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The TELEGRAPH
INSTRUCTOR

BY

G. M. DODGE

Dodge

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THE TELEGRAPH INSTRUCTOR

BY

G. M. DODGE

PRESIDENT

Dodge's Telegraph, Railway Accounting
and Radio (Wireless) Institute

SEVENTH AND REVISED EDITION

VALPARAISO, INDIANA

1921

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ASTOR LENOX AND
TILDEN FOUNDATIONS
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PREFACE

My experience in the telegraph field began in the year 1887 when I entered the railroad telegraph service of the Pennsylvania lines at a small station in Indiana. After a limited period in the railroad work I enlisted in the commercial telegraph service, and I have been in the latter field for about thirty-two years.

In 1891 I began to train young men and women in practical telegraph work, but always felt that my efforts—no matter how persistent—were rather futile, inasmuch as I had no reference book to which I could refer my students and which would be easy for them to comprehend. I made diligent inquiry for a comprehensive book of this kind, but failing, I, in the fall of '98, mustered the courage to undertake the work myself.

In the preparation of this work I have endeavored to use terms which are simple, concise and comprehensive. I find there have been numerous and valuable volumes written and published upon telegraphy, but all of these which have come to my notice lacked that simplicity which is so essential for a student wholly unacquainted with the work. I have kept the thought constantly before me that my readers one and all belong to the uninitiated class of telegraphers. Notwithstanding this I am convinced, from the numerous testimonials I have received from telegraph operators in the service, that the work is also appreciated by many of them as a book of reference.

I wish to thank a number of my telegraphic friends and acquaintances, and especially the officials of the American Railway Association of New York, for the courtesies extended in assisting me in this, the seventh edition of THE TELEGRAPH INSTRUCTOR.

G. M. D.

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THE TELEGRAPH

The word "Telegraph," strictly defined, means "To write afar off." Webster defines it as "An apparatus, or a process, for communicating intelligence rapidly between distant points, especially by means of preconcerted visible or audible signals representing words or ideas, or by means of words and signs, transmitted by electrical action." There are numerous types of the telegraph, but the one most commonly used in this country is "The Electro-Magnetic Telegraph;" electricity producing the force or magnetism which is given to the Electro-magnet.

It is claimed that the force of electricity was discovered several hundred years before Christ, but that no attention was given it in particular for some sixteen centuries afterwards. Very little is known of its force except that it seems to travel with almost incredible rapidity and that all metallic agencies connected are charged instantaneously. Distance proves no barrier except that it requires a stronger productive force.

This book will treat strictly of "The Electro-Magnetic Telegraph," this being used almost exclusively in both railway and commercial telegraphy.

Learning Telegraphy

Any person, of whatsoever age, can learn telegraphy and become a telegraph operator, but the best time to undertake the study is between the ages of fifteen and twenty-eight years.

Telegraphy is not, as a great many are led to believe, a complicated or difficult study to understand. The apparatus employed is quite simple and readily understood, but the student should bear in mind that nothing is attained without an effort; he should give his undivided attention to all that is connected with the work; he should endeavor to familiarize himself with the principle involved in the production of the current, and the application of the current to both railway and commercial telegraphy. It is suggestive for a student, after he has mastered that which is essential for him to obtain in order to become a telegraph operator, to indulge in the principles of the science as applied or connected with the more complicated apparatus of the telegraph.

The successful telegraph operator today is the one who has applied himself diligently and made an effort to master the details of the work. As to the successful class I refer more

particularly to those who have left the actual telegraph service and have better and higher positions, among whom are many presidents, general managers and other high officials of railways, bankers, brokers and retired men of wealth.

It is too true that there are many operators who enter the service in their early life and remain in that capacity the balance of their lives. Invariably it will be found that these operators have never made any effort to advance themselves, but are seemingly content with doing their daily routine of work. If these same men had applied themselves diligently in their early life they could likely have become prominent railway and telegraph officials or be holding other important positions.

It is not necessary that one possess a college education in order to become a successful telegrapher and secure these higher positions. A college education does most certainly equip one for these duties in a better way, but there are indeed few of the successful telegraphers, to whom I have referred, who have ever attended a college. Nothing more than a common school education is necessary for one to become successful in the telegraphic work, and this with diligence properly applied will bring the desired reward.

After Employed

The beginning operator should, on taking his first position, bear in mind that the corporation employing him is dependent in part upon his efforts and he should be solicitous for their welfare and always discreet and ever alert. His occupation will yield the greatest and best results with a constant application and willingness to work. His success depends largely upon the thorough mastery of the details. A telegraph operator's work is in a measure complex and it is necessary for him to realize that the efficiency of the service depends upon his efforts.

A railroad operator should cooperate with the train dispatcher and the train men in assisting the quick dispatch of trains over the railroad. He should be prompt to answer his call, be on the lookout for trains and keep the train dispatcher posted as to the different conditions that may arise, always feel free to make suggestions which will be beneficial to the service. He should keep his telegraph instruments well adjusted, batteries clean; watch the connecting mediums between wires, batteries and instruments; keep hooks clear of all messages to be sent and delivered, and the office clean. He should bear in mind that other operators are entitled to the same wire privi-

leges. He should never be inconsistent in using the wire; nothing will demonstrate an operator's *newness* more than persistent contention for the circuit.

While the rules as set forth in the book of instructions issued from headquarters should always be observed, there are instances when one's judgment will lead him into variance, and few, if any, officials will take exception when the motive has been toward better results.

Promotion will invariably come to those who follow the foregoing suggestions.

The Morse Code

The Morse code of signals as applied to the telegraph is used exclusively in the United States. It consists of a dot and a dash, the former being an instantaneous closing of the key, while the key is held for the latter. Examples: dot (.), dash (-).

Letters

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		&
- - - -	- - -		— — — —

Numerals

1	2	3	4	5
- - - -	... - -	... - - -	- - - -
6	7	8	9	0
.....	- - - -	... - - -	- - - - -

Punctuation, etc.

period [.] comma [,] interrogation [?]

exclamation [!] paragraph [drop a line]

The following punctuation, etc., are not those of the Morse code, but have been compiled by Mr. Walter B. Phillips, ex-president United Press, and are in use at the present time:

colon [:]	colon dash [:—]
colon quotation [: "]	semi-colon [;]
hyphen [-]	dash [—]
beginning quotation ["]	ending quotation ["]
apostrophe ['] or quotation within a quotation [" ' ' "]	[...]
beginning parenthesis [(] ending parenthesis [)]	[.....]
brackets [[])	capitalized letters [.....]
italics or underline [.....]	[.....]
dollars [\$]	cents [¢]
decimal point [.]	pound sterling [£]
shilling mark [/]	pence [¢]

Continental or International Code and Conventional Signals

[To be used for all general public service radio communication. (1) A dash is equal to three dots; (2) the space between parts of the same letter is equal to one dot; (3) the space between two letters is equal to three dots; (4) the space between two words is equal to five dots.]

A	- - -	A (German)
B	- - . .	A or Å (Spanish-Scandinavian)
C	- - - .	CH (German-Spanish)
D	- - - -	È (French)
E	- - - - -	Ñ (Spanish)
F	- - . . .	Ö (German)
G	- - - . .	Ü (German)
H	- - - - .	
I	- - .	1
J	- - - - -	2
K	- - - . -	3
L	- - - - .	4
M	- - - - -	5
N	- - - - - -	6
O	- - - - - - -	7
P	- - - - - - - -	8
Q	- - - - - - - - -	9
R	- - - - - - - - - -	0
S	- - - - - - - - - - -	
T	- - - - - - - - - - - -	
U	- - - - - - - - - - - - -	
V	- - - - - - - - - - - - - -	
W	- - - - - - - - - - - - - - -	
X	- - - - - - - - - - - - - - - -	
Y	- - - - - - - - - - - - - - - - -	
Z	- - - - - - - - - - - - - - - - - -	

Period.....
Semicolon.....	- - - - -
Comma.....	- - - - - -
Colon.....	- - - - - - -
Interrogation.....	- - - - - - - -
Exclamation point.....	- - - - - - - - -
Apostrophe.....	- - - - - - - - - -
Hyphen.....	- - - - - - - - - - -
Bar indicating fraction.....	- - - - - - - - - - - -
Parenthesis.....	- - - - - - - - - - - - -
Inverted commas.....	- - - - - - - - - - - - - -
Underline.....	- - - - - - - - - - - - - - -

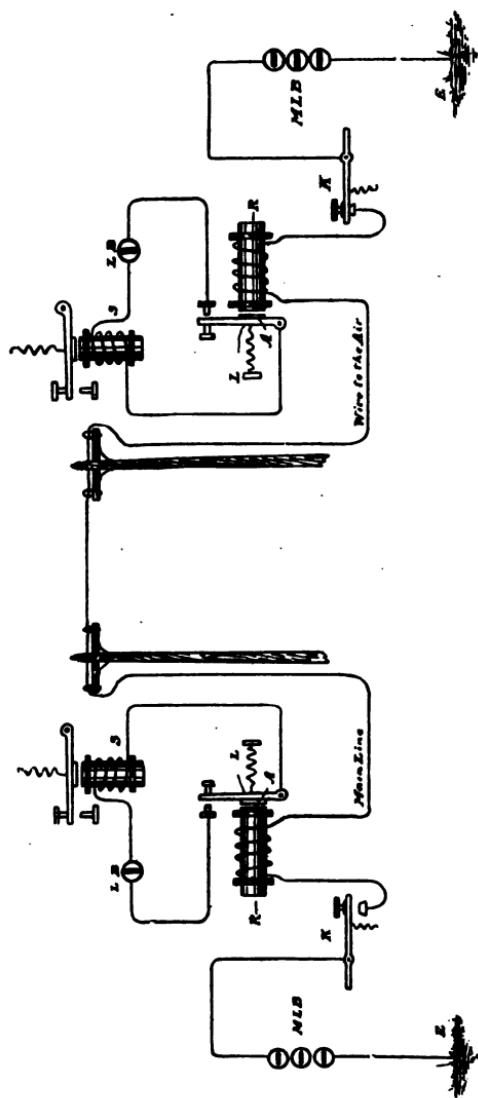
Double dash.....	- - - -
Distress Call.....	- - - - -
Attention call to precede every transmission.....	- - - -
General inquiry call.....	- - - -
From (de).....	- - - -
Invitation to transmit (go ahead).....	- - - -
Warning—high power.....	- - - -
Question (please repeat after.....)—interrupting long messages.....	- - - -
Wait	- - - -
Break (Bk.) (double dash).....	1 - - - -
Understand	- - - -
Error	- - - -
Received (O. K.).....	- - - -
Position report (to precede all position messages).....	- - - -
End of each message (cross).....	- - - -
Transmission finished (end of work) (conclusion of correspondence).....	- - - -

THE ELECTRIC CURRENT

The electric current is generated through the battery or other electric-producing force, and while many authorities fail to agree as to its specificness, it is easy to understand that it is the *life* of the telegraph.

The Main Line Circuit

The following cut will illustrate two different stations of a single Morse circuit, with main line and local batteries, keys, relays, sounders and ground plates for the return of the current in a grounded or earth circuit. "R" represents a relay which has a double coiled electro-magnet; "A" is a small piece of iron called the "armature" of the relay, placed close to the end of the electro-magnet, which is supported in its upright position by the lever "L," which is securely attached, and which is pivoted at its base. "S" represents the sounder; "LB" the local battery.

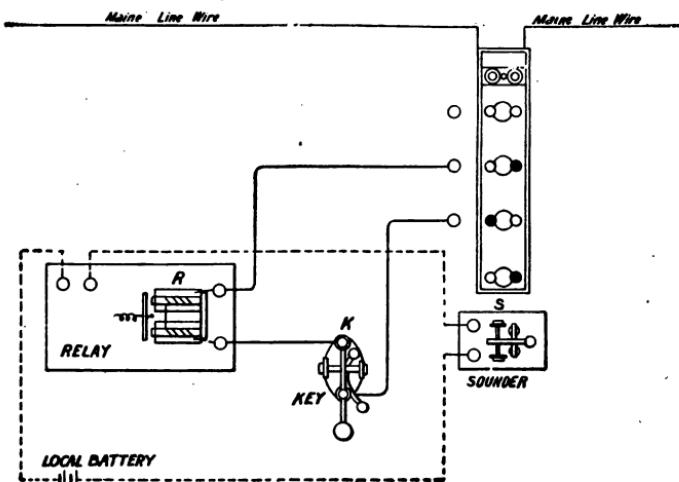


The Main Line Circuit

The wire from the earth at "E" leads to the main line battery "MLB," thence to one of the posts or legs of the key "K," thence from the other post or leg of the key to one of the main line binding posts of the relay "R," thence from the other main line binding post of the relay to the wire to the air, or main line wire, thence to the relay, key, main line battery and the ground, whence the circuit is completed in the earth.

The Local Circuit

It will be observed in the previous article that the main line has no connection with the local circuit; the latter is governed entirely by the vibrations of the bar or armature in the relay, and perhaps to make this clearer it could be said "that the armature and lever of the relay are to the local circuit what the key is to the main line circuit." It is understood that in opening and closing a key it magnetizes and demagnetizes the cores of iron in the relay, thereby affecting the armature and lever in same.



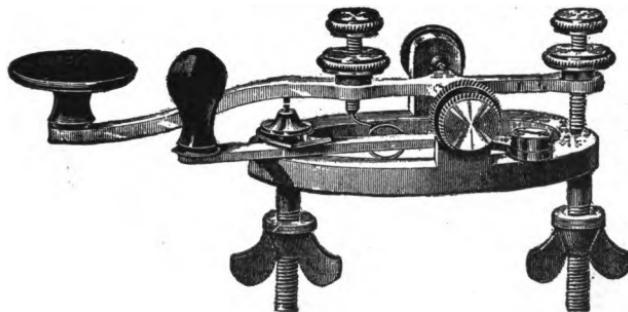
The above cut should clearly illustrate the manner in which a wire is brought into a one-wire switchboard, and its connection with a full set of instruments in an office.

INSTRUMENTS

There are three instruments essential for each set, viz.: the transmitting key, the relay, and the sounder.

The Key

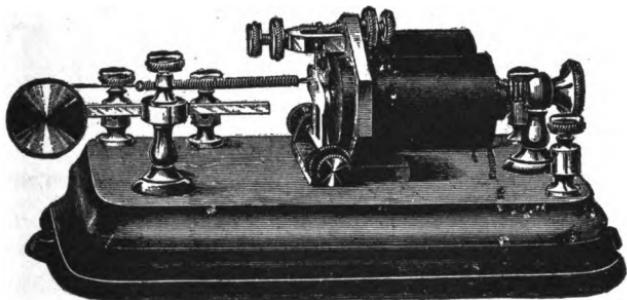
The function of the key is to open and close the circuit, i. e., to make and break the circuit, so as to produce the dots and dashes as required in a code of signals. Strictly defined, it is a mechanical device which is manipulated by the hand for transmitting "matter" over a wire or circuit. Its principal feature is a metallic lever upon a trunnion supported by screws on the elevated sides. Beneath the base are two metallic legs which extend through the table upon which the key is placed. These legs hold the key firmly to the table and connect with the two ends of the wire. The front leg and the lip are



separated from the base of the key by non-conducting material. On the top and in the center of this post is fastened a small piece of platina. Directly above this, on the under side of the lever, is another piece of platina. A spring is used so that the two platina points are separated whenever the hand leaves the key. The circuit closer is a metallic arm attached to the base of the key so that it can slide under the lip, thus keeping the wire electrically connected while the key is not in use. The finger pieces of both the lever and the circuit closer are of non-conducting material in order to prevent the operator from receiving an electrical shock.

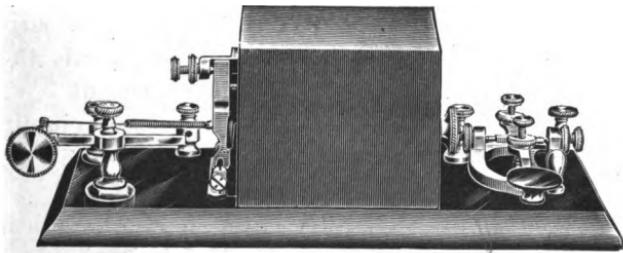
The Relay

The Relay is connected with both the main line and local circuits. Its chief use is for resistance. It has a bar or armature so arranged as to be free to move when acted upon by



its electro-magnet, and which when moved closes the local battery circuit through the sounder, whith is also connected with the relay. It has two electro-magnets and four binding posts, two of the latter being connected with the electro-magnets, and known as the "main line binding posts," while the remaining two are the "local posts," being connected with the armature and the frame or yoke over the electro-magnets and armature.

The Box Relay

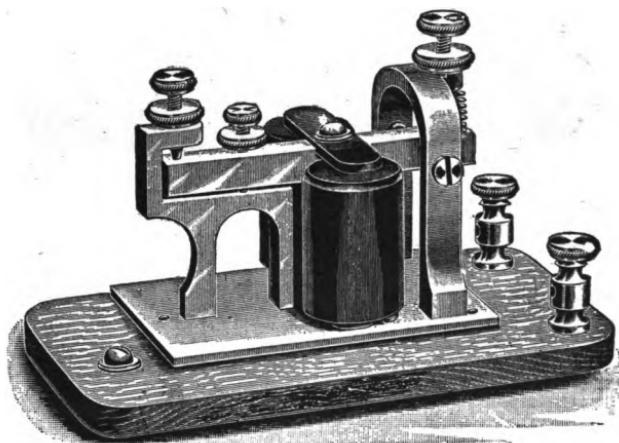


The Box Relay is an ordinary relay, the electro-magnets of which, as will be noticed in the cut, are covered by a wooden box. Its armature is usually some larger than one upon an

ordinary relay; this, together with its wooden box covering, which serves as a sounding board, makes it desirable where a sounder cannot be conveniently used. Sounders can, however, be attached to the box relay. A box relay usually has a key upon the same base.

The Sounder

The Sounder consists of two electro-magnets with an armature attached to a movable lever. The lever has a spring



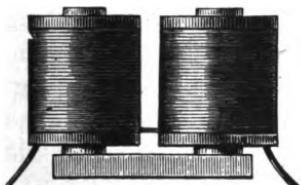
attached for the purpose of drawing the armature away from the magnets when the circuit is open and the cores in the electro-magnets demagnetized. It is regulated by two adjustable screws, one of which checks the movement towards the magnets, while the other limits the reverse movement.

