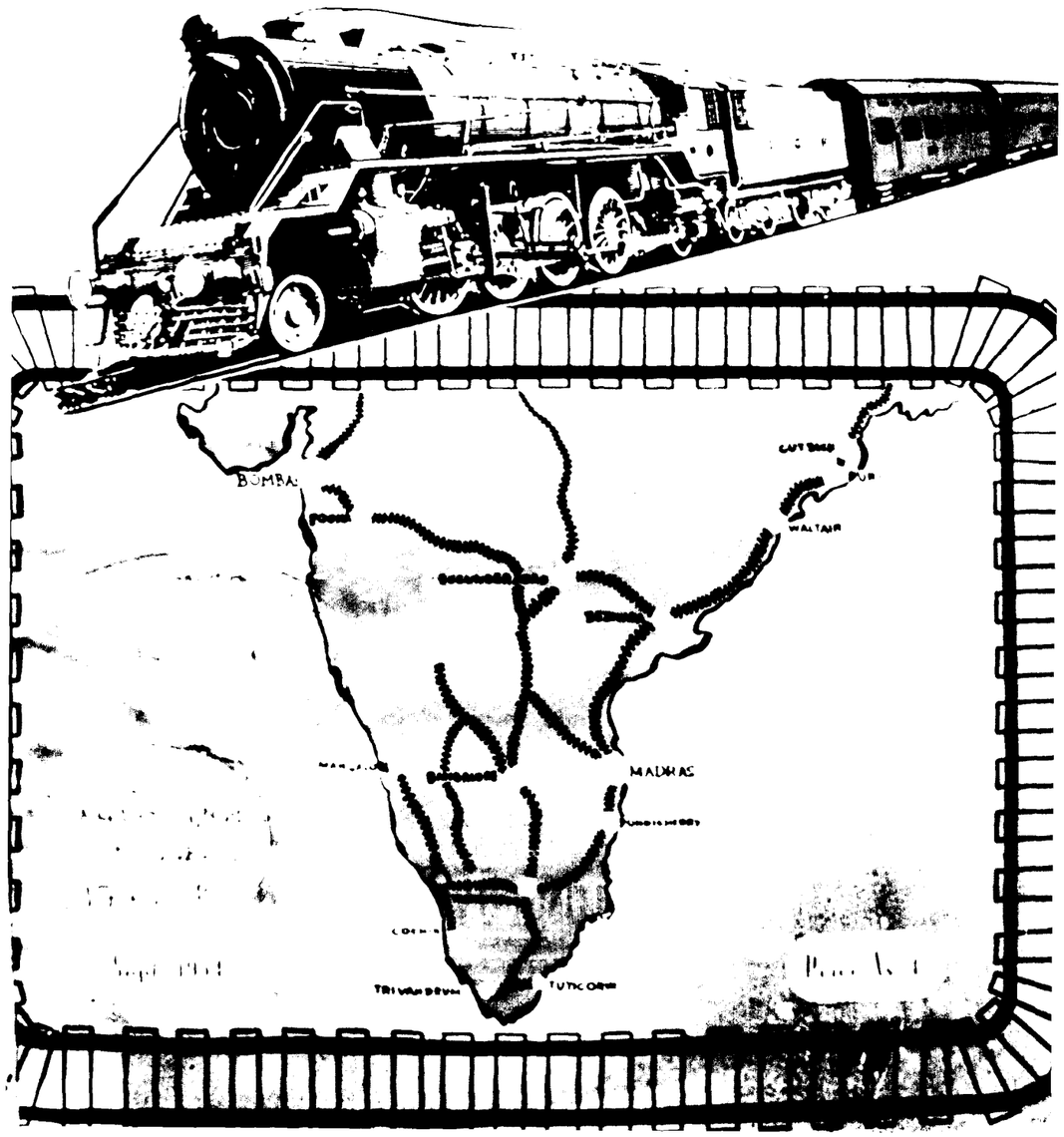
SOUTHERN RAILWAYS

Magazine



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SOUTHERN RAILWAYS MAGAZINE

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August 25 celebrated as Protest day by the Railwaymen of Southern Railway

THE Southern Railway Employees' union the biggest organised association of the Railwaymen of the Southern Railway has begun to move like a collosus. Its hundreds of branches met in thousands on the 25th of August 1954, to voice its emphatic protest at the attitude of the Railway administration in treating railwaymen with contempt. The one notable feature of this meeting was a large number of middleciass employees who were hitherto keeping away have joined in large numbers to demonstrate their feelings. In the words of the "LABOUR TIMES" the organ of the Southern Railway Employees Union :—

"The decision of the Union Executive to observe a "Protest" demonstration is inescapable confronted with continued indifference (negligence) on the part of the administration, the union had often the unenviable position of intimating branches and through them the masses, that a particular case was not successful, notwithstanding the merit. The Railwaymen's Federation and the Union have often brought this unhappy attitude to the notice of the authorities. Attention has also been drawn through these columns and our Correspondents have added their note of disgust in the readers forum.

If labour relationship on Railways should be maintained if not improved, a complete change of outlook should dawn amongst the officers".

What are the grievances that remain unredressed? Number one is the Permanent Negotiating Machinery which was usured at much fanfare at three levels was a remarkable failure in that the General Manager himself had only one meeting in a year while actually four were due. The District Officers were not slow to follow this example.

The Seniority Committee which promised to bring out the seniority list within a short time is prolonging its labour indefinitely and one does not know when it will finalise its list.

Complaints of under payment, non-payment and delayed payment all offences under the Payment of Wages Act were not heeded.

The protest day has focussed the attention of the railway administration and the Railway Board of the need to reorientate their attitude towards Railway Labour. But unfortunately there is confusion at the level of the Railway Board unless this is set right the future appears gloomy. Now that our beloved Prime Minister is free to devote more attention to our local problems we hope he will take steps to rectify this. India is on the March. We can ill-afford to allow the organised labour in the railways to feel sulky at this time.

NOTES AND COMMENTS

CHANGES IN THE RAILWAY BOARD

A correspondent reports that the seventh year of our Independence has brought some changes in the Railway Board which is responsible for the present muddle in the Railways. The Railwaymen who toil day and night are not satisfied while the Railway users as represented by the National Railway Users Council passed some stringent criticisms on the working of the Railways. It appears that our Prime Minister Nehru who has now ample time to look into the local affairs of the country has decided to change the Ministership of the Railways. It seems fairly certain that Rafi Ahmed Kidwai who successfully tackled the Food and Agricultural Ministry and who is without a portfolio is tipped for the Railway Ministry. In the Railway Board itself lot of changes are predicted. The Chairman Shri F. C. Badhwar is to retire shortly and Shri P. C. Mukerjee General Manager, Eastern Railway is to occupy the post. Shri Vasist, Member Transportation who has just returned from Russia is to go as General Manager, Western Railway while Shri K. B. Mathur, General Manager, Northern Railway is to take his place. Shri V. Nilakantan, Member Staff who is responsible for the welfare of ten lakhs of railwaymen is to go as General Manager, Central Railway but he prefers to go as the Chairman, Union Public Service Commission. Shri K. P. Mushran now General Manager, Western Railway is to take his place.

The new team with a new Minister is expected to make our Railways, one of the best in the whole of South-East Asia as the best. To have an idea of the changes, one must see the new directive issued by the Member Transportation in regard to improvement of the existing transport. In his opinion if we increase our loadings by at least 7% more on the Broad Gauge and 10% on the Metre Gauge the present demands can be met fairly well. To that extent he has given various suggestions and has appealed to the General Managers to be more patriotic in solving the issues.

But we feel that unless the organisation on the individual railways is perfected and steamlined these orders from the top will be ineffective. Take for instance the abnormal delay caused in filling up the vacancy of Chief Operating Superintendent caused on the death of Shri S. R. Sarma. Even an acting man has not been chosen so far. This is highly demoralising and naturally affects the ranks. We hope the new team will be usured soon and the stagnation on the Railways is cleared for the benefit of the people at large including the Railwaymen.

INVESTIGATION BY RAILWAY EFFICIENCY BUREAU

The Railways Efficiency Bureau has carried out extensive investigation on almost all the zonal railways of several operational and organisational problems. Among them are the working of goods transhipment at various stations involving change of gauge and deterioration in the speed of goods trains generally.

During the course of their investigation on different railways, the Bureau's experts have made a number of useful suggestions for implementation by the Railways. Several of these suggestions have already been put into effect.

The Bureau which is headed by a Director, assisted by a traffic and a mechanical engineering expert, was set up in order to investigate and eliminate outmoded and costly practices and to evolve suitable techniques for efficiency measurements in various fields of railway operation and management.

Shri Lal Bahadur Shastri in his budget speech had said that the Bureau would study operation, workshop, marshalling yard and other statistics with the object of improving progressively efficiency and economy on the Indian Railways.

It is an expert unit to help the Railway Board and Railway Minister in judging the economy of railway operation and reviewing results.

Any deterioration in any important aspect of railway operation immediately comes under the review of this specialised organisation. The object generally is to measure productivity in the various fields of railway activity bearing on layout and equipment, organisation of work and human factors and focus attention on adverse trends so that timely and effective steps can be taken to arrest a decline and improve performance.

