; the more so, for every regular and frequent user of the railways, such as the Merchant, the Industrialist, and the like; much more so for the railway worker, who of course has to know it in greater detail.

The INDIAN RAILWAYS ACT, 1890, consists of 10 Chapters with the following Headings :—

Chapter	Sections	Contents.
I	1 — 3	Preliminary.
II	4 — 6	Inspection of Railways (by Govt).
III	7 — 15	Construction and Maintenance of Works.
IV	16 — 25	Opening of Railways.
V	26 — 33	Railway Commissions and *Traffic facilities.*
	34 — 46	*Railway Rates Tribunal.*
VI	.....	Working of Railways.
	47 — 52	General
	53 — 61	*Carriage of Property.*
	62 — 71	*Carriage of Passengers.*
VI—A	71A— 71H	Limitation of Employment of Railway Servants.
VII	72 — 82	*Responsibility of Railway Administrations as Carriers.*
VIII	83 — 86	Accidents.
IX	.....	Penalties and Offences.
	87 — 98	Forfeitures by Railways.
	99 —105	Offences by Railway Servants.
	106 —130	*Other Offences.*
	131 —134	Procedure.
X	135 —150	Supplemental Provisions.

The First Schedule.—Limits of Ry. Responsibility.

The Second Schedule.—Articles to be declared and insured.

We, who are concerned with this Claims Supplement, are most concerned only with those parts *in italics* above. The more important of these sections will be dealt with in sufficient detail elsewhere in this Supplement. Regular Readers of this Supplement are sure to become well-equipped in the knowlege of their rights and duties by the Railway. It is advisable for the more frequent day-to-day users of the railway to keep a copy of the Indian Railways Act (latest edition) for reference in case of doubts.

A railway administration shall afford all reasonable facilities for the receiving, forwarding and delivering of traffic upon and from the several railways belonging to or worked by it.

The Railway is bound to give equal facilities for all those desirous of consigning goods or animals or desiring to travel by it. No undue or unreasonable preference or advantage to any particular person or any particular description of traffic may be given. Nor subject any particular person or any particular description of traffic to any undue or unreasonable prejudice or disadvantage. The equal facilities referred to above are (i) Proper waiting Accommodation for passengers, (ii) Covered Accommodation for goods and animals, (iii) Platforms for getting into and out of trains, and for loading and unloading, (iv) Drinking Water, (v) Timely informations regarding time and place of arrival and departure of trains, and the like. Special facilities, such as Mechanical Appliances like lifts, cranes, ambulance-chairs, Retiring Rooms, Refreshments, etc. may be provided on payment of special charges.

Though as a Common Carrier the railway is bound to accept and carry all persons and goods offering or tendered for despatch by any person without favouring one over another, at the advertised cost of carriage (freight or fare) yet a railway can refuse to carry certain categories of traffic, e. g.

1. Persons afflicted with infectious or contagious diseases.
2. Goods of the kind or quality or dimensions the carrier has not held himself ready to carry, except under special previous arrangements.
3. Goods not tendered within the advertised business hours.
4. Goods fraught with risks and dangers.
5. Consignor unwilling to comply with conditions of booking.
6. Goods injuncted by Courts.
7. Goods, when traffic is suspended owing to Nature's fury or Rebellion, Riots, etc. for causes beyond the control of the railways.

The Railway is not liable for loss, damage or destruction to goods or animals left on railway premises, free of charge, waiting to be booked or waiting after delivery. Such goods lie at the sole risk of the owner. The liability of the railway as carrier, strictly speaking, commences only from the moment the goods are delivered to the railway for carriage and are accepted by it as such and with that intent, and ceases with delivery to the consignee.

(to be continued)

You are invited

We invite you to contribute articles for publication in our ***Magazine*** or in our ***Claims Supplement.*** Matters of general transport interest will go into the ***Magazine,*** and matters of special interest on claims will go into our ***Claims Supplement.*** Articles of merit from a constructive angle are requested.

You are also invited to write ***Letters to the Editor*** for our ***Correspondence Column.***

You are also invited to use the ***Question Box;*** your questions will be answered through the columns of our ***Supplement,*** so that others also like you may benefit.

