LMS milk traffic - an overview

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An example of milk churns conveyed by an Ordinary Passenger train. Ex-LNWR Precursor Class 4-4-0 No.25277 Oberon at Whitrope, ten miles south of Crewe, on July 3rd 1937 with a secondary 4-set and an ex-North Staffordshire Railway 6w milk van behind the tender. ER MORTEN.

Carriage of milk by rail is fondly remembered in many ways. Yet it is one of those traffics which the railways didn't carry at first; blossomed for a while; and was then lost. During this interlude there were several phases and the LMS was deeply involved. A particular feature of milk as a commodity is its extremely short shelf life: only a day when the weather is hot, and this was to determine how the traffic was handled with far reaching consequences.

Today, milk is viewed as a staple food but when the railways were being built it was consumed in relatively small quantities which were easily supplied fresh from local farms by the farmer's horse-drawn milk float. Gradually, though, milk began to be promoted as a healthy food for the young and dairy farms were established in greater numbers, including inside cities where, naturally, the demand was greatest. Unfortunately, a large city like London kept swallowing up its pastures and cattle in inner city farms increasingly suffered from poor nutrition and squalid conditions. Outbreaks of disease became frequent with Rinderpest, for example, requiring major culling of herds. By the late 19th century production of milk in the City of London, which at the time made up about 20% of the nation's population, was collapsing and the demand could only be met by bringing it in from further afield. This was the point at which rail began to play a major role.

The first phase

At first, the milk was conveyed over fairly short distances but this increased as the superior quality of milk from country farms was demonstrated, one observer feeling that inner city dairies produced milk that could be filthy and capable of spreading disease rather than good health! With an agricultural depression and import of beef and grain from the American prairies beginning, times were hard for farmers and they were keen to embrace a new market. The dairies helped by offering contracts to supply the milk by rail and even paying the carriage to help smooth the operation. Gradually the distance increased to districts like the Vale of Aylesbury where the LNWR began to collect milk on its northern edge along the Oxford-Cambridge line. Before long it was being sent from 50-75 miles away.

Dairy cattle have to be milked twice a day and at first there were corresponding rail collections around 8am and 6pm but early in the 20th century, coolers were developed and they allowed the afternoon milking to be stored in the cool of the night and added to the morning milking, which was not necessarily cooled because the train was scheduled to collect soon after the milking was complete. A former dairy farmer told me that during severe heat waves when it became hard to keep the milk cool overnight, an extra train could be laid on in the evening but it was no longer the norm.

So, farmers took their churns to the local station - not that all were involved of course; only where supply contracts had been signed. With rising demand, the whole system began to change as dairies were built in smaller cities and towns, often by co-operatives, to which local farmers delivered via a milk float for pooling and distribution to shops and the doorstep. If there wasn't enough to meet local demand, it could be supplemented by a rail delivery from further away, especially if the local land wasn't ideal for dairy farming - it needs lush grass and soil to suit. However, farmers of all kinds were now finding it profitable to keep a small number of cows because the contracts produced a steady flow of cash every week and it was common for a farmer to be delivering only one or two churns a day but, with groups of farmers gathering at each station, the volume as the collecting train proceeded down the line added up. Dairies would place adverts in the local newspapers urging more farmers to take part: the railway was helping to drive the economy.

At this stage - and it was to last for some time and overlap with more new practices before fading away - the churns made a daily cycle in which the loaded ones were sent out and the empties brought back later in the day. Milk trains proper were uncommon at this time because the churns were placed in well-ventilated vans attached to an Ordinary Passenger train. Travellers to the Big City dubbed their morning service "the milk train" as it became a standard feature of the urban scene. The first illustration shows what appears to be a collecting working still going strong in 1937 though much scaled down with only a single milk van attached to the train. The carriages had recently been modernised with LMS gangwayed stock.

A full churn was heavy and though a smaller size was introduced they could be trundled (a process of spinning the churn on its bottom rim) quite nimbly along a hard surface. They were placed on the platform where the train would stop with the milk van behind the engine for accuracy: time was always short and woe betide a farmer who turned up late. Wooden milk landings were also used for the farmers' benefit because the churns didn't have to be lowered from the milk float to the ground but simply transferred. The Oxford-Cambridge line had several.

