February, 1958

Railway Signaling and Communications

On double track each track is signaled both ways, the signal for left-hand running being on the mast at left of track it governs.

CTC Handles 15 More Trains

With 10 Union Pacific passenger trains and considerable freight traffic between Chicago and Omaha, switched from North Western to the Milwaukee, increased track capacity and flexibility to maintain on-time performance has been attained by installing additional signaling with centralized traffic control, rather than by adding main tracks. The section of CTC needed the most, on 35 miles of three-track, was completed in 60 days, and remaining miles on single and double track, in 18 months.

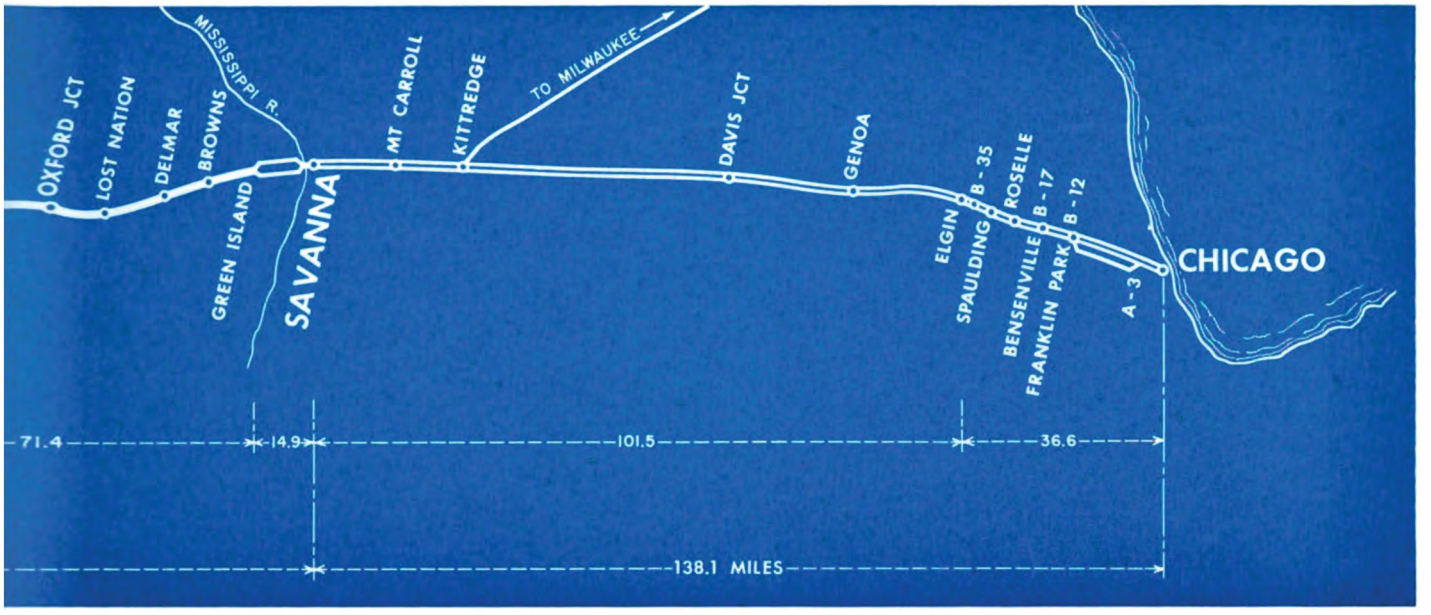
THE BIG SWITCH of Union Pacific trains, from the C&NW to the Milwaukee, was made October 31, 1955, the arrangement having been made known on the railroad August 1. This allowed only three months in which to make special preparations, including installation of 5 power crossovers; automatic block signals and changing out rail on about 9.2 track-miles between Towers A-3 and B-12. Additional new crossovers and turnouts, with complete centralized traffic control, on about 22 miles between Tower B-12 Franklin Park and Tower B-35 near Elgin, were installed early in 1956.