The sounder has a connection with the local circuit only. Its connections are attached to the two local posts of the relay and the two poles of the local battery.

NOTE.—Perhaps, to make this latter paragraph clearer, it might be added that on a circuit of fifty instruments, should forty-nine of these detach their sounder and local battery, the remaining one would not be aware of it. It would not affect the main line circuit.

The Electro-Magnet

The Electro-magnet consists of a small core of iron (about the size of an ordinary lead pencil) wrapped evenly with a great many feet of fine insulated wire, all of which is covered by a vulcanized rubber cap. When the extreme ends of this wire are connected with the poles of the battery or other productive electrical force, the core of iron instantly becomes magnetic and continues so as long as the current continues. This magnetism is produced in the core by the insulated wire which is wrapped around it. The core is magnetized by closing the circuit, or demagnetized by opening the circuit.



ADJUSTMENT OF INSTRUMENTS

The Key

The "play" of the key should always be free, the upper platina point striking the under one with precision, and these should be kept free from rust or dirt. In commenting upon the "play" of the key it is not intended that either extreme should be employed. Perhaps it would be suggestive to say that the distance between these points should equal the thickness of three to five pieces of ordinary writing paper. On a circuit with a light battery, or should the climatic conditions be such as to give an escape of the current on a wire, it is all the more necessary that the adjustment of this instrument be loose so that all force may be brought to bear on the platina points. The lever is held to its position by the set screws on the sides of the trunnion. These latter, as well as the set screw on the end of the lever, together with the set screw attached to the spring, are all adjustable and are provided for the adjustment of the key.

The Relay

The Relay is undoubtedly the most difficult of all ordinary telegraph instruments to adjust. It is necessary that the arma-

ture lever on this instrument, which has a platina point on both sides, stand perpendicular and the platina point to the right set against a similar point on the set screw immediately above the electro-magnets when the circuit is closed, while the platina point to the left should set against the point of non-conducting material on the set screw to the left when the circuit is open. From one-sixteenth to three-sixteenths of an inch is usually suggestive for the necessary "play" of the armature lever between these two set screws and points. At the extreme right of the relay is attached a large adjustable turn screw to regulate the electro-magnets and to govern the distance between the armature and the electro-magnets. The electro-magnets must never be brought so close to the armature as to prevent a good contact between the platina point on the armature lever and the same point on the set screw immediately above the electro-magnets, neither should they be drawn so far away from the armature as to prevent the magnetism in them from acting upon the lever of the armature. Perhaps it would be unwise to suggest a distance in this connection. I have seen this adjustment from one-thirty-second up to fully three-eighths of an inch. The battery or other productive electrical force, and climatic conditions, necessitate this difference of adjustment. The spring, which is regulated by a large turn screw at the extreme left of the relay, also assists materially in the adjustment of the instrument. The purpose of the spring is to draw the armature away from the platina point on the set screw immediately above the electro-magnets when the main line circuit is open and the cores in the electro-magnets demagnetized, thereby at the same instant opening the local circuit.

The Sounder

The adjustment of the sounder is in a sense similar to that necessary in the relay, with the exception that the distance between the armature and the electro-magnets is usually normal, the circuit attached being only local and not subject to a variance of resistance as produced by climatic or other conditions. One thickness of ordinary writing paper should "play"

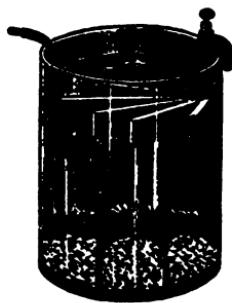
freely between the armature and the electro-magnets. Two adjustable set screws are provided for this purpose, while two others at the side hold the lever in its proper place.

THE GRAVITY BATTERY

It is by the chemical action in the battery that the electric current is generated, and in practical telegraphy this is made to traverse long or short distances through the conducting medium of a metallic wire and by means of the described instruments made to give out tangible signals which, being arranged in the form of an alphabet, enable communication to be held for a long distance.

There are many types of batteries, but the *Gravity* (more specifically known as the crow-foot), as shown in the cut, is almost universally used throughout the United States for telegraphic purposes. During the last few years, however, dynamos are being introduced into the larger offices and are supplanting the gravity battery to some extent.

The gravity battery consists of a glass jar, a zinc and a copper. The zinc is known as the "negative" pole, while the copper is known as the "positive" pole of the battery. In arranging this battery the leaves of the copper should be spread, and placed at the bottom of the jar and about one and a half pounds of blue vitriol placed around them. The zinc should be extended from the top of the jar, and the jar filled with water within one inch of the top—the zinc always being covered with water. It will usually require from two to four days for a battery so arranged to work up to its full strength. The circuit to which it is attached should be closed in order that it may do this. On the other hand, the circuit should be opened to strengthen a battery that is in use, or to save the battery.



Heat will cause rapid evaporation of the battery solution and cold retards the action of the battery, the best results being obtained in moderate temperature.

Care of the Gravity Battery

On account of the zinc dissolving and the vitriol becoming decomposed it is necessary to clean a battery at intervals of from two to four months. This should be done by taking out the zinc carefully, scraping off the adhering matter and washing well. Save the clean part of the solution, pouring into a clean vessel, remove the copper and thoroughly wash the jar, after which replace the copper and put in more vitriol. The clean liquid should then be poured back into the jar, adding enough water to make the battery complete as previously suggested, and the zinc returned to its proper place.

No water should be allowed to remain on the outside of the jar. It is a good plan to rub with a dry cloth the outside of the jar each day. This will require but a few minutes time for a number of cells and it will enhance the appearance, as well as the results, of the battery.

The Earth As a Conductor

To complete a circuit it is necessary that the outgoing pole of a battery at one end of the line be connected with the opposite pole at the other end. For instance, on a wire between New York and Chicago there would be a series of "main line batteries" at each city, and it is necessary that the positive pole of the one "series" be connected with the negative pole of the other. The line wire will connect the inside poles of these batteries, while another wire, or something to answer its purpose, must connect the outside poles of the "series." It has been found that the earth, on account of its great moisture, will serve the purpose of a returning wire, and it is used on lines of any distance for a return wire.

Conductors—Non-Conductors

Mention is made of the use of a wire as the medium for conducting a current of electricity from one pole of a battery to any given point and thence back to the opposite pole, thus making a circuit.

Certain substances are found to conduct electricity with more or less facility (these substances are known as conductors), while through other matter no current whatever will pass. The latter substances are known as "non-conductors" or insulating bodies.

The principal materials used for conductors are copper, iron, brass and platina, and for insulation gutta percha, hard and soft rubber goods, glass, silk and cotton fiber, dry wood, bone and porcelain. In conducting currents of electricity from one point to another, as in telegraphy, it is found necessary to use non-conductors, wherever the wire is fastened for support, in order to prevent an escape of the current. For this purpose glass is generally used for outside work and hard and soft rubber or porcelain tubes where the wires pass through window casing. The copper or "office wire" is usually covered with a coating of gutta percha or cotton fiber. For the handles or knobs to the various instruments, which require manipulation, hard rubber is generally used.

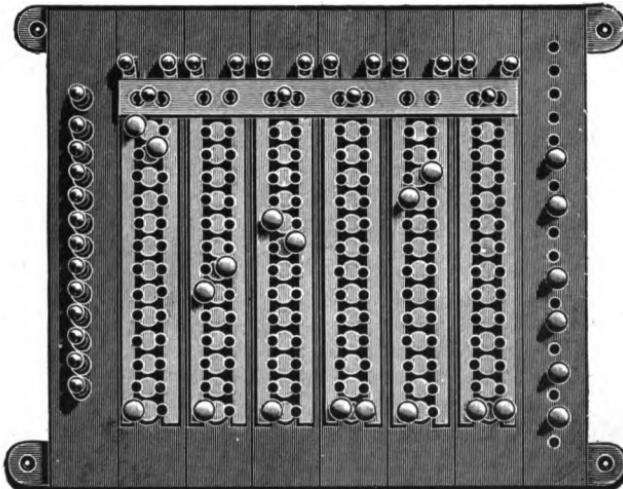
SWITCHBOARDS

The switchboard is used for connecting the main line circuits or wires with the instruments. Each telegraph office is supplied with a switchboard and through this any wire which is "cut in" to that office may be connected with any instrument in that office. The Western Union pin-plug switchboard, as shown in the following illustration, is the one most commonly used. Another type, known as the "spring jack," as shown on page 25, is being used in connection with the "pin-plug" board in large and testing offices, while one wire "cut-outs" are frequently used in offices having but one wire.

On the front of the Western Union pin-plug switchboard are *two perpendicular bars for each wire*. Between these bars are rows of discs, which have no connection with the perpendicular bars except when the metallic pin is inserted, but are connected horizontally with each other by a metallic strap on the rear of the board, with the exception of the bottom row. Each disc and each perpendicular bar has a semi-circular hole in its edge, so that the pin-plug inserted will connect both the horizontal straps on the back and the perpendicular bars on the front of the board. The ground wire usually has its connection with the top row of discs and this row is covered by the lightning arrester. The latter has no connection with the perpendicular bars under it. The distance between the perpendicular bars and the lightning arrester should be equal

to two thicknesses of an ordinary piece of writing paper. The function of the lightning arrester is to prevent injury from lightning to the instruments.

The main line wires, or the wires that come into the office from outside, frequently called *air* wires, are connected to the top binding posts, which are a part of the perpendicular bars, while the wires leading from the instruments have their connection with the side binding posts, the horizontal straps, and the rows of discs. In connecting an instrument through the switchboard it is necessary that both horizontal straps, which



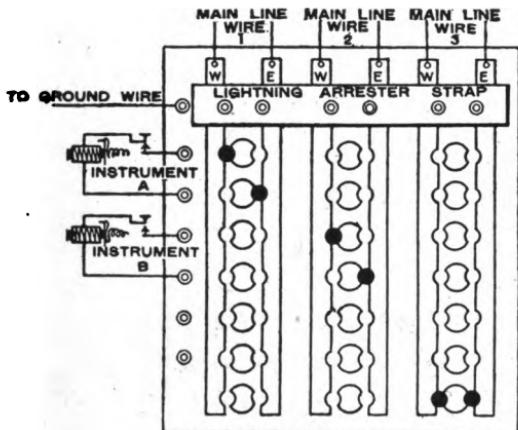
NOTE.—The above illustration shows a six-wire Western Union pin-plug switchboard with plugs inserted as would be done in cutting in four of the wires to a similar number of instruments; two of the wires, the fourth and sixth from the left of the illustration, being "cut through."

lead to the instruments, and both perpendicular bars, which lead to the main line, be on the same circuit and this must be done by inserting *two* pin-plugs *diagonally*.

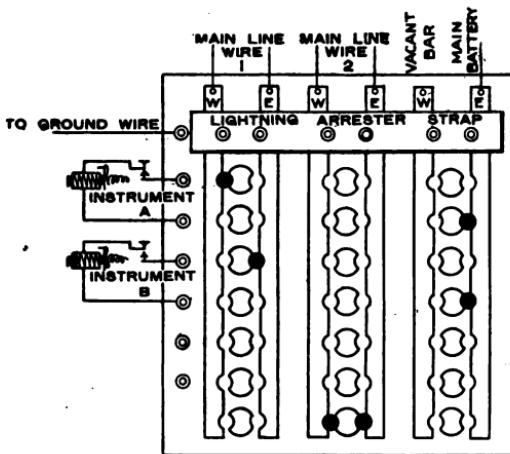
Another valuable service which is rendered through the switchboard is the cross connecting and patching of wires. This is done by arranging the pin-plugs in the required order.

Switchboard Connections

The following illustrations will indicate, with notes immediately below the diagrams, the plan that should be followed in making various switchboard connections with a three wire (six strap) Western Union pin-plug switchboard.

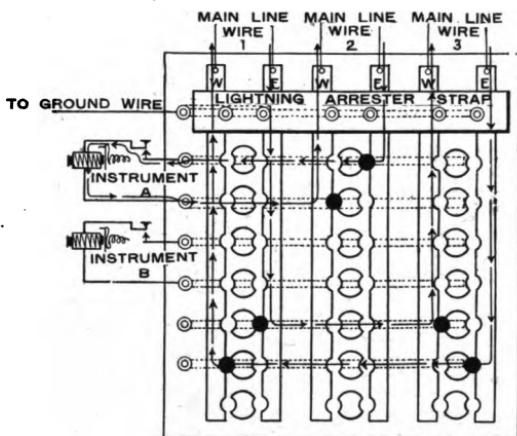


No. 1 wire cut in on instrument A.
 No. 2 wire cut in on instrument B.
 No. 3 wire cut through at bottom of board.

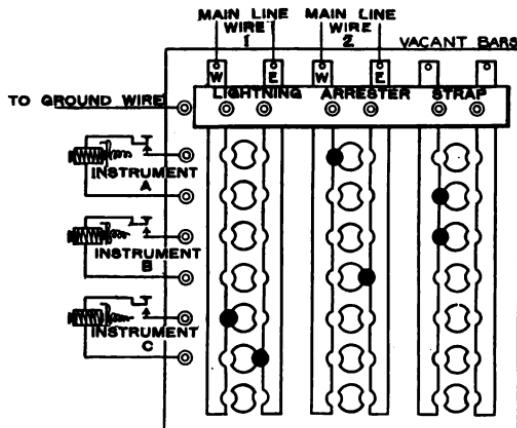


No. 1 wire west grounded and cut in on instrument A.
 No. 1 wire east grounded and cut in on instrument B.
 (Ground wire leads from main battery.)
 No. 2 wire cut through at bottom of board.

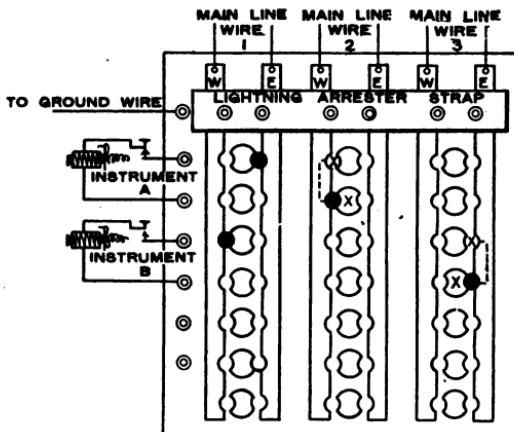
THE TELEGRAPH INSTRUCTOR



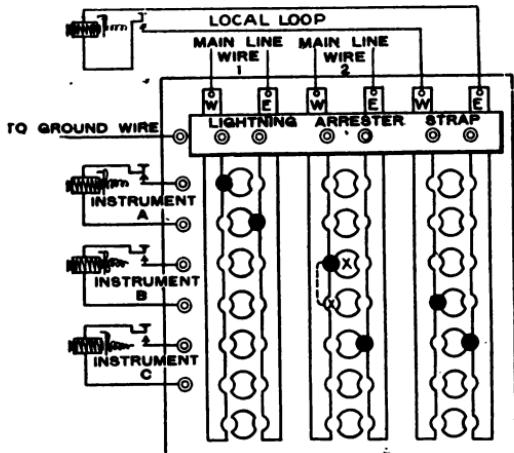
No. 1 and No. 3 wires cross connected below instrument wires.
 No. 2 wire cut in on instrument A.
 Arrows show path of current.



No. 1 wire cut in on instrument C.
 No. 2 wire cut in on instruments A and B.

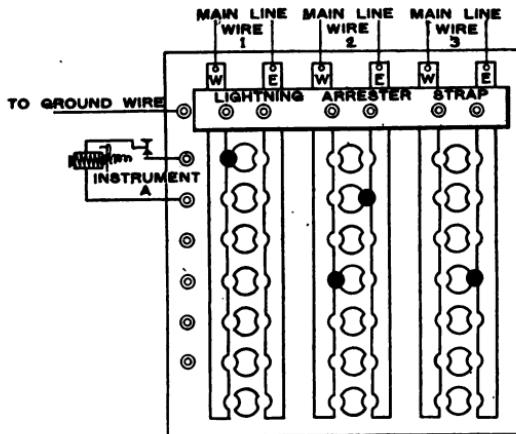


No. 1 wire east to No. 2 wire west cut in on instrument A.
 No. 1 wire west to No. 3 wire east cut in on instrument B.
 No. 2 wire east and No. 3 wire west left open.
 "X"—To cut out instruments and leave patches in, move plugs marked X as shown by dotted line.

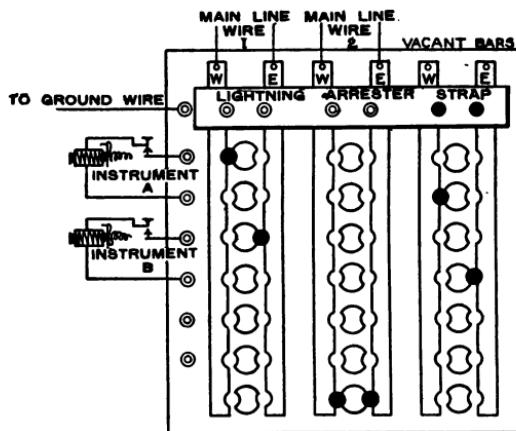


No. 1 wire cut in on instrument A.
 No. 2 wire cut in on instrument B and local loop.
 (Instrument C not in use.)
 To cut out instrument B and leave loop in, move plug as marked "X."

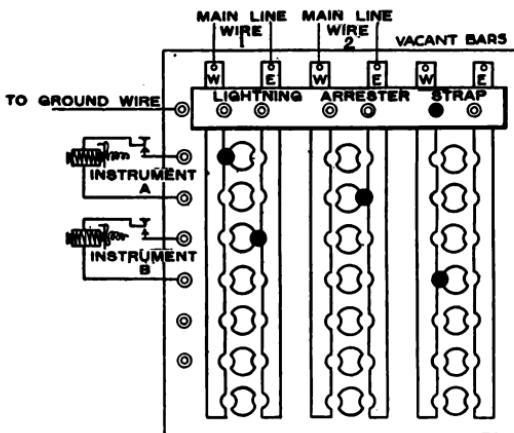
THE TELEGRAPH INSTRUCTOR



No. 1 wire west to No. 2 wire east on instrument A.
 No. 2 wire west to No. 3 wire east straight across below instrument wires.
 No. 1 wire east and No. 3 wire west left open.



