

1: Telpher: Definition with Telpher Pictures and Photos

Buy The electric railway of to-day by Joseph Wetzler (ISBN:) from Amazon's Book Store. Everyday low prices and free delivery on eligible orders.

Play media Riding on a mine car in Ashland, Pennsylvania The tram or dram cars used for mine haulage are generally called tubs. Before locomotives, slate trains would travel down to Porthmadog under gravity, and be pulled back up by horses Main article: Pit pony The Romans were the first to realise the benefits of using animals in their industrial workings, using specially bred pit ponies to power supplementary work such as mine pumps. Pit ponies at work in 18th century French mine workings Ponies began to be used underground, often replacing child or female labour, as distances from pit head to coal face became greater. The first known recorded use in Britain was in the County Durham coalfield in ; in the United States, mules were the dominant source of animal power in the mine industry, with horses and ponies used to a lesser extent. In later years, mechanical haulage was quickly introduced on the main underground roads replacing the pony hauls and ponies tended to be confined to the shorter runs from coal face to main road known in North East England as "putting", in the United States as "trammimg" or "gathering" [19] which were more difficult to mechanise. As of , 55 ponies were still at use with the National Coal Board in Britain, chiefly at the modern pit in Ellington, Northumberland. Dandy wagons were often attached to trains of full drams, to contain a horse or pony. Mining and later railway engineers designed their tramways so that full heavy trains would use gravity down the slope, while horses would be used to pull the empty drams back to the workigs. The Dandy wagon allowed for easy transportation of the required horse each time. Probably the last colliery horse to work underground in a British coal mine, Robbie, was retired from Pant y Gasseg, near Pontypool , in May All of the cable haulage methods were primarily used on the main haulage ways of the mine. Typically, manual labor, mules or pit ponies were used in gathering filled cars from the working areas galleries were driven across seams as much as possible to main haulage ways. Several cable haulage systems were used: In slope mines , where there was a continuous downgrade from the entrance to the working face, the rope from the hoisting engine could be used to lower empty cars into the mine and then raise full cars. In shaft mines , secondary hoisting engines could be used to pull cars on grades within the mine. For grades of a few percent, trains of 25 cars each carrying roughly half a ton were typical in the s. The tail-rope system had its origins on cable-hauled surface inclines prior to the s. Finally, the most advanced systems involved continuous loops of rope operated like a cable car system. Some mines used endless chains before wire-rope became widely available. An endless rope system was developed in Nottinghamshire around , and another independently developed near Wigan somewhat later also in England. Where the cable ran under the cars, a handheld grip could be used, where the grip operator would ride on the front car of the train working the grip chained to the front of the car. In some cases, a separate grip car was coupled to the head of the train. In the 19th and early 20th centuries, some large mines routinely used steam locomotives underground. Locomotives for this purpose were typically very squat tank engines with an wheel arrangement. Such engines could not be used in mines with firedamp problems. This method of propulsion had the advantage of being safe but the disadvantage of high operating costs due to very limited range before it was necessary to recharge the air tanks. Generally, compressors on the surface were connected by plumbing to recharge stations located throughout the mine. Recharging was generally very fast. Narrow gauge compressed air locomotives were being manufactured for mines in Germany as early as , with tanks pressurized to 4 or 5 bar. By the late s, Porter was building locomotives designed for to psi bar. Except for very small prospects and remote small mines, battery or diesel locomotives have replaced compressed air. Electric[edit] Mine locomotive U 28 from AEG at the Verein Rothe Erde, Esch-sur-Alzette The electric motor technology used pre to DC with a few hundred volts and a direct supply of power to the motor from the overhead wire enabled the use of efficient, small and sturdy tractors of simple construction. Initially, there was no voltage standard, but by , volts was the standard voltage for underground work in the United States. By , there were over electric mine locomotives in use in America with new ones being produced at a rate of per year. This limited their usage for gathering loads at the mine face, where trackage was

