

= Meråker Line =

The Meråker Line (Norwegian : Meråkerbanen) is a 72 kilometers (45 mi) railway line which runs through the district and valley of Stjørdalen in Nord -@ Trøndelag , Norway . The line branches off from the Nordland Line at Hell Station and runs eastwards to the Norway ? Sweden border , with Storlien Station acting as the border station . There the line continues as the Central Line . Traditionally the Meråker Line was regarded as the whole line from Trondheim Central Station to the border , a distance of 102 kilometers (63 mi) . There are two daily passenger train services operated by the Norwegian State Railways and a limited number of freight trains hauling lumber and wood chippings .

Proposals for a railway were first made in 1870 . Routes via Verdal and Røros were soon discarded and the Meråker Line was approved on 5 June 1873 . The first revenue services ran in 1879 and the line was officially opened on 22 July 1882 . The line gave a boom to the local economy , allowing for same @-@ day transport of produce to Trondheim . The line has been upgraded several times to increase the axle load . During World War II , the line was the scene of both the Hommelvik train disaster and the Meråker train disaster . Steam trains were in use until 1971 , following the introduction of diesel locomotives in 1961 . From 1900 to 2005 Meraker Smelteverk was a major customer , using the line to haul carbide , and later microsilica , from their mill at Kopperå to the port at Muruvik . The Norwegian National Rail Administration plans to have electrified and installed centralized traffic control by 2023 .

= = Route = =

The Meråker Line is currently defined as the section between Hell and the Norway ? Sweden border at Storlien . Until 2008 it was regarded as the entire section from Trondheim Central Station to Storlien . The line was initially 102 @.@ 23 kilometers (63 @.@ 52 mi) to the border , or 105 @.@ 97 kilometers (65 @.@ 85 mi) to Storlien Station . With the new definition , the line is 70 @.@ 69 kilometers (43 @.@ 92 mi) . The national border is 655 @.@ 10 kilometers (407 @.@ 06 mi) from Oslo Central Station and 751 @.@ 67 kilometers (467 @.@ 07 mi) from Stockholm Central Station . At Leangen Station the Stavne ? Leangen Line branches off and provides a bypass through Trondheim . At Hell the Nordland Line continues northwards . From Storlien the line continues as the Centre Line via Östersund to Sundsvall .

The line largely follows the coast of the Trondheimsfjord from Trondheim until reaching Hell . From there the line heads inland through the valley of Stjørdalen . Initially it follows the river of Stjørdalselva . The line runs predominantly due east from Trondheim , passing through the current municipalities of Trondheim , Malvik , Stjørdal and Meråker . With the new definition , it only passes through the latter two , and is entirely located within Nord @-@ Trøndelag . From Trondheim to Hell the line runs just above sea level , except past Leangen Station where the line hits 34 @-@ meter (112 ft) abovea mean sea level . From Hegra Station there is again a slight rise . The 72 kilometers (45 mi) from Trondheim to Gudå Station remain fairly flat . From there the line enters a steep climb , passing Meråker Station at an elevation of 220 meters (720 ft) AMSL and Kopperå Station at 329 meters (1 @,@ 079 ft) . Storlien is located at 593 meters (1 @,@ 946 ft) AMSL . The Meråker Line is not electrified and lacks centralized traffic control , but as GSM @-@ R. The standard gauge railway is owned and operated by the Norwegian National Rail Administration .

= = History = =

= = = Background = = =

Since the Middle Ages , both the Stjørdalen and Verdal valleys were important trade routes connecting Trøndelag and Jämtland . In particular , Levanger grew into an important trading town for Jämtland farmers , who would travel across the Verdal Mountains . The first public discussion of a

railway was launched in Levanger in 1858 ; the initiative was pushed by Jämtland 's governor Thome , who proposed a line via Verdal to Levanger . At the time , the Trondhjem ? Støren Line was about to be built , and the commercial interests in Trondheim were more concerned with a southward connection along what would become the Røros Line to Oslo . A 1869 meeting in Sundsvall , Sweden , had proposed three routes for the line : via Verdal , via Meråker or as a branch from Røros .