Return was in like manner, or by attachment to a goods train; with churns, it wasn't important. The only difference was that staff would offload the empty churns and move them out of the way for farmers to pick up at their convenience - quite unlike the collection of loaded churns which farmers described as "organised chaos"! Photographs which show unattended churns on a platform are of returned empties, on the other side of the station compared with the collection.

A brief word about the railway vehicles will suffice here. Apart from some bogie vans built by the GWR and GNR milk vans were increasingly built on six wheels and the LMS built a lot of ventilated dual-purpose "fruit and milk" vans between 1924-33, and a further 110 insulated milk vans in 1935. The timing shows how much churns were still being used and a desire to provide a better service.

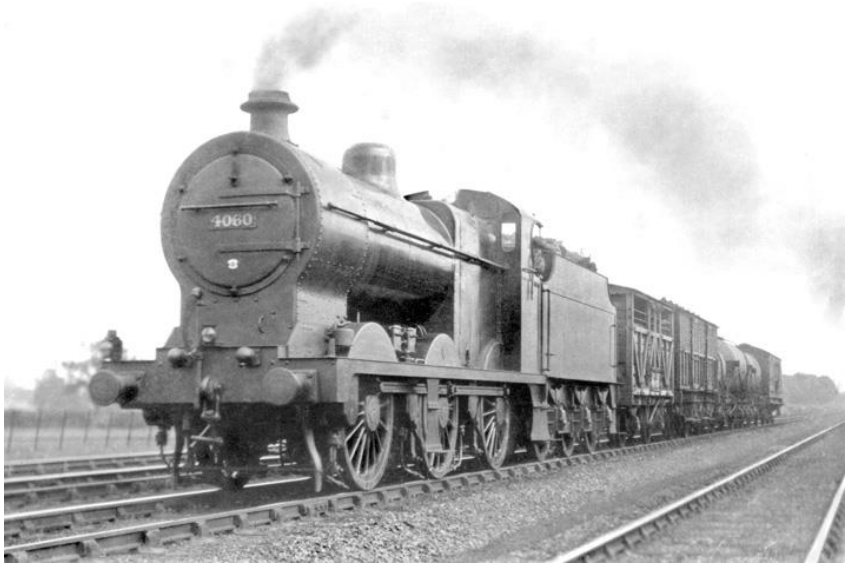
This view at Tutbury on the former NSR line between Crewe and Derby underlines the richness of the resource the LMS found itself sitting on in the Midlands as an LNER Ordinary Passenger headed by J3 No.4094 carries a 4w milk tank off LMS territory towards Grantham on the ECML in June 1933. There it will be attached to a south-bound working to King's Cross. During the 1920s an ex-NSR milk van carrying churns took a similar route. PHOTOMATIC

Alas, despite the company's attempt to modernise its fleet of milk vans, this mode of operation was to be eclipsed thanks to several factors. Underlying them was the inexorably rising demand for milk from the population at large, and for new products such as milk chocolate, that wonderful British confection. (Butter and cheese were made near the farms and generated separate traffic). Milk was being sent from greater distances but there were two counter

developments. Dairy farming had previously been concentrated where the grass was best but gradually it became established in less favourable conditions, focus falling on the environs of London, for example, and around the nation's conurbations from which a short journey by road would bring the milk into town. The trend was bolstered in 1934 by formation of the Milk Marketing Board which encouraged local dairies to set up and collect the milk churns from farms by lorry, pool it, and deliver to the cities by road tanker. These developments caused the railway to lose out to the roads even more heavily and, to put it in a wider context, in the years from 1924 to 1934, the two principal carriers, the LMS and GWR, had already lost 35% and 19% of the traffic, respectively. The LMS continued to lose disproportionately more after 1934, ironically when milk production was continuing to rise, because a larger proportion of its hauls were relatively short distance and easily captured by the roads.

Further developments

Yet, there had been a key development earlier when, in 1927, the LMS and GWR introduced a glass-lined milk tank wagon. Initially they were built on a 4w chassis and could not of course be deployed at every station along the line, only where a dairy was built alongside the railway with a connecting siding. Nor could they be rough shunted and therefore no longer be marshalled with goods wagons, only by passenger or fully fitted freight train. For many years both types of service operated while dedicated milk trains got established, carrying a mixture of vans for churns and tank wagons.



