

General Report No. 1786.

Individual Report No. 2:

Risk Nos. 3 to 8 and 41 to 44.

Risk: Car Shops.

Class: B. and DD. Buildings.

Location: Rose Avenue and Oak Streets, Columbus, Ohio.

Owner & Occupant: The Columbus Railway & Light Co.

Date: May, 1909.

See Map No. 3.

SUMMARY.

A group of buildings mostly of brick construction and used as car repair shops and car storage;

Risk No. 3 A 1 story brick car house and paint shop.

Risk No. 4 A 1 story brick car house, office and storage.

Risk No. 5 A 1 and 3 story brick repair shop and storage house.

Risk No. 6 A 1 story brick car storage house, in four sections.

Risk No. 7 A 1 story brick office and boiler house.

Risk No. 8 A 1 story brick brass foundry building.

Risk No. 41 A 2 story fire proof constructed oil house.

Risk No. 42 A 1 story frame composition roofed dry house.

Risk No. 43 A 1 story frame composition roofed lumber shed.

Risk No. 44 A 1 story frame composition roofed shed.

All the above buildings are so located as to expose one another more or less except the car storage house which is located separately 90 feet distant from any of the others. The buildings are mostly old and reconstructed or built to, and of somewhat inferior construction for this class of occupancy. These risks however are kept clean and in good condition generally, special care and watchfulness being exercised to prevent fire in the property. The public fire protection is poor there being but two double hydrants on a 6 inch main, and so located as to be 350 feet or more distant from several of the buildings. There is a fire alarm box in the premises with fire station and steamer 3-4 mile distant. Most of the risks have vertical pipe and hose equipments, hand chemical fire extinguishers distributed, and watchman's service with watchman reporting over A. D. T. system.

PROMINENTLY DESIRABLE FEATURES.

Only one building, the car storage house, is of particularly commendable construction, it being brick with wooden roof structure and cinder floor and divided into four separate areas by 12 inch division walls extending 18 inches above roof. Commendable features applying to all the risks is the good care and discipline maintained by the management and employes to prevent a fire from originating, and the night watch service with watchman reporting by the A. D. T. system. Three of the main car shops have vertical pipe and hose systems, and chemical fire extinguishers are distributed, but all are not of standard construction. There is public fire protection but the water supply is deficient. Considerable care is exercised in the care of paints and oils the main supply being kept in a separate oil house of fire proof construction. Cars are generally well kept up and in good repair.

PROMINENTLY UNDESIRABLE FEATURES.

The principal undesirable feature is the general construction and exposure of buildings, by

which all except the car storage house are subject to a single fire, this being especially probable since the public fire protection is non standard. (See Map). The repair shop and storage house has a 3 story center section, with wooden joisted floors throughout and all the occupancies including the woodworking exposing one to the other, while the paint shop and the car house and office, have part wooden and part concrete or earth floors, with basement under a portion of each. The arrangement of skylights, roof houses, and window openings is such in the risks just mentioned as to make them subject to easy attack from their exposures. Pits throughout are of non standard construction, some being constructed entirely of plank, with sawdust in bottom to take up oil. The total insurance value ordinarily subject to one fire in this location is \$149,256.53.

CONSTRUCTION.

Risk No. 3: A 1 story brick car house and paint shop, 15 feet to eaves. **Area** is 70 by 220 feet, equaling 15400 square feet. **Walls** are 12 inch brick except the front end, which is frame. **Roof** is slate on 7-8 inch sheathing, with wooden rafters and trusses, and ceiled beneath with wooden ceiling. 10 by 10 foot raised **skylights** with metal clad sides and metal frame are arranged 15 feet apart along both sides of the roof. Glass in skylights is part wired glass and part ordinary plate glass. **Floors** are concrete to within about 60 feet of the rear, from which point they are plank, partly laid in sand and part on joists with basement under.