You are also invited to advertise your ***Goods*** and ***Services*** in our pages and get contact with people you want.

EDITOR

LETTERS TO THE EDITOR

Re : Overcharges and Undercharges

Of late Overcharges are not being automatically refunded or lessed from the Freight entered on the Rail Receipt at the time of delivery, as required to be done under the present rules. We, merchants are often unaware of having been overcharged ; it escapes our notice and attention, as we are often ignorant of *Rating and Routing*. (Incidentally we request that one chapter be devoted in your *Supplement* for *Rating and Routing* between principal stations in India for the principal commodities). When we do become aware of Overcharges existing, either we have to forego it owing to time-bar or have to claim and get it. More often it lapses to the Railway because claims are not promptly honoured and paid, as the Steamer Companies and Lorry companies do. We request through your columns that the Railways improve the conditions regarding refund of overcharges.

Undercharges are more readily collected at the time of delivery; else delivery is refused. Sometimes the undercharges collected really become overcharges owing to wrong collection by the staff, which we have to claim upon the railway. It takes such a long time and endless correspondence and reminders to get the overcharges refunded, that at one stage we become fed up with issuing reminders and drop off correspondence ; after some silence, if we renew the correspondence, the Railway accuses us of lapses or latches etc. and say they cannot re-open the case after a long indifference by us, and deny. "Claimants are advised to keep reminding the Railways for settlement of their claims at least once in three months drawing the special attention of the Administration in cases of abnormal delay "—is their own advice.

So much so, it makes us think sometimes whether it is not advisable to have the question of undercharges settled first and then the delivery be effected ; but then the railway will insist on wharfage being paid unnecessarily. All these evils thwart normal business and are consequent upon irregular rating and routing, and delaying refund of excess freight collected. We hope the Railways will overhaul their machinery for the levying of correct freight charges, and prompt refund of overcharges.

BRITISH RAILWAYS' SOLICITUDE FOR ITS CUSTOMERS

(Hindu of 27—4—1961)

Mr. Henry Wessil thought he had missed the last train home from Liverpool Street station. He was annoyed, because the train bringing him to Liverpool Street, in plenty of time to catch the connection home, had been delayed. It was not his fault—he was left stranded there at midnight.

The British Railways sympathised too. "Be on Platform 4 at 12—20, and there'll be a train" he was told by an official.

Dead on time, a three-coach train with a crew of three, rolled into the platform to take Mr. Wessil home to Harlow. The journey was covered in 31 minutes, 14 minutes quicker than the scheduled time, and Harlow station was kept open with the lights on until his arrival.

The British Railway's comment about Mr. Wessil's "late night special" is : "We do have our passengers' interests at heart, you see."

—Nafen

Our Railways also must have "passengers' interests AT HEART." We also must take more interest in our railways. —Ed.

*** *** ***

Powers of Government Officers must be exercised within limits—Remarks by Madras High Court

(HINDU of 27—4—1961)

"Democracy cannot function, if the Governmental Agencies do not realise that, where they act in exercise of any statutory power, they must strictly keep within the bounds of that power, and respect the rights of the citizen to the extent compatible with the exercise of such powers."

IN YOUR OWN INTERESTS

HOW TO PURCHASE TICKETS

Buy your tickets only at the proper place. The authorised offices are (i) the Booking offices at the railway stations, (ii) the Town or City Booking Offices, (iii) the Out-agencies, (iv) Travel Agents. Never buy tickets from any other source as that may lead you to trouble. Please note that tickets are not transferable.

Buy your tickets in the proper time. You can avoid unnecessary excitement and trouble if you come to the station in good time, that is at least half an hour before the scheduled departure of your train. The Time Tables of the Railway are on sale at Booking Offices and Bookstalls.

Buy your tickets in the proper manner. Queue up at the Booking Window and you can get your ticket easier and quicker than by crowding at the counter.

By handing in the ***exact fare in good coins or currency*** you get the ticket easier and quicker, and save for yourself and the Booking Clerk time and trouble.

Check up your ticket and money before leaving the counter and draw the attention of the Booking Clerk to any discrepancy you may notice.

(Inserted in the interests of Travelling Public)

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