

Editorial Comment

Territories Involved in the I.C.C. Signaling Order

AS EXPLAINED on page 420 of the July issue of *Railway Signaling*, the Interstate Commerce Commission, on June 17, ordered the railroads to install block signaling on lines where freight trains are operated at 50 m.p.h. or more, or passenger trains at 60 m.p.h. or more. Also, additional protection, in the form of train stop, train control or cab signaling, was ordered on lines where any trains are operated at 80 m.p.h. or more. The information released by the Commission in connection with its order indicates that the portion of the order concerning block signaling applies to about 19,550 mi. of track over which train movements are now authorized by timetable and train order, and the portion concerning additional protection applies to about 26,406 mi. of track.

The Commission did not, however, issue a list of the names of the railroads and the location of the territories affected by this order. When such a list was requested from the Commission, the reply was to the effect that this list was not available and that the data could be secured from the statements filed by the railroads at the hearing before the Commission in Cincinnati on October 2 and 3, 1946.

The information sought is scattered through two large volumes, each of which contains hundreds of mimeographed pages, and from this source we have compiled the accompanying tables. When preparing the data for the Commission, some roads listed certain mileages under two or more classifications of train speeds. Furthermore, signaling has been installed on some territories since the railroads prepared the data in July, 1946. Therefore, when compiling the tables herewith, we eliminated obvious duplications and territories on which signaling has been installed recently, as well as where construction is now under way. On the other hand, since July, 1946, some railroads have added new high-speed trains and thereby have increased the mileages where the I.C.C. order may apply. Therefore, the accompanying tables are presented only as a general guide concerning most of the territories on which the order may be effective.

Table 1 lists the territories on which passenger trains were operated at 60 m.p.h. or more, or freight trains at 50 m.p.h. or more, where train movements are authorized by timetable and train orders, effective as of July 1, 1946. Our table totals 17,473 mi., which is somewhat less than the figure of 19,530 mi. given in the statement which accompanied the I.C.C. order. With certain exceptions, the table lists the number of trains daily over each territory, and this figure is one of the important factors in determining the type of signaling system that most logically should be installed to meet the requirements of the

order from the standpoint of improved safety, as well as increased train speeds and reduced operating expenses.

Where the number of trains is small and only one or two are exceeding the 60 m.p.h. limit, some railroads may reduce the speed of these trains below 60 m.p.h., as a means of avoiding the I.C.C. requirement to install block signaling. Where traffic is heavier and reductions in train speed are not practicable, the most logical policy is to install track-circuit-controlled signaling. The more detailed choice of the track-circuit-controlled signal systems for single-track lines is a subject which has been dealt with on numerous occasions in these columns, and which is discussed, from the viewpoint of railway management, in the *Railway Age* of July 26. In brief here, however, our thought is that a principal objective in such projects should be to include dispatcher-controlled signals to authorize train movements, thereby replacing timetables and train orders. (See page 229 of the April, 1947, issue of *Railway Signaling*, and also page 521 of the August, 1946, issue.) The cost of including such signals,

TABLE NO. 1—TERRITORIES SUBJECT TO SIGNAL ORDERS

Territory where train movements are now authorized by timetable and train orders with no signaling and where passenger train speeds are 60 m.p.h. or more, or freight trains 50 m.p.h. or more