Risk No. 4: A 1 story brick car house, office and storage, 20 feet to the eaves and with basement under the rear half of the building. **Area** is in two divisions, 20 by 65 feet and 110 by 220 feet equaling in all 25,500 square feet. **Walls** are 12 inch brick. **Roof** is composition gravel on 7-8 inch wooden sheathing, laid on 2 by 12 inch rafters supported by 8 by 8 inch wooden posts. One 8 by 10 foot **skylight** with metal clad sides and ordinary window glass set in metal frames. **Floors** are earth from front to center, and plank laid on joists from center to rear with blind basement under occasioned by the sloping grade. **Pits** are four in number and are constructed of plank on both bottoms and sides. Office is lath and plaster ceiled and has wooden floors. A frame partition on the South side of the building near its center encloses a 30 by 100 foot section which is used as a wash room.

Risk No. 5: A 1 and 3 story brick repair shop and storage house separated into five principal sections all of which communicate. The front section known as the pit room is 60 by 100 feet, floor dimensions, and 18 feet to the eaves. To the East 10 feet is the blacksmith shop 25 by 60 feet, and 12 feet to the eaves, while immediately North of it is a 20 by 35 foot armature room 18 feet to the eaves and with door opening into the pit room. Located at the center of the risk is the 60 by 90 foot, 3 story, machine shop with storage on the upper two floors, this section being 35 feet to eaves. The North section is the 45 by 110 foot carpenter shop, 1 story and 18 feet to eaves. A 15 by 15 foot air pump room is added to the pit room on the West. The total **area** including all sections is 18775 square feet ground floor, with 5,400 square feet additional floor space on each, the second and third floors. **Walls** are 12 inch brick and parapeted throughout the 1 story sections, except the blacksmith shop which is 8 inch, and the front of the pit room which is of frame construction. The walls of the 3 story section are 16 inch 1st and 12 inch 2nd. and 3rd. **Roofs** are of slate or composition gravel on wooden sheathing, with wooden rafters and trusses supporting. A large frame raised roof lantern with glass sides is in the roof of the pit room and three 6 by 10 foot raised wooden ventilators are in the roof of the machine shop. Upper **floors** are matched double floors supported on wooden span beams and wooden posts. The first floor is heavy matched plank on wooden joists and beam sleepers, except in blacksmith shop where it is earth. In the 3 story machine shop there is an elevator from 1st to 2nd and a stairway from 1st to 3rd neither being properly trapped. Finish throughout is open.

Risk No. 6: A 1 story brick car storage house in four sections with parapeted division

walls without openings between sections. Each division is 45 by 125 feet equaling 5625 square feet in area, the total area of all divisions being 22500 square feet. The building is 20 feet to the eaves with 12 inch brick walls reinforced by buttresses and rising 18 inches above the roof in all locations. Floors are cinders, and roof composition gravel on wooden sheathing and rafters, set on walls at sides and on 8 by 8 inch wooden posts in centers.

Risk No. 7: A 1 story brick office and boiler house in two sections but communicating at the roof. Walls are 12 inch brick. Area is 1600 square feet. Roof is composition gravel on wooden sheathing and rafters. The office has matched wooden floors laid on joists while in the boiler room the floor is of earth. The office is lath and plaster ceiled and the finish in the boiler room open.

Risk No. 8: A 1 story brick brass foundry building with dimensions of 15 by 45 feet, an area of 675 square feet. Walls are 12 inch brick, Floors are brick and earth, and the roof slate on wooden sheathing and roof supports. A raised frame ventilator extends the length of the building.

Risks 41, 42, 43 and 44: These risks are; a 2 story 15 by 15 foot fire proof constructed oil house; a 1 story frame, composition roofed, 10 by 20 foot dry house; a 1 story frame, composition roofed, 15 by 30 foot lumber shed; and a 1 story frame, composition roofed, 15 by 35 foot open shed, none being at present included in the policy form. Other than in the dry house which has a particularly defective electrical equipment and heaters, these buildings are not heated or have other hazards, but are so located as to communicate exposure.

EXPOSURE.

None of the risks are exposed to buildings of other ownership, but all except the car storage house has one or more component exposures which can be best seen by examination of the map. (SEE MAP NO. 3.)