temporary and frequently relocated. This motivated the development of battery locomotives, but in the first decade of the 20th century the first successful electric gathering locomotives used cable reels. To run on tracks away from overhead lines, the power cable was clipped to the overhead line and then automatically unreeled as the locomotive advanced and reeled up as the locomotive returned. This approach allowed use of temporary track that was too light to carry the weight of the a cable-reel or battery locomotive. The disadvantage of a crab locomotive was that someone had to pull the haulage cable from the winch to the working face, threading it over pulleys at any sharp turns. Combustion engines[edit] Deutz mine railway locomotive. Firedamp safety was achieved by wire gauze shields over intake and exhaust ports as well as cooling water injection in the exhaust system. Bubbling the exhaust through a water bath also greatly reduced noxious fumes. Catalytic scrubbers reduce carbon monoxide. Other locomotives are electric, either battery or trolley. Battery[edit] Trainload of chrome ore emerging from a mine tunnel at the Ben Bow chromite mine in Stillwater County, Montana Battery powered locomotives and systems solved many of the potential problems that combustion engines present, especially regarding fumes, ventilation and heat generation. Compared to simple electric locomotives, battery locomotives do not need trolley wire strung over each track. However, batteries are heavy items which used to require long periods of charge to produce relatively short periods of full-power operation, resulting in either restricted operations or the need for the doubling-up of equipment purchasing. In the 19th century, there was considerable speculation about the potential use of battery locomotives in mines. This locomotive was eventually successful, but only after the voltage on the trolley system was stabilized. This was simplified by use of removable battery boxes. Eventually, battery boxes were developed that included wheels so that they could be rolled off of the locomotive. Today, heavy-duty batteries provide full-shift 8 hours operations with one or more spare batteries charging. In operation[edit] Passenger wagon on a mine railway Until the largest single, narrow gauge, above-ground, mine and coal railway network in Europe was in the Leipzig-Altenburg lignite field in Germany. Of this, about kilometres was removable track inside the actual pits and kilometres was fixed track for the transportation of coal to the main rail network. Starting in , 12 miles of underground conveyor belt and 2. The last load of coal was hauled by rail in January Regular museum trains also run on the line from Meuselwitz via Haselbach to Regis-Breitingen. Mine railways in visitor mines[edit].

2: Nose Electric Railway - Wikipedia

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Electricity in.

It also operated city streetcar service in Waukegan and in Milwaukee. Service began in between South Milwaukee and Racine, and later from downtown Milwaukee to Kenosha. The original roadside operation along the old Chicago Road was completely rebuilt from to to largely run on private-right-of-way. The line also ran local streetcar service in Milwaukee from until between downtown and N. The MNRy was acquired by T. In , the line from Sheboygan to Port Washington was curtailed. Full abandonment came in , except for operations in and around the Port Washington Power Plant which were continued by the Wisconsin Electric Power Co. Westsiders demanded their own street railway, so in , the Milwaukee City Railway Co. Eastsiders organized their own horse car company, the Cream City Railroad. Their first line ran from downtown to the Farwell Avenue carbarn. Cream City pioneered heated cars in winter, girder rail and automatic switches in the city. Rapid growth west of downtown led to the creation of yet another horse car line in , the West Side Street Railway Co. Consolidations continued into the s, with the Milwaukee Street Railway emerging as a leader by . By , all horse car lines were converted to electric operation with new, larger cars. The Commerce Street Power Plant, constructed in , supplied commercial power to downtown as well as the street railway system. In , the Milwaukee Street Railway Co. With the automobile still only for the rich, the trolley was the mode of city transit for nearly everyone in the early s. Larger, heavier cars were added to meet the demands of an expanding city and WWI wartime traffic. To promote ridership during the Depression, weekly shopper passes, unlimited transfers and Sunday passes were pioneered in the early s. A violent strike by streetcar workers in led to public demands to break up the T. Interurban Lines Milwaukee Electric Lines The interurban provided a comfortable, swift mode of transit between cities, free from the dirt and cinders of the railroads. Stops were more frequent, and lines usually went to the center of towns. At its peak in the early s, the TM had interurban lines radiating from Milwaukee to Sheboygan, Watertown, East Troy, Burlington and Racine-Kenosha, with over miles of trackage on the third fastest interurban railway in the U. But in the late s, led by the Depression, increased competition from autos and buses, and a series of labor riots in , curtailments became the rule. One by one, lines were cut back and then abandoned. Twelve years prior, the first motor bus replaced a streetcar line in Milwaukee, and over time cutbacks of streetcar service became common. The first trackless trolley bus service came on the North Avenue Line in . Other conversions to these rubber-tired buses powered by overhead wire followed, again often replacing streetcars in cutback stages. Committed to the complete replacement of streetcars in favor of diesel buses, the last streetcar revenue run in Milwaukee occurred March 2, on the Route 10 Wells Street line. Eventually, trackless trolleys similarly were replaced, with the last run occurring June 19, on the Route 18 National Avenue line. In March , shortly after completion of the first freeway link to the suburbs, a new bus service called the Freeway Flyer was instituted. Over the years, a dozen or more routes were created, effectively luring drivers from their autos for commuting and along special routes to the Stadium, Summerfest grounds and others. Several improvements in service kept loyal rail passengers riding the line. Six lightweight cars were purchased second-hand to run in one-man service, replacing heavier two-man units from the days of TM operation. The company also bought ten articulated former South Milwaukee suburban two-car trainsets from the Transport Co. Two days before the sale transfer in , two cars collided at Soldiers Home resulting in 19 injuries, and raising safety concerns. But the death knell came Labor Day weekend on September 2, , when a wreck near National Avenue on the Hales Corners line between a regular service car and a charter by attendees of the National Model Railroad Association in Milwaukee with Jay Maeder at the controls, killed 10 and injured 45 passengers. Three days later, another accident at West Junction totaled a lightweight car and badly damaged a heavyweight freight motor. Never recovering, and faced with increasingly ugly competition from parallel Waukesha Transit motor coach service from the same Public Service Building downtown, the line ceased operations on June 30, , ending interurban rail service in