Name of Railroad and Locations Between Towns	Number of Trains Daily	Miles of Track
Alton		
Francis-Clark	20	28.0
Atchison, Topeka & Santa Fe		
Elliner-Wellington	47	28.8
East Jct.-West Jct.	12	7.0
A. G. Tower-W. N. Jct.	6	30.7
Independence-Wellington	6	102.1
Hutchinson-Kinsley	13	98.7
Panhandle-Borger	6	28.9
Canyon-Lubbock Jct.	7	103.1
Texico-Slaton	11	89.5
Slaton-Sweetwater	14	17.8
Ashfork-Prescott	12	57.1
Prescott-Skull Valley	16	23.5
Skull Valley-Matthie	10	54.3
Matthie-Phoenix	20	58.8
Matthie-Parker	4	105.8
Temple-Brownwood	15	89.3
Rosenberg Jct.-Alvin	10	37.6
Atlantic Coast Line		
Yard Tower-So. Rocky Mt.	20	114.3
Jesup-Waycross	15	39.2
Waycross-Albany	20	108.9
Waycross-Thomasville	20	104.0
East Albany-Thomasville	4	57.2
Thomasville-Dothan	14	91.5
Sanford-Port Tampa	47	90.6
Uceta-South Fort	4	49.0
Moncrief-Wilcox	10	81.1
Trilby-St. Petersburg	7	42.2
High Springs-Lakeland	16	199.5
Vitis-G. Y. Tower	6	28.9
Canadian National		
Island Pond-Norton	8	15.8
Canadian Pacific		
Squaw Brook-Mt. 100.7	10	59.3
Mattawamkeag-Brownville Jct.	13	42.8
Central of Georgia		
Savannah-Tennville	16	138.4
Carolina & Western Carolina		
Augusta-Yemassee	88.3
Chicago & Eastern Illinois		
Wood Jct.-Villa Grove	13	62.5
Villa Grove-Sullivan	18	63.2
Chicago & Illinois Midland		
Springfield-Pekin	20	42.8
Chicago & North Western		
Duck Creek-East Switch	7	64.7
Escanaba-Ishpeming	9	65.0
Belton-Waukesha	9	10.4
U. P. Jct.-Long Pine	14	251.8
Chicago, St. Paul, Minneapolis & Omaha		
Merrillan-Marshfield	7	38.7
Ashland-Trego	8	77.2
Eau Claire-Spooner	13	81.2
Northline-Spooner	8	76.9
Spooner-Duluth	12	83.3
Mankato-Lemars	14	157.7
Chicago Great Western		
Waltham-Austin	8	11.7
Manly-Clear Lake	22	10.7
Oelwein-W. Marshalltown	10	74.9
Blockton-Conception	10	28.4
Bee Creek-West Platte	10	19.9

(Continued on next page)

TABLE No. 1 (CONTINUED)—TERRITORIES SUBJECT TO SIGNAL ORDERS

Territory where train movements are now authorized by timetable and train orders with no signaling and where passenger train speeds are 60 m.p.h. or more, or freight train speeds are 50 m.p.h. or more

