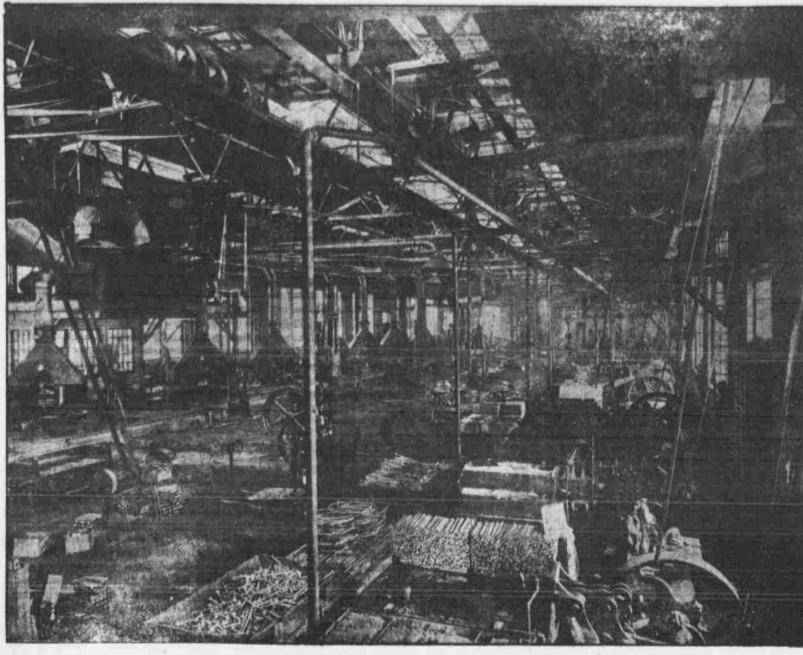
THE OMAHA SUNDAY BEE: JULY 26, 1908

# Union Pacific's Omaha Shops Marvels of Mechanical Completeness



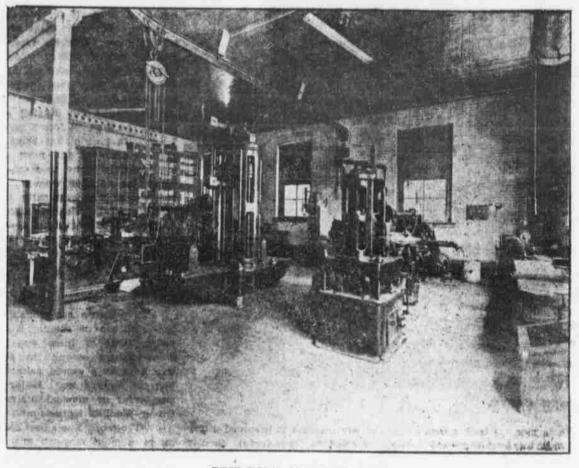


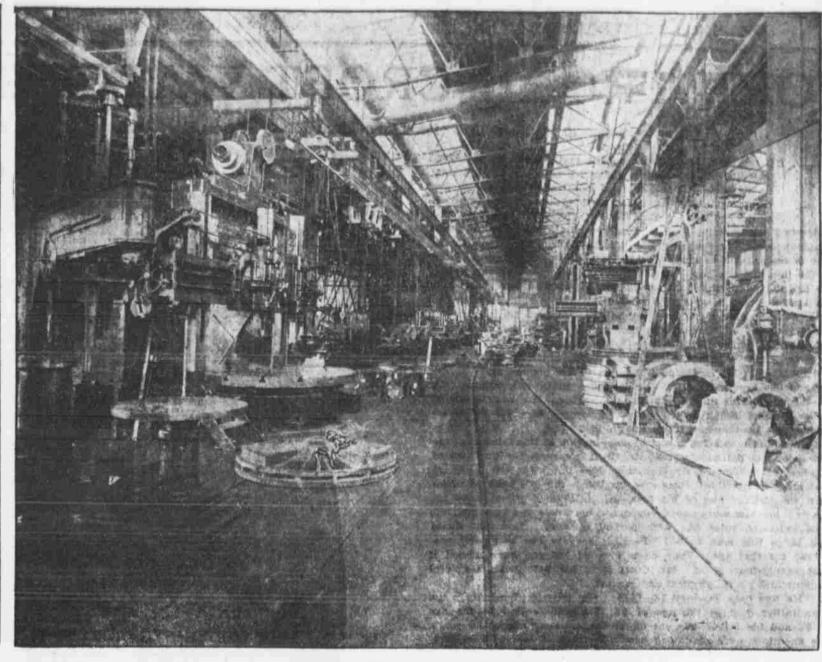
river, at the castern extremity of the city of Omaha, stand the Union Pacific shops, the finest of the kind in the world. While other shops may be larger, the shops of the Union Pacific stand today unequaled in modern machinery and appliances for building and repairing cars and comotives.