Milwaukee except for the North Shore Line.

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Electricity in the household, by A.E. Kennelly
Electricity in relation to the human body, M.A. Starr.

Joseph Railway, is walking the sidewalks of New York this week seeking some Wall Street "angel" to help that line carry on as the sole electric interurban into Kansas City that has not had to reorganize following motorcar, bus and truck competition. It has been general knowledge that the "Springs Line" which serves a territory between Kansas City, St. The bulk of the shareholders, located in the East, where the securities had been largely marketed, were inclined to liquidate the line, so as much money out of the firm could be possibly salvaged. Abandonment of the line was granted thirty months later and on March 10, , the last scheduled trip left Kansas City for St. For that week, nothing is mentioned in the St. Joseph News-Press or competing St. Louis, but 90 years ago, leaving the heart of downtown St. Joseph on an hourly schedule from 5: Joseph - Kansas City run, which took two hours, from downtown to downtown. The average speed for the entire line was 37 MPH, but that included the slow pace the electric cars ran when under the lower voltage of the city streetcar systems. The February 18, edition of the St. Joseph-Kansas City Interurban were delighted with their visit here. Joseph-Savannah electric line and its motors are of much greater power. It is a marvel of comfort and convenience and the finishing throughout is beautiful. Passengers are taken aboard and discharged through doors in the middle of the car and the middle platform divides the car into two sections, one of which will be preserved as a smoking compartment. A later generation would remember that as the location of the Trailways Bus Terminal. The heavy electric cars - 58 feet long and 9 feet wide - used the city streetcar line tracks down Eighth Street, then Mitchell, and finally Eleventh Street, south past what was then the Aunt Jemima Mills later Quaker Oats. In October Mr. Sheridan Logan, the dean of St. They were larger than our trolley cars. They were sort of a red maroon color and they had a very distinctive horn on them. It was sort of a rolling noise. Joseph was really more important than it is today. Joseph and published his book In Ole St. Gateway to the West, Mr. Hard roads in Platte, Clay and Buchanan Counties were non-existent in when 1, men began the grading and heavy concrete work for a high-speed electric railway northward from the retail business center of Kansas City, Missouri. The term described the electric traction systems being developed primarily in the Midwest--particularly Indiana and Ohio--New England, and the West Coast. Joseph, had true electric railroads built with millions of investor dollars. American saw electricity as a symbol of the modern age. At the peak of the interurban craze in , these lines had built over 18, miles of track and operated over 10, cars. Joseph, six steam lines radiating in all directions had competed for business in the years following the Civil War. A look at a map of Buchanan County one hundred years ago shows railroad lines blanketing the county, connecting every rural community, such as Agency, DeKalb, Willowbrook, and Faucett. Joseph and Kansas City. The distance between the two terminals was however 62 miles and at that time required approximately three hours to cover the route. In the Kansas City area, the first electric railroad to build to a neighboring city was completed in January , up the west side of the Missouri River to Leavenworth, Kansas, 26 miles. Its purpose was not necessarily competition to the Santa Fe as much as promotion of W. Opened in , this line was called the St. The route consisted of three wooden cars and headed north on the streetcar line down St. Joseph Avenue and terminated four blocks west of the square in Savannah. Strangely, the little line outlived the St. Joseph streetcar lines and most of the big Kansas City interurbansâ€”its last run was July 22, In this day, the highway drive between the two county seats is on four-lane Route 71, and the southbound lanes of the highway dip up and down over the slightly hilly terrain. In a very obvious contrast the northbound lanes to Savannah are built on the historic right-of-way of the St. Joseph-Savannah Interurban, and give the smooth, graded ride characteristic of a railroad right-of-way. An excellent history of the Kansas interurban railways is found in a book by Alison Chandler, Trolley Through the Countryside. McGowan, born in Clay County, Missouri in , began his career in public transportation as a driver of a horse-drawn streetcar on the muddy

