in the transformer equipment. The findings of an enquiry into this mishap will be considered at meetings which are being held by technical officers of the B.T.C. and the three Regions using the new high-voltage a.c. system with representatives of the electrical manufacturers concerned. It is to be hoped that the heartening increase of traffic which the new services were attracting will not be prejudiced when these temporary, but most unfortunate, difficulties are overcome.

The End of the Irish Narrow Gauge

FEBRUARY 1, 1961, will become a salient date in the history of the railways of Ireland, for it marks the closure of the West Clare Railway, the last survivor of the narrow-gauge lines. The construction of many of these railways was facilitated by special legislation, designed to relieve the depressed state of large areas of that country some eighty years ago. Although several schemes failed to mature, more than 500 miles of 3 ft.-gauge line were built, and over 30 miles of 5 ft. 3 in. gauge were narrowed. To this total must be added the nine miles of so-called "monorail," on the Lartigue system, from Listowel to Ballybunion. The decline of the narrow gauge began with the advent of motorbus services in rural areas, and its extinction is now complete. The first part of an article on this considerable proportion of the railway mileage of Ireland appears in this issue.

Trans-Pennine Diesel Services

OFFICIALLY named the "Trans-Pennine," new services by six-coach buffet-car diesel trains were introduced between Liverpool and Hull, *via* Manchester, Huddersfield, and Leeds, on January 2. Each train seats 60 first and 232 second class passengers. There are five daily services to and from Hull, and hourly fast trains between Leeds and Liverpool. Despite the severe gradients on the Pennine section of the route, between Leeds and Manchester, the new trains are working to substantially accelerated schedules. On the through journey between Hull and Liverpool, there is an average reduction of 45 minutes in the journey time, and there are corresponding improvements at the intermediate stations. The expresses are supplemented between Leeds and Huddersfield by stopping trains at hourly intervals, and by a two-hourly service between Leeds and Manchester. Accelerations and more frequent services on this important cross-country route through the industrial areas of Lancashire and Yorkshire are a welcome improvement.

Colliery Spoil for Railway Filling

ABOUT 1¼ million tons of earth filling are required at the site of the new marshalling yard at Lamesley, near Gateshead, in the North Eastern Region of British Railways. Much of this material has been carried by rail from a cutting under construction 20 miles away, but spoil is now being obtained from another cutting, and from three colliery waste tips. The County Council has arranged for the roads serving these sources of supply to be strengthened where necessary. In addition to providing cheap filling, the removal of spoil from the tips will improve the countryside, and in one case this was actually recommended by the County Planning Officer. As a precaution against fire, the waste from the colliery tips is being used in alternate layers with spoil from the new cutting. It is, perhaps, not too much to hope that a similar use for spoil from other unsightly tips can be found.

At the Enquiry Office

THE problems that perplex many railway passengers are revealed by the queries received at a large station, such as a London terminus. At Paddington, for example, an average of more than 3,000 enquiries are dealt with on the telephone every day of the year. They range from simple requests for information about train services to intricate problems which require a considerable amount of intuition, in addition to a wide knowledge of railway matters, to solve. Perhaps the most difficult type of enquiry comes from those who vaguely recall previous journeys, and are reluctant to be convinced that their memories are at fault. In this connection, we recall the case of a lady who complained that a non-stop run of well over 150 miles at more than 60 m.p.h. was "very slow." A few discreet questions elicited the fact that her previous journey had been made from a station less than 80 miles from her destination.

The Narrow Gauge in Ireland: Its Growth and Decay—1

By E. M. PATTERSON, D.Sc., M.R.I.A.

Photo] [*R. N. Joanes*

Trains of two gauges at Ennis on September 22, 1960. On the right diesel-mechanical locomotive No. F502 is waiting to depart from the bay for West Clare, while across the platform arrives a C.I.E. main-line train for Limerick