Name of Railroad and Locations Between Towns	Number of Trains Daily	Miles of Track	Name of Railroad and Locations Between Towns	Number of Trains Daily	Miles of Track
Chicago, Milwaukee, St. Paul & Pacific			Minneapolis, St. Paul & Sault Ste. Marie		
Sabula-Clinton	10	17.1	Glenwood-Noyes	14	266.3
Elk Point-Sioux Falls	15	69.9	Withrow-Cardigan Jct.	18	11.9
Calmar-Austin	8	69.2	Glenwood-Portal	26	429.2
Watertown-Madison	8	37.7	Wisconsin Central		
Mazomanie-Marquette	10	75.7	Jct. 19-PDC Jct.	18	99.1
Chicago, Rock Island & Pacific			Duplainville-Valley Siding	16	50.7
Limón-Colorado Springs	4	78.8	Fond du Lac-Spencer	25	133.9
McFarland-Bellefonte	9	104.1	Spencer-Owen	23	18.8
Tucumcari-Amarillo	5	113.5	Owen-Carnel'n Jct.	19	119.8
Amarillo-Booneville		396.2	Owen-Superior	7	150.9
Booneville-Little Rock	10	119.3	Missouri-Kansas-Texas		
Little Rock-Cotton Belt Jct.	19	64.4	M.P. 218-M.P. 386-2	12-15	145.9
Biddle-Hot Springs	16	58.2	McDonald-Greenville	12	44.1
Colorado & Southern			Hunt-Gallagher	12	41.0
Utah Jct.-Cheyenne Jct.	8	116.0	Granger-Pershing	9	43.1
Cheyenne Jct.-Wendover	9	121.6	M-K-T Jct.-M.P. 1027-1	13	42.2
Sou. Jct.-Walsenburg	6	47.3	M.P. 908.6-LaGrange	13-15	77.6
Des Moines-Sixela	8	55.9	Cat Spring-Eureka	12	52.4
Columbus & Greenville			Missouri Pacific		
Columbus-Greenville	6	167.7	Valmeyer-Danley	15	17.2
Denver & Rio Grande Western			Knoble-Helena	6-11	140.1
Bradgon-Pueblo	11	21.8	R.I. Jct.-Marianna Jct.	9	42.5
Detroit & Toledo Shore Line			R.I. Tower-McGhee	8	100.3
Lang-Greenings	12	26.4	McGhee-Collinston	13	71.7
Warner-Edison	12	28.2	Kinder-Lake Charles	6	35.6
Sibley-River Rouge	12	13.8	Nassau Jct.-Carthage	12	44.7
Florida East Coast			Rich Hill Jct.-Ft. Scott	6	25.6
Moultrie Jct.-Bunnell	4	48.6	Carthage-Grand Yd.	8	49.2
Edgewater Jct.-Lake Harbor	2	16.6	Batesville-Diaz	11	27.6
Ft. Worth & Denver City			Ft. Scott-Genesco	6-10	240.3
Henrietta-Wichita Falls	15	18.3	Gypsum-Marquette	4	41.6
Wh. Falls-Childress	11	106.2	AA Jct.-BB Jct.	5	11.4
Childress-Amarillo	13	115.5	International-Great Northern		
Amarillo-TeXline	12	117.0	Crockett-Tamina	14	82.1
Grand Trunk Western			Mart-Valley Jct.	16	57.9
Pontiac-Durand	19	43.4	Mumford-Spring	14	92.0
Durand-Ososso Jct.	16	12.2	Ft. Worth-Mart	17	114.4
Owosso Jct.-Grand Rapids	12	79.1	Palestine-Valley Jct.	13	93.9
Grand Rapids-Penn Jct.	11	7.1	Valley Jct.-Taylor	15	50.9
D. T. Switch-Mt. Clemens	12	10.6	New Orleans, Texas & Mexico		
Mt. Clemens-Richmond	10	16.0	Anchorage-Kinder	10	92.8
Richmond-Tappan	9	17.7	St. Louis, Brownsville & Mexico		
Great Northern			Algoa-Kingsville	15-19	222.6
Swan River-Gunn	12	16.5	Kingsville-San Benito	8	99.4
Gunn-Cass Lake	3	56.4	San Benito-Brownsville	6	19.0
Cass Lake-Bemidji	7	15.3	New York, Chicago & St. Louis		
Bemidji-Crookston Yd.	3	89.7	Acadia-So. Lima	15	38.9
Hillsboro-P. A. Tower	10	36.7	So. Lima-Frankfort	22	144.4
P. A. Tower-M. D. Jct.	6	197.4	Frankfort-Altamont	10	20.8