A road up Stjørdalen was built during the 1850s , connecting at Stjørdalshalsen to a steam ship service to Trondheim . A concern in Sweden was that Bottenviken could freeze up and that the Trondheimsfjord offered an ice @-@ free alternative for export of timber . Trade from Norway to Sweden was limited , mostly due to the limited infrastructure . Norwegian trades argued that a railway would allow for the export of Norwegian fish to Sweden .

A committee was appointed in 1870 to consider the railway , and was followed by on @-@ site investigations to determine the railway 's route . Similar investigations were carried out in Sweden . For the Norwegian side , costs were estimated to be at 4 @.@ 7 million Norwegian kroner. for the Meråker route . Surveys along the Verdal route deemed the route unsuitable . This presumed a narrow gauge (1 @,@ 067 millimetres or 42 @.@ 0 inches) railway , common in Norway at the time . Operating profits were estimated to give a 4 @.@ 5 percent return on capital . Shares in the railway company were offered for sale in 1871 ; the largest purchaser was Trondheim Municipality , who bought shares for 1 @.@ 2 million kroner . In Trondheim alone , private investors bought an additional 3 @.@ 6 million kroner in shares .

In the spring of 1871 , the line was considered by the Standing Committee for Railways in the Parliament of Norway . The proposition was voted down at 64 votes to 42 . After a local railway committee was established , Parliament passed legislation to build the line on 2 May 1872 . The state would receive shares in the company equal to their monetary contribution . A suggestion from Johan Sverdrup that required the company to also borrow 1 @.@ 4 million kroner was voted down 58 votes to 52 . In Sweden , the work was meeting resistance , and many Trondheim businessmen chose to purchase shares in the Swedish part of the line to secure the financing of the Swedish part . In 1873 , the Parliament of Sweden voted to build a narrow gauge railway from Torpshammar to the Norwegian border ; there was already a railway line from Torpshammar to Sundsvall , the Sundsvall ? Torpshammars Railway .

The Norwegian Parliament gave 400 @,@ 000 kroner in support in 1873 , and doubled it the following year . By then , the Swedish authorities had decided that all railways should be built in standard gauge , and the Norwegian Parliament chose to change their configuration to the same gauge in 1874 , increasing estimated costs from 4 @.@ 7 to 8 @.@ 9 million kroner . This was a similar arrangement to what would happen with the two international lines in Eastern Norway , where the Kongsvinger and Østfold Lines were also built with standard gauge . Despite intense lobbying from representatives from Innherred , the Verdal alternative was finally discarded when parliament gave 3 million kroner to the Meråker Line .

= = = Construction = = =

The choice of route through Stjørdal remained a controversy . The river Stjørdalselva created a barrier just north of Hell , making it cheaper to build the line on the south shore of the river until Hegra . This would make the line bypass Stjørdalshalsen on the north shore , the largest town between Trondheim and Östersund . Despite massive local protests , Parliament ultimately chose the southern alternative . The added distance reduced Stjørdalshalsen 's trade role while reducing railway revenue as the steam ships continued to run on the route , thus reducing the profitability of the line . Stjørdalselva Bridge was opened in 1902 when the Hell ? Sunnan Line opened to Stjørdal .

Blasting commenced during a ceremony in 1875 , although regular construction work on the line did not commence until the following year . The immediate line into Trondheim was the last to start , in 1878 , following disagreements about the plans . By then 54 kilometers (34 mi) of track were laid from Leangen Station to the border between Nedre Stjørdal and Øvre Stjørdal . The first train ran

from Rotvoll Station , just outside Trondheim , to the international border on 27 August 1879 . From 11 February 1880 a weekly train service was operated and regular revenue services began on 17 October 1881 , although the line was not yet completed to Östersund .