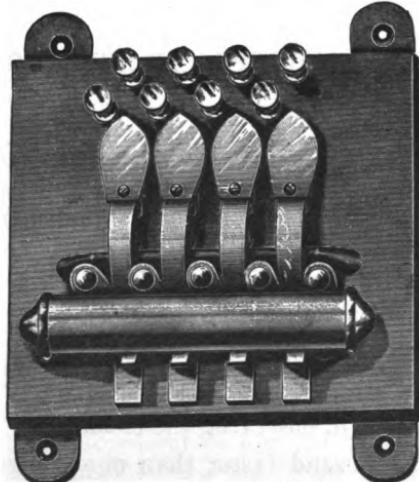
No. 1 wire west grounded and cut in on instrument A.
 No. 1 wire east grounded and cut in on instrument B.
 No. 2 wire cut through at bottom of board.



No. 1 wire west to No. 2 wire east cut in on instrument A.
 No. 1 wire east grounded and cut in on instrument B, by using vacant bar.
 No. 2 wire west left open.

Spring-Jack Switchboard

The following illustration represents a four-wire board; the main-line wires being connected to the top binding posts and



a wedge with cord attached extending to the instruments, being inserted in the jacks, which have spring attachments. The advantage in the use of this board is the fact that two or three instruments can be quickly and easily attached to a circuit. These boards, as stated in the preceding article, are used to a great extent in connection with the Western Union pin-plug switchboard.

Ground Wires

In addition to the purpose which the ground wire serves at terminal points, each "way" or intermediate telegraph office is also provided with one which is attached to the switchboard. The function of this wire, at way or intermediate offices, however, is only for testing purposes and in cases of interruption of the circuit, to notify the chief or testing operator regarding it and to receive his instructions.

It consists of a wire attached to an iron rod driven in the ground several feet, or to a gas or a water pipe, these two being preferable. Any of these should be deep enough to be free from frost, and always in contact with the moist earth.

NOTE.—If a ground wire be inserted at Indianapolis on a Chicago and Cincinnati wire it would divide the line into two independent circuits, one from Chicago to Indianapolis and one from Indianapolis to Cincinnati, and form a common conductor for each circuit. In this case, however, there must be a main line battery at both Chicago and Cincinnati in order to produce a current on each circuit.

TRANSMITTING OR SENDING

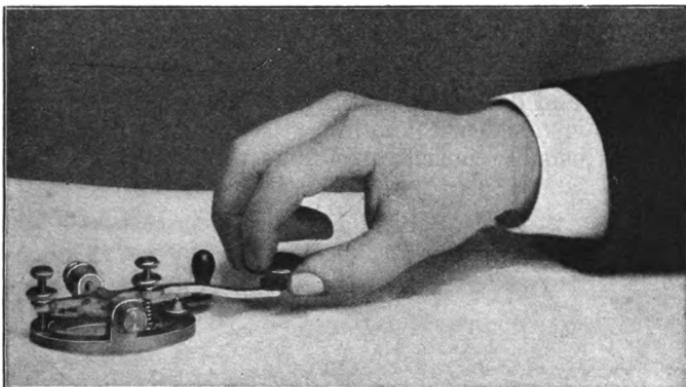
The art of transmitting or sending, in the writer's opinion, is of greater importance than that of receiving. The student should bear in mind that accuracy *and not rapidity* is the qualification needed in sending. Speed should be attained unconsciously. Untiring efforts should be employed to master accurately letters or characters which are difficult.

Many are of the opinion that sending is easily attained, while receiving is the more difficult. The facts are to the contrary, as few who become proficient in sending fail to become equally as good in receiving. A number, however, who receive well are poor at sending. This inefficiency can usually be attributed to a failure in observing the elementary principles.

One should never send faster than one can receive.

Position

Take an easy and graceful position, always sitting erect and facing the key. Place the first and second fingers on the farthest part of the key-button with the thumb under the edge, curve the first and second fingers so as to form a quarter section of a circle, partially close the third and fourth fingers but do not allow them to touch the table. Rest the arm on the table at the elbow. The grasp of the fingers and thumb upon the key should be firm but not rigid and should never leave the key (while sending).



Arm Movement

The wrist should be perfectly limber. The motion should be directly up and down, avoiding all side pressure. The movement should be from the wrist and forearm and not from the fingers; the fingers are used only for a leverage. The fingers, wrist and arm, however, should all move in the same direction.

The downward movement (closing the key) produces the dots and dashes, while the upward movement (opening the key) produces the breaks and spaces.

A dot (.) is made by a single, instantaneous downward stroke of the key. A dash (-) is made by holding the key down as long as it would take to make two dots. A long dash, as used in the letter "l" or the numeral "cipher," should be made by holding the key down as long as it would take to make three and four dots respectively.

The length of a space or a break in a letter that contains the same should be equivalent to one dot, *i. e.*, the letter "o" should require the same time as the letter "s," the letter "c"

or "r" the same time as the letter "h," the letter "y," "z" or "&" the same as the letter "p."

In letters that do not contain spaces or breaks the dots and dashes should follow each other closely.

The alphabet should be attained theoretically.

BEGINNING EXERCISES

First Exercise

Learn the movement by making dots and dashes slowly, taking the dots first, making one each second, then two and three each second. Afterward undertake the dashes in the same way.

NOTE.—The great advantage in attaining the movement by making dots and dashes instead of the letters is in the fact that one's mind is taxed with nothing else, while with the letters the mind is usually concentrated upon the formation of them.

Second Exercise

e	i	s	h	p	6
•
o	c	r	y	z	&
..

Third Exercise

t	l	m	5	o
-	—	--	---	————
a	u	v		4
--	---	---	---	----
n	d	b		8
--	---	---	---	-----

Fourth Exercise

f	g	j	k	q
---	---	—	---	---
w	x	1	2	3
---	---	---	---	---
7	9	—	---	---
---	---	—	---	---

Fifth Exercise

Period [.]	comma [,]	interrogation [?]
exclamation [!]	paragraph [drop a line]	
dollars [\$]	cents [¢]	dash [—]

Sixth Exercise

Colon [:]	colon dash [:—]
colon quotation [: "]	semi-colon [;]
hyphen [-]	
beginning quotation ["]	ending quotation ["]
apostrophe ['] or quotation within a quotation [" ' "]	
beginning parenthesis [(]	ending parenthesis [)]
brackets ([])	capitalized letters
italics or underline
pound sterling [£]	shilling mark [/]
pence [d].	decimal point [.]

Formation

The letter j should be formed as tae, k as ta, q as ue, x as ai. The numeral 1 as we, 2 as ui, 3 as ve, 9 as tu. The period as ud, comma as aa, interrogation as tue, beginning quotation as qn, ending quotation as qj, beginning parenthesis as pn, ending parenthesis as py, brackets as bx, hyphen as hx, dash as dx, colon as ko, semicolon as si, colon-dash as kx, colon-quotation as kq, capitalized letters as cx, dollar mark as sx, cents as c,

decimal point as dot, italics or underline as ux, apostrophe, or quotation within a quotation, as qx, pound sterling as px, shilling mark as ut, pence as d.

Seventh Exercise

Aim, buy, care, dove, easy, farm, good, hill, ice, jot, keep, life, many, none.

Eighth Exercise

“Every cloud has a silver lining.”

“Time and tide wait for no man.”

“A rolling stone gathers no moss.”

Ninth Exercise

86, 921, 3,255, 72,400, 856,000.

The comma or a space should be employed in dividing numerals into thousands.

The abbreviations hnd, tnd, mln or myn are frequently used in transmitting numbers containing a string of ciphers. Examples.—700 as “7 hnd”; 15,000 as “15 tnd”; 18,000,000 as “18 mln.”

NOTE.—When these abbreviations are used, however, the receiving operator will write them in numerals, the same as if they had been sent in that way.

Tenth Exercise

$$\begin{array}{ccccccc} \frac{1}{8} & \frac{1}{2} & \frac{2}{5} & \frac{3}{7} & \frac{1}{16} & \frac{3}{32} \end{array}$$

In fractions a dot (the letter “e”) represents the bar of division; hence the fraction 1-2 would be transmitted 1 e 2, 3-32—3 e 32.

Eleventh Exercise

3.7, 32.57 $\frac{3}{4}$, \$1.12, \$18.07 $\frac{1}{2}$.

The decimal point is transmitted by spelling out the word “dot.”

Uniformity of space is highly essential for correct sending. This is applicable to the characters in letters and between letters and words.

I have found in my experience that a great majority of beginners are inclined to put the characters in letters too closely

together, thereby creating a style of "jerk sending," which is bad in the extreme. This style of sending is deceptive, inasmuch as the student imagines he is attaining speed when he is, in fact, retarding his speed.

Due caution should be exercised in transmitting words which contain either all dot letters or a number of them together; the following words as well as a great number of similar ones should be made slowly and distinctly: Erie, error, choice, & Co., piece, price, bicycle, voice.

A decided distinction should also be made wherever the letter "t" follows the letter "l," or *vice versa*, as in the words: alternate, altogether, altitude, or in the words: atlas, battle, title.

Whenever an error is made in sending, the interrogation mark should be used as a "break." If the error has been made on the first letter of a word, repeat the word immediately preceding it; if on any other letter, repeat only the word in which the error has been made.

The abbreviation "msk" for mistake is used in addition to the interrogation mark "?" when some other word than that which appears upon the copy has been sent.

Punctuation in Transmitting

Punctuation in the transmission of messages, train orders, etc., is somewhat different from the way it would appear in print. The period is seldom used except at the beginning of the body of a message or train order. The comma is invariably used to serve the purpose of the period at the end of sentences, while the comma, as it would appear in print, is omitted.

Punctuation marks are not transmitted after abbreviations. Examples: Mr., Mrs., No. Dak., N. Y., and D. C.

Receiving

All of the letters and characters should be well memorized before receiving is undertaken, and then some one who can make these accurately should send slowly and the one receiving name each letter as sent until he is able to call them rapidly. Then *words* should be taken and these called as sent, later on *sentences* and eventually it is unnecessary for the receiver to name anything as sent, but more than one set of instruments should be used, and the receiver should "break," if he fails to get all, by opening the key and have the sending operator repeat from

the last word he received. The different forms of train orders, messages, etc., should then be learned, adopting a systematic plan for the attainment of all.

Copying

The student should endeavor to copy *behind*, i. e., to memorize from one to three words of the matter that is being sent and copy it afterwards. While many operators attain a great proficiency in this respect, it is ordinarily quite difficult for the student. Its attainment will require a great deal of practice.

Breaking

Do not be ashamed to break. Do this a dozen times in one message or train order rather than make one error.

It is not necessary to sign your office call when breaking, except when two or more offices are copying.

When breaking in train orders, should you miss in the order number, say—"no"; in the address, say—"to"; in the beginning of the body of the order, say—"period (.)"; in the body or text, give the last word received.

When breaking in commercial messages, should you miss in the message number say—"no"; in the check, say—"ck"; in the name of the place from which it was sent, say—"fm"; in the state, say—"state"; in the date, say—"date"; in the name of the addressee, say—"to"; in the street number, or in the name of the party in whose care addressed, give last word or number received; in the beginning of the body or text, say—"period (.)"; in the body or text, give the last word received; in the signature, say—"sg." Should you fail to receive a message after a portion or all of it had been transmitted, or in case you make a "bull" in your copy which would necessitate its repetition, say—"g a ahr."

Penmanship

Plain and legible handwriting is essential for a telegrapher. Ornamental styles, graceful and shaded curves are entirely unnecessary and should be avoided. Make the letter in the shortest length practicable and without curves where it is possible to retain the contour of the letter without it. It is suggestive to use what is known as the muscular movement, and the grasp upon the penholder should be only enough to control it. Do not cramp the fingers. Always cross the letter "t" and dot the letter "i." While rapidity in writing is essential, accuracy should receive the first consideration.

CIRCUIT REGULATIONS

Never Contend For the Circuit

Each office has its call, which will consist of not more than two letters.

Each operator will have a personal signal, which will consist of one or two letters; sometimes letters and figures in large offices.

It is customary, in calling an office, to call continually and sign your own office call after every third call. The office called in answering will say "I I" and his office call. An exception to this rule can be made with larger offices when an operator is known to be at the instrument continually. In this case give the office desired one call, sign your own call and close the key.

If an instrument connected with a wire, which is usually busy, remains quiet for any great length of time, the key of the same should be opened and closed in order to ascertain if the wire is open or closed. If found to be open, insert the plug into the disc of the strap in the switch board which is connected with the ground wire, thereby ascertaining in which direction the trouble is from your office. If no circuit is obtainable, that is, if the instrument does not respond (after letting down the spring of the relay) cut this wire through at the bottom of the board and connect in another circuit, which is closed, with that instrument. If the experiment opens this wire also, it would indicate that the trouble was in the instrument and not in the wire. A diligent search for the trouble in this instrument should then be made and no wire cut in on it until repaired.

The circuit should never be retained by leaving the key open except in extreme cases of emergency. Whenever an operator is called away from the wire to answer telephone, wait on a customer, or for some similar reason, it should be explained as follows: if to answer telephone, say "ex me fone"; if to wait on a customer, "ex me counter"; if to deliver train orders, "ex me trn"; if to speak to some one, "ex me talk," etc., but the key should not be left open.

Great care should be taken, especially in stormy weather, when opening a key it does not take the circuit from others who might be using it. Owing to the fact that wires are so susceptible to climatic conditions, an office in using the circuit will occasionally be interrupted by another office, which is not adjusted, taking the circuit. In a case of this kind the one

interrupted will use the signal "8," until he believes that office to be adjusted, in an endeavor to keep the one interrupting off the circuit. In extremely bad weather relays should be given a great deal of attention in the way of adjustment.

Whenever one is asked to "sine" he should give his office call, and if he is asked "wo" he should give his personal signal.

All offices hearing the "os" signal, when it is given in the nature of a call, should answer with their own call. Usually in this case they will be told to "copy" and invariably they will receive a "general message" addressed to "all agents," "all operators," or to some other particular class of employees. Each operator in giving an "O K" to a message of this nature will give his office call in addition to his personal signal.

If one's instruments fail to work properly, he should ask the operator, with whom he is working, to "dot," which would be done until the one who had asked him to do this had adjusted his instruments, and breaking in he would use the signal "O K" and, if the receiving operator, name the last word he received; if the sending operator, he would use the signal "4." Faults of this nature may be with the wire or the instruments connected with it.

Whenever an operator is busy, either with a wire or elsewhere, and cannot answer a call, which is being given him on another wire, he should, if possible, take the time to answer the other wire, first opening the key of the wire which he is working and then going to the one which is calling him, give the signal "25," adding his office call. He should be careful to make this signal distinct, so that the one to whom he has given it will understand it and not mistake the signal for an answer to his call. If the one called does not know which office is calling him he would, before giving the signal, ask the office calling him to "sine." After finishing with the one with which he was working, he would go to the wire which had called him and call them inquiring as to what they wanted, by using the signal "5" and his office call. He would not, however, break in on the circuit to do this.

Whenever the sending operator is in doubt as to whether or not the receiving operator is copying that which he is sending, he will say at the conclusion of a message or a sentence within it, "bk u tr," or "u tr," and if the receiving operator is copying that which is being sent him he will answer by saying "i," sometimes adding his office call.

Whenever in receiving a message someone else on the circuit, who is inclined to be meddlesome, should break, asking

the sender to repeat from a stated word, and this not being the receiver, which of course would be unknown to the sender as he would have every reason to believe that the one who broke was the operator at the office with which he was working, in instances of this kind the receiving operator should immediately take the circuit and say "nt me" or "nt hr."

Whenever a receiving operator in repeating back a train order or message is told by the sending operator that a word is in error, he should open his key, correct the error, and repeat the copy as corrected. The receiving operator should never allow the sending operator to repeat any further than is necessary to correct an error, but should open his key as soon as the sending operator has covered the part in error. The sending operator, when correcting in this instance, should transmit the word or part in error distinctly and slowly.

Wire Signals

The word "wire" may be used by wire chiefs when locating wire trouble, and it has preference over all other business on any circuit. The signals "grn," "stx," "corn," "govt," and "cable" denote very important business. The signals "grn" and "stx" may be used for speculative messages, but in no way relate to cars of grain or stock. The signal "corn" may be used to make a correction in a message which has been previously transmitted. The signal "govt" may be used for transmitting messages pertaining to official business of the government. The signal "cable" may be used for transmitting cablegrams.

In taking the circuit from others it should be done so far as possible between their messages. This will avoid confusion and possible errors. Offices interrupted by any circuit signal have the next right to the circuit.

Numerical Wire Signals

- 2, very important.
- 4, where shall I go ahead?
- 5, anything?
- 8, close your key and stop breaking.
- 9, calling for train orders.
- 13, understand?
- 18, what's the trouble?
- 19, train order.
- 22, busy on another wire.

- 25, busy on another wire.
- 31, train order.
- 55, important.
- 73, best regards.
- 92, deliver.

NOTE.—Other numerical signals are used by different railroads for different purposes, for instance, the signal "47" upon some railroads means "display signals"; while the signal "48" means "signals are displayed." The numerals "9" and "12" are frequently used for "correct." Other numerals are used for the different officials' messages, agents' messages, etc.

ABBREVIATIONS

Abbreviations are usually made by dropping the vowels; some, however, are quite arbitrary. They are used chiefly for wire conversations.

An abbreviation may be used in one sentence when it cannot in another. One should avoid using too many of the arbitrary ones together, for instance, "r r" for "are our," or "for our."

The letters "d," "n" or "ng" can be used for the affixes "ed," "en" or "ing."

"Art," "O K" and "I" are used for acknowledging verbal instructions, meaning the same as "yes sir" in the English language.

Abbreviations inclosed in quotations will indicate that the same could not always be understood in wire conversations, but are applicable to certain or special lines of work.