The Bureau is functioning as a roving commission collecting, sifting and studying statistics and making on-the-spot inquiries in consultation with railway officers responsible for the section. It makes suggestions for adoption of practical and quick measures on the spot and passes them on immediately to the railway for implementation. This is a continuous process eliminating any time lag between an investigation and application of its results.

TWENTY four light British locomotives built by the Vulcan Foundry Company, were delivered recently to the Persian Railways at the port of Chapour in the Persian Gulf. They were ordered as far back as four years ago but delivery was delayed due to the break in diplomatic relations between Britain and Persia. Persian railways and rolling stock are in a very bad condition which is stated to be due to three years of the Mussadeq regime. 215,000 tons of railway equipment and stores are to be bought abroad. In consequence of this decision, the United Steel Companies Ltd., acting for British makers of permanent way materials, have signed a £5 million contract with the Seven Year plan organisation in Persia. The contract is the largest single order of its type secured by British Manufacturers in Persia since the war. It calls for delivery, over a period of three years, of 100,000 tons of rails and 4,000 tons of fishplates with fishbolts, washers, and turnouts. The Persian authorities are not only planning to rehabilitate their main line from the Persian Gulf to the Caspian Sea but also to complete a branch line to Rabriz and to build a long extension to Meshed.

The importance of soft water for the proper running of locomotives is well known in India but India is not the only country which has this trouble. Ten trains on three suburban lines from Liverpool Street (Eastern Region, British Railways) broke down on June 14th badly affecting the rush hour period. It was discovered that the engines had been filled with unsoftened water owing to a fault at a water softening plant. The hard water affected the injector pumps supplying water from the locomotive tanks to the boilers. Officials diverted trains to avoid the blocked lines.

On June 14th, British Railways restored one of its crack trains. This was the Bristolian, the 8. 45 a. m. non-stop express from Paddington to Bristol which completed the 118¼ miles in 100 minutes on that day. The new summer schedule for the run is 105 minutes, an average speed of 67.6 m. p. h. The Western Region claim that this is now the fastest scheduled run in the U. K. The locomotive, was the King George V which pioneered the run in 1935. More and more faster trains are in the railway summer timetable. In the London Midland region along 30 new expresses have been introduced. More trains and acceleration of existing ones, are also the feature of other regions. Every Friday, the famous Devon Belle leaves Waterloo at 4.40 p. m. instead of at noon. On Saturdays, south coast seaside resorts are being linked to towns in the Midlands and the North by trains which by-pass London. Travellers to the continent have been given a Southern summer bounty by Saturday services from Victoria to Dover and Ostend and a Sunday service to the Channel Islands. Hourly interval trains are being run by the Eastern region to Clacton, Walton-on-the Naze and Frinton and there are extra trains to East coast resorts like Felixstowe and Yarmouth.

On June 28th British Railways new Elizabethan train, hauled by the streamlined Pacific Class engine "*Union of South Africa*, made a record non-stop run from Edinburgh to Kings Cross. It completed the 393 miles in 6 hours 25 minutes (385 minutes) 5 minutes under schedule. The Elizabethan, with the engine *Golden Fleece* did the journey from Kings Cross to Edinburgh also in the record time of 6 hours 27 minutes, knocking three minutes off the schedule. The previous record set up by the Elizabethan on July 1st last year was 6 hours 45 minutes. The average speed on the journey to Edinburgh on June 28th was 60.9 m. p. h. and that on the run to Kings Cross 61.2. Over long stretches the trains attained over 90 m. p. h. On the run to Edinburgh, the locomotive, which weighs 167 tons consumed 6½ tons of coal and 14,000 gallons of water. Water was taken on from water troughs at speed on six occasions.

Although Coronation year attracted a record number of American visitors to Britain, there may be an even greater number this year when records are completed. Ships and planes bound for Britain were booked to

capacity. The Queen Mary and other liners have left New York leaving last minute passengers waiting on the quay hoping to get a pier head jump!

The Swansea and Mumbles Railway is 150 years old this summer. It celebrated its 150th Birthday on June 29. It was once called the Swansea and Oystermouth Railway but that was a very long time ago when the train was drawn by a horse. Following this experiments with sailing were carried out, sails being attached to vehicles. Thereafter passengers travelled by petrol, battery electric, diesel and now overhead electric. These varying forms of traction constituted a record. It is the oldest passenger carrying railway in the world for it carried passengers before the Stockton & Darlington line was opened. The railway is still flourishing and is run by private enterprise. It charges lower fares than British Railways but shows a profit charging 1½d per mile against British Railways 1¾d. per mile. Last year it made a profit of some £ 5,000, the year before £ 9,750 and the year before that about £ 10,000. Last year this little railway, which serves a resident population of about 160,000 persons, carried no fewer than 3,153,000 passengers. The first train is at 4.40 a. m. while the last train reaches Swansea at midnight. Trains run every eight minutes at peak hours at an average speed of 16 m. p. h. running approximately 20 hours a day, and carrying, at full capacity, 1,600 people an hour, in each direction. The railway is now worked by 106 seat double deck electric cars, the largest vehicles of their type in the country, built in 1928 by the Brush Electrical Engineering Co. Ltd., with British Thomson Houston power equipment. Even in its administration the Mumbles Railway is unusual; it is claimed to be the only one in the country controlled by a bus company—the South Wales Transport Co. Ltd.

Recently permission has been given for the use of Helicopters over the Central London area utilising the south bank site on the River Thames where the Festival of Britain was held. Helicopters may yet come into their own so far as railway work is concerned as witnessed by their use in a flooded area near Langtry, Texas. (U. S. A.). Food and water was flown by military helicopters to 260 stranded passengers aboard the Southern Pacific Railroads streamlined *Sunset Limited* which was isolated by bridges and track being washed away in an extensive flood. Floods made it impossible to reach the train by road. It carries food only sufficient for two meals.

Prompt action by a lorry driver prevented what may have been a nasty accident on a steep hill near Exeter. Two 15 ton British Road services lorries, each towing 8 ton trailors loaded with sugar, were climbing up the 1 in 8 Dunsford Hill when the tow bar coupling on the first lorry parted. The trailer ran down the hill for 124 feet. The driver of the second lorry could have passed the runaway trailer on its near side but he knew that there were vehicles following behind including a petrol tanker thereby stopping it. Although his cab was smashed, Leonard Maurice Murray, the driver was not injured. The driver of the petrol tanker seeing the trailer running away, reversed his vehicle downhill. After temporary repairs to his lorry, Murray continued his journey to Tavistock. Murray's action was praised by the Chief Constable of Exeter.

Although badly burned by the blow back from the fire box, the driver and fireman of a train from Faversham to Chatham stopped the train at a singnal box, told the signalman, then drove the train on to Sittingborne. A relief crew was standing by when the train pulled into the station and passengers were delayed only three minutes. The driver and fireman received their injuries just before reaching Sittingbourne the cab being filled with red hot ashes.

At Plumstead railway station a horse and cart fell a distance of 40 feet on to the Up platform just as a train for Charing Cross was drawing out. A moment or so before there was over a hundred passengers standing on the spot and fortunately they had all got into the train. The horse was pulling a Royal Arsenal Co-Operative Society milk cart and apparently it became frightened for no apparent reason whatever. It bolted and ran the length of a street with the driver unable to control it. It then crashed through a fence 16 feet high beside a sheer drop on to the platform below. The horse was instantly killed. The platform was littered with broken glass from the smashed milk bottles and pieces of the cart which was completely smashed. The driver was uninjured except for shock.

London is to have a new post office building which will cost £7,000,000. This building will be of five storeys, with basements and underground garages and will accommodate a staff of 2,000 housing the new Western district letter and sorting office, it will replace the present inadequate and out of date post office buildings in Wimpole Street and Bird Street, Marylebone. These cannot be enlarged to handle the increased amount of mail for West End Stores and business houses. This work will entail the diversion of about 100 yards of the Post Office Underground Railway and the construction of another station under the new building. This railway, which is 6½ miles long, runs from Paddington in the west to the Eastern district post office at Whitechapel. There are six intermediate stations. It is used for transferring mail bags from one

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SIGNALLING AND INTERLOCKING

By H. C. Towers, M. I. E. E., M. I. R. S. E., M. Inst. T.

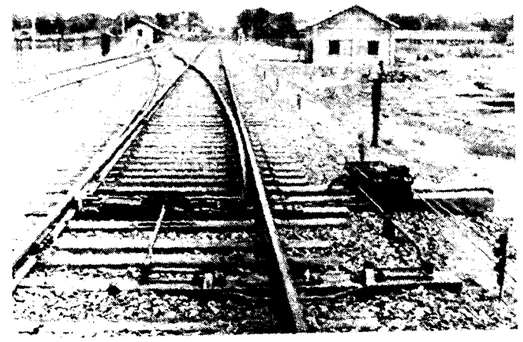
Chapter 19. Power operation of points.