In Trondheim , the existing railway station for the Trondhjem ? Støren Line was built as a cul @-@ de @-@ sac station at Kalvskinnet . This could not serve the Meråker Line and the station was thus moved to Brattøra , an artificial peninsula immediately north of the city center . Thus the station became located next to the new port facility . With the construction of the Røros Line , it was decided to connect both lines to the same station . The cost of the new station was 1 @.@ 4 million kroner . Trondheim Station did not open until 1882 .

The work paid well , and attracted many navvies to the area . Initial wages were 3 @.@ 20 kroner per day , though this later was reduced . Two and a half thousand men were employed , with fewer jobs being offered than there were applicants . Land owners were compensated 50 ? 200 kroner per hectare (NOK 20 ? 80 per acre) for cultivated land , and 10 kroner per hectare (NOK 4 per acre) for forest . Many local farmers made good money offering transport of cargo for the construction , as well as renting out annexes for navvies ; others made money as traders . As with all such construction areas , many legal and illegal pubs and brothels were established . After construction was completed , some moved on , while others settled in the area ; many of these received jobs with the railway company .

The official opening took place on 22 July 1882 by King Oscar II of Sweden and Norway . This was at the height of the debate on parliamentarianism and the king 's right to veto the Parliament of Norway , and the king used the opening ceremonies and speeches at each station to encourage people to support the union between Sweden and Norway , and pointed out how the railway would better connect the " brother nations " . In contrast , in Hegra no @-@ one from the municipal council chose to attend the opening ceremony , and no @-@ one from Nedre Stjørdal attended the opening at Hell either .

= = = The first years = = =

By 1880 the railway had six locomotives at its disposal . No. 1 ? 2 were Class 14 that were intended as helping power to get trains up the steep climb from Gudå to Storlien . No. 3 ? 6 were Class 9 locomotives that would do the main haulage from Gudå into Trondheim . In 1883 , NSB 's other two Class 14 locomotives were transferred from the Smaalenene Line . The initial fleet consisted of 24 passenger and nine breaking cars , all from Skabo . The line featured the first bogie cars in the country , with a single entrance at the end of each car , instead of individual doors for each compartment . There were also 37 closed freight cars , 40 lumber cars , 20 boxcars , 100 flatcars and three milk cars . At first all trains were mixed freight and passenger .

In addition to the trains heading for Sweden , there was also a commuter train that ran , first from Hommelvik Station , then from Hegra Station , into Trondheim in the morning , and returning after work in the evening . Since there was no depot at Hegra , the locomotive had to return without cars to Hommelvik for the nightly overhaul . The 854 kilometers (531 mi) route from Trondheim to Stockholm initially took 57 hours . By 1904 , this was reduced to 26 hours , mostly due to reducing the layover between trains .

The Røros Line was connected to the station at Brattøra at 24 June 1884 , allowing Marienborg to be us as a common maintenance depot for both lines . The Meråker Line 's locomotives were then renumbered , starting at 51 , to keep them distinguished from the Røros Line 's . From the same year , the Meråker Line was assigned two Class 8 locomotives . From 1896 , Class 15 locomotives were used , and two years later supplemented by the Class 17 .

The revenue of the line was at 533 @,@ 306 kroner per year in 1900 , most of which was from the freight traffic . This gave a return of capital of 1 ? 2 % . Freight traffic increased about twice as fast as passenger traffic , and in 1904 a new daily train was put into service to Storlien . The first Hell ? Sunnan Line opened in stages between 1902 and 1905 . At first the trains along the Hell ? Sunnan Line were decoupled at Hell Station , but from 1909 on direct trains to Trondheim started operating .