A

abandoned, abnded	answer, ans
abbreviation, abbn	any, ay
about, abt	anything, aytng (or) 5
acknowledge "x" (use in train orders only)	April, Apl (or) Apr
account, acct	are, r
action, actn	Arizona, Ariz
address, ads	Arkansas, Ark
afternoon, P M	arrive (or) arrived, "a"
agent, agt	ascertain, ascrtn
Alabama, Ala	assist or assistant, asst
Alberta, Alta	Assistant General Freight Agent, A G F A
all right, art	Assistant General Passenger Agent, A G P A
always, alwas	attention, attn
amount, amt	attorney, atty
and others, "et al"	August, Aug
annulled, annld	avenue, ave
another, ahr (or) anr	

B

"B," Block (used in block system
only)
back, bk
baggage, bage
Baltimore, Balto
barrel, bri (or) bbl
battery, baty
be, b
become (or) became, becm
been, bn
before, b4
better, btr
between, betwn
bill-lading, "BL"
black, blk
blanks, blnx
block, blk

board, bd
body, bdy
book, buk
bought, bot
boulevard, blvd
bound, bnd
brakeman, brkmn
break, brk
British Columbia, B C
brought, brot
Buffalo, Bflo
building, bldg
bushel, bu
business, biz
but, bt
by, bi

C

California, Calif
can, cn
Canada, Can
cancel former order, C F O
cannot, cnt
captain, capt
cashier, cashr
cavalry, cav
cent, ct
charge, chg
check, ck
Chicago, Chgo
Chief, Chf
Christmas, Xmas
Cincinnati, Cinti
circuit, ckt
clear, clr
clerk, clk
Cleveland, Cleve
coal and water, C & W
collect, coll
collect on delivery, C O D
Colonel, Col
Colorado, Colo

combination, combin
come (or) came, cm
coming, cmg
commercial, coml
Commercial News Department, C
N D
commission, comsn
company, co
complete, comp (or) "em"
compliments, 73
conductor, cond'r
conductor and engineer, C & E
Connecticut, Ct (or) Conn
connection, conctn
copy, cy
correct, O. K.
correction, "corn" (used only as
a wire signal)
cost, insurance and freight, "C I
F"
could, cld
credit, cr
crossing, xng

D

day, da
day press rate, D P R
dead head, D H
debit, dr
December, Dec
decrease, dec
Delaware, Del
democrat, dem
deliver, 92
delivery, dely

delivery charges guaranteed, dely
chgs gtd
depart (or) departed, "d"
Despatcher, Despr
destroy, bust
Detroit, Det
did, dd
difference, dif
dinner, dinr
disregard former service, D F S

district, dist
 District of Columbia, DC
 division, div (or) divn
 Doctor, Dr
 don't, dnt

double deck, D D
 doubt, dbt
 down, dwn
 dozen, doz
 duplicate, dup

E

east, e
 election, elec
 empty, em (or) mt
 engine, eng
 engineer, engr
 England, Eng
 enough, enuf
 errors and omissions excepted,
 "E & O E"

Esquire, Esq
 every, evy
 excursion, exen
 excuse, ex
 ex-dividend, Xd
 express, ex
 extra, exa

F

factory, facty
 favor, fvr
 February, Feb
 few, fu
 Florida, Flo
 for, r

foreign, forgn
 forward, fwd
 free on board, F O B
 freight, frt
 Friday, Fri
 from, fm (or) fr

G

General, Genl
 General Baggage Agent, G B A
 General Freight Agent, G F A
 General Passenger Agent, G P A
 Georgia, Ga
 get, gt
 give better address, G B A
 give some address, G S A
 go ahead, G A
 go ahead arrival, G A A
 go ahead departure, G A D
 gone, gn
 good, gd
 good afternoon, P M

good evening, G E
 good morning, G M
 good night, G N
 gossip, "guff"
 got, gt
 government, govt
 Governor, Gov
 grain, grn
 great, grt
 ground, gnd
 ground wire, g w
 guaranteed, gtd
 guess, gs

H

half, hf
 hardware, hdw
 has, hs
 have, hv
 hear (or) here, hr
 high, hi

Honorable, Hon
 household goods, H H Gds
 how, hw
 how is, hws
 hundred, hnd

I

Idaho, Ida
 Illinois, Ill (or) Ills
 immediately, immy
 important, impt (or) 55
 incorporated, inc
 increase, inc
 Indiana, Ind

Indianapolis, Indpls
 Indian Territory, Ind Ty
 instant, inst
 instrument, instmnt
 insurance, ins
 Iowa, Ia

January, Jan
junetion, jet (or) june

Kansas, Kans (or) Kas
Kentucky, Ky

language, lang
laugh, ha ha
learn, lrn
leave, lv
letter, ltr
Lieutenant, Lt
light, lite
limited, ltd

machinery, machy
made, md
magazine, mag
main, mn
Maine, Me
Major, Maj
majority, maj
make, mk
manager, mgr
manifest, mfst
manifold, mfld
Manitoba, Man
manufacture, mfr
manufacturing, mfg
many, mny
March, Mar (or) Meh
marked, mkd
market, mkt
Maryland, Md
Massachusetts, Mass
Master Car Builder, M C B
matter, mtr
May, Ma
Member of Congress, M C

namely, viz
near, nr
Nebraska, Nebr
necessary, neccy
Nevada, Nev
never, nvr
new, nu
New Brunswick, N B
Newfoundland, N F
New Hampshire, N H

J
junior, jr
Justice of the Peace, J P

K
knew, nu
knocked down, "k d"
know, no

L
loads, lds
local, loc
look, luk
loop, lup
Louisiana, La
low, lo
lumber, lbr

M
merchandise, mdse
message, msg
messenger, msgr
Mexico, Mex
Michigan, Mich
mite, mite
mile, mi
(mill), typewriter
million, myln (or) myn
Milwaukee, Milw
Minneapolis, Mpls
Minnesota, Minn
minute, min
Mississippi, Miss
Missouri, Mo
mistake, msk (or) bull
mistaken, mskn
Mister, Mr
Mistress, Mrs
Monday, Mon
Montana, Mont
more, mo (or) mr
morning, mng (or) A M
much, mch

N
New Jersey, N J
New Mexico, N Mex
New York, N Y
night, nite—(red)
night press rate, N P R
none between, n b
north, n
North Carolina, N C
North Dakota, N Dak
Northwest Territories, N W T

not, nt
nothing, ntg
Novia Scotia, N S
November, Nov

now, nw
no more, nm
no such number, N S N
number, no

o'clock, k
October, Oct
of, o
office, ofs
Ohio, O
O K, correct
Oklahoma, Okla
Ontario, Ont
on time, o t
opening, opg

operator, opr
opinion, opn
order, ord
Oregon, Org
O S, all offices take notice
other, otr
our, r
"out" (of no account)
out, ot
owner's risk, "O R"

package, pkg
paid, pd
pair, pr
passenger, pasgr
pay, pa
Pennsylvania, Pa (or) Penn
peoples, peo
Philadelphia, Phila
pink (rush)
Pittsburg, Pgh

please, pls
pound, lb
precinct, pret
preferred, pfd
president, prest (or) pt
Prince Edward Island, P E I
principal, prin
prohibition, pro
proximo, proxi
Purchasing Agent, Pur Agt

Quebec, Que
quick, qk

railroad, R R
railway, Ry
ready, rdy
rebate, reb
receipts, reccts
received, recd
receiving, recg
red (nite)
refrigerator, refr
relay, rela
release, "rel"

quotation, qtn (or) tick

R
relief, rlf
repeat, rept
report, rept
report delivery charges, rept dely
chgs
republican, repn
Rhode Island, R I
right, rite
roast (a great number)
round, rnd
rush (pink)

said, sd
St. Louis, St L
St. Paul, St P
same, sm
Saskatchewan, Sask
Saturday, Sat
say, sa
second, sec
secretary, secy

S
section, seen
see, c
see former order, C F O
see former service, S F S
seen, cn
see your service, S Y S
sending, sendg
September, Sept
Sergeant, Sergt

service, svc
several, svl
should, shld
siding, sdg
sight, site
sign, sine
signature, sig
signed, sined (or) sgd
single deck, S D
sir, sr
slow, slo
somehow, smhw
someone, sm 1
something, smtn
somewhat, smwt
somewhere, smwr
soon, sun
south, s
South Carolina, S C
South Dakota, S D
speak, spk

special, spl
special delivery guaranteed, spl
dely gtd
Springfield, Spgfd
station, stn (or) sta
stay, sta
steamer, str
steam ship, S S
stock, stk (or) stx
stop for breakfast, s f b
stop for dinner, s f d
stop for night, s f n
stop for tea, s f t
straight, strate
street, st
Sunday, Sun
Superintendent, Supt
supper, supr
suppose, spose
switch, sw
system, sys

take, tk
talk, tlk
tariff, tf
telegraph, tel
telephone, fone (or) phone
Tennessee, Tenn
Territory, Ty
Texas, Tex
thanks, tnx
that, tt
that is, tts (or) "i e"
the, t
their, tr
them, em
then, tn
there, tr
they, ty
thing, tng
think, tkn
this, ts
this morning, smng (or) ts A M
though, tho

ultimo, ult
unchanged, unchg'd
undelivered, undeld

Vermont, Vt
versus, "vs"
very, vy

T
thought, thot
thousand, tnd
through, thru (or) tru
Thursday, Thur
tierce, te
to-day, toda
together, togtr
tomorrow, tomw
to-night, tonite
took, tuk
tough, tuf
track, trk
train, trn
Train Master, T M
transfer, tfr
Traveling Passenger Agent, T P A
Treasurer, Treas'r
trouble, tbl
try, tri
Tuesday, Tues
typewriter (mill)

U
understand, 13
United States of America, U S A
Utah, U

V
Vice-President, V P
Virginia, Va

W

was, ws	where, wr
Washington, Wash (or) Wn	while, wile
water, wtr	why, wi
way, wa	who, wo
way bill, "W B"	will, wi
weather, wtr	with, wi
Wednesday, Wed	Wisconsin, Wis
week, wk	word, wd (or) w
were, wr	work, wk
west, w	would, wld
West Virginia, W Va	write, rite
what, wt (or) ?	wrote, rote
when, wn	Wyoming, Wyo

X

"x," acknowledge (used in train orders only)

Y

yard, yd	yet, et
yes, es	you, u
yes sir, esr	young, ung
yesterday, estrda	your, ur

Example Sentences

Using Abbreviations in Railroad Telegraphy.

- Q. Hw sun wi 1st 74 b rdy—How soon will 1st No. 74 be ready?
 A. Sun as ty gt C & W—Soon as they get coal and water.
 Q. Wr r ty gg r 9—Where are they going for No. 9?
 A. SX—Wanatah (office call).
 Q. Cld ty\mk K A if I gv em 10 mins on 9—Could they make Hanna if I gave them 10 minutes time on No. 9?
 A. Es r if 3rd 79 doesnt dela em at WS—Yes sir, if 3rd No. 79 does not delay them at Winslow.
 Q. Is tt exa tr et—Is that extra there yet?
 A. Cmg—Coming.
 Q. Hw far off—How far off?
 A. Abt 2 mi—About 2 miles.
 Q. Let me no wn tr rdy—Let me know when they are ready.
 A. O K—All right.
 Exa rdy nw—Extra ready now.
 Q. Ask em if ty en mk HN bi 55 r 8—Ask them if they can make Inwood by 7:55 for No. 8?
 A. Es r ty en—Yes sir, they can.
 Q. Hw much wk hs 93 to do tr et—How much work has No. 93 to do there yet?

A. Cnt sa tr dwn at east end of yd nw—Can't say, they are down at east end of yard now.

Q. Wt ty doin dwn tr—What are they doing down there?

A. Gtg 2 mt gonds to set in at WS—Getting two empty gondolas to set in at Winslow.

Q. Let me no wn ty cm bk Id like to gt em over to SX r 38—Let me know when they come back, I would like to get them over to Wanatah for No. 38.

A. I—All right.

Q. Is 1st 76 emg—Is 1st No. 76 coming?

A. Es r—Yes sir.

Q. Tell t condrt to set off 2 mt refrs at V to b iced—Tell the conductor to set off two empty refrigerators at Valparaiso to be iced.

A. Art—All right.

Q. Tell em to tk full tank tr, wtr plug is ot of order at SX—Tell them to take a full tank there, water plug is out of order at Wanatah.

A. I—All right.

Example Sentences

Using Abbreviations In Commercial Telegraphy.

Q. 5 P—Have you anything for Plymouth?

A. Es r hrs a roast—Yes sir, here is a roast (a great number).

Q. Hw do u count East St L—How do you count East St. Louis?

A. 1 w—One word.

Q. Chf wnts to no wi it is so hard to raise u—Chief wants to know why it is so hard to raise you?

A. Loeal on ts string is bad Ill hv it fixed—Local on this string (wire) is bad, I will have it fixed.

Q. Wt ws ur last to us—What was your last number to us?

A. 28—Our last number to you was 28.

Q. Tr r no exa wds in tt sig—There are no extra words in that signature.

A. Es tts rite hold it Ill get it fixed—Yes, that is right, hold it and I will get it fixed.

Q. Hrs a combin spl 3 cys 1 city & 2 trus abt 3 hnd wds, shall I rept it—Here is a combination special, three copies, one city and two throughs, about 300 words, shall I report it?

A. Es u btr—Yes, you better.

Q. Wo—Who are you?

- A. XN—(Operator's personal signal.)
 Q. U tr—Are you at the instrument?
 A. I—Yes sir.

Example Sentences

Using Abbreviations for Wire Testing.

- Q. 18 on 42—What is the trouble on wire No. 42?
 A. No ckt—No circuit.
 Q. Which wa 74 open—Which way is wire No. 74 open?
 A. E—East.
 Gnd 42 w & tri me tr—Ground wire No. 42 west and call me there.

Tk it off & put 42 e to 74 w & tri me—Take it (ground wire) off and put wire No. 42 east to wire No. 74 west and call me.

Q. Tbl on 42 seems to b in ur bd luk at t conctns & c if ty r art—Trouble on wire No. 42 seems to be in your board; look at the connections and see if they are all right.

- A. Tr O K—They are all right.
 Q. Straten 42 & 74 sa wn—Straighten wires No. 42 and No. 74, say when.
 A. Nw—Now.

DEFINITIONS

Of Technical Terms Used in Railroad and Telegraphic Work

Ballast—The road-bed or that which gives the track its support. Gravel, broken stone, etc., laid in the bed of a railroad to make it firm and solid.

Block System—A system by which the track is divided into sections of three to five miles, and trains are so run by the guidance of electric, automatic or controlled manual signals, that no train enters a section or block with a *clear* signal before the preceding train has left the block.

Telegraph Block System—A series of consecutive blocks controlled by block signals operated manually upon information by telegraph.

Absolute Block—Where one train only in a given direction is permitted between the two telegraph block stations.

Permissive Block—Where two or more trains in a given direction are permitted between the two telegraph block stations.

Bug-in-the-wire—A slang phrase frequently used when a wire is in trouble.

Bumpers—Protecting irons placed at both ends of a car, used to assist and protect the drawbar in deadening the jar. A buffer.

Bumping Posts—Piles or large posts driven in the ground, with dead-woods attached, located at the end of a siding which has but one spur or outlet.

Bust—To destroy a message or train order.

Car—A vehicle adapted to the rails of a railroad.

Baggage—A car used for carrying baggage.

Barn—A large box car.

Box—A closed freight car.

Caboose—A car fitted for the use of a freight crew.

Coach—A passenger car.

Combination—A car used for more than one purpose.

Express—A car used for carrying express.

Flat—A car with a platform only.

Foreign—A car belonging to a railway other than the one transporting it.

Furniture—Similar to a barn car.

Gondola—A flat car with side and end boards.

Hand—A small car propelled by hand.

Mail U. S.—A car used for carrying the United States Mail.

Pile Driver—A car used for driving piles.

Refrigerator—A box car with ice vats, used for carrying perishable freight.

Stock—A latticed box car, used for transporting stock.

Note.—A single deck stock car is used for transporting cattle and horses; a double deck stock car is used for transporting hogs and sheep.

Cattle Guard—A trench under a railroad track and alongside a crossing (as of a public highway), intended to prevent cattle from trespassing upon the railroad's right-of-way.

Coal Dump—A small car used for dumping coal into the tenders of engines.

Coal Chutes or Docks—An elevated stand from which coal is dumped into the tenders of engines.

Commercial News Department—The department of a commercial telegraph company in a large city which gathers and furnishes by wire to its subscribers quotations and other news of grain and provision markets.

Cross Arms—Placed at the top of telegraph poles with pins and insulators attached for the support of telegraph wires.

Dead Woods—Timbers placed at the ends of cars or elsewhere to give solidity and to aid in resisting jars.

Depot—A railroad station.

Disc—A circular plate in the switchboard.

Dot—To make a number of dots consecutively on a wire in order that the operator with whom one is working may readjust his instrument.

"D" Rail—Used at interlocking plants at railroad crossings and elsewhere for derailing trains when they fail to obey signals.

Drop Block—A signal which shows clear at the time the front end of a train has passed, but which shows danger before the rear end has passed.

Duplex—A system of telegraphy for sending two messages (one from each end) over the same wire simultaneously.

Engine—A locomotive.

Engine Cab—The apartment of the engineer and fireman.

Engine Pilot—The cowcatcher. A projection attached to the front of an engine which will clear the track of obstructions.

Engine Tender—A car attached to the engine for carrying a supply of fuel and water.

First Out—Applied to cars on sidings, the first car or cars to be reached by an engine going in on a siding.

Frog—A supporting plate having raised ribs that form continuations of the rails to guide the flange of the wheel where one track branches from another or crosses it. One of these is always necessary with each switch.

Getting Old—As applied to telegrams, means they are being delayed.

Note.—Telegrams usually become "old" when they are held fifteen or more minutes.

Gold and Stock Department—A department of a commercial telegraph company in a large city which gathers and furnishes by wire to its subscribers quotations and other news of stocks and bonds.

Guard Rail—A rail placed on the inside of a main rail, at switches, on bridges, etc., as a safeguard against derailment.

Ham—(See plug).

Hot Box or Journal—Is caused by an excessive amount of friction produced by the axle revolving in the "truck" bearing.

Insulators—(Non-conductors). Used for the support of wires and to prevent an escape of the electric current.

Interlocking—An arrangement of switch lock and signal appliances so interconnected that their movements must succeed each other in a predetermined order.

Interlocking Plant—An assemblage of switch, lock and signal appliances, interlocked.

Knock Off—To quit work temporarily. Railway and telegraph construction gangs “knock off” on account of the weather.

Local Is Bad—As applied to a local battery, connected with an instrument, which is in poor working condition.