IT was explained in Chapter I that the distance over which manually worked points can be operated is controlled by legislation. Even with the most carefully installed point equipment, a considerable load is imposed on the lever in the signal cabin by the weight of point rodding, the resistance of switches and the frictional losses of all the attendant connections. It will be understood that in a busy cabin, the speed of point operation will not be constant and the signalman's fatigue will be proportional to the number of movements performed during his term of duty.

These considerations and the ever increasing necessity to be able to work points over an unlimited distance, led to experiments being made with power operation. Mr. George Westinghouse was the inventor of the first method of working railway points by means of power. He had been completely successful in the introduction of the Westinghouse air brake on the American railroads and so turned his attention to the long distance operation of points by means of air power, on the same principle as his railway brake. The points were driven by air motors, the admission of air being controlled by electrically operated valves. The first installation of this type in the world was put down at Bound Brook, in the U. S. A., in 1884.

Later, other systems were introduced so that in the first decade of the present century there was the electro-pnuematic system, the hydraulic system and even gas for working signals from long distances by power. At the present time electro-pnuematic and all electric points operation is predominant, other systems having become obsolete.

An electro-pnuematic system requires a source of compressed air usually at 60 lb. per sq. in. This is



Crossover operated by electric point machines from hand generator.

(Photograph by the author)

supplied by an air compressor driven by an electric motor or oil engine. Since one machine cannot work all the time, a second is necessary as a changeover. In very busy yards, where it is essential that the possibility of a shut down shall be reduced to a minimum. Often alternative sources of electrical power are used and three or more compressor sets may be necessary.

With air operation, the point switches, locking bar and facing point lock are driven by a compressed air motor consisting of a simple cylinder driving a piston backwards and forwards. The rod is attached to the point connection. Admission of air to one side of the piston drives it one way and vice versa. Air to the point cylinder is controlled by an auxiliary motor or point control valve. This consists of two small pistons operating a slide valve. This valve controls the

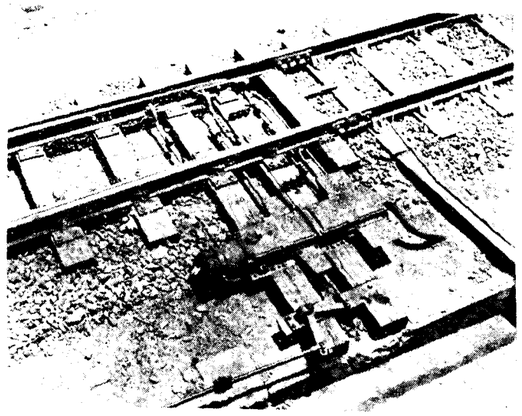
(Continued from page 7)

district sorting office to another. The trains have no passengers and are worked entirely automatically having neither driver or guard. A full illustrated account of this lane appeared at page 37 of the March 1951 issue of this journal.

The 1st of July marked the 50th anniversary of the Cornish Riviera Express, the first train in Great Britain to run non-stop for more than 200 miles.

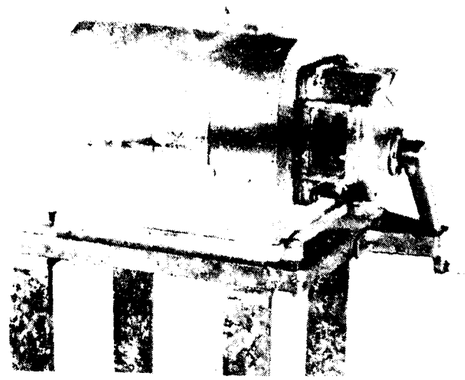
Originally it was known as the Limited Express as the number of passengers on this seven-car train was held to 230.

It was introduced after the outstanding performance of a Royal train that carried the then Prince of Wales to Falmouth in 1903. This covered the 246 miles from Paddington to Plymouth, via Bristol, in just under four hours.

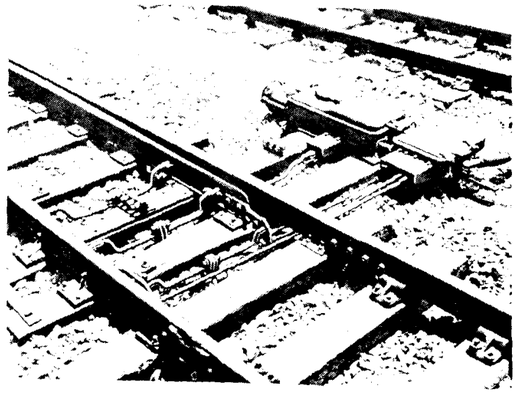


All Electric Point Layout.

(Photo by courtesy : Metropolitan Vickers GRS Ltd.)



Hand generator used for working points by power.

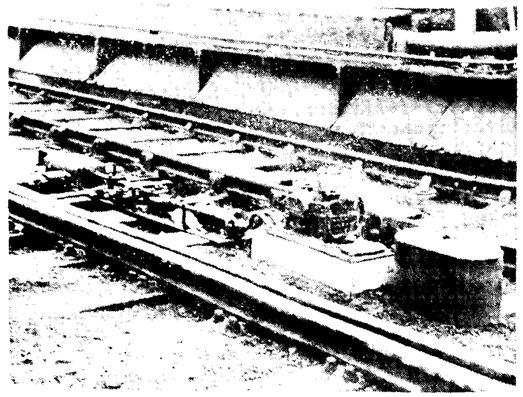


Type HB Combined Point Machine at Krugersdorp, South African Railways.

(Photo by courtesy : Siemens & General Electric Railway Signal Co. Ltd., London.)

admission of air from the air main to the point motor. It is fitted with two electro-magnets, one for normal and one for reverse and these magnets control the auxiliary pistons which work the slide valve. The magnets are connected by line wire to the point lever in the signal cabin.

The sequence of operation is as follows. If the point switches are lying normal and are required to be reversed, the point lever is placed in the reverse position.



Electro pneumatic point layout showing point motor and escapement.

(Photo by courtesy : Messrs. Westinghouse Brake & Signal Co. Ltd.)

The normal magnet is de-energised and the reverse magnet energised. The reverse valve cylinder becomes charged with air at the same time as air supply is cut off from the normal side. The reverse piston pushes the slide valve over at the same time pushing back the normal. The slide valve has now connected the air main to the pipe leading to the reverse side of the point motor while the normal pipe is now connected to atmosphere. The main piston is forced from normal to reverse, driving the point operating gear, while the air

in the cylinder on the normal side is forced back through the normal pipe to atmosphere, the escape port being opened by the passage of the slide valve from normal to reverse.

It was necessary to ensure that the points had correctly responded to lever movement and that they were locked and this was arranged by fitting a contact box operated by the point movement. This released electric locks on the point lever in the signal box there being one lock for the normal movement and one for the reverse. These locks prevented the final or indicating movement of the lever so that if the points had not operated correctly the point lever could not be replaced fully—normal or reverse which prevented the signal lever working signals reading over the points being cleared due to the mechanical interlocking between the levers. Even in the early days of power point operation, the signals were also operated electro-pnuematically, and the line wire controlling the signal was taken over contact boxes on the points to detect their position.

Electro-pnuematic point layouts in use today still resemble their prototypes and except for improvement in the design of point cylinders and auxiliaries, the principle remains unchanged. Originally, the point piston was fitted with leathers but these were found to be unsatisfactory. The leathers wore and air leaks occurred and where a large number of points were involved, the air loss was serious apart from maintenance problems. In the improved designs the leathers have been removed. The point control valves are also fitted with a third magnet and valve which has a cut-off feature. This valve controls the main air supply and has to be operated before air is admitted to the normal or reverse valves. It is only in operation during point movement so that air is cut off from the points when they are not in use.

With the advent of track circuiting, the locking bar was removed and the point lever locked by the track circuit passing through the points. If the track circuit is occupied, the point lever is locked in whichever position it happens to be placed. The contact boxes on the points have been displaced in favour of a combined switch and lock detector. This detects, to a very fine limit, that the point switches are correctly positioned and locked. It reverses the polarity of an electrical circuit operating a point detection relay in the signal cabin. The point switches have to be correctly set and locked, either normal or reverse, before the point detection relay is energised. The indication lever locks and the signal control circuits are taken over contacts on this relay.

In all electric point operation the point switches and locking device are driven by an electric motor through gears. The motor is controlled by means of an auxiliary device known as a point contactor or controller which is really a polarity switch. This reverses the polarity of the motor and it is operated by a magnetic device energised by current received from the point lever in the signal cabin. Both AC and DC point operation are in use at the present time and the latter method is more usual where a power supply is not readily available. Here primary batteries are used and this system is generally adopted in centralised traffic control systems which are extensively used in the USA, Australia and New Zealand.