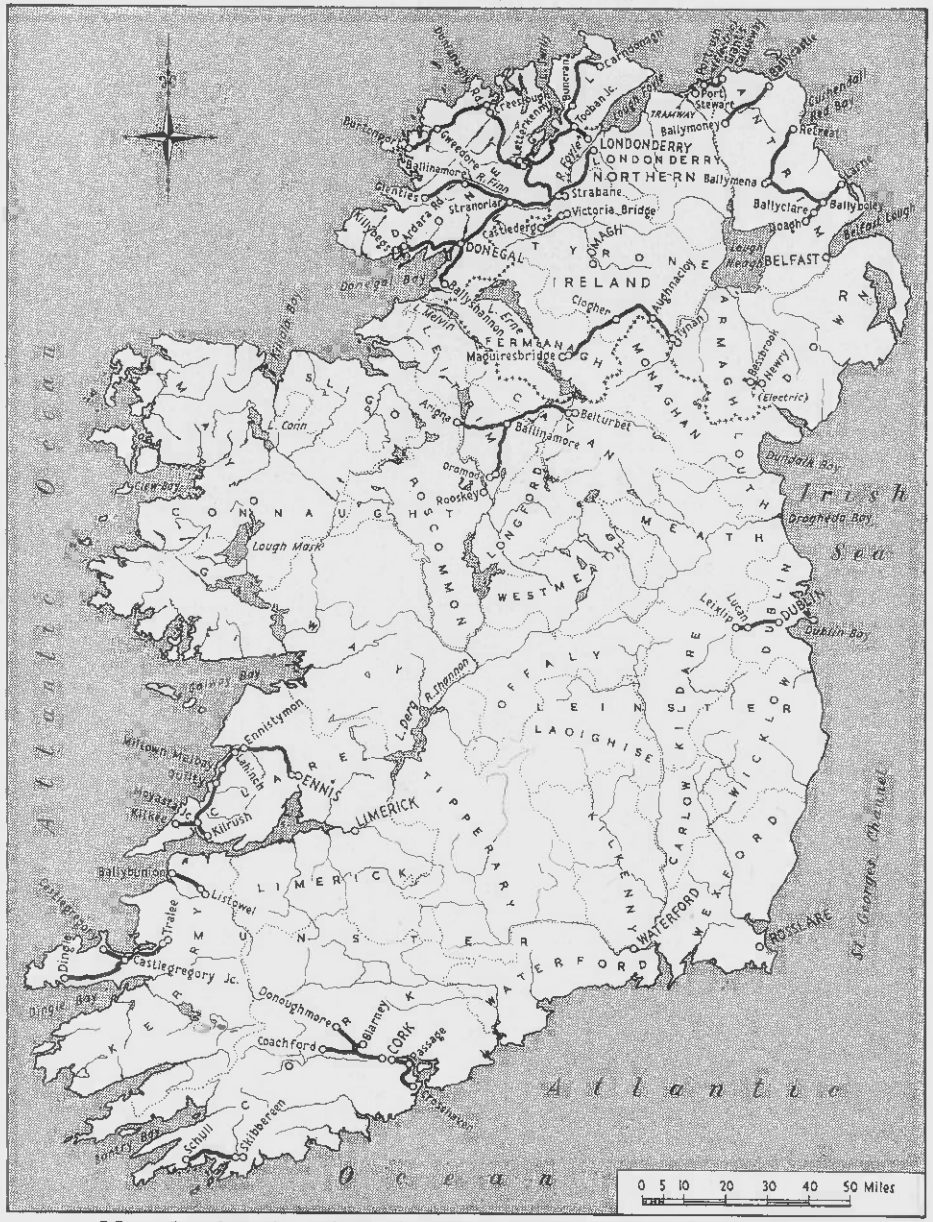
THOSE of us who have fallen under the fascination of the narrow gauge have heard with regret that from the first of this month (February) the West Clare section of Coras Iompair Eireann was being closed. Though nationalised and dieselised, and differing in many a way from its steam days, the West Clare was the last survivor of the family of narrow-gauge lines that were sprinkled over the varied landscape of Ireland, each line a little railway system with its own inimitable personality. For the writer, the sight of old 106 waiting in the Ballymoney bay, and then leisurely taking her train across the peat and bog cotton of the Antrim hills down to the blue waters of the Moyle at Ballycastle, were fitting introductions to the Irish narrow gauge.

The start of the 1930s in Ireland seemed a settled enough time to some of us. The "Troubles" lay ten years behind, and we were too young to remember them. On the European horizon war clouds had not begun to gather, and in a country predominantly agricultural, unemployment of the cities was less apparent than "across the water." On the Irish railways things were less serene, however. Road transport had been developed by the demands of the first world war and a flood of omnibuses, lorries and cars had swept down the dusty roads in an assault on the railways' near-monopoly of long-distance haulage.