Lyndale Jct.-St. Cloud	7	62.6	Templeton-Peoria	15	134.7
Gulf, Mobile & Ohio			Indianapolis-Michigan City	4-6	156.9
E. St. Louis-Tamms	18	133.1	Frankfort-E. St. Louis		174.6
Tamms-No. Cairo	16	15.7	Northern Pacific		
Winford Jct.-Iselin	16	100.7	Superior-Staples	10	121.3
Iselin-Perry	11	2.5	Little Falls-Brainerd	5	32.7
Ruslor-Okolona	14	69.1	Manitoba Jct.-Gilby	3-4	119.9
Okolona-Meridian	11	126.2	Voss-Pembina	3	55.6
Meridian-Mobile	7	129.3	Pere Marquette		
Shidell-Bogalusa	7	36.6	Romulus-Atwood Jct.	25	55.4
Bogalusa-Jackson	7	114.8	St. Louis-San Francisco		
Jackson-Louisville	7	113.8	Francis-Staley	16	98.2
Louisville-New Albany	7	104.9	Edward-Afton	15	84.0
New Albany-Jackson	7	85.2	Cape Gir.-Chaffee	13	139.5
Illinois Central			St. Louis, San Francisco & Texas		
Tara-M.P. C 500	7	118.9	Red River-T. & N. O. Jct.	14	5.3
Tara-Lemars	11	103.0	Sherman-Irving	14	65.0
Gulfport-Hattiesburg	6	70.0	Red River-Paris	4	16.2
Hattiesburg-Jackson	6	89.7	St. Louis Southwestern		
L. Corn't Jct.-Cleveland	10	92.1	Dexter Jct.-Pine Bluff	15-25	233.3
Cleveland-Vicksburg	11	102.0	Lewisville-TeXarkana	17	29.5
Metcalfe-Leland	11	7.4	Lewisville-Shreveport	10	62.0
Vicksburg-Baton Rouge	10	150.1	St. Louis Southwestern Railway of Texas		
Baton Rouge-Orleans Jct.	15	1.3	Texarkana-Corsicana	16-21	202.1
Meridian-Vicksburg	13	137.3	Mt. Pleasant-Dallas	8-12	132.9
Delta Point-Shreveport	13	171.1	Southern		
Illinois Terminal			Macon-Jesup	8	147.3
Springfield-Mackinaw Jct.	16	55.8	Columbia-Hibernian Pk.	22	130.0
Kansas City Southern			Seven short sections on Columbia division		117.7
Leeds-Grandview	15	14.2	Greensboro-Selma	13	101.0
Grandview-Pittsburg	16	89.7	Youngstown-SJ Tower	17	87.2
Pittsburg-K. O. G. Jct.	22	11.5	E. St. Louis-Huntingburg	17	147.9
K. O. G. Jct.-Joplin	17	8.1	Pomona-Winston Salem	12	24.4
Neosho-Watts	17	50.0	Spokane, Portland & Seattle		
Watts-Spiro	14	75.6	Wishram-S. P. & S. Jct.	9	45.7
Spiro-Poteau	16	14.6	Pasco-Ft. Wright	10	40.0
Poteau-Heavener	16	11.9	Texas & Pacific		
Heavener-Mena	17	41.8	Cypress, M.P.-O-Lake End	7	30.0
Mena-De Queen	15	53.5	Texarkana-M.P. A-83.0	6	83.0
De Queen-Shops	14	126.0	Lobdell Jct.-Torras Jct.	9	48.7
Noble-Neame	11	62.9	Union Pacific		
Louisiana & Arkansas			Idaho Falls-Spencer	7	64.0
La. Jct.-Alexandria	9	120.2	Humphrey-Silver Bow	7	132.0
Alexandria-Torras Jct.	9	54.1	Western Pacific		
Baton Rouge-Shrewsbury	10	73.4	Chestnut Jct.-Stockton	19	46.7
L. & A. Jct.-Mindon	10	26.3	Stockton-Oroville	16	57.7
Louisville & Nashville			Portola-Winnemucca	13	177.1
Memphis Jct.-Leewood	16	252.7	Elko-Wendover	38	78.7
Brentwood-No. Athens (via N. & D.)	22	96.1	Wendover-Salt Lake	13	117.5
Pensacola-Flomaton	12	44.0	Wheeling & Lake Erie		
Pace Jct.-Chattahoochee	10	147.7	Ironville-Brewster	38	130.3
Lexington-Winchester	12	21.9	Cleveland-Harmon	21	76.4
Arklow-Mortons (cut-off)	24	9.4	Total		17,473.3