There is little to choose in the advantages and disadvantages of the two systems and whether one or the other is used is largely dependant on the policy of the signal engineer and the type of installation and traffic conditions to which it has to be applied. There is no doubt that the electro-pneumatic point motor and its attendant switch and lock movement offers a robust design, simple to maintain and which can be looked after by a mechanical fitter. On the other hand it is necessary to run an air main connection to each pair of points in addition to the point control cable. A compressor plant with standbys has also to be maintained. With all electric working, only a power supply is required and a signal main for feeding all the other circuits would be required in any case irrespective of how the points are worked. On the railways of London Transport, electro-pnuematic operation is used exclusively, not only for point operation but for automatic train stops and other auxiliary devices. Here a signal air main runs throughout the length of the line and it is supplied at intervals on route from the traction sub-stations. For railways with isolated installations to work, a compressor house and air reservoir tanks would be necessary with the attendant running costs. Alternatively if electric lighing mains are in service, these can be stepped down to the standard signal working voltage of 110 Volts and used for operating point machines, signals, track circuits, etc. The expense of a compressor house, plant and air main are avoided. If an electrical supply is not available, low voltage point machines are manufactured and can be operated by suitable batteries.

It has been claimed that all electric operation is slower than electro-pnuematic, the former method taking longer for the switches to change from one position to another. While this may be considered immaterial where a few points only are concerned, the time lag may be accumulative and quite serious in large station yards where many points have to be set for the passage of a train. Frequently these points work in sequence, that

is, one has to be set and locked before another movement can be initiated. With the indication locks checking the final movement of a lever, the signalman has to wait for one indication to be received and the point lever placed fully normal (or reverse) before the next lever can be pulled. Some railways dispense with the indication lock entirely on the grounds that this slows up the working and that in any case no signal can be cleared unless all the points are correctly set and locked, their circuits being controlled by the point detection relay. The question of whether or not this is good practice is a matter of opinion but the position of the points can still be checked by the N and R visuals at the back of the lever. Where there is a panel and relay interlocking, the question does not arise because points operate simultaneously.

Another system of operation known as the hand generator method has been used where only a few points outside the limits of manual operation, are required to be worked from the same cabin. This system is very economical since only a few batteries are required, for point indication purposes. If manual working were used, an outlying ground frame would be necessary, with consequent delays, or a small cabin the staffing of which would probably be uneconomical. Typical installations are on the Ashington Colliery Line, in Northumberland, England, where facing points are worked 1,600 feet from the cabin and at Charleville in Ireland, where a junction is worked at a distance of 5,500 feet.

The points are driven by all electric point machines which work switch and lock movements. All signals and points are controlled by the usual full sized levers and provided with standard mechanical interlocking. The point levers are connected to electrical contacts, which, when operated, link up the various circuits controlling the point machines. Adjacent to the lever frame is a hand generator the handle of which is turned to generate the required voltage. With this method, the normal system of operation of points is to move through a portion of its travel the point lever controlling the points and then to rotate the handle of the hand generator until an indication has been received that the points have thrown and locked, when the lever can be moved to its final position. With regard to the length of time it is necessary to rotate the handle, it is found in actual practice that the slackening of the load on the machine, due to the opening of the motor circuit, is distinctly felt by the operator directly the operation to be carried out is complete because the handle revolves much more freely. The operator automatically stops winding. The generator is connected to the handle through a train of gears and a ratchet arrangement is provided which ensures that the handle is turned in the correct direction and allows a free rotation of the gears on the event of a sudden stoppage of the movement of the handle. This may be understood by considering a complete point movement. To reverse a pair of points the lever controlling them is pulled over but it is not possible to fully reverse it due to it being held, in the indication position, by an electric lock. When the points are correctly reversed the electric lock on the point lever is released. The lever may then be fully reversed and the signal lever or levers pulled.

(To be continued)

IRAQ ORDERS CALLENDER-HAMILTON BRIDGES

British Insulated Callender's Construction Company Limited announce the receipt from the Iraq Development Board of an order, worth £ 69,000, for the supply of six Callender-Hamilton bridges. Designed to carry full Ministry of Transport loading, the bridges will provide a double carriageway 24 feet wide, together with footways for pedestrian traffic cantilevered outside the main girders. The order entails the supply of 700 tons of steelwork of the well-known Callender-Hamilton type, except that high tensile steel will be used in place of the normal mild steel. In accordance with standard practice, extending back over the past 20 years, the bridge steelwork will be protected by hot dip galvanizing, the zink coating being applied after all shop fabrication is complete. The bridge decks will be of pressed steel troughing with a concrete fill. The order follows recent shipments of a considerable number of Callender-Hamilton bridges to other parts of the world. Deliveries to New Zealand during the past nine months have totalled over 1,000 tons valued at £ 120,000. These bridges, which have been supplied to the orders of the Ministry of Works and Local Councils, include both through and deck types to carry roadways up to 24 feet wide. Of five Callender-Hamilton bridges recently shipped to the West Indies and Central America, two are now nearing completion in Trinidad and will provide crossings over the Ortoire river. One bridge, having a span of 160 feet, will replace a Bailey bridge and the other, of 180 feet, a ferry crossing. The remaining bridges are being erected in British Guiana and British Honduras. All are being fitted with reinforced concrete decks and the majority are provided with cantilever footways.

The Steel Bridge of Friendship and Peace

A Grandiose Construction in Record Time

On June 20, took place the festive inauguration af the bridge over the Danube connecting the Rumanian People's Republic and the People's Republic Bulgaria. This monumental construction, one of the most valuable achievements of modern technique, is the result of the common effort, the fruit of the common work of the Rumanian and Bulgarian constructors. In realizing this work, the constructors permanently relied on the aid extended them by the Soviet Union, in the shape of machinery and equipment, technical advice, and advanced techniques. They relied also on the precious contribution made to it by the fraternal countries of people's democracy — Czechoslovakia, Poland, Hungary — through deliveries of material, equipment and metal constructions.

The festive inauguration of the "bridge of peace and friendship" was attended by members of the Rumanian government, headed by Gh. Gheorghiu-Dej, Chairman of the Council of Ministers of RPR and members of the Bulgarian government headed by Vylko Tchervenkov, Chairman of the Council of Ministers of PR Bulgaria; Dr. Petru Groza, Chairman of the Presidium of the Grand National Assembly of RPR and Gheorghi Damianov, Chairman of the Presidium of the People's Assembly of PR Bulgaria, by guests from the USSR, Poland, Czechoslovakia and Hungary, as well as by workers, engineers, technicians, press representatives, etc.

THE newly opened bridge across the Danube, the biggest in Europe is a grandiose construction which corresponds to all the requirements of modern technique.

Work on this construction began two years and three months ago and was completed 7 months ahead of the scheduled term. Work started simultaneously on both shores and developed at a rapid pace. A distinguishing feature of the works has been the high level of mechanization, the all-round employment of advanced technique. At the construction of this bridge was applied, for the first time both in the RPR and in the PR Bulgaria, the system of navvying by hydro-mechanization. With the help of powerful electric dredges furnished by the USSR, the navvying was completed five months ahead of term. The hydro-mechanization system was applied also in the digging work in caissons with compressed air; in this way the understructures could be also terminated half-year ahead of term. On the site was built a big-capacity concrete factory equipped with up-to-date machinery.

The Rumanian machine-building industry likewise contributed to the realization of the bridge; the majority of the cranes and electric winches of various types and sizes utilized in assembling work, were home manufactured.

The Rumanian and Bulgarian constructors displayed a creative work full of elan and dynamism. Enduring ties of friendship characteristic of free people who strive for the prosperity of their countries have been established among them. Last year, at a moment when the Danube had risen to its highest level threatening the works, the Rumanian and Bulgarian constructors succeeded in a common effort in ensuring a normal development of the basic works.

The construction-site has constituted a highly-specialized school for qualifying cadres. In two years' time more than 300 unskilled workers qualified as caisson-workers, 300 as fitters and riveters, more than 600 as mechanics by attending special schools opened on the site.

The permanent concern of the regime of people's democracy for the welfare of the people, for the satisfaction of the socio-cultural requirements of the constructors has been powerfully reflected on the site. On the Rumanian side, for example, a workers' town sprang up including apartment blocks for the workers and their families, many stores, a workers' club, a performance hall, a library, reading rooms and a sports hall. Likewise have been opened canteens, creches two dispensaries, a pharmacy, etc.

The bridge across the Danube has been built both for rail and road traffic. It will promote to a greater extent the development of economic exchanges between the RPR and the PR Bulgaria, as well as of trade with other countries and contribute to the cause of strengthening the ties of friendship between Bulgaria, Rumania and the other countries of the democratic camp. It is a construction of peace and cooperation among peoples.

In the speech he delivered at the inauguration solemnity. Gheorghe Gheorghiu-Dej, Chairman of the Council of Ministers of the RPR, showed that this bridge constitutes a brilliant expression of the fraternal

cooperation between the countries of the camp of socialism and peace.

Gheorghe Gheorghiu-Dej emphasized that the friendship between the two peoples is of long standing. Side by side, they waged a fight full of sacrifices for shaking off the Ottoman yoke. The former regimes attempted by every means to sow discord between the two peoples but their friendship came out victorious from all these trials. After the liberation of the two countries from the fascist yoke by the Soviet Army, the Rumanian and Bulgarian peoples taking their destiny into their own hands and establishing the people's democratic rule, have given a new content to his friendship between two peoples which build up socialism, creating their material and cultural well-being.

Gheorghe Gheorghiu-Dej further stressed that the accomplishment at a so high technical level of a construction of such proportions was possible thanks, in the first place, to the aid of the Soviet Union and to the fraternal support of the people's democratic countries: Czechoslovakia, Poland and Hungary.