The public readily accepted the new era. The farmer's wife preferred the bus at the lane-end to the station three townlands away, and if Seamus was bringing the fares on his bus down to half those on the railway, sure everyone knew it must be because the railways were overcharging anyway? The railways' annual accounts told a different story. Bound by statutes, they could not organise their own road feeder services at first and the private buses won several years' lead. Rail fares were reduced to

keep pace with the undercutting of what were often short-term profiteers, and this at a time when wages, raw materials and overheads were grinding in an upward spiral. The stockholders took the impact first, as dividends on ordinary shares failed to materialise. Lacking long hauls of heavy mineral traffic and with commuters localised around Dublin, Belfast and Cork, and tempted by buses, the decline was setting in.

The reasons behind this decline lay



Map showing the relative positions of Irish narrow-gauge lines

also in Ireland's population movement during the nineteenth century. The famine that resulted from the potato crop failure between 1846 and 1848 initiated wholesale emigration from a rural and over-populated country. Liner-loads of the young and able-bodied went to the New World, and Ireland was left the poorer for their going, with an increased proportion of ageing folk. The population of the country as a whole fell from 8 to 4¼ million. This was not all, for the distribution of the population changed as the cities and large towns expanded in size. Belfast's growth was phenomenal, from 20,000 to 360,000 over the century. As the numbers of people and their distribution altered, so did their demands on the railways. But the railways formed a rigid framework on the island's map, unlike the population density. Inevitably the inflexibility led to atrophy.

In the Irish railway framework, the narrow-gauge lines formed an integral part. In no sense freaks, they used a gauge of 3 ft. 0 in. which, though it lacked the Parliamentary blessing of the standard Irish 5 ft. 3 in. gauge, was entitled by

as a secondary standard. Only 9½ miles of Lartigue monorail in County Kerry was an exception to the rule, and its short existence of 36 years likewise singled it out from the others. The 18 other narrow-gauge systems worked away in self-contained independence, with rolling stock that was nearly as commodious as on the standard gauge.

Fittingly enough, the cradle of the Irish narrow gauge was rocked by the mining industry. In the peat-shrouded plateau of County Antrim, the basalt rocks north-east of Ballymena had been shown by geological survey to contain extensive beds of iron ore, and associated with them, accumulations of bauxite. The latter, mined for its aluminium content, was of no interest in the 1870s but iron ore that could be trucked out on to the hillsides was of immediate use to the cross-channel ironmasters. Roads in Antrim were primitive then, and in many of the glens the slipe or slide cart was more often to be seen than wheeled vehicles. Then the boom in iron-ore mining began, and in 1873 the first 3 ft.-gauge line was made down Glenariff to the sea, linking mines high on the

Photo] [*R. E. Tustin*

Mixed-gauge tracks at Larne Harbour Station in 1948

at the White Arch. It was no fault of the railway that the mines never paid; locally poor-grade ore, and high royalties to the landowner smothered the line, but though it never carried passengers, it was the pioneer.

The first 3 ft.-gauge railway in Ireland to be authorised by Parliament followed close behind the Glenariff line, as the Ballymena, Cushendall & Red Bay Railway, opened in 1875. It ran alongside the 5 ft. 3 in.-gauge Belfast & Northern Counties main line at Ballymena and was to have conveyed ore to a pier at Red Bay. The descent from the uplands to the coast would have entailed a drop of 1,000 ft. in 5½ miles. Probably because of the severe grade this part was never built and the line terminated near its summit level, the station being fittingly named Retreat and situated on a treeless moorland honeycombed with iron ore workings. Down at Ballymena, the broad gauge took the ore away for some years, until the Ballymena & Larne came in from Larne Harbour in 1878, and joined the B.C.R.B.R. in 1880. The broad gauge B.N.C.R. took the pair of them over in 1884 and 1889.

Once the fashion was started by these three narrow-gauge lines in Antrim, similar systems progressed apace. In 1877, the Ballycastle Railway Company obtained its Act and made a line from the B.N.C.R. at Ballymoney to what was then a small fishing port on the rocky northern coast of County Antrim. The line skirted the great flat of the Garry Bog and, after a gentle ascent towards the rounded hills, it started down the Tow Valley to the sea. It never had any prospect of mineral traffic, for it crossed country devoid of ore deposits, but the promoters' hopes of its developing Ballycastle as a tourist resort were reasonably well fulfilled. With its opening in 1880, the start of a rapid expansion of narrow-gauge mileage had begun.