THE bank of the Missourt

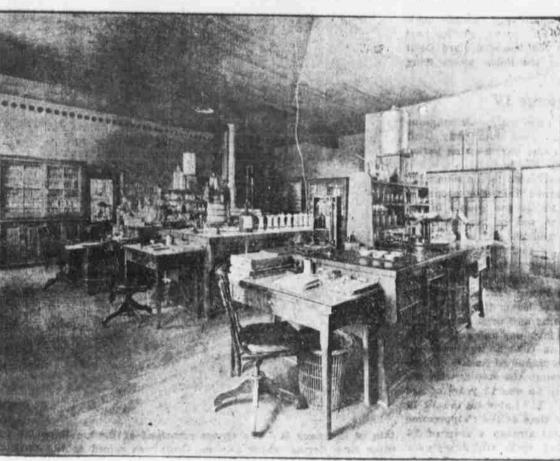
When William Riley McKeen, jr., last week gave up the office of superintendent of motive power and machinery of the Union Pacific railroad to his successor, Inarics E. Fuller he turned over the keys o the best equipped machine and locomotive and car shops of modern times. Omaha's shops are not only the bride of Mr. McKeen, who for the last seven years as superintendent of motive power and machinery has had a great deal to do with their building and enlargement; not only to A. L. Mohler, who as vice president and general manager of the Union Pacific has granted an unlimited expense account toward keeping everything up to the highest standard, but also to E. H. Harriman, president of the Union Pacific road, who on more than one occasion has shown that he is a friend to Omaha and has told Mr. Mohler and Mr. McKeen to build the best

GENERAL VIEW OF THE BLACKSMITH SHOP.





GENERAL VIEW OF THE MACHINE SHOP.



freight and passenger car, in locomotives and all material used in the motive power and engineering departments.

At the present time the test department of the Union Pacific Railroad company has direct charge and supervision over all tests, analysis and inspections of all materials purchased for the Union Pacific, the Southern Pacific, the Oregon Short Line and the Oregon Railway and Navigation company. The scope of the work of the department may be seen from the following list, which includes the materials which the test department must test, inspect or analyze according to the requirements of the medifications and contracts; all locomotives, passenger train cars, freight cars, still bridge material and all materials which are purchased from time to time for

repairs or replacements. Some idea of the magnitude of the work being carried on in this department alone may be gleaned from the statement that last year when things were running on full time there were ninety men employed in the department. The organization of the department also gives a good idea of the magnitude of the work. The entire work is in charge of the chemist and engineer of tests. He has an assistant chemist, who supervises the work of the chemical laboratory under the direction of the chemist and engineer of tests. In addition to the assistant chomist there are three assistants, who do analytical work in the laboratory. Two chemists constantly travel on the road testing boller waters. The entired time of a laboratory boy is required to keep the apparatus clean and in place. Work in the chemical laboratory consists. in the analysis of iron and steel, bearings metals and other alloys, fuels, water, disinfectants, fire extinguishers, dyes, paints, illuminating and lubricating offs, varnishes, ingot metals, boller compounds, batterys materials, waste, minerals, rocks and sponges. In addition to this routine works the department is continually making original investigations on subjects bearing one railroad work. In the engineering laboratory the chemists and engineer of tests is assisted by an assistant engineer of tests, two inspectors and a general utility man. The work of the en gineering laboratory consists of making physical tests on the various engineering materials used in railroad work, such ag tensile tests on iron and steel, physical tests on air, water and steam hose, tests on Portland cement, physical tests on springs, transverse and crushing tests on timber for bridge members, ties, etc. The work also includes checking all material for conformity to blue prints.

that modern constructors knew and he would provide the money.

