



CHICAGO TRANSIT AUTHORITY

Skokie Shop



Rail Car Heavy Maintenance

3701 W. Oakton St.

Skokie, IL 60076-3498

Telephone No: (847) 763-8900

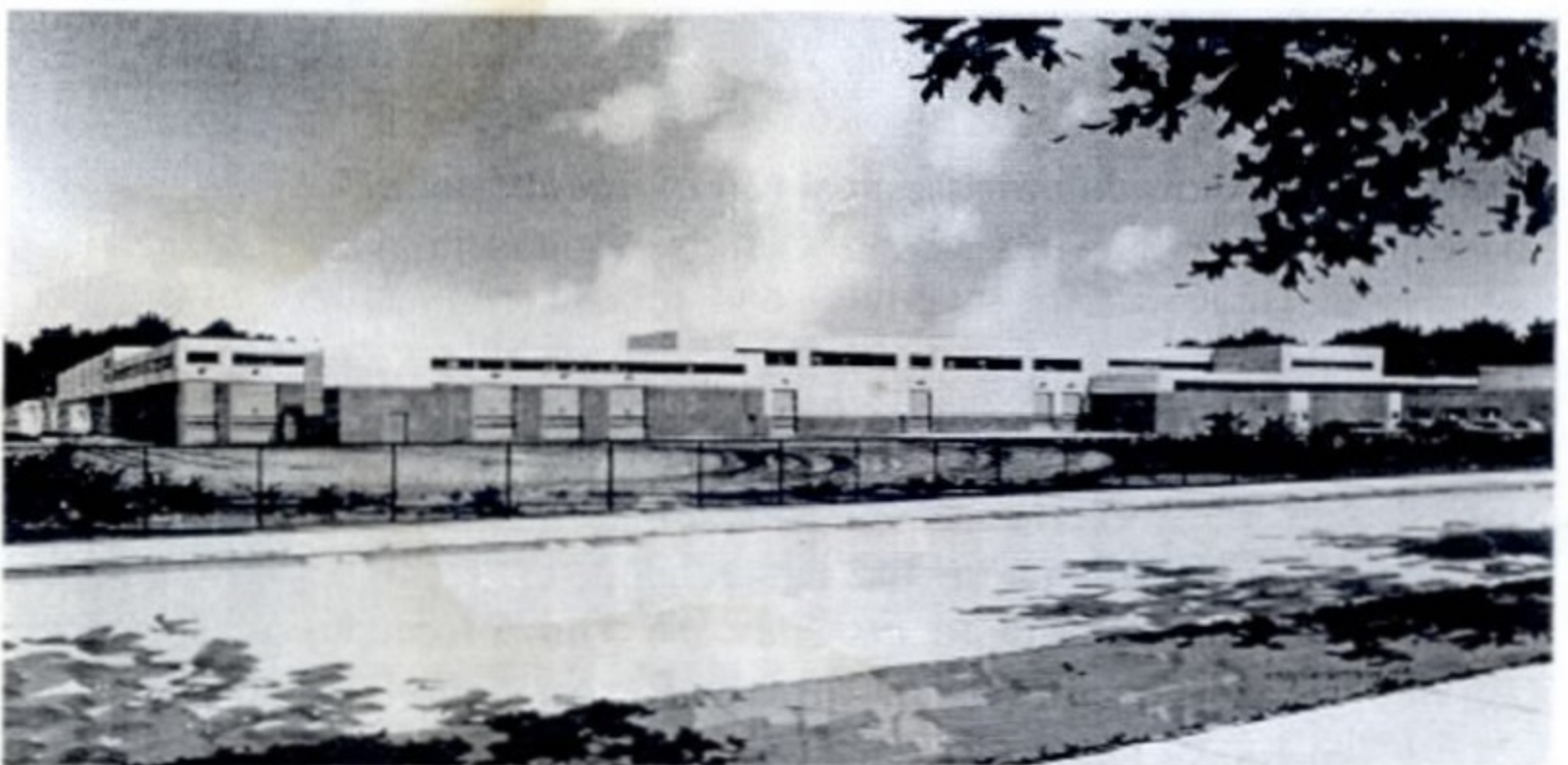
SKOKIE SHOP

The Skokie Shop Complex is CTA's facility for the performance of all "heavy" or major work on CTA's rail cars. The property site is approximately 40 acres on which three main structures exist. The buildings include a maintenance facility, warehouse and engineering and technical service office. Located behind and along the side of the maintenance building are holding tracks and a 2000 foot test track.