OCCUPANCY.

The several risks are occupied as follows: Risk No. 3 is occupied entirely as a paint shop for the refinishing and painting of cars, and has a trackage capacity of 19 cars. Risk No. 4 consists of an office and employe's room for car men, car storage and wash room and repair pits where minor repairs only are done, and a storage room in the blind basement for car supplies. Trackage covers all the ground floor area except the office section; the total capacity being about 45 cars. Risk No. 5 is the main car repair shop of the Company and is occupied on the ground floor as a pit room, a blacksmith shop, and armature winding room, a machine shop, and a carpenter shop, while the 2nd and 3rd floors are used for storage of electrical supplies and car repair parts. The machinery here consists of 3 electric motors 500 volt D. C., or 5, 10, and 15 H. P. respectively and all operated by trolley current; air compressor, wheel boring mill, 4 engine lathes, wheel press, 3 drill presses, 2 shapers, grindstone, emery wheel, buffing wheel, bolt threading machine, planer, joiner, buzz saw, jig saw, wood lathe, and a field winder. There is a trackage capacity here of 6 cars. Risk No. 6 is occupied only for car storage purposes, winter cars usually being stored here in Summer and summer cars in Winter. The total trackage capacity is 48 cars. The West section of Risk No. 7 is occupied as an office and the East section as a boiler room for a heating boiler. Risk No. 8 is a brass foundry in which car journals are cast. Risk No. 41 is filled with oils and paints, No. 42 is used as a lumber dry house, No. 43 as a lumber shed and No. 44 has storage of brake shoes.

HAZARDS.

The car storage barn and the lumber sheds and oil house are not heated but all other buildings are heated by steam except that there is a small coal stove in the wash room of the car house and office building used for heating water, and the brass foundry is heated by a coal stove; both stoves being safely arranged. **Lighting** throughout is electric with service from 110 volt non grounded system, and with wiring generally in good condition except that the pit lamps in the car house and office have some rather defective fittings and worn out cords. A few hand torches were found and employes explained that they were used only for thawing out air brakes during the colder weather. **Power** in the repair shop is furnished by 500 volt electric motors with service from the trolley system and with wiring in fair condition but not standard. **Trolley wires** are properly hung on insulated hangers throughout and have the proper **cutout switches** and fair lightning protection. Rails are all **bonded** and connected with the outside grounded system. All the main supply of **oils** is ordinarily stored in the separate oil house, but at time of inspection several partly filled barrels of grease and a number of empty ones were found stored in the blind basement of the paint shop. Waste cans are generally distributed where needed and **oily waste** kept well cleaned up. Floors however are badly oil soaked in a number of places and the plank bottomed pits in the car house and office are so constructed as to not permit of their proper cleaning and sawdust is being used to absorb the oil drippings. **Cars** are electric heated and lighted with wiring not nearly standard but fair. **Trolley poles** are not drawn down out of contact during the storage of cars, but overhead switches are thrown off. This however does not disconnect all the car wiring and should not be considered as sufficient. **Painting** is all done in the paint shop which risk was found in clean and well kept condition. Gasoline blow torches are used for removing paint from car bodies in this risk. The pits in the pit room of the repair shop are communicating with tracks set up on wooden posts and stringers, and planked over between and at time of inspection were not in as clean a condition as is desirable. **Armature drying** is all done in an outside fire proof drying oven of excellent construction. Some coil dipping is done on the 2nd floor of the machine shop. All forge work is done at three forges in the blacksmith shop with **forges** properly hooded but with stacks through roof without any thimble or protection.

ADMINISTRATION.

The risks throughout show good care and management, and premises were in fair condition considering the class of building construction. There are 69 men employed 52 of which are in the repair shop. Insurance is carried under general form the amounts being mentioned in the value sheet herewith. (SEE VALUE SHEET).

PROTECTION.