Omaha may well be proud of the magnificent shop buildings, which separate the city from the river, for they have been built regardless of expense to provide quarters for the latest machinery of all kinds known to man for the construction and repairs of cars and locomotives. These shops are now employing about 1,400 men each day and the amount of money turned back into the hands of the merchants of Omaha is considerable when it is considered

how many mouths this pay roll directly and men and laborers than the old. Standing quietly in reserve, ready to be

## Into Still Newer Shops.

indirectly Teeds.

A vnst change will soon be wrought at the Omahu shops. The big buildings which are now the quarters for the different departments will in a few short months be given up, that the skilled employes of the nish the power from a central station for Union Pacific may work in the larger and all the shops buildings. The power for the of the semi-cylindrical ashpan, an entirely more modern and up-to-date structures entire plant is furnished at present from which have recently been completed and a central station, where two large 500-kilointo which the new machinery is now being watt condensing steam turbines of the installed. Westinghouse-Parsons type are located.

The old blacksmith shop has temporarily These supply 440-volt alternating current, been turned into a motor car manufacturing which is transformed by rotary converters, plant, where the McKeen 300-horse power for use in the machine shop and is also gasoline motor car engines are built by the conducted to the car shop at this voltage most skillful mochanics and most modern where alternating current motors are used. electrically driven machinery. The parts of Ten marine type, self-contained firebox these are turned out with the utmost ac- bollers, equipped with automatic stokers curacy, being interchangeable with one an- and automatic coal conveying devices for other within one-thousandth of an inch. feeding the same, are also located within As the new buildings are occupied by the the power plant and generate the steam Union Pacific the McKeen Motor Car comwhich does the work. pany will take over the old buildings and the strife will soon he on, the question

being how long it will be before the new

TEST ROOM OF LABORATORY.

company will be hiring more skilled work- at once attracts the wonder and admira- tion to say that with the improved methods made at the Union Pacific shops are now roundings are appreciated by men working 150 by 400 feet, has a gallery, where the work has been cut in half. Everything in isfaction, called upon for service at a moment's brass workers are busy, but what most the shop is arranged in order. The engine Numerous other structures go to make than 1,500 handsome young trees growing in house engines, it is a miniature beside the the building to the other, with the case as all sizes of boxes are kept in stock. At stormy weather ample facilities are found Through the shop windows the men can mammoth plant which is now used to fur- of a giant carrying a babe.

As one enters the boiler shop ha is told boxes put on engines. new invention, recently made at the Omaha shop which absolutely prevents locomotives

from dropping fire. Danger of fire on bidges after a locomotive has passed or in a depot, where an engine stands for a time, is thus done away with. In this huge building, which is 90x380 feet, electrically driven cranes handle with ease all material, fireboxes, boilers, furnaces and all such parts of the engines. Here one 'may see the engine stripped of its symmetrical appearance, and it takes considerable imagination to picture the big hulks transferred in a few short days to things of beauty. This shop has made more advances than any other during the last In the machine shop a sight is seen which twenty-five years and it is no exaggera-

# Comforts for the Blacksmiths.

of machinery, with Bradley hammers, most modern types. large, powerful steam hammers, trip hammers, forging machines, "buildozers," punches and shears. The furnaces are at a white heat, without the smoke seen in the village blacksmith shop, for they all burn fuel oil. These have water fronts to protect the workman from the excassive heat. In this building full of seething furnaces three complete systems of ventilation are used to protect the workmen from being overcome with the heat and from having to breathe foul air. These keep the shop atmosphere particularly clear and agreeable so that even the visitor not used to the heat feels no discomfort while walk-

#### CHEMISTS' ROOM IN LABORATORY.

tion of the visitor. This immense shop, and tools the force required to do the in daily use and are giving eminent sat- in railroad shops as well as by other

notice, is the old plant for furnishing the attracts the sightseer are the two 50-ton is taken to the stripping shed and then to up the wonderful ensemble of the Omaha various parts of the shop grounds. There power for the entire shops. Although this traveling cranes which pick up a 100-ton the boller shop, where new fireboxes are shops of the Union Pacific. In fact so are several large grass plots and lawns, plant contains two 230-kilowatt Westing- locomotive and carry it from one end of put in if necessary. No delay is required extensive are the shops that in rainy or clumps of shrubbery and beds of flowers.