Markers—Used to indicate the rear of a train; flags or lamps.

M. C. B. Coupler—That which couples cars together and by which the car is drawn. The Gould, Tower and Janney couplers are the ones mostly used.

Message—A communication sent by wire.

Black—A full-rate message. A message to be delivered immediately. All commercial messages are “black” unless a request for a different one is made by the sender.

Cable—A cablegram. A message transmitted by a submarine cable line.

Cipher or Code—A message which insures secrecy and oftentimes economy, containing words which have no meaning without the use of a key.

City—A message addressed to some one in the city to which it is being sent—it is *not* to be *relayed* or *transferred*.

Dead-head—A free message.

Government—A message relating to official business of the government.

Grain—A message pertaining to speculative transfers of grain or provisions on some board of trade.

Night—A “red” message. One which is sent at reduced rates, and is delivered the morning following its date.

Office—A “service” message pertaining to messages which have been sent, regarding their delivery, collection of charges, etc.

Query—A message which is sent by a newspaper correspondent to some metropolitan paper stating briefly some happening or occurrence, and enquiring the amount of matter desired by them for publication.

Railroad—A message which pertains to railroad business.

Red—(See night message).

Service—(See office message).

Skeleton—A message without the body or text. Used for tracing lost messages.

Special—A newspaper special is news which is telegraphed to some publication, usually to a metropolitan daily paper.

Stock—A message pertaining to speculative transfers of stock or bonds upon some stock exchange.

Through—A message addressed to some place other than the place to which it is being sent—it is to be relayed or transferred.

Train—A message addressed to someone on a train.

Milk Stand—An elevated stand at the side of a track used for loading and unloading milk.

Ohm—The standard unit in the measure of electrical resistance.

Pins—Used for the support of insulators and attached to cross arms.

Plug—A telegraph operator who is not proficient.

Quadruplex—A system of telegraphy by which four messages, two in each direction, may be sent simultaneously over the same wire.

Resonator—Used for incasing Sounders. It greatly assists the receiving operator in copying upon a typewriter.

Road-Bed—(See Ballast).

Round House—A repository for engines while not in use.

S Curve—A double curve. Two curves close together on a railroad.

Semaphore—An apparatus for giving signals by the disposition of oscillating arms and lights.

Side Track or Siding—Used for allowing one train to pass another or for the storage of cars.

Signal Mast—The pole upon which semaphores, lights and other signals are displayed.

Signals—“Fixed,” a semaphore or other stationary signal which is governed by a lever. “Hand,” a flag or lantern swung by the arm.

Note.—“Home” and “distant” signals are used in connection with interlocking plants, the former is usually the one nearest the d-rail, while the latter is the one farthest away.

Spike—Used for fastening the rail to the tie.

Splices—Used for connecting one rail with another.

Stand Pipe—A supply pipe, connected with a reservoir, of sufficient elevation to enable the water to flow into an engine tender.

Station—A place where passengers and freight are received and delivered.

Stood off—An operator who has messages to send, but who is put off until another office sends theirs, is said to be “stood off.”

Swing—A wire that swings against another on a line of poles.

Switch—Movable rails, used for transferring cars from one track to another.

Cross-over—Used to connect one main track with another, as on a double track.

Switch Board—A collection of switches (electrical) in one piece of apparatus, so arranged that a number of circuits may be connected or combined in any manner.

Switch Engine—Used for making up trains in *yards*, and for switching cars.

Telegram—A message sent by telegraph.

Tie—Timbers which support the track and keep it in place.

T Rail—The rail used for railroad tracks.

Time Schedule or Table—The authority for the movement of regular trains subject to the rules.

Train—An engine or more than one engine coupled with or without cars, displaying markers.

Accommodation—A passenger train which does local work.

Dummy—(See accommodation train).

Extra—A train which is *not* scheduled.

Freight—A train made up of freight cars.

Mixed—A train containing both passenger and freight cars.

Passenger—A train which is usually made up of passenger, mail and express cars.

Regular—A train which is scheduled. It may consist of sections.

Special—An extra train carrying railroad officials.

Train Numbers—Numbers which are applied to trains on the time schedule, in order to distinguish one from another.

Train Orders—Special instructions issued from the Superintendent's office by the Train Dispatcher relating to train movements not authorized by time-table.

19 Train Order—One which does not require the signature of either the Conductor or Engineer.

31 Train Order—One which does require the signature of the Conductor or Engineer, or both.

Train Pilot—A person assigned to a train when the engineman and conductor are not acquainted with the physical characteristics or running rules of the road over which the train is to be moved.

Trestle—A railroad bridge resting on trestles connected together.

Trucks "Car"—A swiveling carriage, with 4 or 6 wheels, and the necessary journal boxes, springs, etc., to carry and guide one end of a car.

Turn Table—Rails resting on a movable platform, used for turning engines and cars. It is usually located at a round-house.

Velocipede—A light railroad conveyance, with three wheels, propelled by the hands and feet.

Volt—The standard unit of electro-motive force.

Water Plug or Spout—(See stand pipe).

Wire to the Air—The telegraph wire which leads out of an office on to the poles.

Y—Two diverging tracks connected by a cross track, also, the track used for transferring cars from one road to another where two railroads cross.

Yard—A number of side-tracks.

Yard Engine—(See switch engine).

TEACHING TELEGRAPHY

No other class of students, in my opinion, is more susceptible to the teacher's interest in the work than those of telegraphy. For this reason, it is essential that the greatest interest be taken in the student's progress. Especial interest should be taken in the student's "copy," and his "sending" frequently criticized. All the prescribed forms should be made clear. The success of the student will depend largely upon the interest his teacher takes in his work.

A school should have its course thorough, systematic, and complete. Accept one familiar line of railroading, the rules as adopted by the American Railway Association being preferable, and one line of commercial work, as adopted by the Western Union, Great Northwestern or Postal Telegraph Companies, and follow these throughout. As a matter of fact, suggestive thoughts will frequently present themselves, which are other than those spoken of, and these should be discussed and receive proper consideration, but one system of each branch of the work should be adhered to so far as possible.

Teaching Railroad Telegraphy

The rules as recommended by the American Railway Association are used with slight variances on nearly every railroad and its form of train orders is commonly known as the "double order system."

General Information

Car or engine numbers will *not* indicate the number of a scheduled train. Train numbers are usually imaginary and designated only by the time table.

All trains represented on the time table are numbered. Even numbers are usually east and north-bound, odd numbers west and south-bound.

Extra or *wild* trains are inferior to all regular trains of whatever class. The terms passenger, freight or extra, are *not* descriptive of the rights of trains, but are only inserted to indicate the way these classes are usually divided.

Even number trains have the right of way over odd number trains of the same class: i. e., No. 2 would have the right of way over No. 3.

Extras are designated by their engine numbers and may run "odd or even" in either direction.

The block signal should always be at red when an operator is on duty, except when changed to clear to allow a train to pass to which there is no order addressed, and which is not encroaching upon the time of a preceding train. It should be immediately returned to red as soon as the rear of the train has passed.

On single track, ask for orders, if you have none, for all *except* first-class trains, when they are approaching your station. Do this by "breaking in," if necessary, on the train wire; for instance, if No. 72 should come into the operator's sight at Hamlet, he would take the circuit and say, "H 5 r 72 H A" or "H 9 r 72 H A." "H" represents the office call of the Despatcher, "5" anything, "r" for, "72" train number, "H A" office call of Hamlet. In the second instance "9" indicates train orders. Either of these figures "5" or "9" would be applicable except that the figure "5" could not be used where it is also used with the "Telegraph Block System." The Despatcher's reply would be "yes" or "no." If the former, he would add "copy 19 (or) 31," and if to be addressed and delivered to more than one train (3 copies), the number of copies he wished made in manifold, as "31 copy 7," or "19 copy 5" (the conductor and engineman on each section of each train addressed receiving a copy, and the operator retaining one), and immediately call one or more offices, instructing them likewise. All offices to which the order would be addressed would copy it simultaneously from the Despatcher, each taking its proper address, otherwise the copy made by all would be the same. At the conclusion of the transmission of the order, the Despatcher would likely instruct the Hamlet operator to repeat it by saying "To HA GA H."—To Hamlet, go ahead—Despatcher's office call. Hamlet would then repeat the order, giving the conductor's and engineer's signatures with his own initials

if a "31" order. If a "19" order he would omit the conductor's and engineer's signatures, but would give his last name or initials as signature. He would add in conclusion "N M r em" or "N M r 72."—Any more for them—No. 72. The Despatcher would then complete the order by giving the word "complete," the time of completion, and the Superintendent's initials, and if he had no further orders, he would add "N M r em," meaning—no more for them (72). The Hamlet operator would then deliver the order, and in case it would not encroach upon the time of a preceding train, set the block signal at clear, keeping it so until the rear end of the train had passed, when he would return it to its former position, red. If the Despatcher's answer had been "No" to the operator's first question, "H 5 r 72 HA," and the operator had no orders for the train (which he should not have had and asked this question), the block signal would be immediately placed at clear and kept so until the rear of the train had passed. This, of course, is with the understanding that it would not encroach upon the time of a preceding train. If we assume that the Hamlet operator had an order for this train, before it came into sight, and it had not been repeated or a "complete" received upon it, he would take the circuit at an opportune time, and say "H 31 (or) 19 HA,"—"31 (or) 19," indicating that he had an order that he wished to repeat and receive a "complete" from the Despatcher. The Despatcher would answer "I" or "G A," either meaning—go ahead, and the routine followed would be the same as formerly spoken of.

In repeating a "31" train order, use the following form: order number, "No. —," train addressed, "to—," office call, period, body of the order, Superintendent's initials, signatures of conductors and enginemen, and conclude with your own initials. In repeating a "19" train order, use the following form: order number, "No. —," train addressed, "to —," office call, period, body of order, superintendent's initials and your last name or initials. The train Despatcher in completing an order will use the word "complete," adding the hour and minute, and the Superintendent's initials.

In acknowledging a train order, give the order number "No. —," train addressed, "to —," your office call, the letter "X" and your initials.

In using the "double order system," an order is invariably addressed to a superior and inferior train and, in many instances, it is desirable that the inferior train receive its order before the same is completed and delivered to the superior train,

but before the Despatcher can allow the delivery to be made to the inferior train, he must have an acknowledgment from the operator holding the order for the superior train. To illustrate, we will assume that an order is sent to No. 72 at Valparaiso and No. 71 at Wanatah, reading "No. 72 will wait at Valparaiso until —M for No. 71." As No. 72 is the superior train, an acknowledgment of the order from the operator at Valparaiso is necessary before a complete on the same can be given to the operator at Wanatah and the order delivered to No. 71. Owing to this, a brief form of acknowledgment is used, and the letter "X" serves this purpose. Assuming the number of the order spoken of to be "127," the Valparaiso operator would acknowledge this by saying "127 to 72 V X J L H," this done, the operator at Wanatah could repeat and receive a complete upon his order for No. 71, and No. 71, the inferior train, could then act upon the order. There are several advantages to be obtained by using this abbreviated form of acknowledgment. If it were not for this, it would have been necessary for the Valparaiso operator to have repeated the order, thereby consuming more time which No. 71 could employ in running. More than this, it is quite possible, if not probable, that No. 71 would arrive at Valparaiso before No. 72 would be ready for departure, making it unnecessary for the Valparaiso operator to deliver the order to No. 72. In this latter event, the Valparaiso operator would say to the Train Despatcher:

"No. 71 a—on sdg clr order 127 is N G to 72?" ("a," arrived; "on sdg clr," on siding clear—meaning clear of main track; "N G," no good). The Despatcher would answer "O K 31 copy one" and send the following order—"Order No. 133 to opr V. If No. 71 is clear order No. 127 is annulled." The Valparaiso operator upon receiving this order would repeat it to the Train Despatcher in the regular way, signing his own name, whereupon the Despatcher would "complete" the latter order "No. 133." The Valparaiso operator would then write across the face of order No. 127, "annulled by order No. 133," and file together orders numbers 127 and 133, and allow No. 72 to proceed without the order. Operators are not permitted to bust or file orders without first receiving a "31" order to do so as shown in order No. 133 herewith.

As stated in a former paragraph it is not necessary to ask for orders for first-class trains. Place the semaphore at clear, when they are sighted, unless you have orders for them, and they are not encroaching upon the time of a preceding train, and leave it so until the rear end of the train has passed the

office. If you have orders keep the red signal displayed until the orders are properly delivered.

Keep all trains running in the same direction the required time apart, except where some form of block system is used—no exceptions should be made to this rule. Trains running on "passenger" time should be at least 10 minutes apart, on "freight" time 5 minutes apart. A train running on "freight" time should not be allowed to follow a passenger train until 5 minutes after the departure of the passenger train. Trains running on "passenger" time should not be allowed to follow freight trains until 10 minutes after the departure of the freight train.

When reporting trains, give the departure only unless their stay has been quite extended. Report a first-class train at the time it is passing your office by saying "Now" for them; for instance, if No. 5 were passing the Plymouth office, the operator would take the circuit "breaking in," if necessary, and say "H nw 5 P," meaning—Despatcher—No. 5 passing now, and signing his office call. The Despatcher would reply by giving him the hour and minute as "6 42 H." All other trains should pass the office 100 yards or more before reported and they should then be reported with the signal "O S;" for instance, in reporting the 2nd section of No. 81 out of Bourbon, the following form would be used: "O S O S H R N 2nd 81 d 3 18 R N." "O S" is a signal for all offices to take notice, "H" Despatcher's office, "R N" Bourbon office, "2nd 81" train reported, "d" departed, "3 18" the time, "R N" Bourbon office. When giving the arrival, insert the letter "a" and arriving time immediately before "d" and departing time, as "O S O S H R N 2nd 81 a 2 55 d 3 18 R N." Whenever a failure to report a first-class train by the signal "Now" is made, the "O S" form will be substituted.

CONTROLLING TRAINS BY TELEGRAPH BLOCK SIGNALS

Where absolute block is used on double track you must, in order to admit a train to a "block," first ascertain from the station in advance if all of the trains which have passed your station are clear of that block. For example, we will assume that your block station is Bourbon and No. 75 is approaching; you would take the circuit and signal the operator at Inwood, the next station west: "3 for No 75 R N" meaning—"3" block wanted, "No 75" number of train, "R N" your office call. The

operator at Inwood would examine his block sheet and if block was clear would answer "2 for No 75 H N" meaning—"2" block clear, "No 75" number of train, "H N" his (Inwood's) office call. You would then give No. 75 a clear signal immediately. Assuming that the block was not clear and No. 73, a preceding train, not having passed Inwood, the operator at Inwood would have answered, "5 of No 73 H N" meaning—"5" block is not clear, "No 73" number of train occupying the block, "H N" Inwood's office call. In the latter case you as the operator at Bourbon would not give No. 75 a clear signal, but would hold them until the block was reported clear.

Where permissive block is used, the same method should be followed in ascertaining condition of the block, and if the Inwood operator should answer "5 of No 73" you as the operator at Bourbon would display a cautionary signal or issue a permissive card, thereby allowing No. 75 to proceed.

Where absolute block is used on single track, you, as the operator at Bourbon, would say to Inwood: "1 for No 75 R N" —meaning—"1" display stop signal, "No 75" number of approaching train, signing your office call. If the block was clear, operator at Inwood would answer, "2 for No. 75 H N" meaning—block is clear for No. 75, and signing his office call. That is, stop signal is displayed to all opposing trains in order to protect block at Inwood for No. 75, which is entering the other end of the same block at Bourbon. If the block was not clear, an opposing train having already passed Inwood, the operator at Inwood would have said, "5 of No 70 H N" meaning—"5" block not clear, "No 70" number of opposing train in block, "H N" Inwood's office call. Upon receiving this information at Bourbon you would know that trains No. 75 and No. 70 were to meet at your station and you would immediately display stop signals in both directions until the trains had met and passed.

Where permissive block is used on single track for following movements, assuming that train No. 83 desires to follow No. 81,—a train of similar class, in the same block, you as the operator at Bourbon would say to the operator at Inwood: "17 for No 83 R N" meaning—"17" display stop signal—train following, "No 83" the train following, "R N" your office call. The operator at Inwood would then reply: "5 of No 81, 13 for No 83 H N" meaning—that the block is not yet clear of train No. 81, but that he will display stop signal for train No. 83. You would then give train No. 83 cautionary signal or permissive card allowing it to enter the block.

As soon as a train enters the block at your station you report it, giving time to the next station in advance, using this form: "4 No 75, 720 R N" meaning—"4" train has entered block, "No 75" number of train, "720" the time, "R N" your office call. The operator at Inwood would acknowledge by giving his personal signal or office call, sometimes prefixing it with the signal 13, as "O K 13 H N."

After the markers of a train have passed your block signal about 100 yards, report it to the office in the rear by saying: "2 of No 75 d 721 R N" meaning—that the block is clear of No. 75 at the time stated (7:21), and signing your office call. You also report time of each train's departure to the Train Despatcher by using the usual O S form.

RAILROAD TELEGRAMS

Railroad telegrams or messages are those which are sent and received by officials, agents and other employes connected with a railroad company, and pertain strictly to the business of that company. They are sent free of charge and no record is made of them. Checks are omitted and Deadhead franks or passes are not used to secure their transmission. They are concise and brief, and whenever practical the initials or last name only of the sender and addressee are used.

Requests are frequently made by the traveling public to stop passenger trains at points at which regularly no stop is made. When these requests are granted, a message is sent in triplicate to an office in advance of the station at which the train is to stop, addressed to the conductor and engineman, which is delivered to them after signing (the same as is done in a "31" train order), the operator retaining a copy.

Examples

NOTE.—Characters enclosed in parentheses () are sent by the sending operator but are not copied by the receiving operator; while those enclosed in brackets [] are written by the receiving operator, but are not sent by the sending operator.

(a) **Received Copies**

(Hr). KS MH [WR] (fm) Warsaw July 22
 (to) C D L

H

(.) 2nd 71 set off P R R 71218 at Warsaw loaded with H H
 Goods for St. Paul on account of broken drawbar

(sig) Henry
 [3 02 PM]

(b)

(Hr) H WR [MH] (fm) Wayne July 22
(to) F D W

KS

(.) 2nd 71 set off P R R 71218 at Warsaw account broken
drawbar please repair and report when ready

(sig) H J K
[3 35 PM]

(c)

(Hr) KS MH [WR] (fm) Warsaw July 22
(to) H J K

H

(.) P R R 71218 now ready to go

(sig) Whitney
[6 11 PM]

(d)

(Hr) H WR [MH] (fm) Wayne July 22
(to) Maulsby Condr 79

KS

(.) Pick up P R R 71218 at Warsaw loaded forgn via Chgo

(sig) H J K
[6 30 PM]

The four preceding messages relate to a car of household goods which has been set off by a through freight train on account of a broken drawbar.