A mixed milk train carrying churns and tank wagons c1932-34. 4F No.4060 is believed to be near Roade and behind the cattle truck (which could in an emergency be used to carry churns) is an ex-NSR milk van. Following are three tankers on 4w chassis built in 1931 for United Dairies, the first for 2000 gallons, the other two for 3000 gallons. On the rear is an ex-NSR 6w brake van. AUTHOR'S COLLECTION

A further drawback to the tanks was in poor stability thanks to a high centre of gravity and the milk sloshing around (conversion to butter was another albeit minor consideration) and after a derailment a new specification was issued for either a much longer wheelbase or six wheels: the latter was adopted and a speed limit of 60mph placed on extant 4w wagons, plus a requirement for a 6w vehicle to be marshalled behind. The LMS began building on the new chassis in 1931, standardising on a capacity of 3,000 gallons (the first 4w tanks had a capacity of both 2,000 and 3,000 gallons), and a year later, adopted a stainless steel tank (trade name "Staybrite"). During the late '30s the earlier wagons were rebuilt on a 6w chassis. As a matter of detail, the tanks were owned and maintained by the dairying companies, the chassis by the railway. A road-rail version carrying 2,000 gallons was also built but in much smaller numbers as the railways addressed the shift from rail to road. Construction of tank wagons continued until 1951, the LMS becoming

An example of an Up milk train during the transitional period during the early 1930s showing much modernisation. Class 2P No.695 is on Dillicar troughs with three recently built dual-purpose "fruit and milk" vans and four even newer tank wagons, believed to be the 6w version for United Dairies. The guard's van is an ex-MR 6w clerestory.
AUTHOR'S COLLECTION

This 1930s view with 'Royal Scot' No.6113 *Cameronian* at Rugby, though slightly soft, shows important facets. Staffordshire was a major supplier of milk and the leading vehicle is an ex-North Staffordshire Railway 6w milk van which lasted into the mid-1950s. Five milk tanks follow, several on the original 4w chassis, and an LMS "Stove R" further back. Rugby lay in beefstock territory so the reason for the stop here isn't clear. GORDON COLTAS COLLECTION

the second largest operator (behind the GWR) as the company exploited established and blossoming locations for dairy farming.

The final phase

Hence the stage was set for a further mode of operation because the tank wagons carried such high volumes of milk that established LMS-dominated bulk-producing districts like North Staffordshire and Cheshire could scale up and the operation become more efficient. More remote regions could also prosper for if the milk production could be centralised, carrying it overnight over distances far greater than previously imagined would now be feasible, driven by the railway's ability to take the product to market, in some cases a truly distant market over 300 miles away. Two particular regions on the LMS to expand this way were the northern part of the Settle & Carlisle and around the Solway Firth; both were now able to send milk trains each day to London.

The new practice was to send out a loco and passenger brake van (more on the latter in a moment) to collect the tanks and concentrate them in a yard or station from which an express milk train could be despatched for the long leg of the journey. The collecting was done by relatively light engines but the complete train would have something more powerful including express passenger types. Known examples included the Hughes "Crab" 2-6-0, Black 5, "Royal Scot" and "Jubilee". The illustrations show some of these workings.

An interesting aspect is that with milk trains proper beginning to run at high speed, goods brake vans were found unsuitable so a passenger brake van became the norm. Many companies used all kinds of bogie vans indiscriminately, even old bangers or an elderly brake 3rd carriage, but it was hardly efficient when a bogie van could be better utilised in a proper load-carrying capacity: with a milk train only the guard was aboard. A better solution was to use a 6-wheel goods or passenger brake van although being elderly, their riding at speed on the end of a train could be suspect so the LMS adopted a practice of coupling some of the vehicles outside the brake to make life more comfortable for the guard.