This bridge—Gh. Gheorghiu-Dej declared—is a vivid testimony to the creative forces of the countries of the camp of peace and socialism, a testimony to their will for peace, to their struggle for developing the links of friendship among peoples.

Vylko Tchervenkov, Chairman of the Council of Ministers of Bulgaria, emphasized in his speech that this bridge is the result of the fraternal economic cooperation and of the mutual aid between several people's democratic countries and the Soviet Union. It is a brilliant embodiment of the community of interests of those countries, of their peace-loving policy, of close friendship between them, of the selfless aid extended them by the Soviet Union. The bridge over the Danube—Vylko Tchervenkov pointed out—will establish still closer economic and political links between Bulgaria and Rumania: at the same time it constitutes a new element of strengthening relations with the other countries of people's democracy which participated in its building. It will create a new opportunity for accelerating and facilitating goods exchanges, as well as passenger transport, by rail and motor in south-eastern Europe.

Taking into consideration all this—Vylko Tchervenkov declared—the present festivity takes on an international significance.

At the festive inauguration of the bridge speeches were also delivered by the heads of the Soviet, Polish, Czech and Hungarian governmental delegations.

I. D. Gotsiridze, head of the Soviet governmental delegation, underlined that the building of the bridge over the Danube is a vivid proof of the friendship and selfless mutual aid between the people's democratic countries and the Soviet Union. This bridge—the speaker emphasized—will exercise a beneficial influence over the expansion of economic ties and goods exchanges, thus contributing to the improvement of our peoples' well-being.

Jan Rustecki, head of the Polish delegation, pointed to the fact that the construction of the bridge over the Danube is an expression of the peace policy of the countries of the camp of socialism.

The bridge which spans the Danube—Karel Polacek, head of the Czechoslovak governmental delegation emphasized—marks a victory in the struggle for peace and friendship of the peoples all over the world.

Zsofinyecz Mihaly, head of the Hungarian governmental delegation, declared that the Hungarian people are proud of having participated in the construction of the bridge over the Danube and underscored that, after the historic victory of the Soviet Union in the second world war, the Danube became a factor in the fraternal cooperation between the Danubian countries.

Important details with regard to the unfolding of the construction work were given by L. D. Saprykin, head of the Soviet construction organization. He congratulated the constructors "on the occasion of the opening of rail and road traffic over the free, large and quict Danube, between the Rumanian People's Republic and the People's Republic of Bulgaria".

Particularly impressive was the moment when, amidst powerful applause from those present, Gheorghe Gheorghiu-Dej and Vylko Tchervenkov cut the ribbon and embraced each other.

The big construction, the steel bridge of friendship and peace, was put into commission.

ALSTHOM Electric Locomotive CC-7121 of the French National Railways, which beat the world record at 152 miles hour on 21/2/54.

152 MPH "World Speed Record for Railways"

ON 21st February, 1954, the ALSTHOM Locomotive CC 7121 has broken the world speed record for railways by running at a measured speed of 152 miles per hour for a number of miles between DIJON and BEAUNE.

This trail was decided upon and carried out by the French National Railways at very short notice. The speed record was achieved by a locomotive of the series CC 7100 without any modification, except for the fitting of piezo-electric devices at the ends of front and rear axles of the front bogies for measurement of lateral thrust by the wheels on the rails.

Further, the normally supplied speed indicator reading upto 130 m.p.h. had to be replaced by a special tachygraph capable of recording higher speeds.

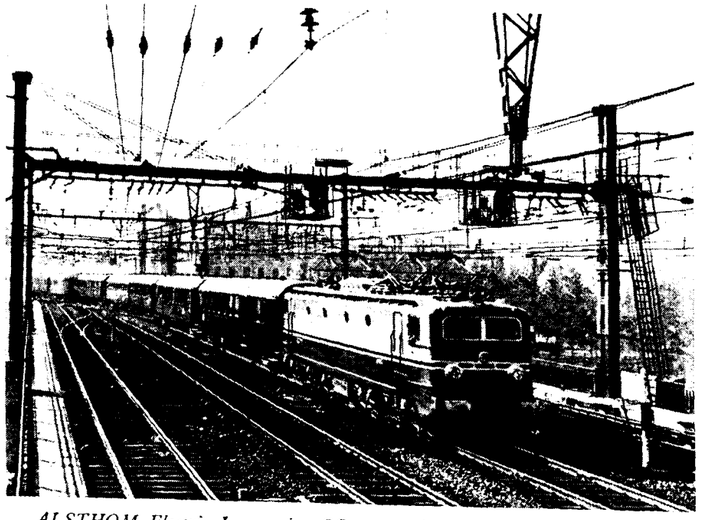
The components which could be expected to be mainly affected by this considerably higher speed, such as the pantographs, axle couplings, gears and the traction motors, remained exactly as they were when the locomotive came out of the manufacturer's works, and as they have been supplied on all the locomotives of the series 7100.

When the locomotive CC 7121 was chosen for the speed test, it had already run 62,500 miles in normal service without any check-up.

The portion of line between DIJON and BEAUNE for a distance of 17 miles was selected for the trial because of the long stretches of straight track interrupted by only a few curves of very large radius. With this exception, the line is normal and it carries tens of thousands of tons of trains every day. It had not even been repaired after the heavy cold and thaw of the winter period. The catenary also had not received any previous particular care.

The fact that 152 m. p. h. have been reached on a normal line with a series locomotive, gives an exceptional importance to this record. It shows the quality of rolling stock and lines of the French National Railways and gives an idea of the safety factor that exists for the fast normal trains running at an average speed of 87.5 m. p. h.

The record of 152 m. p. h. has been attained in several steps. On Friday 19th February, the world



ALSTHOM Electric Locomotive CC-7101 of the French National Railways, hauling Express No. 16 leaving Lyon Station.

record was already broken with a speed of 139 m. p. h. The photo (No : 1) shows this locomotive CC 7121 with 3 coaches attached at the time of world speed record.

During all these tests, the locomotive has shown a remarkable stability, without any noising. Persons who are used to travelling on locomotives would appreciate the degree of stability thus realised by considering that in the rear cabin it was possible to remain standing without any support at this highest speed.

The piezo-electric measurements have shown that the peak value of the lateral thrust on the rails does not reach 5 tons measured at the first axle.

These relatively low values are below the limits which are now being admitted in current practice and are clearly far below the thrusts which could damage the alignment of the track.

The reduction of fatigue of track has been one of the aims since the very conception of these locomotives, in view of their very high speed running and their load has been limited to 17.5 tons per axle, whereas the load for other electric locomotives are 20 tons and even 22 tons per traction axle, as for example for locomotives 2D2.

The perfect working of this locomotive which had already covered about 62,500 miles, also proves the effectiveness of the measures taken for the elimination of wear which is important for the conservation of stability.

The locomotive CC 7121 is one of 58 locomotives CC 7100 ordered by the French National Railways, about 40 of are already in service.

These locomotives are of an entirely French conception and realization, resulting from the prototype locomotives ALSTHOM CC 7001 and CC 7002 put into service in 1949 on the South West Section of the French Railways and have covered more than 1,375,000 miles by now.

ALSTHOM Electric Locomotive CC-7121 of the French National Railways, running at the record speed of 152 miles/hour.

(Continued on page 17)

COGS IN THE WHEEL—X

By Ajax

THERE are several "weeks" on the Railways, viz., the Courtesy Week, the Cleanliness Week, the P. L. M. Week, and the rest of it. These weeks afford an opportunity to the staff as well as the railway's clientele to concentrate their thoughts and efforts in certain well-defined channels. That is to say, during the "Courtesy Week" the railwaymen are exhorted to be courteous to the public even to the point of personal inconvenience. In the case of the "Cleanliness Week" the need for personal cleanliness and the cleanliness of the railway premises are driven home to the railwaymen. They are enjoined to practise certain simple rules of hygiene and personal habit. In the case of the "P. L. M." Week, the public, i. e., the mercantile community, are enjoined to pack their consignments with due regard to the rules of packing, labelling and marking, etc., so as to eliminate the possibility of misdespatch or loss in transit.

Similarly, on a little thought one could multiply these weeks and organise one week for every subject throughout the year so that in our daily conduct we could always feel that the concentrated efforts of so many are directed towards the mutual happiness of all of us. For example, we could as well have weeks for Efficiency, Honesty, Integrity, Fellowship, Service, etc., etc. If these become part and parcel of our daily life then the need for organisation of "special weeks" will gradually disappear.

Let us think for a moment what are the cumulative effects of such a drive in whatever manner it may be directed. In the first place the railwaymen are asked to put in an extra dose of energy in a particular direction; in the second place, they are asked to put their "thinking cap" on and remember that in their individual effort the common success of all depends; in the third place, the railwaymen are enthused, in the cause of service, as if it were in a military parade where the spirit of organised, disciplined conduct takes the pride of place. In the fourth place, the co-workers who do not participate in these endeavours are asked to emulate and copy the example of those who are on "active list", and in the last place, by constantly emphasizing on the need for courtesy, tidiness and other things we are creating a sort of nobler thoughts in our minds which we imbibe in due course. That is an asset in our daily conduct.