Private: There is no private fire protection in the car storage barn, the brass foundry and the small lumber sheds, but the other risks have vertical pipe and hose, hand chemical extinguishers and water barrels distributed as follows: In the paint shop there are two 2 inch vertical pipe outlets with 100 feet of 2 inch hose at each and 6 chemical extinguishers properly distributed; in the car house and office there are four 2 inch vertical pipe outlets with from 50 to 100 feet of 2 inch hose attached to each, six hand chemical extinguishers and three water barrels with pails; in the repair shop there are three 2 inch vertical pipe outlets on the 1st floor of the machine shop section and two outlets on the second, with 75 feet of 1 1/2 inch hose at each and ten chemical extinguishers and four water barrels distributed throughout the risk, and in the office building one hand chemical extinguisher was found. Fire protective equipment is in generally good condition and employes appear to understand its use but a portion of the hand chemical

are sub-standard in construction.

All risks have A. D. T. watch service boxes with watchman reporting hourly during nights.

Public: Public protection consists of two double hydrants on a 6 inch main dead ended at the second hydrant and so located as to be accessible to only a portion of the risks, and a fire call box in the office with fire station and steamer 3-4 mile distant.

RECOMMENDATIONS.

1. Provide two standard two way yard hydrants, each having standard housing and equipment and one 150 foot line of C. R. L. hose with supply to be from city water works system and with underground yard mains not less than 6 inch, hydrants to be located 30 feet out and on the line of division wall between the 1st and 2nd and the 2nd and 3rd sections of the Car storage house.
2. Make all car wiring and car heaters standard.
3. Remove trolley poles from contact with trolley during the storage of cars. Throwing the overhead switch does not disconnect all the car circuits.
4. Discontinue the use of sawdust in the car pits.
5. Properly repair pit wiring in the car house and office.
6. Remove empty casks and grease stored in blind basement under the paint shop.
7. Provide proper thimbles around the forge stacks in the blacksmith shop.
8. If possible have city water works system extended east on Oak Street and double hydrants installed in front of the repair shop and the car storage house, respectively.

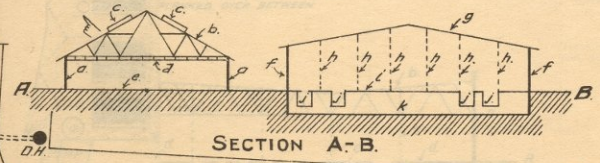
THE COLUMBUS RAILWAY AND LIGHT CO.

OHIO INSPECTION BUREAU.
T.B. SELLERS, MGR.
COLUMBUS, OHIO.
MARCH 1903.
SCALE 1"=50' H.P.M.

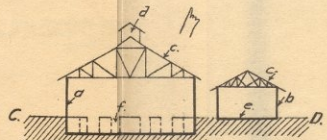
WALLS WITH 20" X 20" PIERS 15' CENTERS.
THE ROOF ON 7/8" SHEATHING SUPPORTED BY
WOODEN TRUSSES SET ON WALLS.
GLASS SKYLIGHTS WITH METAL CLAD
OF HOUSE & METAL FRAMES BUT ONLY
PART OF GLASS WYRED-GLASS
WOOD PART BRICK & PART PLANK
ON SAND.
WALLS.

- g.- COMPOSITION GRAVEL ROOF ON 7/8" SHEATHING & SUPPORTED BY 2" X 12" WOODEN ROFTERS & 4" X 8" WOODEN POSTS (h.)
- i.- WOODEN FLOORS ON JOISTS.
- j.- WOODEN PITS BOXED CONSTRUCTION
- k.- DISJUNCTION UNDER WITH PLANK FLOOR Laid ON THE GROUND.