It never became a universal practice but it is why, I believe, the LMS took the unusual step in 1932-33 of building a modern 6w passenger brake van, the "Stove R". More were delivered in 1938 and during the War in 1940. The new vehicles ousted ex-NSR and clerestory ex-MR 6w brake vans pretty quickly but the practice of marshalling them inside the end of the train lingered here and there, the last known example being in the early 1950s. By then the Stove R could be seen on milk trains in other parts of the country, notably on the SR.

The same applied to the milk tanks, many of the United Dairies' on LMS chassis running on the WR and SR in quite large numbers, especially on the latter where about half of the tanks could be ex-LMS.

In trying to present an overview of developments, I have tried to avoid quoting details of specific workings, some of which are shown in the accompanying illustrations. Two examples are worth mentioning lightly. On the Oxford-Cambridge line at the turn of the century two collections a day were being made on the western part of the line between Bicester and Bletchley with the morning collection going to Bletchley (probably for Euston and the milk depot at Willesden) while the afternoon's went to Verney Junction (probably for the dairy at Rossmore Rd. by Marylebone station). Dedicated milk trains were being operated and one lot of empty milk vans came back via an overnight goods train: on a minor line with relatively little traffic it could be difficult to link the milk and passenger workings but later, when there was only a single collection, a morning passenger train was used. A dairy was set up in the district and while rail collection continued, it would have sent the milk on by road before capturing the whole traffic.

As regards the tank traffic, an interesting example involved two companies (such an arrangement was also made between the GWR and LNER from Shrewsbury, for example). There was a contract for milk from Sanquar in Dumfriesshire to the dairy at Marylebone and the round journey of over 700 miles showed just how much the transport of milk had developed once large tanks were made available. This milk began its journey along former Glasgow & South Western lines to Carlisle where it was attached to a heavy milk train up the WCML to London. The normal load for Marylebone was three tanks and they were detached at Bletchley for transfer to a local passenger train on the Oxford-Bletchley line, along which lay Verney Junction where they were transferred again. The final leg was by attachment to more passenger services, this time LNER via Aylesbury to Marylebone. Empty tanks took the same route back. By a quirk of fate this humble line in north Buckinghamshire, by dint of its proximity to London and connections to two termini, saw nearly the whole gamut of milk operations.

Seen at Crewe not long after Nationalisation is ex-LMS 2P No. 40402 with a single but very smart milk tank and ex-LMS 50ft BG. This is almost certainly a connecting working for which it was common to place the brake van behind the tender to make shunting at wayside stations and depots easier. AUTHOR'S COLLECTION

Caprotti 5MT No.44745 heads north at Elstree with the milk empties for Appleby on October 2nd 1948. An ex-LMS "Stove R" is at the back for the guard. Behind the tender a stores van has been added, a recent conversion from an ex-WCJS fish van (possible number M40398). JL COATES, JS HANCOCK COLLECTION

"Black Five" No.44762 near Tebay in the 1950s with 14 milk tanks and a "Stove R" on the rear. NEVILLE STEAD COLLECTION.

After WWII, dairying was developed ever more heavily near the conurbations where the most concentrated need for milk lay, aided by more productive cattle (such as the well-known black and white Friesian). One only needs to look at maps showing the distribution of dairy farming in the UK to see how great the changes were.