These "Weeks" are also reminders of what our failures were and what we should do to avoid them in the future. They also teach us the simple rules of human conduct and in the thought that we are all one we shape our conduct in the hope that ultimately it is to the advantage of us all.

On the other hand, the merchants who are asked to be careful in packing materials and marking them are effectively told that the possibility of misdespatch could be eliminated if they carried out certain simple instructions. They are told how a little care on their part in the desired direction could save them a lot of worry, trouble and expense; how the railwaymen would feel happy in the discharge of their duties as "carriers"; how it will be a realisation on the part of the mercantile community of the difficulties of the railways and how with a little co-operation from their side matters could be improved.

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These prototype locomotives had already shown their exceptional qualities. It is the CC 7001 that covered PARIS-BORDEAUX in 4 hrs. 26 minutes, a distance of 362 miles at a commercial speed of 82 m. p. h. It had also run at a speed of 112.5 m. p. h. for a number of miles.

At present, the locomotives of series CC 7100, in service on the South East section, operate heavy trains at high speeds—such as the "Mistral" which covers PARIS-DIJON at an average speed of 77.5 m. p. h. or PARIS-LYON at an average speed of 75 m. p. h.

The little maintenance needed by this type of locomotives permit them to cover an average of 31,250 miles per month. The locomotives of this type can run 312,500 miles without general check-up, representing considerable progress against earlier designs.

Finally, it is worthwhile to note that other locomotives of the CC type have been supplied by ALSTHOM to HOLLAND and SPAIN and have proved the excellent quality of French Rolling Stock also beyond the French frontiers.

Chittaranjan Makes Two Locos A Week

CHITTARANJAN is making locomotive history in India. Eight locomotives a month have been coming off the assembly lines during the last three months. This is an average of two a week, and compares with the average of one a week achieved during 1953.

At the end of June 1954, a total of 40 locomotives against a planned out-turn of only 32 had been turned out. Every month has seen old records being broken, every day has seen new standards being set up. The eight W. G. locos. per month which have been produced during the past few months equate to 10 average-sized locomotives.

If the Chittaranjan shops can maintain this out-turn, it can very well be said to have achieved the capacity rate of production. The brass foundry with its total meeting capacity of two 400 lbs. and one 1000 lbs. brass melting furnaces has averaged 54 tons per month, the iron foundry with its four $\frac{7}{8}$-ton capacity cupolas has shown an average of 170 tons per month and this tonnage only represents finished castings. The smithy and forge section, not to be outdone, gave an average out-turn of 115 tons per month and the machine shops have finished machining as many as 47,500 components per month.

EXPANSION SCHEMES

The Government of India are planning to revise Chittaranjan's target to 200 average-sized locomotives and 150 additional boilers instead of the original schedule of 120 locos and 50 spare boilers.

The existing artisan staff is now well-conversant with the type of work they are expected to do, and the Technical School is annually producing more skilled staff to take up their places in the workshops.

The Workshop has been built for production of 120 locomotives and 50 spare boilers per annum. The present order under execution at the Works is for W. G. broad gauge goods locomotives. This type of locomotive, which is the heaviest in use, weighs roughly 173 tons in working order and consists of approximately 5330 components in addition to bolts, nuts, set-screws, rivets, washers, studs etc. which are too numerous to be counted. The workshop, however, is fully equipped for producing any class of locomotive, broad-gauge or meter gauge.

1953 ACHIEVEMENT

According to plans and targets, 52 locomotives were scheduled to be turned out from the Chittaranjan Locomotive Works by the end of 1953, and the end of August 1953 should have seen the 34th locomotive turned out during the year. However, only 32 locomotives were turned out and Works had a certain amount of leeway to make up in addition to the task of keeping up the scheduled out-turn. Staff were called upon to put forth their best effort and lo! the results at the end of the year were beyond expectation. Instead of the scheduled out-turn of 52 locomotives, 54 had been turned out. On paper this may appear to be just a small difference but actually it means a saving of 160,000 man-hours and financially an additional out-turn equivalent to Rs. 14 lakhs.

During 1953, Chittaranjan celebrated the completion of its 100th locomotive. On January 6, 1954, the Railway Minister Sri Lal Bahadur Shastri drove the 100th locomotive out of the workshops. Named "Chittaranjan 100th" and consisting of all Chittaranjan manufactured and finished parts right from the wheels and axles to the bar frames, the cylinders, boiler, motion parts and the tender, it was truly an India-built locomotive, the proud beared of name of one of the country's noblest sons. This locomotive, has been kept in one of the neighbouring Eastern Railway sheds where it is being utilised every day to haul the heavy coal and ore trains. An examination carried out in the shops after this locomotive had done six months service on the open line fully justified the confidence in Chittaranjan workmanship—the locomotive was standing up to the requirements as well as could ever be expected.

A MODEL INDUSTRIAL TOWN

Keeping in view the ideals of a walfare state, Government have spared no pains to make the working conditions of the men behind the machines, comfortable. To house the workers, a modern well-planned town with more than 5000 quarters and all available facilities of city life amidst beautiful healthy rural surroundings, has been established. It can be said that from blue prints to actual buildings, Chittaranjan has been planned as a model industrial town.

The township, built at a cost of Rs. 6.8 crores, covers an area of about seven square miles with an estimated population of 30,000. Every single house has at least two rooms and has electricity, filtered water supply, sanitised privy and is a compact unit with its courtyard and verandah. This means each house has been provided with the basic facilities of a modern home.

The township has been planned in separate colonies of self-contained units with separate shopping centres, maternity clinic, school, playground, dispensary, park social amenity centre and recreation Institute. Besides a most modern sewerage system, 71 miles of metalled and non-metalled roads, 120 miles of pipe lines for water supply, Chittaranjan has at present 5 dispensaries, 4 maternity and health centres, 2 high schools for boys and girls, 7 basic schools, 4 community halls and 6 parks. The main hospital named after Kasturba Gandhi, has 50 beds and is centrally located to cater to the need of the inhabitants of the township. The scenic beauty of the place has also been enhanced with the plantation of more than 18,400 flowering and fruit trees of different varieties. Chittaranjan can justifiably claim the encomium " a poem in cement and steel" bestowed on it by one of the distinguished visitors to the place.

The social side of life in the colony is also the object of great interest. There are cinema shows and dramatic performances tournaments and matches, and a sense of healthy rivalry prevails. There are no differences between the labour and the management. An up-to-date planning and rate-fixing office has completed its preliminary investigations and time studies are taken for all jobs. To build up production to the required pitch production quotas have been specified and the staff is required to come up to them. Each job is progressed from stage to stage and inspections are carried out at every step to ensure that quality in not sacrificed for quantity.

The stage, therefore, is set for bigger and greater things in Chittaranjan, and all eyes are on the project, to see what it can do, to see what the determination of a nation can achieve.

(Continued from page 17)

The cumulative effect of all these "weeks" on the railways has a psychological effect on the minds of the railwaymen who would only be happy to make their contribution to the success of these "celebrations". So do not miss participating in the observance of these weeks whenever they are held. They will instil confidence in you; they will add courage to your minds and enable you to do your task well and efficiently; they will lead you to a fearless attitude and might bring recognition of merit if any.

"A Milestone" in History of Tanganyika

FIRST DEEP-WATER PORT AND RAILWAY OPENED

COMMENTING on the opening by the Governor, Sir Edward Twining, of Tanganyika's first deep-water port — at Mtwara — and the extension of the Southern Province Railway, the *Manchester Guardian* (July 17) says the event is a "milestone in the history of this province, for so long at once the most promising and the most backward part of this huge country".

The newspaper continues: "The port and railway alike are the by-product, so to say, of the now defunct groundnut scheme. But for the high hopes of its early days another generation might have passed before anyone was bold enough to tackle the formidable task of opening up southern Tanganyika and linking it with the outer world.

"Nachingwea was to have been the heart of a great groundnut-producing area, a conception which has tailed off into a number of small experimental farms growing a variety of crops. These will yield their dividend in time. But before the groundnut scheme dwindled the port and railway were too definitely launched to draw back. They have been born, so to say, a little before their time; but time will soon catch up with them.

"Mtwara offers a sheltered anchorage for a fleet of ships, a deep-water berth, and plenty of good building land; it has, in fact, been loading cargo since January. The railway is open to traffic under normal conditions only from today (July 17). The two have cost about £6,500,000 to build, and the British Government has waived repayment of advances totalling £3,750,000 so that the enterprise can start without a crippling load of debt. A decade hence we may be blessing our foresight in starting it and forgetting that the original reason for starting it has ceased to hold good".

British Diesel-Hydraulic Locos for India

DELIVERY TO START THIS YEAR

OF the 67 Diesel-hydraulic locomotives at present being built by a Glasgow firm, 20 are for India. Altogether 47 are destined for oversea territories, the others going to East and Central Africa, South Africa, Malaya and Spain. The remainder are for industrial use in the U. K. and for British Railways.