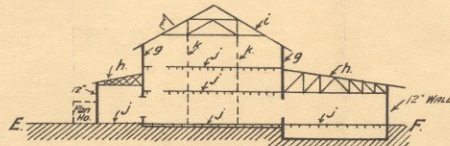
- d.- 12" WALLS WITH 20" X 20" PIERS 15' CENTERS
- b.- 8" WALLS. c.- COMPOSITION GRAVEL ROOF ON WOODEN SHEATHING, RAFTERS & TRUSSES.
- e.- WOODEN ROOF LANTERN WITH GLASS SIDES.
- e.- EARTH FLOOR. f.- COMMUNICATING PITS WITH CONCRETE BOTTOMS & PLANKED OVER BETWEEN TRACKS.
- g.- 15" WALLS. h.- COMPOSITION GRAVEL ROOF ON WOODEN SHEATHING & ROOF SUPPORTS.
- i.- SLATE ROOF ON WOODEN SHEATHING
- j.- FLOORS OPEN JOIST CONSTRUCTION PART ON 1ST LAD ON EARTH.
- k.- 12" X 12" WOODEN POSTS. - 8' X 8" ON TOP STORY.



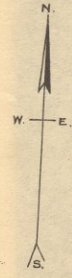
SECTION A-B.



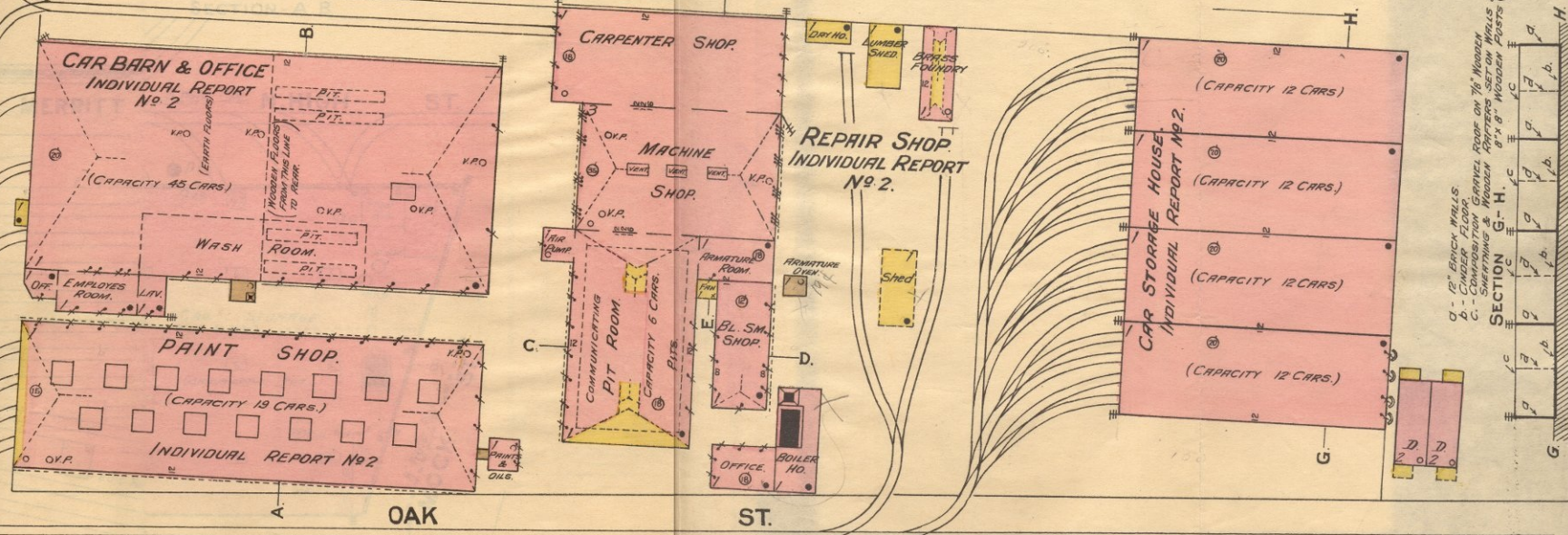
SECTION C-D.



SECTION E-F.



ROSE AVE. BARN.



g.- 12" BRICK WALLS
b.- CHANDER FLOOR.
c.- SHEATHING & WOODEN ROOF ON 7/8" WOODEN TRUSSES & 4" X 8" WOODEN POSTS (cd)
SECTION G-H.

OAK ST. G. H. A. B. C. D. E. F. G. H. I. J. K. L. M. N. O. P. Q. R. S. T. U. V. W. X. Y. Z.