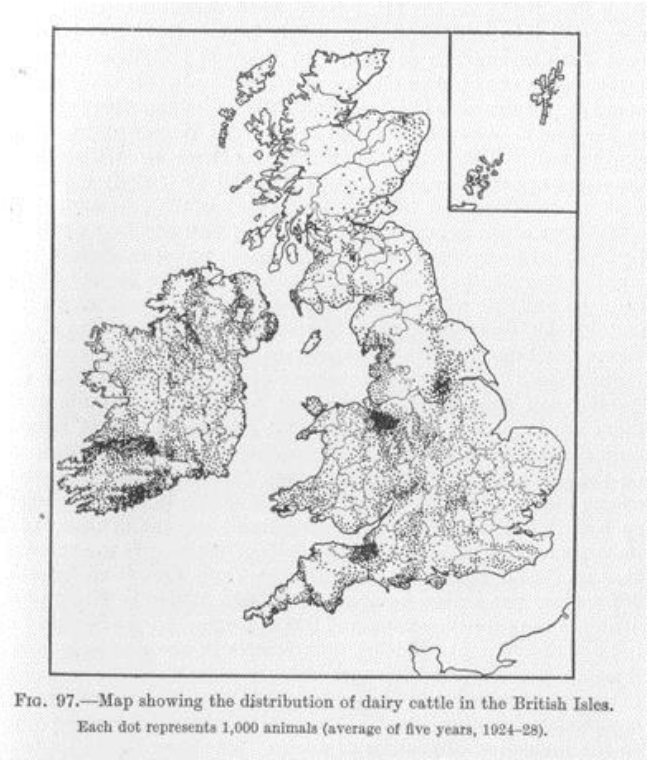


FIG. 97.—Map showing the distribution of dairy cattle in the British Isles.
Each dot represents 1,000 animals (average of five years, 1924–28).

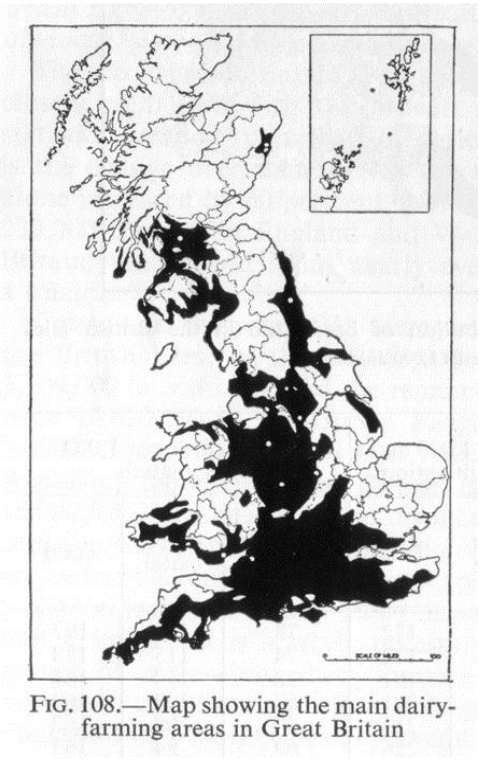


FIG. 108.—Map showing the main dairy-farming areas in Great Britain

Distribution of dairy farming in 1926 (left) and 1956 (right). The presentations are slightly different but development around the UK's principal conurbations is evident, as well as on LMS territory around the Solway Firth, served by long distance express milk trains.

With an increasingly sophisticated road system, use of churns over short distances died out and the rail borne milk traffic was entirely by milk tank over long distances; how it had changed in less than twenty years. In 1967 with the end of steam in sight, the LMR still had a substantial fleet of milk tanks (down from around 360), comparing thus with the other regions:

WR	310
LMR	220
SR	41
ER/NER	40

The need for long hauls was fading and it finally ceased when the Milk Marketing Board ended the traffic officially in 1980. At this time 170 6-wheel tank wagons from all the companies were still in service, all on the WR. Thus ended three overlapping transitions, through churns to tanks; from rail to road; and delivery from nearby to afar and back again.

Sources and acknowledgements

With thanks to Max Garratt, dairy farmers in Buckinghamshire and Northamptonshire, Milk Marketing Board, Bob Essery, Philip Millard, Bill Simpson and Glen Woods. Maps from "The British Isles, A geographic and economic survey", Dudley and Beaver, 1933, 1958.

Note

The above was submitted to Wild Swan on 5.2.11 but the version published in LMS Journal No 34, September 2011, was different - an incomplete working draft used between the Editor and myself to help fix errors. Fresh material was being added too. The published version should be disregarded in favour of the above corrected and expanded, finisihed article. Any additional material will be placed on my website, under "Prototype & workings / LMS Milk": www.steve-banks.org. 3.10.14

Caption for additional photograph (provided by WSP)
"Jubilee" Class No.5593 (as yet unnamed) near Oxenholme with a down empties working c1935 during the transitional era. Churns are being carried in three vans: an ex-LNWR bogie van and two on 6w chassis, ex-NSR and ex-MR. Around them are 6 milk tanks, one on 4 wheels, the rest on the newer 6w chassis. Behind the Stove R for the guard an unidentified milk tank has been placed, plus an LMS Vanfit.