The locomotives on order for India are to be used for mixed passenger and goods traffic. Delivery of these is expected to begin this year. The other locomotives are being built for goods haulage. Due to improved steel supplies in Britain, the Scottish firm (The North British Locomotive Co., Ltd.) says that it can now compete on deliveries with others, and is quoting only 12 months as delivery date. The first locomotive to be delivered to Malaya is due to leave Glasgow in September.

These Diesel-hydraulic locomotives range in power from 200 h. p. to 625 h. p. and in value from £15,000 to £34,000 each. The value of the oversea orders on which work is now in progress is well over £1,000,000.

Although the biggest order in hand at the moment is for a 625 h. p. locomotive, the firm is capable of building Diesel-hydraulic locomotives up to 2,000 h. p. The firm is also building a coal-burning gas turbine with a horsepower of 1,750 for testing in Britain.

A LEADING CUSTOMER

The North British Locomotive Co. Ltd. was formed half-a-century ago by the amalgamation of three Glasgow firms. Since then it has built over 27,000 locomotives for the world's railways, with India a leading customer.

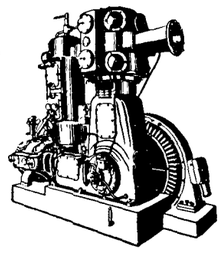
One of the biggest exhibits at the 1951 Festival of Britain South Bank Exhibition in London was a "WG" type locomotive built by North British for the Indian Government Railways. This was one of an Indian order for 100 locomotives, bringing the number the firm had built for India during its long association with the subcontinent until then to near the 7,000 mark.

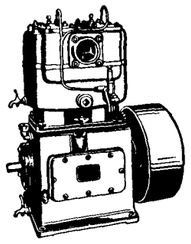
Atlas Diesel

AIR COMPRESSORS AND VACUUM PUMPS

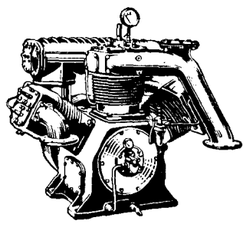
OF UNEQUALLED ECONOMY

AR-Class, watercooled, 2 stage, extra Heavy Duty compressors for continuous shift-work. Unequalled in reliability and economy. Capacity 330-3220 CFM for working pressure up to 225 p.s.i.

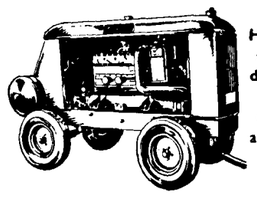




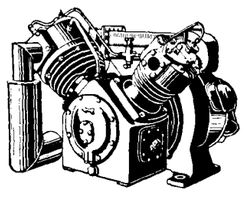
R2A6-Watercooled, stationary—one stage aircompressors. Simple, reliable, low priced and cheap in upkeep. 117 CFM capacity 100 p.s.i. working pressure.



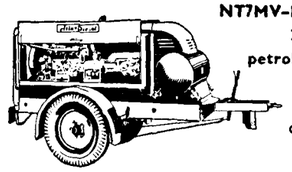
CR-CT Class, water and aircooled 2 stage stationary air compressor. Capacity 150-330 CFM for working pressure up to 125 p.s.i.



HR4V-FR4V-Portable, 2 stage all-watercooled diesel compressors with Atlas-Diesel "Polar" engine, extremely rugged and simple, cheap upkeep, economical, favourable prices, 250 and 160 CFM capacity.



NT-Class, aircooled, 2 stage aircompressors. Compact units for direct flanging to electric motors and for Vee belt drive. 4 sizes, 35-110 CFM, working pressure up to 125 p.s.i.



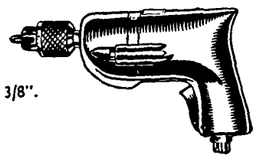
NT7MV-NT9MV—Portable 2 stage diesel and petrol driven compressors. Powered by Dorman, Armstrong or Standard engines. 60 and 110 CFM

Atlas Diesel

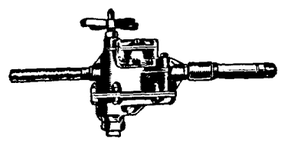
PNEUMATIC TOOLS

OF HIGH EFFICIENCY

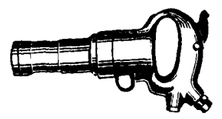
Pistol grip metal drills, up to 1/2". Pistol grip screwdrivers up to 1/4". Pistol grip tappers up to 3/8".



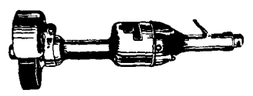
Heavy type drills max. 4".

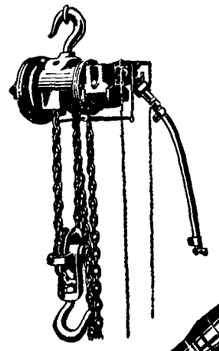


Riveters, clipping hammers, Rivet Bursters.

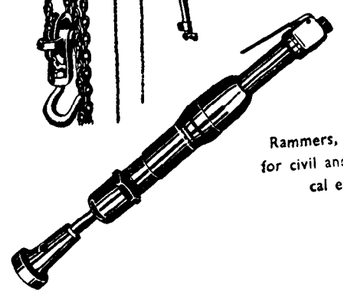


Grinders for all purposes from 1/2" to 8" wheels.

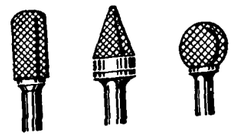




Air blocks, capacity 1000-11000 lbs.



Rammers, four types for civil and mechanical engineering.



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EVEREST

P. C. Mukerjee — The New Chief of Eastern Railway

By Socrates

I was in sick bed. The announcement of the appointment had been made. A well-wisher wanted me to join the new place and sent word to me. He was not aware of my sickness, and when he heard of it he was sorry that I could not catch up the opportunity.

To go or not to go was the question. How could I from the sick bed? And would the gentleman wait for my recovery? That was not possible. I knew I would have a better time if I had been able to proceed. But circumstanced as I was I could not. Therefore I sent word to my well-wisher that fate was again against me.

Mukerjee—mark it, he is particular in spelling it in this manner—was transferred to the post of General Manager of the Chittaranjan Workshops that were being built up. Chittaranjan was going to make history in the industrialisation of the country. The Government wanted some one to tackle the job, one who would excel in organising ability, skill and industry. Whether Mukerjee had these qualities in him is a question which is now common knowledge.

And so from the General Managership of the Bengal Nagpur Railway, which was comparatively a smooth-running job, Mukerjee had to go to the deep jungles of the forest which were fast being cleared up and be at the helm of affairs until the workshop began functioning in full swing and locomotives were turned out in sufficient numbers to cope with the increasing demands of the railways.

To Mukerjee's calibre this was not a difficult job, but all the same this was an opportunity he gained to test his own mettle. He soon set to work wholeheartedly.

Needless to say that Mukerjee proved a first class acquisition to the project. Engineering had been his 'avocation' for a number of years, and prior to the new job, he had passed through the 'mill' so to say and acquitted himself creditably. As Deputy General Manager in charge of the Works Programme of the East Indian Railway he had ample opportunities of proving his skill and initiative. There is not a single place of importance which he had not already held with dignity and distinction.

Beginning his career as an Asst. Engineer in the year 1925 Mukerjee passed through a galaxy of assignments such as—to mention them chronologically—Asst. Executive Engineer, Asst. Superintendent (Staff), Superintendent (Staff), Employment Officer, Personnel Officer, all in Senior Scale. When the Supply Department was opened he was called to do war work.

P. C. Mukerjee.

There too he passed through a series of highly responsible assignments, namely, Officer on Special Duty, Deputy Director (Engineering) (Civil), Director of Civil Engineering, Deputy Director-General (Engineering), Controller of Railway Supplies, (under the Railway Board) and Deputy Director-General (Development). He was thus largely responsible for

"RAILWAYS AND THE LAW"

By A. H. Pearson

AS a passenger in a train you are enjoying a fragrant cigarette when one of your fellow passengers in the same compartment objects to your smoking and asks you to desist. His objection may seem to you to be a violation of your rights as a citizen of a free and democratic country, but your fellow passenger is right according to the law. Section 110 of the Indian Railways Act gives your fellow passenger every right to object to your smoking, and if you are unwise enough to accept his challenge you may eventually find yourself up before a Magistrate who can make you poorer to the extent of a fine up to twenty rupees.

Now, this is only one of the sections of the Indian Railways Act, which contains about 150 sections covering such aspects as the Inspection of Railways, Construction and maintenance of works, Opening of Railways, Traffic facilities, Railway Rates Tribunal, Working of Railways, Carriage of passengersa nd property, Responsibility of Railway administrations as carriers, Limitation of employment of Railway servants Accidents, Penalties and Offences, and so on.

But in spite of this formidable array of sections and sub-sections of the law as contained in the Indian Railways Act, the strange part of it is that Railway administrations are not rushing cases into court for the violation, interpretation or misinterpration of the intricacies of the Railways Act.

There are, however, some sections of the Railway Act especially those classified under the title "Responsibility of Railway Administrations as Carriers," which figure most in Railway cases which eventually 'go to court.' This being so, let us see why this particular section of the Indian Railways Act produces perhaps the largest number of 'court' cases in railway annals.