The type of work performed at Skokie Shop falls into four basic categories: repair or rebuild major rail car components, manufacture rail car repair parts, repair damaged rail cars and perform major rail car overhauls. In order to perform this work, the shop complex is divided into sixteen (16) separate shops. Each shop area performs specific functions that, when combined, provide for a coordinated maintenance effort. Skokie Shop is also responsible for the overhaul, inspection and repair of 73 pieces of non-revenue, railborne equipment which is maintained at a Skokie Shop satellite location at 61st and Calumet on the south side of Chicago.

Seven unions are represented at Skokie Shop: Machinists, Electrical Workers, Carpenters, Painters, Blacksmith/Welders, Sheet Metal Workers and Laborers.

There are currently four different series of rail cars in use on the rapid transit system, distinguishable to the public by number series and appearance. To the workforce at Skokie Shop, each series is unique in some form relative to the heavy maintenance. With the emergence of higher technology exhibited in the later rapid transit (RT) cars, education and training has been provided to keep pace with the advancements.

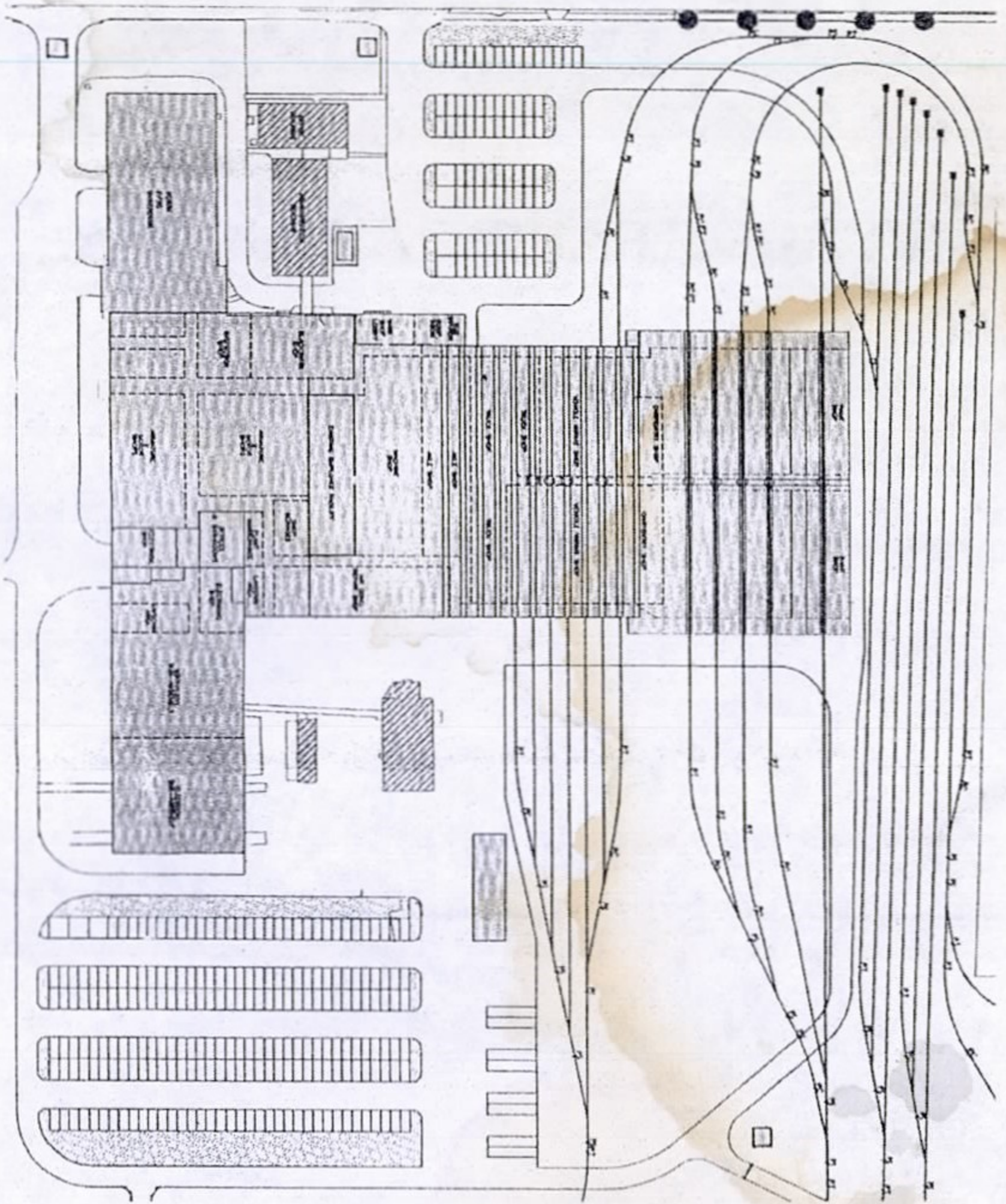


CTA SKOKIE SHOPS
5701 GAKTON STREET

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Oakton St.



Skokie Shop Facility

Skokie Shop is currently undergoing reconstruction. This project began in the summer of 1995 and should be completed by early fall 2000. After reconstruction, Skokie Shop will have a 256,300 sq. foot single level facility. With the new facility, Skokie Shop will be able to meet increasing vehicle maintenance and repair needs for the Authority while improving efficiency and lowering maintenance cost.

Area 413 – Non- Revenue Vehicle Maintenance (7 machinists, 3 electrical workers)

Responsible for all maintenance and repairs of non – revenue work equipment, i.e. railborne cranes, snow fighters, flat cars & track maintenance equipment.

Area 415 – Electronic Repair (6 electrical workers)