== Impact ==

The Meråker Line was of great economic and social importance for the villages it passed through . It allowed much quicker transport into Trondheim , and the station buildings became centers of community life . For the first time these places had telegraph stations and daily post deliveries . The expedient transport meant that many more people chose to travel into Trondheim , which gained an advantage over other towns , such as Levanger and Stjørdalshalsen , in becoming the regional center for trade . Especially Stjørdalshalsen lost much of its importance for the villages up the valley Stjørdalen . For farmers , the railway made it possible to sell fresh dairy products to Trondheim , and even to Sundsvall . New markets , combined with good income during construction that allowed for investments in machinery , increased the revenue and profits for agriculture along the line . By 1900 , 68 people were employed by the railway in Meråker alone .

Storlien , just on the Swedish side of the national border , grew up as a resort , with the first hotel established just after the railway arrived . Trade between the two countries increased , as Jämtland had easy access to the Trøndelag market . However , the freight rates were so high that it was cheaper to send some products to Trøndelag from the Swedish east coast by ship around Scania .

Meråker saw an industrial boom due to the railway . There was already a copper mine and smelters at Kopperå , and they saw the railway as a possibility to change from locally produced charcoal to imported coke . A pulp mill opened in 1887 , but burned down in 1912 . The most important industry was the carbide factory that opened in Kopperå in 1900 ? Meraker Smelteverk . Though located close to the hydroelectricity sources in Meråker , the import and export of raw and finished materials would not have been possible without the railway . A port for the plant was built at Muruvik in 1918 .

Lumber export was one of the main driving forces for building railways at the time , and the Meråker Line was no exception . In both Stjørdalen and the vast areas of Jämtland and Northern Sweden are huge amounts of woodlands . The Meråker Line ran straight through this area , and was seen as a new possibility to export lumber to the continent , where there was high demand for it . Before the railway was built , there was a small sawmill in Hommelvik . In 1881 , the Scotsman Lewis Miller bought huge areas of woods in Jämtland , as well as nine sawmills in Sweden . All the produce from these were then sent to Hommelvik for processing and shipment . At the most he employed 100 men , and exported up to 183 @, @ 000 @, @ 000 m³ (6 @. @ 5 × 10⁹ cu ft) of lumber each year . Also located at Hommelvik were two wharfs owned by NSB , and one of the major imports was coal for the Swedish State Railways .

== World War I and beyond ==

World War I proved to be a boom for the Meråker Line . The line suddenly became a transit corridor for shipments from Russia , as well as from Sweden , to the ports in Trondheim and Hommelvik . To cope with the increased traffic , NSB had to both rent equipment from Sweden and acquire ten new Class 21 and Class 35 locomotives between 1913 and 1918 . Four of these were transferred from other lines , while six were new . With the new locomotives , the dimensioned axle weight needed to be upgraded to 14 t (14 long tons ; 15 short tons) , which mostly involved improving the bridges . The bridge at Funna was dismantled and sold to be used on the Gråkallen Line of the Trondheim Tramway . Class 35 was used on the Gudå ? Storlien section , and replaced the aging Class 14 . They remained in service until 1929 , when they were transferred to the Ofoten Line .

From 1927 , the first pure through @-@ passenger trains started operating in the summer , towards Sweden in the morning and back during the evening . From 1933 it operated all year . Through the 1920s and 1930s , many shorter distances received extra trains , and passenger and freight trains were gradually separated into separate trains . The traffic through Trondheim ? Hell increased ; commuter trains terminated at several different stations . From 1930 , multiple units were also put into use on the line .

== World War II ==

During the German occupation of Norway from 9 April 1940 , traffic continued in ordinary fashion until 14 April , when a telephone message was misunderstood , and Norwegian military forces shot at a train they thought had Germans on board . After this , traffic on the line was halted . On the Swedish side of the border , 1 to 2 kilometers (0 @. @ 62 to 1 @. @ 24 mi) of track was broken to hinder the Germans from using the line to access Sweden . Local traffic to Kopparå started again on 25 April . On 17 May , a multiple unit ran to Storlien with a general to discuss reopening the line . The answer was negative , but on 24 May , an agreement was struck . At the same time , military trains were put into use , from Snåsa and Steinkjer to Storlien , and onward to Narvik . After transport on the Ofoten Line to Narvik (via Sweden) was officially reopened on 2 August , there were regular trains from Trondheim via the Meråker Line to Narvik , with up to three trains a day .