The decade 1880-90 witnessed the number of Irish narrow-gauge systems increase from three to 16. This growth was the result both of private enterprise and of state assistance under the Tramways & Public Companies (Ireland) Act of August 25, 1883. Private enterprise put six systems in motion, both steam and electrically hauled. There were four of the former—the West Donegal; the Portstewart Tramway, in Co. Derry; the Castlederg & Victoria Bridge, in Co. Tyrone; and the Dublin & Lucan, west of the capital. The two electric lines were the Giant's Causeway & Portrush, in Co. Antrim, and the Bessbrook & Newry, in Co. Armagh. Unique in design, and steam hauled, was the Listowel & Ballybunion, already mentioned as Britain's only [illegible]

Photo [*W. A. Camwell*

Skibbereen to Schull train, headed by 4-4-0 tank engine No. 4s, between Newcourt and Church Cross in June, 1939. This line was absorbed into the Great Southern Railways in 1925

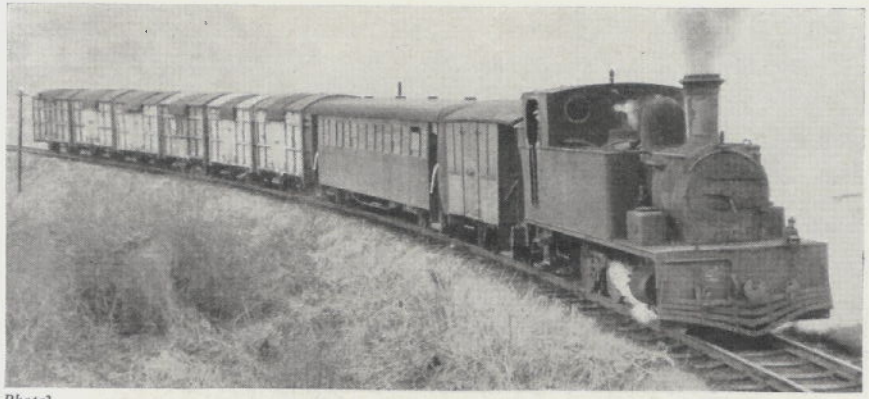


Photo [*Dr. E. M. Patterson*

Dromod-Ballinamore mixed train, headed by locomotive No. 4T, at Ballinamore Top Gates, on the Cavan & Leitrim section of C.I.E., on April 24, 1959

The 1883 Act fathered six lines, widely scattered on the map. The Cavan & Leitrim was sited north of the central plain. Twenty miles north-east of it was the Clogher Valley. County Cork held the Cork & Muskerry Light and the Schull & Skibbereen, the latter a shortened version of a tramway network planned for the district of Carbery. Out on the wild Atlantic coast were built the Tralee & Dingle Light and the West Clare lines. The Act also allowed the West Donegal to complete its line from an unsatisfactory temporary terminus at Druminnin to Donegal town.

By 1890 then, the narrow-gauge lines were to be found as unconnected fragments over much of Ireland, sweeping in an arc from Antrim in the north-east, through Derry, Tyrone and Donegal and down the west coast to Kerry. More centrally placed were the Cavan & Leitrim and the Dublin & Lucan. Narrow-gauge lines were noteworthy in their absence from the south-east.

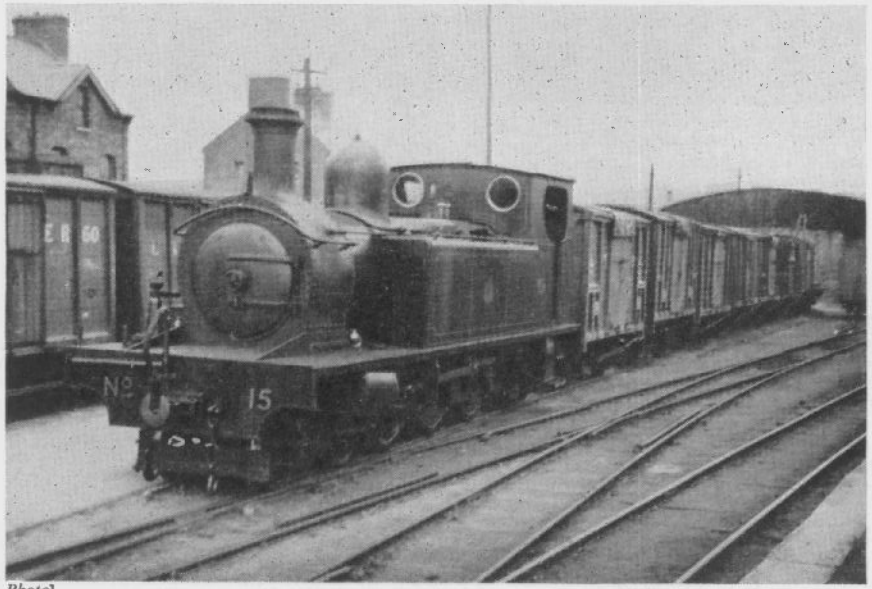
The West Donegal was soon incapable of independent existence and in 1892 it joined with the 5 ft. 3 in.-gauge neighbour, the Finn Valley Railway. The F.V.R. had been open since 1863, and the merger yielded the Donegal Railway Company. In the year following, the Finn Valley section was converted to narrow gauge. Coeval with the Finn Valley was the Londonderry & Lough Swilly. Like it, the original gauge was