over and above straight automatic block, can be saved by reducing the number of signals, the number of sidings, and the number of operators required. Further discussion of this phase of the subject may be given in later issues.

Manual Block Expensive to Operate

The requirement of the Interstate Commerce Commission for block signaling on lines not now so equipped can evidently be met by the installation of either manual block, automatic block or C.T.C. If manual block is to be used, it must comply with rules issued as a part of the order

TABLE No. 2

Territory Where Manual Block Was In Service As of July 1 1946

Railroad	Miles of Track
B. & O.	154.8
C. B. & Q.	566.1
C. & O.	271.4
Erie	79.0
N. Y. C.	598.3
M. C.	274.8
C.C.C. & St. L.	317.6
P. & E.	199.0
N. Y. N. H. & H.	206.2
Penna.	635.1
P. R. S. S.	44.0
S. A. L.	1,227.4
Southern	117.2
Wabash	211.9
Total	4,902.8

by the Commission. These rules require careful reading, but, in the opinion of some experienced railroad officers, trains are not to be permitted to make meets at sidings where no operators are on duty; in other words, there must be no blind-siding operations. The operating expense of maintaining open offices at all sidings would be prohibitive, if the number of trains is such that meets must be made at sidings spaced less than 10 to 15 mi. apart.

Accordingly, it is quite likely that most railroads will not change over from timetable and train-order operation to manual-block operation, as a means of complying with the I.C.C. order, except perhaps on a few isolated sections. In the data filed with the Commission at the hearing last October, only 14 railroads listed territories where manual block was then in service and where freight trains were operated at 50 m.p.h. or more, or passenger trains at 60 m.p.h. or more. As listed in Table 2 herewith, these territories total 4,902 mi. The operation on a considerable percentage of this mileage does not comply with the new rules of the Commission for operation of manual block. Therefore, on much of this territory the railroads must either add more open offices to eliminate blind sidings or install track-circuit-controlled signaling. Thus a large part of this 4,902 mi. in Table 2 may well be added to that shown in Table 1, thereby increasing to about 22,375 mi. the mileage of track on which the railroads may be obliged to install track-circuit-controlled signaling. Brief comments as to choice of systems of signaling are given a few paragraphs above.

Additional Protection

Our analysis of the data submitted by the railroads at the hearing last October reveals the names of 21 railroads with 23,500 mi. of track on which trains are operated at 80 m.p.h. or more, and on which train stop, train control or cab signaling is not now in service, as listed in Table 3. Our total of 23,500 mi. is 2,906 mi. less than the 26,406-

mi. figure given in the information issued with the I.C.C. order.

As applying to heavy-traffic territories, where numerous high-speed trains are operated on the same track, additional protection in the form of train stop, train control or cab signaling is desirable as a means of increasing safety. The order of the Commission, however, is based on only one factor, i.e., train speed at 80 m.p.h. or more. No consideration is given to the number of trains operated daily, or to the number of tracks, or to the number of trains operated on each track. Although the traffic on a line may be light, the operation of one high-speed, lightweight passenger train at 80 m.p.h. or more will involve the territory in the train-stop, train-control or cab-signal part of the order. In such light-traffic territories, where maximum speeds are not much over 80 m.p.h., some railroads are analyzing the factors involved in an effort to determine whether the train speeds can be reduced to less than 80 m.p.h. without lengthening the overall schedules too much.

On the other hand, the railroads which are operating new lightweight passenger trains at speeds at 90 m.p.h. or more, on long routes of 500 mi. to 1,000 mi. or more, find themselves in a quandary. If train speeds are reduced to less than 80 m.p.h., the overall schedule between termi-

TABLE No. 3

Territory Where Trains Are Operated at 80 m.p.h. or More and Where Train Stop, Train Control or Cab Signaling May be Required

Railroad	Miles of Track
A. T. & S. F.	6,094.2
B. & O.	726.9
C. & E. I.	164.3
C. & N. W.	1,002.9
C. St. P. M. & O.	356.2
C. B. & Q.	2,430.2
C. M. St. P. & P.	1,583.7
C. R. I. & P.	684.6
F. E. C.	665.4
G. T. W.	649.4
I. C.	783.8
M. P.	1,173.8
I. G. N.	106.8
N. & W.	559.3
Penna.	486.0
P. R. S. S.	
P. M.	73.0
S. P.	500.2
U. P.	4,175.0
Wabash	1,206.1
W. P.	78.2
Total	23,500.0

nals may have to be lengthened a couple of hours. This may not be acceptable from the standpoint of passenger traffic. These are factors for consideration when determining whether to install additional protection.

And It's A Big Job

Thus, for these reasons, most of the railroads affected by this I.C.C. order have not as yet developed their policies or plans far enough to state the types of signaling to be installed or the mileages to be so equipped. From any viewpoint, however, the amount of signaling is enormous, being far greater than any previously known in the signaling field. As a result, manufacturers of all kinds of signaling equipment, materials, accessories and supplies will find a ready market for their products, and will be hard pressed to make deliveries promptly. The railroads, too, will be confronted with serious problems in securing and training the additional men required to design the installations, prepare the plans, organize the construction forces, and later maintain the finished signaling.