"Hr" is a signal invariably given before commencing any message. "KS" represents the sending office call in messages (a) and (c). "H" represents the sending office call in messages (b) and (d). "MH" represents the sending operator's personal signal in messages (a) and (c), and the receiving operator's personal signal in messages (b) and (d). "WR" represents the sending operator's personal signal in messages (b) and (d), and the receiving operator's personal signal in messages (a) and (c). "Fm"—from. "To"—the address. "H," the office call of the station addressed in messages (a) and (c); and "KS," the office call of the station addressed in messages (b) and (d). "(.)" the period—the beginning of the body of the message. "Sig"—the signature. After the signature, the time message is received.

The call of the office sent to, the sending and receiving operators' personal signals and the time sent should be written in a conspicuous place on each message sent. Example (as on the sending copy of message "a"): H MH WR 302 P.

DUTIES OF RAILROAD EMPLOYES**Train Masters**

701. The Train Master reports to and receives his instructions from the Superintendent.

It is his duty to take charge of the movement of the traffic; exercise supervision over the men employed on the trains, see that they understand and observe the rules, and suspend them when necessary for neglect of duty; in case of detention of trains by accident or obstruction, go to the place if necessary, take general charge of clearing the road, and see that proper precautions are taken to insure the safety of trains and property.

Assistant Train Masters, in the particular duties or districts assigned them, have the same authority as the Train Master, and will act for him in his absence, as may be directed.

Station Masters

702. The Station Master reports to and receives his instructions from the Superintendent.

He has charge of the passenger station where he is located, and of the persons employed therein.

It is his duty to see that the station and various apartments are kept in proper condition; preserve order about the station, and prevent confusion and delay in seating passengers and receiving and delivering baggage; and attend courteously to the comfort and wants of passengers, and see that the employes do the same. He must see that the cars in trains starting from his station are inspected, cleaned and properly equipped; that the Trainmen are ready for duty at the appointed time, with the necessary signals and other appliances, and that the trains are properly made up, and leave on time.

Passenger Conductors

703. The Passenger Conductor reports to and receives his instructions from the Train Master. He must obey the orders of Station Masters and of the Ticket Receivers, and conform to instructions issued by the Accounting, Passenger and Treasury Departments.

He must report for duty at the appointed time, with his trainmen; assist in making up his train when necessary; see that the engine and train are supplied with full sets of signals; and ascertain that the cars have been cleaned, inspected and properly equipped, and that the brakes and other appliances are in proper order.

He must have a reliable watch and a copy of the Timetable; examine the General Order board before each trip; compare time with the Engineman before starting, and see that he has a copy of the Timetable.

He must show his train orders to his Flagman.

The Conductor is responsible for the movement, safety, and proper care of his train, and for the vigilance and conduct of the men employed thereon, and must report any misconduct or neglect of duty.

It is his duty to ascertain that passengers are provided with tickets, collect fare from those who are not, and put off, at a convenient station, any who refuse to pay fare; attend courteously to the comfort and wants of passengers, and see that his trainmen do the same; see that passengers are properly seated, and not allow them to ride on the platforms or in the baggage, express or mail cars, or violate, in any respect, the regulations provided for their safety; and maintain good order, and not allow drunken or disorderly persons to get on the train.

Passenger Brakemen

704. The Passenger Brakeman reports to and receives his instructions from the Train Master. While on duty he is under the direction of the Conductor. At stations he must obey the orders of Station Masters.

It is the duty of the Brakeman to attend to the brakes; be provided with, take care of and properly display train signals; attend to the lighting, heating and ventilation of the cars; open and close the car doors, and assist the Conductor in the proper disposition of passengers, and in preventing them from riding on the platforms, or in any way violating the regulations provided for their safety; in preserving order; and in all things requisite for the prompt and safe movement of the train and the comfort of the passengers.

He must report for duty at the appointed time; assist in making up his train if necessary; give polite attention to the wants of passengers, avoiding unnecessary conversation. When necessary to pass through sleeping cars, do so quietly, so as not to disturb passengers; announce at each stopping place the name of the station and the length of the stop if more than two minutes.

The post of the rear Brakeman (or Flagman) is on the last car of the train. He must immediately go back to protect the train in cases where the rules require it, without waiting for

signal or instructions to do so. The front Brakeman must in like manner protect the front of the train when the Fireman cannot leave the engine; and if the train should part, the Flagman must immediately stop the rear portion and send forward the most reliable person he can secure to make stop signals until the front portion comes back, while he protects the rear.

Baggagemen

705. The Baggageman reports to and receives his instructions from the Train Master. While on duty he is under the direction of the Conductor. At stations he must obey the orders of Station Masters. He must conform to the instructions issued by the Accounting and Passenger Departments.

It is his duty to receive, take care of and correctly deliver baggage carried on the trains; check baggage at stations where there are no Baggage Agents; collect, report and remit the proper charge for excess over the amount of baggage allowed each passenger; take charge of and promptly deliver letters and packages forwarded on railroad business or addressed to Officers or Agents; and attend to the heat and light in the baggage cars while on duty.

He must report for duty at the appointed time, handle baggage carefully; be civil and obliging to passengers, and remain in the baggage car while on duty, except when required to take the place of a Brakeman.

He must not carry letters, packages, money or other valuables not authorized by the regulations nor receive any perquisite for the transportation of any article except such as he may be authorized to take charge of, at fixed rates for special care; and he must not permit any one to ride in the baggage car except mail agents, express agents and news agents, in the discharge of their duties.

Yard Masters

706. The Yard Master reports to and receives his instructions from the Train Master.

He has charge of the yards, of the men employed, and the movement of trains and distribution of cars therein.

It is his duty to see that trainmen and engines are ready for duty at the appointed time; that trains are properly made up and leave on time; that Conductors are furnished with way bills for cars leaving; that way bills are received for cars arriving; that doors of loaded cars are properly secured; that

cars are inspected, and those needing repairs sent to the shop; that cars are not unnecessarily delayed in the yard, and that records and reports are made in accordance with instructions.

He must be familiar with the rules of the freight service, and the duties of employes connected with freight trains; require the efficient discharge of those duties in his yard; and report all violations of the rules coming under his notice.

When signals are to be carried by trains for following sections, the Yard Master must see that this is done.

Freight Conductors

707. The Freight Conductor reports to and receives his instructions from the Train Master, and must obey the orders of Yard Masters.

The Conductor is responsible for the movement, safety and proper care of his train, and for the vigilance and conduct of the men employed thereon, and must report any misconduct or neglect of duty.

He must have a reliable watch and a copy of the Timetable; examine the General Order board before each trip; compare time with the Engineman before starting, and see that he has a copy of the Timetable.

He must report for duty at the appointed time with his trainmen; assist in making up his train when necessary; see that he has the proper way bills for the cars to be moved; see that the engine and train are provided with full sets of signals; see that the couplings and brakes are in good order before starting, and inspect them as frequently as opportunity permits; see that the Trainmen occupy their proper places on the train; handle freight with care, using every effort to prevent loss or damage; keep the car doors fastened, except when loading or unloading; and not permit unauthorized persons to enter the cars or handle freight or ride upon the train.

He must not move cars from stations without proper way bills and must see that the cars are in safe condition to be moved. When necessary to move the cars on station or loading tracks, he must see that persons loading or unloading cars thereon are notified before the cars are moved.

He must show his train orders to his Flagman.

Freight Brakemen

708. The Freight Brakeman reports to and receives his instructions from the Train Master. He must obey the orders

of Yard Masters. When on duty he is under the direction of the Conductor.

It is the duty of the Brakeman to attend to the brakes; be provided with, take care of and properly display train signals; assist the Conductor in loading or unloading freight, in inspecting the cars, and in all things necessary for the safe and prompt movement of the train.

He must examine and know for himself that the brake shafts and attachments, ladders, running boards, steps, hand holds and other parts and mechanical appliances which he is to use are in proper condition; if not, put them so, or report them to the proper parties and have them put in order before using.

He must report for duty at the appointed time and assist in making up his train.

When not engaged in duty elsewhere, the Brakeman must occupy the post assigned to him. The post of the rear Brakeman (or Flagman) is on the last car. He must immediately go back to protect the train where the rules require without waiting for signal or instructions to do so. The front Brakeman must in like manner protect the front of the train, when the Fireman cannot leave the engine; and if the train should part the Flagman must immediately stop the rear portion and send forward the most reliable person he can secure to make stop signals until the front portion comes back, while he protects the rear. An assisting engine on the rear is a part of the train and the Flagman will be governed accordingly.

Brakemen must stop their trains at stations and control them in descending heavy grades, without waiting for signal from the Engineman, and must be careful to avoid the sliding or heating of the wheels.

Switch Tenders

709. The Switch Tender reports to and receives his instructions from the Train Master. In yards he reports to and is under the direction of the Yard Master or Station Master.

It is the duty of the Switch Tender to operate the switches under his charge for trains using them; to keep the switches in good condition and clear of snow or other obstruction, and promptly report defects.

He must keep the switches secured for the main track, except when passing trains to or from another track, and must watch for approaching trains and give the Proceed-signal if all is right.

Where day and night switch tenders are employed, they must not leave their posts until relieved by each other, and the one going off duty must inform the one coming on of trains due which have not passed.

Levermen

710. The Leverman reports to and receives his instructions from the Train Master. In yards he reports to and is under the direction of the Yard Master or Station Master. He must conform to the instructions of the Signal Supervisor and, if an Operator, to the instructions of the Division Operator.

It is the duty of the Leverman to operate the levers under his charge and to keep them in good condition. He must see that the switches are in good condition and clear of snow or other obstructions and promptly report defects.

He must keep the switches secured for the main track, except when passing trains to or from another track, and must watch for approaching trains and give the Proceed-signal if all is right.

Where day and night Levermen are employed, they must not leave their posts until relieved by each other, and the one going off duty must inform the one coming on of trains due which have not passed.

Station Agents

711. The Station Agent reports to and receives his instructions from the Superintendent and must conform to the instructions issued by the Passenger, Freight, Accounting and Treasury Departments.

A Station Agent at an important station is required to devote his time exclusively to the business of the Company. At less important points the Agent may be permitted to engage in other business when it does not interfere with the proper discharge of his duties.

The Station Agent has charge of the Company's books and papers, and of the buildings, sidings and grounds at his station; and must preserve order in and about the station, and keep the buildings and grounds in proper condition.

It is his duty to attend to the sale of tickets and the receiving, delivering and forwarding of freight and collections for the same; see that cars are properly loaded or unloaded and forwarded; keep the accounts, and make reports and remittances in the manner prescribed.

He has charge of the employes at the station and must see that they perform their duties properly; promptly report to the Superintendent any misconduct or violation of the rules, and anything that is observed that is prejudicial to the Company's interests or may interfere with the safe and economical working of the road.

He must advise the Superintendent of all local matters which may affect the interests of the Company.

He must not sell tickets to persons who are not in a condition to take care of themselves, or whose conduct might endanger their lives or make them a source of annoyance to others on the train.

He must see that cars left at the station have the brakes applied and are not moved by unauthorized persons, or shifted so as to interfere with the safety of trains.

Baggage Agents

712. The Baggage Agent reports to and receives his instructions from the Superintendent. He must obey the orders of the Train Master and of the Station Master or the Station Agent, and conform to the instructions issued by the Passenger and Accounting Departments.

It is the duty of the Baggage Agent to receive and check baggage, and deliver it to the Baggagemen on the trains; take charge of baggage unloaded at his station; handle baggage carefully; be civil and obliging to passengers, and require them to show their tickets before checking their baggage, in order to avoid errors in route or destination.

He must keep a supply of the necessary checks, secure them from theft or loss, and promptly return those belonging to other stations.

Division Operator or Chief Train Despatcher

713. The Division Operator reports to and receives his instructions from the Superintendent. He must obey the instructions issued by the Superintendent of Telegraph.

He is responsible for the condition and proper working of the wires and instruments, the prompt transmission of messages, and the economical use of supplies.

He has charge of the Train Despatchers, Telegraph Operators and Linemen on his division; will direct them with regard to their duties, and see that they understand and obey rules, and are provided with the necessary signals and supplies.

Train Despatchers

714. The Despatcher reports to and receives his instructions from the Superintendent. He must obey the orders of the Division Operator.

It is his duty to issue orders for the movement of trains, in the name of the Superintendent; see that they are transmitted and recorded in the manner prescribed; and have a record kept showing the time each train passes each telegraph office, the time the Despatcher and the Operators in his office go on and off duty, and important incidents which occur while he is on duty.

A Despatcher to be relieved by another must not go off duty until so relieved, and he must explain, in writing, to the Despatcher relieving him, the train orders in force, and give other information necessary for his guidance.

In the absence of the Division Operator, the Despatcher is responsible for the deportment and discipline of the Operators.

Meeting orders must not be sent for delivery to trains at the meeting point if it can be avoided. When it cannot be avoided, special precautions must be taken by the Despatcher to insure safety.

An order which has been signed for must be made "complete" and delivered.

Telegraph Operators

715. The Telegraph Operator reports to and receives his instructions from the Division Operator, and in his absence from the Despatcher. An Operator at a station must obey the instructions of the Station Master or Station Agent, when they do not interfere with his duties as Operator.

The Operator is required to be constantly on duty during the hours assigned him, and must not leave his office without permission. The office is in charge of the day Operator. Where two or more Operators are employed during the day or night, there must be always one on duty. Where both day and night Operators are employed, they must not leave their posts until relieved by each other, and those going off duty must inform those taking their places respecting unfinished business and the position of trains.

An Operator must not leave his office when a train is at the station, unless required by business connected with the train.

Each Operator must keep a register of the times at which trains pass his office, and such other offices as may be required; give particular attention to the adjustment of his instruments,

and be ready at all times to receive train orders; in transmitting, receiving and delivering train orders conform to the prescribed rules; keep a full set of signals, in good order and ready for use, and use them in accordance with the rules; and observe the rear of trains and report at once to the Superintendent and the next telegraph office, if the proper signals are not displayed. When orders are sent for delivery to trains at the meeting point he must take special precautions to insure safety.

The Operator must be courteous in his intercourse with other Operators, and with persons transacting business at his office, and must use no improper language over the wire. He must not take students or leave his office in charge of another Operator, without permission; and must not permit employes or others to frequent his office. He must not receive messages to be transmitted free, unless signed by, or addressd to, an officer, agent or employe, and on each message sent and received must appear the date, the time, the signal and call of the Operator who sent and received it. He must preserve messages sent, and promptly deliver those received; and must consider all messages confidential, and not permit them to be read by any person except those to whom they are addressed, nor make their contents the subject of conversation or remark.

If the telegraph line fails at an office for an unusual length of time, the Operator must test the wires and report, if possible, on which side of his office the failure is. If it is at a point which the Lineman cannot reach promptly, the Operator must immediately notify the Track Foreman.

The telegraph is not to be used for the transmission of communications which may be sent by train without detriment to the Company's interests, and the operator should report any such cases observed.

Linemen

716. The Lineman reports to and receives his instructions from the Division Operator. He must obey the orders of the Chief Lineman.

It is his duty to keep the poles in proper position, the wires connected, insulated and clear of all obstructions, and make all necessary repairs, calling on the Track Foreman for assistance when required. He must keep a diagram and record of the wires, and changes in wires, on his Division.

He must frequently pass over the road and observe the condition of the telegraph line and the connections at the offices,

and promptly report anything observed that may interfere with the proper working of the line.

He must always be provided with a full set of tools and be ready to respond immediately to any orders he may receive, and must supply the Operators and Track Foremen with wire and insulators, and instruct them in regard to splicing the wire and making other repairs. He must report each morning the part of the road he will be on during the day.

Road Foremen of Engines

717. The Road Foreman of Engines reports to and receives his instructions from the Superintendent.

It is his duty to frequently ride upon the engines, instruct Enginemen and Firemen in regard to the proper performance of their duties and the economical use of fuel and stores; see that engines are in good working order and properly equipped; know the proper tonnage rating for each class of engines, and report whether more or less than this tonnage is given them; familiarize himself with the qualifications of Enginemen and Firemen, and report any violation of rules or neglect of duty which may come to his knowledge.

The Road Foreman of Engines must consult and advise with the Master Mechanic and Engine House Foreman respecting the condition and requirements of the engines, and with the Superintendent upon all matters relating to their economical and efficient operation.

Enginemen

718. The Engineman reports to and receives his instructions from the Road Foreman of Engines. He must obey the orders of the Train Master. He must obey the orders of Station Masters and Yard Masters as to shifting and making up trains, and those of Conductors as to starting, stopping and general management of trains, unless they endanger the safety of the train or require violation of rules. When at the engine house he is under the direction of the Engine House Foreman.

The Engineman must have a reliable watch, a copy of the Timetable and a full set of signals, examine the General Order board before each trip, and compare time with the Conductor of his train before starting.

He must report for duty at the appointed time; see that the engine is in good working order and furnished with the necessary supplies; give checks for fuel and stores received, and assist in shifting and making up the train.

He must exercise caution and good judgment in starting and stopping the train, and in moving and coupling cars, so as to avoid disturbance to passengers and injury to persons or property; keep a constant lookout on the track for signals and obstructions; acknowledge all signals except fixed signals; stop and inquire respecting any signal not understood, and report any neglect of duty observed; see that the front of the train is protected, when necessary; use every precaution against fire, and not permit burning waste, hot cinders or any other thing to be thrown or dropped from the engine; clean the ash pan or front end only at points specially designated; report the condition of the engine at the end of each trip, and assist in making repairs when called upon.

He must call the indication of signals to his Fireman.

He must show his train orders to his Fireman and also to the front Brakeman when practicable.

He must permit no unauthorized person to ride on the engine.

He must not leave the engine during the trip except in case of necessity, and must then leave the Fireman in charge.