On 19 November 1940 , a train with workers from Trondheim to the airport collided with the local train from Kopparå just east of Hommelvik Station . The Hommelvik train disaster killed 22 people . The trains were supposed to have passed at Hommelvik Station , but the engineer thought he had seen the other train , and had left the station . The accident occurred at 08 : 03 , and was caused by there being virtually no light to see with , since all outdoor sources of light were covered . On 23 January 1941 , a coke and coal train from Sweden lost its braking between the border and Kopparå . The six back cars plus the caboose derailed just west of Kopparå Station , while the locomotive and 17 other trains continued their wild flight . The train derailed at Meråker Station , and the Meråker train disaster killed both the engineer and the stoker .

The railway and its personnel were an active part of the Norwegian resistance movement during the war . In particular , Swedish newspapers and literature were smuggled into the country , primarily by stokers , who hid the material in the coal . Also , people who were not able to flee to Sweden via the mountains , or needed to get out in a hurry , were sometimes smuggled on board the trains , primarily on German trains . Illegal documents and microfilms were also smuggled out . For German transport trains , track @-@ side employees tried to create " delays " .

= = = Post @-@ war = = =

After the war there was limited resources for new rolling stocks and upgrades to the line . Multiple units gradually took over passenger trains , and by 1957 , no passenger trains to Storlien were hauled by locomotives . That year Stavne ? Leangen Line opened , allowing trains to bypass Trondheim Central Station . The new Di 3 diesel locomotives were put into service in 1961 . The last steam engine was taken out of service in 1971 . The introduction of the Di 3 forced an upgrade to the line to allow for an axle load of 18 tonnes . The opening of European Road E14 in the 1950s caused a reduction in shorter @-@ haul passenger and freight . NSB subsequently cut passenger services to a single daily train , with a Di 3 hauling Swedish carriages through Meråker . Trains continuing along the Nordland Line continued to increase .

Maintenance remained mostly manual until the 1960s , after which a major rationalization plan shifted this work to machines . This allowed the line 's standard to increase , allowing for heavier and faster trains . Hegra , Sona and Flornes Stations were made unmanned in 1970 .

Freight volumes remained high throughout the following decades . In the late 1950s , the Swedish Air Force built a 32 million kroner storage area for aviation fuel at Muruvik . The terminal would be a reserve in case of an attack on Sweden , and the Meråker Line was to be used to transport the fuel into Sweden . The depot was sold in 1988 to Petrofina , following the Royal Norwegian Air Force 's quest to build a pipeline to the NATO @-@ base at Trondheim Airport , Værnes .

from the 1960s through the 1990s .]]

As previous , the Swedish authorities continued to subsidize freight operations on their side , making it profitable for Swedish exports to go via the Baltic Sea . Hopes in Trondheim to act as a major transit port for Swedish cargo never materialized . The 1966 opening of Norske Skog Skogn paper mill saw an increase in transport of lumber from Sweden . The petroleum transport lasted until the 1980s , when the Muruvik terminal was sold to Norwegian interests . A major customer was still Meråker Smelteverk , who used designated trains to haul ore from Muruvik to Kopparå and microsilica in return . By 1980 , cargo volumes were up to the level seen during World War I.

The line had 400 @, @ 000 tonnes of cargo in 2005 . Half of this was for Norske Skog , and 130 @, @ 000 tonnes for Eklem Meråker , the smelter . The latter was shut down the following year , with the subsequent drop in traffic. That year the line received a 60 @-@ million @-@ kroner upgrade , increasing maximum axle load to 22 @. @ 5 tonnes , the same as on the Central Line . Speeds increased from 50 to 80 km / h (31 to 50 mph) for freight trains and from 100 to 130 km / h (62 to 81 mph) for passenger trains . The Norwegian National Rail Administration , who took the line in 1996 , opened the Gevingåsen Tunnel between Hell and Hommelvik 15 August 2011 , making the section from Hell to Muruvik a branch . The Rail Administration reclassified the lines in 2008 , so that the section from Trondheim to Hell is now part of the Nordland Line and only the section from Hell to Storlien is regarded as part of the Meråker Line .