streets of nineteenth century Kansas City. From that beginning he rose to the rank of manager of the United Gas Improvement Company of Kansas City when in he was called east to manage the Indianapolis Street Railway Company owned by the same utility. For the remaining twelve years of his life Hugh McGowan was literally the right man at the right place as his shrewd and competent leadership, in partnership with William Schoef of Cincinnati, Ohio, created a traction syndicate which grew to be the dominant force in Midwest interurban circles. Bradley in his book, *Indiana Railroad*—the Magic Interurban. They knew shrewd landowners would demand higher prices if they knew the real source of the capital. Joseph had in the inflated census population of , Kansas City had its own glowing reputation as a booming western metropolis. Traction promoters dreamed of constructing an electric interurban connection between these two leading western Missouri cities, but the cities were separated by a major obstacle that the steam railroad already conquered -- the Missouri River. Charles Fredrick Enright, born in , had an established career in banking when in he left the Missouri Valley Trust Bank to promote an electric Interurban connection to Kansas City. He secured franchises and the necessary right-of-way. A major engineering feat of the day, the A-S-B Bridge carried steam railroad service on the lower deck, and the upper deck was for street and interurban cars, vehicles, and pedestrians. Completion of the A-S-B Bridge was noticed on a national level. In Indiana Hugh McGowan, who had been raised on a farm near Liberty, must have seen the progress in his native state. Was he the link between Charles Enright and experienced Interurban developers from Indiana? This is definitely possible, but not recorded. Hugh McGowan, only 51 years old, died December 19, , as construction was underway on the new line. Enright found associates in the project--or they found him--from the hotbed of Interurban know-how-- Indiana. It was to have one division linking Kansas City to St. Joseph, a distance of 52 miles, and another smaller line, The desirability of the Clay County route was the fact the steam Wabash RR was carrying , passengers annually to the Springs. In that preserve still stands a foot large, semicircular bridge which took the line over Rush Creek. Woods of Indianapolis, was the consulting engineer, responsible for the route details, bridge design, station and equipment design. At that time this eminent engineer had over 21 years experience in RR construction. The company purchased the best available equipment. From the Cincinnati Car Company the road received five motor-freight units, five express cars and sixteen passenger cars. Due to increases in both freight and passenger business, the road by had acquired an additional four motor freight units and four passenger cars. Like the Santa Fe, there was no shoddiness anywhere. The interurban trains always moved slowly mainly because they were operating thru the change-over from volts to volts on city car lines, and then too, because they were trains and not street cars. Charles Enright did not live to see the decline of the railroad he promoted. He was 55 years old. Joseph News-Press reported later about the pending Enright funeral: Enright, with burial in the Mt. Joseph a sturdy, boxy red brick building at the south-west corner of 8th Street and Angelic Street now houses an enterprise called The Motor Shop. That structure at South 8th Street was the Interurban freight depot in St. Joseph from to The heavy Interurban cars went down 8th Street and 11th Street. South of New Life Mills formerly Quaker Oats , 11th street turns leftward, but in the railroad veered right, and a house is now built on the right-of-way. Behind that property the route has been paved over by Interstate , for the mile distance to 22nd Street Route Where the interchange of 22nd Street and I is today in St. Cooper of Greencastle, Indiana. Joseph to Dearborn, Missouri. A rare Atlas of Buchanan County at your St. Joseph Public Library reference department shows the route through these townships. In Willowbrook, Missouri, there are 2 brick structures on the main road Route H. Now used simply as a garage, this brick building like the fright depot on 8th Street, is another Interurban structure to be found in the Northland. Unlike Clay County, where a power transmission line is built on the historic R. In the winter and early spring you can feel your way along and imagine the long gone Kyle, Maxie, Richie, and Pinkston stops on the way to Willowbrook. On her farm was something completely amazing--a lengthy section of the right-of-way, completely cleared, with the Interurban wire fences placed there ninety years ago. John explained, his Aunt and her husband had moved to their farm in Their farmhouse was heated solely by a wood-burning stove. Guess where the scrub brush, trees, and wood were harvested for their stove? The history of the railroad ends, March 10, , but its story continues, as the children who rode the railroad are now Senior Citizens with memories to share. The principal growth of the Kansas City metropolitan area has historically

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been to the south. Joseph has fallen to sixth in rank of Missouri cities.

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8: Odakyu Electric Railway - Wikipedia

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Figure 4 shows such a combination, in which the first or small magneto-electric machine is mounted on the top of the other, and sends the current from its commutator through the coils of Appears in 6 books from

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