What may always be a source of contention between Railways and railway users, especially those who offer goods and merchandise for transport by rail, is the well-known compensation claim. A consignor or consignee has not received goods that have been despatched to him, or received these in a damaged condition. He will promptly put in a claim, which may run into thousands. The Railway administration, after due enquiries, based on documents and facts, may agree to settle the claim for a figure considerably less than claimed, but which is more equitable. The claimant does not agree to this and insists on settlement of the larger amount. Eventually after a battle by correspondence with no agreement reached, the claimant decides to take the case to court. Then again, the Railway may repudiate a claim altogether, as they are sure that the railway has taken all reasonable care and precautions while the consignment has been in the custody of the railway. The claimant declines to accept the railway's verdict; so he files a suit in court.

Such compensation claims which eventually go to court, either at the instigation of the claimant, or by the railway administration defending its legitimate rights under the law, are in the region of approximately six thousand cases per annum on some railway systems, and involve sums of money which may run into five or six figures. Apart from those compensation claims that are eventually decided in the law courts, quite a considerable number are decided on a compromise basis and settled out of court, when the claimant is wise enough to agree with his adversary quickly, rather than resort to law.

Apart from cases of compensation claims, the legal department of a railway handles other types of cases which eventually go to law courts for a decision. A railway administration employs the services of contractors for various purposes—like catering contractors to provide passengers with refreshment and food while travelling: engineering contractors for building structures like stations, offices, houses, bridges etc: supply contractors for supplying materials, stores, manufactured products, etc. As long as a contract runs smoothly, and services rendered and payment made to the satisfaction both of the railway administration and the contractor, there is no possibility of a recourse to the law. But if there is a breach of the terms of contract, or the supplies not up to the quality specified, or a difference of opinion in the interpretation of the terms of the contract, and no possibility of an agreement being reached by mutual consent; then either the contractor files a suit against the railway for what he may consider his rights, or the railway may sue the contractor for a breach of contract.

After a serious rail disaster in which a train or trains carrying passengers has been wrecked and people killed, and goods damaged as a result of the accident, railway administrations are faced with a heavy bill for compensation. Usually all such claims are decided by a special claims commissioner appointed by the Central Govern-

the development scheme under the War Service Emergency Ordinance.

Returning to the Railway he was posted for a time as the Deputy General Manager (Works) on the East Indian Railway, then as the Divisional Superintendent, and finally as the General Manager of the Bengal Nagpur Railway, from where he was summoned to Chittaranjan.

While serving as the Controller of Railway Supplies in the Railway Board he was sent abroad on an important mission to meet the Ministry of Supply and the Board of Trade in the Unite Kingdom and also to attend on behalf of India the International Study Group and Conference of non-ferrous metals at Brussels.

Giving his ideas of railways before the Indian Railway Enquiry Committee he was so rapid in the output of his fertile brain that the members were simply stunned at his performance for over an hour and a half. He went on delivering an oration and the marvellous nature of his analysis, the wealth of information that he unfolded, the clarity of thought and the fluency of expression, all won for him the unstinted admiration of the Chairman of the Committee who was then Sri K. C. Neogy. It was an oration which the stenographers were hard put to catch up.

Thin in build, proportionately tall, Mukerjee is "activity personified". A man of genial temperament, a great organiser, one who would rise equal to every occasion, and answer the demands placed on him, a good publicist and propagandist, and an effective writer, Mukerjee manned Chittaranjan Works with credit and ambition. An engaging conversationalist and a tip-top gentleman of immaculate dress and decency, he is a perfect gentleman to move with and to come in close contact with. He is kind, energetic, sympathetic to a degree, understanding well, and ever ready to accommodate, as far as is possible within limitations. His strength lies in the fact that he has a fund of information analysed and kept ready in his mental compartments so to say that whenever he needs any information he has only to pick it up from the particular shelf of his mental library. The ideas, the plans and the information are all so very well arranged as if it is a big library and storehouse of information. His head is thus a central clearing house for ideas.

He believes in the dictum that national enterprises, if they are to make headway, should be well-publicised and every endeavour made to get the public interested in them. Only then can their (the public's) approbation be gained—an essential factor in any nation building programme.

The stream of distinguished visitors to Chittaranjan in the recent past and the high tributes paid to the colony speak of the exemplary character and teamwork of those in charge of the affairs there.

Sri Mukerjee has just assumed charge of the Eastern Railway as its head. The problems that await his fertile brain are perplexing in variety and complexity and need a man of his strength of mind and studious application, for in the next few years reconstruction, rehabilitation, consolidation, and opening up of new ventures, such as electrification and circular railway, etc., will fall to his lot to pilot through. To the extent to which he is able to pull forces and pool resources to his aid, will he succeed in his parrys with the representatives of trade and commerce, and to this aim he would perhaps direct his attention in the creation of a better informed public relations wing of the Calcutta railways.

PASSENGER AMENITIES—SPECIAL OFFICERS TO BE APPOINTED

The Railway Board has decided to appoint a special officer on each Railway to ensure minimum standard of amenities to the travelling public and to advise the Railway Ministry on the utilisation of Rs. 3 crores provided in the current year's budget for providing amenities to passengers on all the six zonal railways. These officers will work under the General Managers of the different railways and co-ordinate all work on the provision of amenities. They will visit various railway stations and assess for themselves their needs and requirements. The officers will be required to submit quarterly reports on the progress of their work to the Railway Board through their respective General Managers.

The Five Year Plan has a total provision of Rs. 15 crores for expenditure on passenger amenities. The amenities proposed to be provided or already provided, include waiting rooms, waiting halls, improved lighting at stations, fans on platforms and in third class carriages, better water supply and building of overbridges.

ment, but in all such matters the law in regard to the responsibility or culpability of the railway is involved. Then again, if as a result of an official enquiry into a serious rail accident any railway personnel have been found guilty of negligence or disregarding the prescribed rules laid down for the safe operation of railways, such railway staff are prosecuted for criminal negligence and eventually have to face a judge and jury in a court of law.

Another type of case found in the files of a Railway's law department are those of encroachment by private parties on to railway land or premises. Some individual may start building a structure on land near railway property and when the railway surveyors get on the job of inspection, they find that there has been an encroachment. When this is brought to the notice of the party concerned and he is asked to vacate the railway land, he may refuse and claim that he is within his rights. If this cannot be settled amicably, either the party or the administration seeks the decision of the law courts.

The rapid widening of the scope of labour legislation for the protection of employees, and the latter be coming more and more conscious of their rights under the law, often lead railway personnel to seek redress of grievances by seeking the aid of the law courts. A railway employee may have been removed or dismissed from service for some misconduct or negligence, but he feels that he has been the victim of injustice at the hands of the railway authorities. As a last resort he brings a suit against the railway for wrongful dismissal or removal from service. These, and many other types of cases arising out of labour legislation for the benefit of employees are on the increase.

Now how does a railway administration tackle its legal work. Usually each administration has a whole time legal expert—known as the Law Officer—to advise the General Manager and Heads of departments on all matters of law; and it is usually on the advice of the Railway's Law Officer that it is decided when the administration should go to law for its rights. Of course where the administration is sued by an outside party—and these are by far more in number—the administration must defend. The Law Officer does not appear in court in railway cases as counsel or pleader or advocate as he would never have the time to do so. When the railway is either plaintiff or defendant in a lawsuit, the Railway has to engage professional barristers, advocates or pleaders, depending upon the nature of the individual case.

A glance at some of the files of the Law department would reveal cases of several other types; but the strange part of Railways and the law is, that it is not so much the Railway administrations who constantly seek the decision of the court for rights under the law, but mainly to those who either use a railway for purposes of transport, or those who give their services to a railway either as a contractor, or employee.

SELF-HELP

I believe that the lot of the average railwayman can be improved to a considerable extent by intelligent self-help, self-discipline and self-improvement, supported by a policy of active cultural co-operation with the Administration. The policy of self-help is naturally an exacting one. First and foremost it means a wholehearted and active co-operation amongs the different sections of workers themselves, breaking down the barriers of class and creed. It demands of the veteran worker already ranking high in the ladder, as well as the junior struggling to gain ground, to join hands and help each other. Self-discipline means not only of body and mind but also of conduct. It imposes a judicious restraint on the latter and regulates relationship with co-workers to the extent to which discipline is maintained rigorously. Naturally, it demands of you the highest attention and your actions are judged according to the barometrical readings which faithfully record the rise and fall. Self-improvement connotes an eagerness to learn and grasp as quickly as possible. Here again the degree of your improvement will be governed by the enthusiasm and sincereity which you exhibit in your day to day work. It demands of you a receptiveness of mind, alertness and determination to see through ups and down, and above all a cheerful disposition. Active co-operation with the Administration implies a ceaseless effort to study the problems from the Administration's stand point and help solution of the difficulties that confront each other. It also means that you should strive to inform the administration of the possibilities and limitations under which work can be efficiently carried out at every stage and invite consideration dispassionately. On these lines we should strive heart and soul for our upliftment.

N. G. IYER

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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