Firemen

719. The Fireman reports to and receives his instructions from the Road Foreman of Engines. He must obey the orders of the Train Master, and when at the engine house he is under the direction of the Engine House Foreman. When with the engine the Fireman must obey the orders of the Engineman respecting the proper use of fuel and performance of his duties.

The Fireman must report for duty at the appointed time; assist in shifting and making up the train when required; assist the Engineman in keeping a lookout on the track for signals and obstructions; call the indication of signals to the Engineman; take charge of the engine during the absence of the Engineman, and assist in cleaning the engine after each trip, and in making repairs when required. He must not run an engine in the absence of the Engineman unless in some emergency he is directed to do so by the Conductor, or some one in authority. He must be familiar with the rules that apply to the protection of trains and the use of signals, which he must be prepared to use promptly.

He must protect the front of the train when necessary.

Master Mechanics

720. The Master Mechanic reports to and receives his instructions from the Superintendent. He must conform to the instructions of the Superintendent of Motive Power.

He is responsible for the proper and economical management of the shops, and for the discipline and proper discharge of the duties of the persons employed therein; for the economical use of fuel and stores, and for keeping the proper account of those supplied to engines and cars; and for engines and cars being in proper condition for service.

He must adhere to the authorized standards in construction or repairs, unless otherwise instructed; and must keep a daily record of the time made and rate of pay and earnings of workmen; and of the time employed, and quantity and cost of material used on each piece of work.

He must not permit work to be done in the shops at night or on Sunday, unless absolutely necessary; nor permit lights in the shops after working hours, except those required by the Watchmen on duty; he must not permit smoking in or about the shop buildings; he must not allow visitors in the shops without permits, nor allow them to converse or interfere with the workmen.

He must advise with the Road Foreman of Engines respecting the performance of engines while on the road, and see that they are maintained in condition to give the most efficient service.

Engine House Foremen

721. The Engine House Foreman reports to and receives his instructions from the Master Mechanic. He must obey the orders of the Road Foreman of Engines with regard to the assignment of engines and the disposition of Enginemen and Firemen.

The Engine House Foreman has charge of the engine house and the workmen employed therein. It is his duty to see that the engine house is kept clean and in good order; that the workmen perform their duties properly; that the supplies are economically used; that the engines are prepared for service promptly and are in good working order and properly equipped, and that they are inspected and cleaned at the end of each trip, and reported for repairs when necessary; and that Enginemen and Firemen are ready for duty at the required time.

Car Inspectors

722. The Car Inspector reports to and receives his instructions from the Master Mechanic and must obey the orders of the Station Master or Yard Master.

It is his duty to inspect all cars passing his station; make needed repairs, and send to the shop cars not fit for service.

He must see that cars in passenger trains are properly washed, equipped and warmed; that all the fixtures are clean and in good order and ready for use; and that the load on freight cars is properly placed and does not exceed the safe capacity nor the authorized quantity or dimensions.

When inspecting cars he must protect himself by placing a blue signal at the end of each car or train in accordance with the rules.

Master Carpenters

724. The Master Carpenter reports to and receives his instructions from the Engineer of Maintenance of Way.

He has charge of the repairs of bridges, buildings and other structures, and of the men employed in the maintenance thereof. He is in charge of the water stations and will be responsible for their operation.

He must be familiar with the use and meaning of signals, and see that they are understood and properly used by the persons employed under him.

When repairing bridges or other structures he must keep the main track safe for passage of trains, and, when necessary to obstruct it, see that full protection is provided in both directions.

He will arrange with the Supervisor for the distribution of material and for assistance he may require.

Signal Supervisors

725. The Signal Supervisor reports to and receives his instructions from the Engineer of Maintenance of Way.

He is responsible for the proper working of all interlocking apparatus and fixed signals.

He must make all repairs, but must not make any alterations without proper authority, nor permit any changes in interlocking apparatus or signals maintained by foreign companies without proper authority.

When, from any cause, an interlocking machine will be out of service for more than twenty-four hours, he must see that the semaphore arms are taken off and that no lights are displayed on the signals. He must see that all towers are provided with proper hand signals.

Supervisors

726. The Supervisor reports to and receives his instructions from the Engineer of Maintenance of Way.

He has charge of the track forces employed on his subdivision, and must see that they perform their duties properly, discipline them for neglect of duty, and keep account of and report their time in the manner prescribed. He is responsible for keeping the track, fences, roadbed, bridges, culverts, telegraph line and everything pertaining to the roadway in repair.

He must frequently pass over his subdivision; observe the condition of the track and bridges; see that the proper slopes and ditches are preserved, and that culverts and drains are kept open; note anything liable to obstruct the track, and have it removed; and do everything necessary to secure the safety of the road.

He must know that the persons under his charge understand and obey the rules and understand the use and meaning of signals; see that materials are safely kept and economically used; attend in person to the removal of slides, snow or other obstructions; in case of accident take the necessary force to the place, and use every effort to clear the road; have the standard time, and compare with each foreman once a week or oftener; give attention to the water supply, and report any defect or deficiency; keep an oversight of work performed by contractors or mechanics, and see that they do not endanger trains; and make careful inquiry and report fully in writing respecting any accident on his subdivision.

He must be familiar with the instructions issued for the government of trains and trainmen, and report any neglect of duty or violation of the rules that comes under his notice.

Track Foremen

727. The Track Foreman reports to and receives his instructions from the Supervisor.

He has charge of the repairs on his section, and is responsible for the safety of the track, bridges and culverts.

He must see that the track is in good line and surface, and properly spiked; that it is in true gage; that the cross-ties are properly spaced, lined and tamped; that the roadbed is in good order; that the proper slopes and ditches are preserved, and that there be no interference with the drainage.

He must engage in work personally, and see that watchmen and other workmen faithfully perform their duties; suspend them for neglect or misconduct, and report the same to the Supervisor.

He must compare time each day with the clock at the nearest telegraph office, or with the Conductor of a train; and must carefully observe signals displayed by trains.

He must watch points where obstructions are likely to occur; examine the slopes of cuts, and remove anything liable to fall or slide; remove combustible material from the vicinity of the track, bridges and buildings; extinguish fires that may occur along the road; watch the telegraph line and keep the poles and wires in proper position; report promptly any derangement of the wires and assist the Lineman when necessary; see that water stations are kept in order and report any failure in the water supply; see that fences are kept in repair; prevent any encroachment on the right of way and other grounds of the Company; render prompt assistance in case of accident, or delay to trains; and see that old material is gathered up, and that his section is kept in neat and proper condition.

He must not permit anything to be placed where it will endanger trains or employes, and during heavy storms he must detail all hands to watch the road and take every precaution to prevent accident.

Any work that interferes with the safe passage of trains at full speed is an obstruction and must not be attempted without full protection in both directions. If merely a reduction in speed is necessary, he must have Caution (yellow) signals placed at a sufficient distance from the obstruction and must have Proceed (green) signals placed just beyond the obstruction on the Engineman's side of the track. Where it is necessary for trains to come to a stop before reaching the obstruction, or where the Caution signals cannot be seen from the obstruction, he must send out Flagmen with Stop (red) signals a proper distance to insure full protection. He must report all failures of Enginemen to properly acknowledge these signals.

He must not permit his switch key to pass out of his possession, and must personally attend to the opening and closing of switches.

He must not run his hand car without at least one man facing in each direction, nor without full protection by signals when necessary. He must see that push cars, when used, are never so loaded as to prevent prompt removal on approach of a train, and that they are at all times properly protected by signals.

He must not permit hand or push cars to be attached to moving trains or to be run at night without a light, or at any time on other than Company business, or without his authority,

or on other than sidings or outside main tracks in the direction of traffic where practicable. He must see that they are so secured when not in use that they cannot be moved to endanger trains.

Track and Bridge Watchmen

728. Track and Bridge Watchmen report to and receive their instructions from the Track Foreman.

The Track Watchman must carefully examine the track, and see that it is in safe condition; that the switches are set and locked for the main track; that cars left on sidings fully clear the main track, and that the doors of loaded cars are secured. He must examine buildings and other property of the Company, and protect them from fire and other damage.

Should an obstruction to the track occur, the Watchman must at once display Stop signals in both directions and immediately send word, if possible, to the Track Foreman. Night Watchmen, before going off duty, must notify the Track Foreman of the trains due which have not passed, and of any other matters requiring attention.

The Bridge Watchman must keep a supply of water on the bridge and follow each train with a bucket of water to extinguish fire or hot cinders that may have fallen from the engine; keep the coping of the abutments and piers clean; remove combustible matter from near the bridge; frequently examine the timber and iron work of the bridge and report any decay or defect, and prevent all persons, except employes, from crossing the bridge.

The Watchman must observe the speed of passing trains and report any violation of the rules. When his time is not wholly occupied with watching, he will attend to such other duties as may be assigned him.

Captains of Police

729. The Captain of Police reports to and receives his instructions from the Superintendent, and must conform to the instructions of the Superintendent of Police.

He is responsible for the proper guarding against depredation, fire or trespass of the Company's property or that entrusted to its care, and shall have supervision of the men thus employed.

He shall, at the request of the Conductor, assist in maintaining order on trains, and shall maintain order at stations and in yards, and so far as possible protect the Company's patrons from annoyance by disorderly persons.

He has supervision over Crossing Watchmen and will see that they properly understand their duties and fulfill them.

The Lieutenant of Police will, in the particular duties or district assigned him, have the same authority as the Captain and will act for him in his absence as may be directed.

Crossing Watchmen

730. The Crossing Watchman reports to and receives his instructions from the Captain of Police.

He must exercise care to insure full protection at the crossing when trains are approaching.

He will use white signals at crossings to signal vehicles and pedestrians, and green signals at night on the crossing gates.

Red signals must be used only to stop trains.

He must keep his watch house clean and not permit unauthorized persons in or about the premises.

Where two or more Watchmen are employed during the day or night, there must always be one on duty. When both day and night Watchmen are employed they must not leave their posts until relieved by each other.

Ticket Receivers

731. The Ticket Receiver reports to and receives his instructions from the Superintendent and must conform to the instructions of the Passenger, Accounting and Treasury Departments.

He must see that Passenger Conductors are equipped with the necessary blank forms and supplies, and that they make the required reports. He is responsible for the preservation and display of the instructions to Conductors from the Passenger, Accounting and Treasury Departments, and must see that they are acknowledged and understood by them.

He must promptly report to the Superintendent all irregularities.

STANDARD RAILWAY RULES

As Recommended by The American Railway Association

General Notice

Safety is of the first importance in the discharge of duty.

Obedience to the rules is essential to safety.

To enter or remain in the service is an assurance of willingness to obey the rules.

The service demands the faithful, intelligent and courteous discharge of duty.

To obtain promotion capacity must be shown for greater responsibility.

General Rules

A. Employes whose duties are prescribed by these rules must provide themselves with a copy.

Employes whose duties are in any way affected by the time-table must have a copy of the current time-table with them while on duty.

B. Employes must be conversant with and obey the rules and special instructions. If in doubt as to their meaning they must apply to proper authority for an explanation.

C. Employes must pass the required examinations.

D. Persons employed in any service on trains are subject to the rules and special instructions.

E. Employes must render every assistance in their power in carrying out the rules and special instructions and must report to the proper official any violation thereof.

F. Accidents, detention of trains, failure in the supply of water or fuel, or defects in the track, bridges or signals, must be promptly reported by wire to the proper official.

G. The use of intoxicants by employes while on duty is prohibited. Their use, or the frequenting of places where they are sold, is sufficient cause for dismissal.

H. The use of tobacco by employees while on duty in or about passenger stations, or on passenger cars, is prohibited.

J. Employes on duty must wear the prescribed badge and uniform and be neat in appearance.

K. Employes and others authorized to transact business at stations or on or about trains must be orderly and avoid annoyance to patrons.

L. In case of danger to the Company's property employes must unite to protect it.

Definitions

ENGINE.—A locomotive propelled by any form of energy.

MOTOR.—A car propelled by any form of energy.

TRAIN.—An engine, or motor, or more than one engine, or motor, coupled, with or without cars, displaying markers.

REGULAR TRAIN.—A train authorized by a time-table schedule.

SECTION.—One of two or more trains running on the same schedule displaying signals or for which signals are displayed.

EXTRA TRAIN.—A train not authorized by a time-table schedule. It may be designated as—

Extra—for any extra train, except work extra;

Work extra—for work train extra.

SUPERIOR TRAIN.—A train having precedence over another train.

TRAIN OF SUPERIOR RIGHT.—A train given precedence by train order.

TRAIN OF SUPERIOR CLASS.—A train given precedence by time-table.

TRAIN OF SUPERIOR DIRECTION.—A train given precedence in the direction specified by time-table as between opposing trains of the same class.

TIME TABLE.—The authority for the movement of regular trains subject to the rules. It contains the classified schedules of trains with special instructions relating thereto.

SCHEDULE.—That part of a time-table which prescribes class, direction, number and movement for a regular train.

DIVISION.—That portion of a railroad assigned to the supervision of a _____.

SUBDIVISION.—A portion of a division designated by time-table.

MAIN TRACK.—A track extending through yards and between stations, upon which trains are operated by time-table or train order, or both, or the use of which is governed by block signals.

SINGLE TRACK.—A main track upon which trains are operated in both directions.

DOUBLE TRACK.—Two main tracks, upon one of which the current of traffic is in a specified direction, and upon the other in the opposite direction.

THREE OR MORE TRACKS.—Three or more main tracks, upon any of which the current of traffic may be in either specified direction.

CURRENT OF TRAFFIC.—The movement of trains on a main track, in one direction, specified by the rules.

STATION.—A place designated on the time-table by name, at which a train may stop for traffic; or to enter or leave the main track; or from which fixed signals are operated.

SIDING.—A track auxiliary to the main track for meeting or passing trains.

FIXED SIGNAL.—A signal of fixed location indicating a condition affecting the movement of a train.

YARD.—A system of tracks within defined limits provided for the making up of trains, storing of cars and other purposes, over which movements not authorized by time-table, or by train order, may be made, subject to prescribed signals and rules, or special instructions.

YARD ENGINE.—An engine assigned to yard service and working within yard limits.

PILOT.—An employe assigned to a train when the engineman or conductor, or both, are not fully acquainted with the physical characteristics or rules of the railroad, or portion of the railroad, over which the train is to be moved.

TRAIN REGISTER.—A book or form which may be used at designated stations for registering signals displayed, the time of arrival and departure of trains and such other information as may be prescribed.

Rules for Single and Double Track

NOTE.—In the following rules, those marked with "D" before the number, are applicable to double track.

Standard Time

1. Standard Time obtained from _____ observatory will be transmitted to all points from designated offices at _____ m. daily.

2. Watches that have been examined and certified to by a designated inspector must be used by conductors, enginemen and _____. The certificate in prescribed form must be renewed and filed with _____ every _____.

NOTE TO DEFINITION OF FIXED SIGNAL.—The definition of a "Fixed Signal" covers such signals as slow boards, stop boards, yard limits, switch, train order, block, interlocking, semaphore, disc, ball or other means for displaying indications that govern the movement of a train.

(Form of Certificate.)

CERTIFICATE OF WATCH INSPECTOR

This is to certify that on..... 19.....
 the watch of.....
 employed as.....
 on the..... R.....
 was examined by me. It is correct and reliable, and, with proper
 care, should run within a variation of thirty seconds per week.

Name of maker.....
 Grade

Number of movement.....
 Open or hunting case.....
 Metal of case.....

Signed,

Inspector.

Address

3. Watches of conductors, enginemen and _____ must
 be compared before commencing each day's work, with a clock
 designated by time-table as a standard clock. The time when
 watches are compared must be registered on a prescribed form.

Time-Tables

4. Each time-table, from the moment it takes effect, super-
 sedes the preceding time-table, and its schedules take effect on
 any division, or subdivision, at the leaving time at their initial
 stations on such division, or subdivision. But when a schedule
 of the preceding time-table corresponds in number, class, day
 of leaving, direction, and initial and terminal stations with a
 schedule of the new time-table, a train authorized by the pre-
 ceding time-table will retain its train orders and assume the
 schedule of the corresponding number of the new time-table.

Schedules on each division, or subdivision, date from their
 initial stations on such division, or subdivision.

Not more than one schedule of the same number and day
 shall be in effect on any division, or subdivision.

5. Not more than two times are given for a train at any
 station; where one is given, it is, unless otherwise indicated,
 the leaving time; where two, they are the arriving and the
 leaving time.

NOTE TO RULE 3.—The conditions under which conductors and engine-
 men whose duties preclude access to a standard clock are required to
 obtain standard time vary so much on different railroads that each com-
 pany should adopt such supplementary regulations to this rule as may
 best suit its own requirements.

The time applies to the switch where an inferior train enters the siding; where there is no siding it applies to the place from which fixed signals are operated; where there is neither siding nor fixed signal, it applies to the place where traffic is received or discharged.

Schedule meeting or passing stations are indicated by figures in full-faced type.

Both the arriving and leaving time of a train are in full-faced type when both are meeting or passing times, or when one or more trains are to meet or pass it between those times.

Where there are one or more trains to meet or pass a train between two times, or more than one train to meet a train at any station, attention is called to it by _____.

When trains are to be met or passed at a siding extending between two adjoining stations, the time at each end of the siding will be shown in full-faced type.

D-5. Not more than two times are given for a train at any station; where one is given, it is, unless otherwise indicated, the leaving time; where two, they are the arriving and the leaving time.

The time applies to the switch where an inferior train enters the siding; where there is no siding it applies to the place from which fixed signals are operated; where there is neither siding nor fixed signal, it applies to the place where traffic is received or discharged.

Schedule passing stations are indicated by figures in full-faced type.

Both the arriving and leaving time of a train are in full-faced type when both are passing times, or when one or more trains are to pass it between those times.

Where there are one or more trains to pass a train between two times, attention is called to it by _____.

When trains are to be passed at a siding extending between two adjoining stations, the time at each end of the siding will be shown in full-faced type.

6. The following signs when placed before the figures of the schedule indicate:

"s"—regular stop;

"f"—flag stop to receive or discharge passengers or freight;

"L"—leave;

"A"—arrive.

Signals

7. Employes whose duties may require them to give signals, must provide themselves with the proper appliances, keep them in good order and ready for immediate use.

8. Flags of the prescribed color must be used by day, and lights of the prescribed color by night.

9. Day signals must be displayed from sunrise to sunset, but when day signals cannot be plainly seen, night signals must be used in addition.