Photo [*W. A. Camwell*

One of the Cavan & Leitrim 4-4-0 tanks, No. 1L, "Isabel," on a Belturbet train at Ballinamore, then G.S.R., in June, 1939

Photo] [Dr. E. M. Patterson

Scene at Tooban Junction, on the Londonderry & Lough Swilly Railway, on March 25, 1953, with Tooban-Buncrana and Londonderry-Letterkenny goods trains hauled by locomotives Nos. 10 and 2 respectively



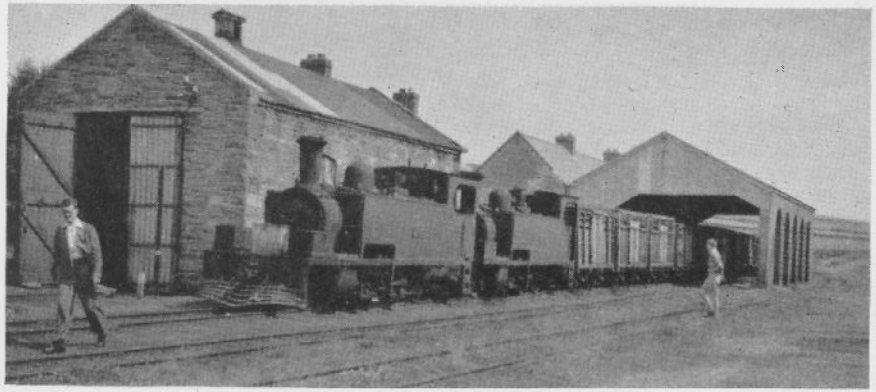
Photo] [R. E. Tustin

L.L.S.R. 4-6-0 tank engine No. 15 at Londonderry (Graving Dock) in June, 1948

5 ft. 3 in. The L.L.S.R. worked the privately-sponsored 3 ft.-gauge Letterkenny Railway, which was opened in 1883, and as the two lines were contiguous, the L.L.S.R. was re-laid to 3 ft. gauge in 1885. The combined mileage of the two was 30.

Further expansion came more slowly. Sir John Allport's Royal Commission of 1886 recommended the development of the Irish railways by the furtherance of light railways. The 1889 Light Railways (Ireland) Act was the outcome, and it authorised further state assistance. As a result, the Donegal Railway benefited by the addition of the Donegal-Killybegs and Stranorlar-Glenties sections, totalling 43½ miles and opened in 1893 and 1894 between August, 1902, and June, 1904.

Round about the turn of the century, extension was definitely slowing, but the bulk of what was yet to come was concentrated around the Donegal system. To give unbroken access to the city and port of Londonderry, the Donegal Railway built a 14½-mile line from Strabane down the east side of the valley of the River Foyle and opened it in 1900. The Great Northern Railway (Ireland) already held control of the west bank of the river, and made what opposition it could to the granting of powers for the narrow-gauge competitor. At the other end of the same system, a 15½-mile branch was opened in 1905 from Donegal town to Ballyshannon. The next year, the Donegal was bought



Photo] [R. B. Meadows

Monthly cattle special from Tralee at Dingle on July 25, 1952, double-headed by 2-6-0 tank engines Nos. 8 and 1

respectively. With County Donegal in particular thus very fully furnished with railways at the turn of the century, it might have been expected that any further narrow gauge expansion would be elsewhere.