Responsible for the repair and overhaul of all electronic equipment of rail cars. These include propulsion devices and components, public address amplifiers and destination signs.

Area 416 – Carpenter Shop (14 carpenters, 1 sheet metal worker)

Responsible for the repair, manufacture and modification of various parts of the rail car or housing parts for the components. These include windows, doors, seats, A/C covers, interior and exterior side panels, floors, etc.

Area 417 – Paint Shop (9 painters)

Responsible for maintaining the interiors and exteriors of all rail equipment for appearance and corrosion protection. Area 417 also paints various rail car component parts.

Area 418 – Overhaul/Modifications (10 electrical workers, 2 carpenters, 2 laborers, 1 welder, 2 sub-assemblers)

Responsible for performing rail car repairs, overhauls and modifications. This area performs work on the afternoon shift to expedite the repair process, thus returning the rail car to revenue service.

Area 419 – Motor Line (19 electrical workers, 1 machinist)

Responsible for disassembling, repairing and reassembling various motors used on the rail cars. Some of the varieties of motors/motor alternators which are repaired/rebuilt include: traction motors, blower motors, compressor motors and motor alternators.

Area 420 – Vehicle Wiring (19 electrical workers)

Responsible for all major wiring work and testing of rail cars sent to Skokie Shop. This includes cars to be overhauled, rehabbed or rebuilt. This area also maintains electrical systems within the shop buildings.

Area 421 – A/C Maintenance (8 machinists, 1 electrical worker)

Responsible for the repair and overhaul of the 10 ton (120,000 BTU) capacity air comfort systems and its components (i.e., compressor, receiver, etc.) on the rail car fleet. For comparison purposes, the A/C units on CTA'S rail cars have over four times the capacity of the central air conditioning system in a standard three (3) bedroom home. This is necessary due to the constant flow of passengers in and out of the cars.