Prior to this time, the Milwaukee had main tracks between Chicago and Council Bluffs as indicated on the map. This same track arrangement, with additional signaling, is now being used.

On the Same Tracks

Five of the through passenger trains depart from Chicago between 4:30 pm and 6:45 pm. During this period seven westbound suburban passenger trains depart from Chicago for Elgin, 37 miles, making numerous station stops. To run the through passenger trains around the suburban trains, new 132-lb rail was laid on a previous freight transfer track, on 9.5 miles between A-3 tower and Franklin Park. New signaling, for westbound only, was installed on this track.

To further increase track capacity, both main tracks on the previous double track main line were signaled for train movements in both directions from Franklin Park to interlocking B-35 on the east side of the Fox River, 1.4 miles east of Elgin station. To cross trains from one track to the other, No. 20 crossovers were installed at Franklin Park, B-17, Roselle and Spaulding, with No. 20 turnouts at B-35 tower Elgin. Trains are authorized to use these crossovers for diverging moves at 50 mph. These crossovers and turnouts are all power-operated and included in interlocking, or are remotely controlled by levers in interlocking. As advance information that a 50 mph crossover or



236.2 miles of double track, on 119.8 miles of which both tracks are signaled both ways.

increased in as high a proportion as the increase in cars or tonnage. Freight trains are operated at 60 mph maximum and are powered to maintain this speed except on some grades.

Cars going to or coming from the line to Sioux City are set off or picked up at Manilla. During grain movements or other peaks of traffic from the Sioux City line, extra trains are operated through from Sioux City to Savanna and to Chicago.

On-Time Train Performance

The maximum speed for passenger trains is 79 mph. The through trains change crews at Savanna, Marion and Perry. The overall time of the four through trains, either way on the 488 miles between Chicago and Omaha, varies from 8 hr 5 min to 8 hr 15 min, depending on the number of station stops.

The Milwaukee is maintaining an excellent record of on-time train performance. If trains leave Chicago or Omaha behind schedule, the Iowa Division and the Illinois Division can make up a considerable amount of the time late.

Through freight trains with more tonnage, are making the same time as previously, which is about 8 hours either way on the 344 miles between Savanna and Council Bluffs Yard, and about 2 hr 45 min either way on the 121 miles between Savanna and Bensonville Yard near Chicago.

Because the five westward through passenger trains leave Savanna in the period between 6:44 p.m. and 9:55 p.m. difficulty would be encountered in operating freights either way in this territory, if the CTC were not in service to authorize moves promptly by signal indication, rather than by train orders. For example, a typical move is for westbound freight No. 63, to leave Savanna shortly after the second passenger train No. 105, and go 170 miles to the siding at Melbourne to let the two remaining westward passenger trains, 101 and 103, pass.

Westbound time freight No. 63 meets all five of the eastbound through passenger trains in the 59 miles of single track between Manilla and Council Bluffs Yard. Also in this section, some of the westbound through passenger trains meet some of the eastward passenger trains.

All of the 244 miles of single-track in Iowa is equpped with CTC

Flexibility on Single Track

Consideration is being given to a proposed change from two-track to single-track with three power CTC sidings, on the present section of double-track between Collins and Madrid, 27 miles. This change will provide better flexability to advance a freight train one or more sidings ahead of a passenger train of the same direction, this being the needed flexibility in this area, rather than a need to meet opposing trains.

The signaling projects and track changes in this change-over program were planned and constructed by Milwaukee Road forces under the direction of Philip H. Linderoth, Signal Engineer, and under the jurisdiction of Chief Engineer W. G. Powrie and Virgil E. Glosup, Assistant Chief Engineer Signals and Communications, now promoted to Engineer Maintenance of Way. The major items of signal and CTC equipment installed were furnished by Union Switch & Signal, Division of W A B Company.

Design of the carrier control system, as well as the wayside telephone system, was handled by communications forces under the direction of D. L. Wylie, Communications Engineer. Carrier equipment was supplied by F. W. Lynch Company and telephone equipment by Automatic Electric Company and R. W. Neill Company.