In the extreme south, the Finn Valley's example was followed by the little Cork, Blackrock & Passage Railway, on which the 5 ft. 3 in. track was replaced by 3 ft. in October, 1900. This added 6½ miles to the narrow gauge total, but there the process could scarcely be regarded as an indication of buoyant health, for the line was coming under severe competition from the Cork Electric Tramway. Seeing that its future was in the hinterland rather than the suburbs of Cork city, an extension of 9½ miles was opened in

out by the combined efforts of the G.N.R.(I.) and the Midland Railway (Northern Counties Committee) and was thereafter administered by a joint committee. Finally, the nominally-independent Strabane & Letterkenny Railway Company joined in 1909 the two towns in its title by 19½ miles of line, but arranged for it to be worked by the C.D.R.J.C. The line was noteworthy in that it formed a link between the two big narrow-gauge systems of Donegal, and thereby enabled a certain amount of freight traffic to be interchanged between them. Unfortunately free interchange of rolling stock was inhibited by differences in the heights of the buffers, though the joint committee ran a number of wagons specially fitted to couple with the Lough

Photo] *[W. A. Camwell*

Trains from Kilrush and (right) Ennis passing at Miltown Malbay, on the West Clare line, in June, 1939. The latter is headed by 2-6-2 tank engine No. 9C

ings were at least considered, but never materialised, for attempts by the L.L.S.R. in 1907 to get the C.D.R.J.C. to run passenger services through to Dunfanaghy and Creeslough met with a chilly response.

With the opening of the Strabane & Letterkenny line, the construction of passenger-carrying narrow-gauge lines in Ireland was complete, though the fact that the public had not lost interest was evidenced from time to time when local

Photo] *[Rev. A. W. V. Mace*

Goods train from Kilrush crossing the West Clare railway bridge over the River Fergus at the approach to Ennis in August, 1954, headed by former

bodies advocated the extension of existing lines. In January, 1914, for instance, the C.D.R.J.C. turned a deaf ear to the entreaties of a local committee which was anxious to see the Glenties line extended to Ardara.

As the need for mineral haulage had been responsible for the first narrow-gauge line in Ireland, so was it the reason for the building of the last. The western limb of the Cavan & Leitrim ended at Arigna, just inside County Roscommon. On a hillface three miles from the railhead, adits had been driven in to coal deposits, and carts were being used to bring the coal down. The Leitrim County Council had opposed the making of extensions for some years: one was

Original petrol railbus of the County Donegal Railways Joint Committee at Stranorlar about 1925. On the right is G. T. Glover, Locomotive Engineer of the G.N.R.(I.)

from Arigna to the mines, the other from Dromod to Rooskey. Land was taken for the mines extension in 1918, however, at a time when the Irish railways were under Government control and under powers given under the Defence of the Realm Act. So in June, 1920, the last narrow-gauge line, 4½ miles in length, was opened for mineral traffic from Arigna to Derreenavoggy and Aughabehy. Ten years later it was cut back to a length of 1½ miles.

The first world war, which had indirectly enabled the Arigna extension to be built, equally indirectly struck the first severe blow at the Irish narrow gauge. British Government control of all the Irish railways was enforced from December, 1916, until August, 1921. During this period, wages were raised by around 250 per cent. and the cost of working increased accordingly. Fares were at first fixed, but were later doubled in stages. The slim profits of pre-war days vanished and a combination of higher rail fares, and higher rail freight charges, drove potential customers on to the roads. There, the expanding motor industry was ready to provide vehicles for both public and private transport. The position was the same in Great Britain, but in Ireland the rate of change was restrained by the lack of suitable roads to carry the new traffic.

In the remoter parts of Ireland, where the narrow-gauge lines were situated, and where they had been built by reason of the physical and economic geography, road improvements came slowly. Surfaces in the 1930s were shockingly bad by present-day standards, but in spite of the limited amount of money that the county councils had to spend, change was working.

Never far in the background, the internal politics of Ireland played their part in changing the conditions under which the little lines had been created. Rebellion against British rule had broken out in 1916. By mid-1920, some engine crews were refusing to work trains which carried British troops or munitions and, in the December, this had virtually paralysed rail services in County Donegal and in other parts of the west. The formation of the 26-county Free State in December, 1921, did not end the unrest, for almost two years of civil war followed, during which there was widespread damage to rail systems, and train services ceased in Kerry and Cork.

(*Continued on page* 96)