Area 422 – Shop Services (7 laborers)

This shop area is responsible for physical plant maintenance support and maintenance support for all other shop areas. Primary duties entail ensuring the Skokie Shop facility is clean and hazard free. They also clean all rail cars prior to returning them to service.

Area 423 – Blacksmith/Welding Shop (9 blacksmith/welders)

Responsible for manufacture and repair of various parts used on the rail cars. These parts may be individual or used in the repair/overhaul of larger systems. Included in this group are any parts that require welding, torch - cutting or blacksmith forge work.

Area 424 – Machine Shop (15 machinists, 1 toolmaker)

Responsible for all machining aspects of brake parts, motor parts, drawbar parts, wheel boring and any other machine shop work. This group manufactures special tools, gauges, and fixtures used to assist in rail car repair.

Area 425 – Truck Shop (13 machinists, 5 electrical workers)

Responsible for stripping, rebuilding and inspecting the rail car trucks. Other responsibilities of this area include manufacturing cables and harnesses used on all cars and the removal/replacement of drawbars.

Area 426 – Axle Shop (18 machinists)

Responsible for the heavy inspection and complete overhaul of all axle assemblies (4 types). This shop area also operates the wheel press and wheel truing equipment used during the repairing and rebuilding of axle assemblies.

Area 427 – Inspection, Degrease, Teardown (11 machinists)

This shop area interacts with all other shop areas by inspecting, disassembling and cleaning components to be worked on in other areas.

Area 428 – Sub-Assembly/Mechanical (14 machinists, 2 electrical workers)

Responsible for the overhaul and rebuild of a variety of smaller mechanical component parts which include: brake calipers, drawbars, current collector devices and batteries.

Area 429 – Sub-Assembly/Electrical (22 electrical workers)

Responsible for overhaul and rebuild of electrical component parts. This shop area provides overhaul or repair on electrical panels, control groups, contactors, relays and other electrical devices used in rail car operation.

Definition of Terms

Actuator The component part which applies brakes, mechanically, and releases the brake, electrically.

Armature The rotating portion of a direct current motor that changes electrical energy into mechanical energy (rotation).

Axle Assembly The axle assembly consists of a gear box, axle shaft and two rail car wheels and is an integral part of the truck assembly and propulsion system. The axle assembly on each of the four series of rail cars is unique. Axle assemblies keep the car on the track.

Caliper A device that mechanically applies and hydraulically releases pressure to the brake disc.

Control Group Houses all main contactors, relays and switches. Control group receives signals from master controller to determine direction, rate of acceleration and braking.

Drawbar Head A device that mechanically couples (locks) and uncouples rail cars.

Electronic Cards Printed circuit cards similar to those used in televisions and radios. They contain electronic components and are used to monitor car operation.

Friction Brake Rods Mechanical parts that move the brakes in and out of service.

Master Controller Sends power and brake signals to the control group from the Motorman's cab.

Motor Alternator Converts 600 volt (direct current) into 230 volt (alternating current) to operate air conditioning units and interior lights, charge batteries and cool motors.

Pilot Motor A small motor in the control group that moves the controls to different positions depending on signals from the motorman's cab. This controls that speed of the train.

Sleet Scraper A device that cleans the snow and ice from the third rail to ensure a clear connection between the trolley shoe and the third rail.

Trolley Beam The support device for the third rail current collector which collects that 600 volt current. It also supports the sleet scraper assembly.

Truck The assembly that supports the car which includes a kingpin bearing assembly, primary and secondary suspension systems, wheels and axles, traction motors and gearboxes, disc brake assemblies, magnetic track brake assemblies and current collectors.

Wheel Boring Bores and machines wheel blanks (new wheels) to fit axle assemblies. (Different axle assembly for each series.)

Wheel Press A piece of equipment that presses wheels onto the axle assembly. (Also used to remove wheels from axle.)

Wheel Truing Equipment and process that restores wheels to concentric (circumferential) accuracy.