The Trøndelag Commuter Rail was established in 1993 , increasing the frequency on the western part of the line . With the retirement of the Di 3 in 2000 , the Class 92 multiple units were introduced also on the Meråker Line . The concept , originally named Mittnabotåget , saw two daily services , originally running all the way to Östersund Central Station . From 2007 a train change was introduced at Storlien . Through traffic was closed from November 2013 to March 2015 with a bridge closed on the Swedish side .

= = Operations = =

The Norwegian State Railways operate two daily round trips between Heimdal Station via Trondheim Central Station to Storlien Station . There passengers change to a regional train operated on the Central Line by Norrtåg . This served was marketed as Nabotoget (" the neighbor train ") in Norway and Mittnabotåget in Sweden until 2012 . Travel time from Trondheim to Storlien is 1 hour and 44 minutes . Most freight trains are lumber trains , hauling timber from Jämtland to the Norske Skog Skogn paper mill . There is also a train hauling limestone from Verdal to Örnköldsvik .

= = Architecture = =

Peter Andreas Blix was chosen to be the line 's main architect . Hell was the largest station along the line , at 148 square meters (1 @, @ 590 sq ft) . Slightly smaller 110 square meters (1 @, @ 200 sq ft) buildings were built at Ranheim , Malvik , Hommelvik and Gudå . Smaller 90 square meters (970 sq ft) station buildings were erected at Leangen , Hegra , Flornes and Meråker . These were all built in wood . Stylistically Blix drew inspiration from the freer composition of British railway stations of the 1870s , often resulting in non @-@ symmetrical stations . Stylistically they drew Gothic inspiration . Blix designed the stations along the Røros Line and the Jæren Line in similar styles .

Balthazar Lange designed Trondheim Central Station . The originally two @-@ story station was designed in Renaissance Revival architecture . With the opening of the Hell ? Sunnan Line in 1902 , there was a need for a larger station at Hell . The Blix ' station building was therefore moved to Sunnan Station , while a new and larger building , designed by Paul Due , was built at Hell . It received an intermediate style between Dragestil and Jugendstil .

= = Future = =

Lack of electrification has been described as the " missing green link " in using the Meråker Line for intermodal transport for shipping out of Trondheim . The line could also act redundantly for fish exports from Northern Norway to the continent . The steep gradient between Gudå and Storlien is prohibitive for a single diesel locomotive , but would be more economical for electric traction . These issues limit cargo hauling on the line to lumber trains .

Proposals for electrification of the Meråker Line have been made since the 1940s . By then the Swedish side had been electrified . This was initially desired also by NSB in an effort to cut the high operating costs of steam trains . However , lines with higher traffic received priority . By 1971 the

last steam trains were retired and issue of electrification for marginal lines were shelved . The issue was pressed by regional bodies from 1978 and 1992 , and then again from the 2000s . This time the issue was successful and in 2013 the Parliament of Norway approved the electrification of the Meråker Line and the section from Trondheim to Steinkjer . The plan is to start the physical construction in 2017 and finish by 2022 .

Installation of centralized traffic control is scheduled to take place as part of nationwide implementation of European Train Control System , which is scheduled to be completed within 2023 . Capacity and efficiency on the line require more passing capacity , especially for longer freight trains . Thus the passing loop at Gudå Station has been proposed lengthened . To allow trains to run from the Meråker Line directly northward on the Nordland Line , a triangular line has been proposed at Hell Station . All regular freight trains on the line come from the north .