no other shop on the road are new fire- for the 1,400 men now at work to do their catch glimpses of these touches of nature. work inside the buildings, which are all And when the machinery stops its roaring well lighted, ventilated and heated. Among the first sound to greet the cars of tired the other buildings are the coach and workers is the pleasant soughing of the The blacksmith shop is the same size as cabinet shop, 175x342 feet and the paint wind through leafy trees. There is no

the boller shop, 90x380 feet, and it is full and wheel shop, 175x302 feet, all of the question that this campaign for beauty is

#### Store house and Shop Yards.

J. H. Stafford, the general storekeeper in ure pressed down and shaken together, his big storehouse 59x280 feet, has each

class of materials in a separate bin or compartment arranged in long tiers or rows so they may easily be found.

at the Union Pacific shops is the depart-The big shop yards do not present to the ment of tests, where all material used on eye a barren waste of cinders, weeds and all the Harriman lines is thoroughly indebris as most shop yards do. It is the spected before it is permitted to be placed idea of those in authority that pretty sur- in use. This includes all material used in

valuable to the railroad as well as pleasing to the employee. Men work better with pleasant surroundings. These surroundings Although the different materials used in reflect themselves on the men's minds. the construction and maintenance of a Also, any man appreciates a kindness done

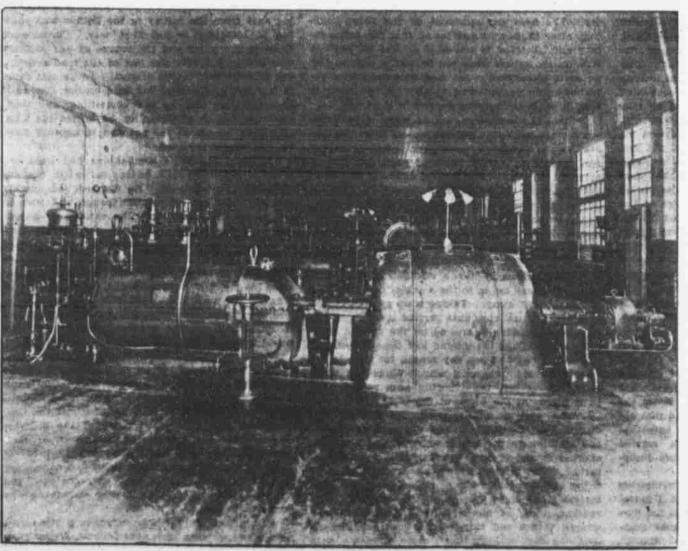
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railroad are almost too numerous to count. and usually reciprocates, giving good meas-

# Work of Test Department.

One of the most interesting departments cific goes farther and sends men to manufacturers' plants to inspect work which is being done for the railroads. In this work of inspecting at manufacturers' plants such

(Continued on Page Three.)



Wonders of Machinery.

TURBINE ENGINES IN POWER HOUSE

ing before the fiery blasts. Wonders are wrought in the blacksmith shop and the visitor who has never been the modern blacksmith shop stands in open-eyed wonder as he sees the giant hammers bore a square hole through six inches of solid iron. Huge shears trim iron as though it was the thin paper a street vender uses while demonstrating the good qualities of his wares. This shop hus modern lavatories and lockers for individuals, which are especially appreciated by the workmen. In the olden doys, as in smaller shops at the present time, the man working for eight or nine hours at the forge, who, from the nature of his work becomes besmirched with soot and smoke was compelled to leave his work for home with his dirty clothes or at best, but a hasty wash and a change of clothes under adverse circumstances. Not so at the blacksmith shop of the Union Pacific. Here each man has his own locker, where he may keep everything necessary to fixing up his tollet after a hard day's work. He may have a shower bath of hot or cold water and may completely change his apparel and go home feeling refreshed and ready to sit at his wife's table without danger of solling her table linen. - 2

## Million Dollar Car Shops.

The pride of the shops are the new million dollar car shops now almost completed, which are said to be the largest repair shops in the world. The freight repair shop is 150 feet by 342 feet, equipped with modern tools for the repair and maintenance of steel cars. Ample facilities are also provided for the building of a limited number of steel cars. Shops all over the country are working on designs for new steel cars, both passinger and freight, but the trouble has been the makers have been afraid to get away from conventional lines and have tried to make steel cars by simply changing the wooden parts to steel. The Union Pacific has dared to break away from accepted form and has made some cars, which are the wonder of the railroad world. Stael curs



GENERAL VIEW DY BOILER SHOP

## Raw Material Inspected.

The department of tests at the Union Pas