Night signals must be displayed from sunset to sunrise.

10.

Color Signals

COLOR.	INDICATION.
(a) Red.	Stop.
(b) ——.	Proceed with caution, and for other uses prescribed by the Rules.
(c) ——	Proceed, and for other uses prescribed by the Rules.
(d) Green and white.	Flag stop. See Rule 28.
(e) Blue.	See Rule 26.
(f) Purple.	Stop. (Night indication for dwarf signals.)

11. A train finding a fusee burning on or near its track must stop and extinguish the fusee, and then proceed with caution prepared to stop short of train or obstruction.

12.

Hand, Flag and Lamp Signals

MANNER OF USING.	INDICATION.
(a) Swung across the track.	Stop.
(b) Held horizontally at arm's length, when the train is moving.	Reduce speed.
(c) Raised and lowered vertically.	Proceed.
(d) Swung vertically in a circle at half-arm's length across the track when the train is standing.	Back.
(e) Swung vertically in a circle at arm's length across the track when the train is running.	Train has parted.
(f) Swung horizontally above the head when the train is standing.	Apply air brakes.
(g) Held at arm's length above the head when the train is standing.	Release air brakes.

13. Any object waved violently by any one on or near the track is a signal to stop.

14. Engine and Motor Whistle Signals

NOTE.—The signals prescribed are illustrated by “o” for short sounds; “—” for longer sounds. The sound of the whistle should be distinct, with intensity and duration proportionate to the distance signal is to be conveyed.

SOUND.	INDICATION.
(a) o	Apply brakes. Stop.
(b) — —	Release brakes. Proceed.
(c) — o o o	Flagman protect rear of train.
(d) — — — —	Flagman may return from west or south, as prescribed by Rule 99.
(e) — — — — —	Flagman may return from east or north, as prescribed by Rule 99.
(f) — — —	When running, train parted; to be repeated until answered by the signal prescribed by Rule 12 (e). Answer to 12 (e).
(g) o o	Answer to any signal not otherwise provided for.
(h) o o o	When train is standing back. Answer to 12 (d) and 16 (c). When train is running, answer to 16 (d).
(j) o o o o	Call for signals.
(k) — o o	To call the attention of yard engines, extra trains or trains of the same or inferior class or inferior right to signals displayed for a following section.
(l) — — o o	If not answered by a train, the train displaying signals must stop and ascertain the cause.
(m) — — —	Approaching public crossings at grade.
(n) — — o	Approaching stations, junctions, railroad crossings at grade and —.
(o) o —	Approaching meeting points. See Rule 90.
(p) Succession of short sounds.	Inspect train line for leak. Alarm for persons or live stock on the track.

D-14. (Same as rule 14 with (n) omitted.)

15. The explosion of two torpedoes is a signal to reduce speed and look out for a train ahead or obstruction. The explosion of one torpedo will indicate the same as two, but the use of two is required.

16.

Communicating Signals

NOTE.—The signals prescribed are illustrated by “o” for short sounds; “—” for longer sounds.

SOUND.	INDICATION.
(a) o o	When standing—start.
(b) o o	When running—stop at once.
(c) o o o	When standing—back the train.
(d) o o o	When running—stop at next passenger station.
(e) o o o o	When standing—apply or release air brakes.
(f) o o o o	When running—reduce speed.
(g) o o o o o	When standing—recall flagman.
(h) o o o o o	When running—increase speed.
(j) o o o o o	When running—increase train heat.
(k) —	When running—look back for hand signals.

17. The headlight will be displayed to the front of every train by night, but must be concealed when a train turns out to meet another and has stopped clear of main track, or is standing to meet trains at the end of double track or at junctions.

When an engine is running backward a white light must be displayed by night on the rear of the tender.

D-17. The headlight will be displayed to the front of every train by night, but must be concealed when a train is standing to meet trains at the end of double track or at junctions.

When an engine is running backward a white light must be displayed by night on the rear of the tender.

18. Yard engines will display the headlight to the front and rear by night. When not provided with a headlight at the rear, a white light must be displayed. Yard engines will not display markers.

19. The following signals will be displayed, one on each side of the rear of every train, as markers, to indicate the rear of the train: By day, green (or yellow) flags, or marker lamps (not lighted): By night, green (or yellow) lights to the front and side and red lights to the rear; except when the train is clear of the main track, when green (or yellow) lights must be displayed to the front, side and rear.

NOTE TO RULE 17.—Railroads which do not find it necessary to conceal headlights, as required in Rule 17, may omit that provision from the rule.

NOTE TO RULE D-17.—Railroads which do not find it necessary to conceal headlights, as required in Rule D-17, may omit that provision from the rule.

D-19. The following signals will be displayed, one on each side of the rear of every train, as markers, to indicate the rear of the train: By day, green (or yellow) flags, or marker lamps (not lighted): By night, green (or yellow) lights to the front and side and red lights to the rear; except when the train is clear of the main track, when green (or yellow) lights must be displayed to the front, side and rear, and except when a train is turned out against the current of traffic, when green (or yellow) lights must be displayed to the front and side, a green (or yellow) light to the rear on the side next to the main track on which the current of traffic is in the direction the train is moving, and a red light to the rear on the opposite side.

20. All sections except the last will display two green flags, and in addition, two green lights by night, in the places provided for that purpose on the front of the engine.

21. Extra trains will display two white flags and, in addition, two white lights by night, in the places provided for that purpose on the front of the engine.

22. When two or more engines are coupled, each engine shall display the signals as prescribed by Rules 20 and 21.

23. One flag or light displayed where in Rules 19, 20 and 21 two are prescribed will indicate the same as two; but the proper display of all train signals is required.

D-23. One flag or light displayed where in Rules 20 and 21 two are prescribed will indicate the same as two; but the proper display of all train signals is required.

24. When cars are pushed by an engine, except when shifting or making up trains in yards, a white light must be displayed on the front of the leading car by night.

25. Each car of a passenger train must be connected with the engine by a communicating signal appliance.

26. A blue signal, displayed at one or both ends of an engine, car or train, indicates that workmen are under or about it; when thus protected it must not be coupled to or moved. Workmen will display the blue signals and the same workmen are alone authorized to remove them. Other cars must not be placed on the same track so as to intercept the view of the blue signals, without first notifying the workmen.

NOTE.—Where railroads desire to discontinue the use of markers by day on passenger trains it is permissible to do so.

NOTE TO RULE 21.—Where conditions make it desirable railroads may omit Rule 21 on two or more tracks.

Use of Signals

27. A signal imperfectly displayed, or the absence of a signal at a place where a signal is usually shown, must be regarded as the most restrictive indication that can be given by that signal, and the fact reported to the _____. Conductors and enginemen using a switch where the switch light is imperfectly displayed or absent, must also, if practicable, correct or replace the light.

28. A green and white signal will be used to stop a train only at the flag stations indicated on its schedule. When it is necessary to stop a train at a point that is not a flag station on its schedule, a red signal must be used.

29. When a signal, except a fixed signal, is given to stop a train, it must, unless otherwise provided, be acknowledged as prescribed by Rule 14 (g) or (h).

30. The engine-bell must be rung when an engine is about to move and while approaching and passing public crossings at grade.

31. The whistle must be sounded at all places where required by rule or by law.

32. The unnecessary use of either the whistle or the bell is prohibited.

33. Watchmen stationed at highway crossings must use stop signals when necessary to stop trains. They will use _____ signals to stop highway traffic.

34. The engineman and fireman must, when practicable, communicate to each other by its name the indication of all signals affecting the movement of their train.

35. The following signals will be used by flagmen:

Day signals—A red flag,
Torpedoes and
Fusees.

Night signals—A red light,
A white light,
Torpedoes and
Fusees.

Superiority of Trains

71. A train is superior to another train by right, class or direction.

Right is conferred by train order; class and direction by time-table.

Right is superior to class or direction.

Direction is superior as between trains of the same class.

D-71. A train is superior to another train by right or class. Right is conferred by train order; class by time-table.

Right is superior to class.

72. Trains of the first class are superior to those of the second; trains of the second class are superior to those of the third; and so on.

Trains in the direction specified by the time-table are superior to trains of the same class in the opposite direction.

D-72. Trains of the first class are superior to those of the second; trains of the second class are superior to those of the third; and so on.

73. Extra trains are inferior to regular trains.

Movement of Trains

82. Time-table schedules, unless fulfilled, are in effect for twelve hours after their time at each station.

Regular trains more than twelve hours behind either their schedule arriving or leaving time at any station lose both right and schedule, and can thereafter proceed only as authorized by train order.

83. A train must not leave its initial station on any division, or subdivision, or a junction, or pass from double to single track, until it has been ascertained whether all trains due, which are superior, or of the same class, have arrived or left.

Stations at which train registers are located may be designated by time-table.

D-83. A train must not leave its initial station on any division, or subdivision, or a junction, until it has been ascertained whether all superior trains due have left.

Stations at which train registers are located may be designated by time-table.

84. A train must not start until the proper signal is given.

85. When a train of one schedule is on the time of another schedule of the same class in the same direction, it will proceed on its own schedule.

Trains of one schedule may pass trains of another schedule of the same class, and extra trains may pass and run ahead of — class trains and extra trains.

A section may pass and run ahead of another section of the same schedule, first exchanging train orders, signals and numbers with the section to be passed. The change in sections must be reported from the next available point of communication.

D-85. When a train of one schedule is on the time of another schedule of the same class it will proceed on its own schedule.

Trains of one schedule may pass trains of another schedule of the same class, and extra trains may pass and run ahead of — class trains and extra trains.

A section may pass and run ahead of another section of the same schedule, first exchanging train orders, signals and numbers with the section to be passed. The change in sections must be reported from the next available point of communication.

86. Unless otherwise provided, an inferior train must clear the time of a superior train, in the same direction, not less than five minutes; but must be clear at the time a first-class train, in the same direction, is due to leave the next station in the rear where time is shown.

D-86. Unless otherwise provided, an inferior train must clear the time of a superior train not less than five minutes; but must be clear at the time a first-class train in the same direction is due to leave the next station in the rear where time is shown.

Extra trains must clear the time of regular trains —— minutes unless otherwise provided.

87. An inferior train must keep out of the way of opposing superior trains and failing to clear the main track by the time required by rule must be protected as prescribed by Rule 99.

Extra trains must clear the time of opposing regular trains not less than five minutes unless otherwise provided, and will be governed by train orders with respect to opposing extra trains.

88. At meeting points between trains of the same class, the inferior train must clear the main track before the leaving time of the superior train.

At meeting points between extra trains, the train in the inferior time-table direction must take the siding unless otherwise provided.

Trains must pull into the siding when practicable; if necessary to back in, the train must first be protected as prescribed by Rule 99, unless otherwise provided.

89. At meeting points between trains of different classes the inferior train must take the siding and clear the superior train at least five minutes, and must pull into the siding when practicable. If necessary to back in, the train must first be protected as prescribed by Rule 99, unless otherwise provided.

NOTE TO RULE 89.—Where greater clearance is necessary, Rule 89 should require a clearance of TEN minutes.

90. Trains must stop at schedule meeting points, if the train to be met is of the same class unless the switch is right and the track clear.

When the expected train of the same class is not found at the schedule meeting point, the superior train must approach all sidings prepared to stop, until the expected train is met.

Trains must stop clear of the switch used by the train to be met in going on the siding.

The engineman will give signal 14 (n) at least one mile before reaching a schedule meeting point with a train of the same or superior class, or a point where by train order the train is to meet or wait for an opposing train. Should the engineman fail to give signal 14 (n) as herein prescribed, the conductor must take immediate action to stop the train.

91. Unless some form of block signals is used, trains in the same direction must keep at least five minutes apart, except in closing up at stations. A train following a train carrying passengers must keep at least ten minutes behind it.

D-91. Unless some form of block signals is used, trains must keep at least five minutes apart, except in closing up at stations. A train following a train carrying passengers must keep at least ten minutes behind it.

92. A train must not arrive at a station in advance of its schedule arriving time.

A train must not leave a station in advance of its schedule leaving time.

93. Within yard limits the main track may be used, protecting against _____ class trains.

_____ class and extra trains must move within yard limits prepared to stop unless the main track is seen or known to be clear.

D-93. Within yard limits the main tracks may be used, protecting against _____ class trains.

_____ class and extra trains must move within yard limits prepared to stop unless the main track is seen or known to be clear.

94. A train which overtakes another train so disabled that it cannot proceed will pass it, if practicable, and if necessary will assume the schedule and take the train orders of the disabled train, proceed to the next available point of communication, and there report to the _____. The disabled train will assume the right or schedule and take the train orders of the

last train with which it has exchanged, and will when able proceed to and report from the next available point of communication.

When a train, unable to proceed against the right or schedule of an opposing train, is overtaken between communicating stations by an inferior train or a train of the same class having right or schedule which permits it to proceed, the delayed train may, after proper understanding with the following train, precede it to the next available point of communication, where it must report to the _____. When opposing trains are met under these circumstances, it must be fully explained to them by the leading train that the expected train is following.

D-94. A train which overtakes a superior train, so disabled that it cannot proceed will pass it, if practicable, and if necessary will assume the schedule and take the train orders of the disabled train, proceed to the next available point of communication, and there report to the _____. The disabled train will assume the schedule and take the train orders of the last train with which it has exchanged, and will, when able, proceed to and report from the next available point of communication.

95. Two or more sections may be run on the same schedule.

Each section has equal time-table authority.

A train must not display signals for a following section, except as prescribed by Rule 85, without orders from the _____.

D-95. Two or more sections may be run on the same schedule.

Each section has equal time-table authority.

A train must not display signals for a following section, except as prescribed by Rule D-85, without orders from the _____.

96. When signals displayed for a section are taken down at any point before that section arrives, the conductor, if there be no other provision, will arrange in writing with the operator, or if there be no operator, with the switchtender, or in the absence of both, with a flagman left there for that purpose, to notify all opposing trains that the section for which signals were displayed has not arrived, and, in addition, the conductor must notify all opposing inferior trains, or trains of the same class, until the fact that the signals were carried has been registered at the next register station.

97. Extra trains must not be run without train orders.

D-97. Unless otherwise provided, extra trains must not be run without train orders.

Work extras must move with the current of traffic unless otherwise directed.

98. Trains must approach the end of double track, junctions, railroad crossings at grade, and drawbridges, with caution. Where required by rule or by law, trains must stop.

Trains using a siding must proceed with caution, expecting to find it occupied by other trains.

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fusees.

When signal 14 (d), or 14 (e), has been given to the flagman and safety to the train will permit, he may return. When the conditions require he will leave the torpedoes and a lighted fusee.

The front of the train must be protected in the same way when necessary by the _____.

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fusees must be thrown off at proper intervals.

When day signals cannot be plainly seen, owing to weather or other conditions, night signals must also be used.

Conductors and enginemen are responsible for the protection of their trains.

Flagman's signals:

Day signals—A red flag,
Torpedoes and
Fusees.

Night signals—A red light,
A white light,
Torpedoes and
Fusees.

100. When the flagman goes back to protect the rear of the train, the _____ must, in the case of passenger trains, and the next brakeman in the case of other trains, take his place on the train.

101. Trains must be fully protected against any known condition which interferes with their safe passage at normal speed.

When conditions are found which may interfere with the safe passage of trains at normal speed and no protection has been provided, such action must be taken as will insure safety.

102. If a train should part while in motion, trainmen must, if possible, prevent damage to the detached portions. The signals prescribed by Rules 12 (e) and 14 (f) must be given.

The detached portion must not be moved or passed until the front portion comes back.

D-102. If a train should part while in motion, trainmen must, if possible, prevent damage to the detached portions. The signals prescribed by Rules 12 (e) and 14 (f) must be given.

The detached portion must not be moved or passed until the front portion comes back.

The engineman and trainmen of the front portion must give the train-parted signal to trains running on the opposite track. A train receiving this signal or being otherwise notified that a train on the opposite track has parted, must immediately reduce speed and proceed with caution until the separated train is passed.

When a train is disabled so it may obstruct the opposite track, trains on that track must be stopped.

103. When cars are pushed by an engine, except when shifting or making up trains in yards, a trainman must take a conspicuous position on the front of the leading car.

104. Switches must be left in proper position after having been used. Conductors are responsible for the position of the switches used by them and their trainmen, except where switch-tenders are stationed, but, when practicable, the engineman must see that the switches nearest the engine are properly set.

A switch must not be left open for a following train unless in charge of a trainman of such train.

105. Both the conductor and the engineman are responsible for the safety of the train and the observance of the rules, and, under conditions not provided for by the rules, must take every precaution for protection.

106. Trains must use caution in passing a train receiving or discharging passengers at a station, and, except where proper safeguards are provided or the movement is otherwise protected, must not pass between it and the platform at which the passengers are being received or discharged.

107. In case of doubt or uncertainty the safe course must be taken.

D-151. Trains must keep to the ——, unless otherwise provided.

D-152. When a train crosses over to, or obstructs the other track, unless otherwise provided it must first be protected as prescribed by Rule 99 in both directions on that track.

Rules for Movement by Train Orders

201. For movements not provided for by time-table, train orders will be issued by authority and over the signature of the _____. They must contain neither information nor instructions not essential to such movements.

They must be brief and clear; in the prescribed forms when applicable; and without erasure, alteration or interlineation.

Figures in train orders must not be surrounded by brackets, circles or other characters.

202. Each train order must be given in the same words to all employes or trains addressed.

203. Train orders must be numbered consecutively each day, beginning at midnight.

204. Train orders must be addressed to those who are to execute them, naming the place at which each is to receive his copy. Those for a train must be addressed to the conductor and engineman, and also to any one who acts as its pilot. A copy for each employe addressed must be supplied by the operator.

Orders addressed to operators restricting the movement of trains must be respected by conductors and enginemens the same as if addressed to them.

205. Each train order must be written in full in a book provided for the purpose at the office of the _____; and with it recorded the names of those who have signed for the order; the time and the signals which show when and from what offices the order was repeated and the responses transmitted; and the train dispatcher's initials. These records must be made at once, and never from memory or memoranda.

206. In train orders regular trains will be designated as "No. 10," and sections as "Second 10," adding engine numbers if desired. Extra trains will be designated by engine numbers, and the direction as "Extra 798, 'East' or 'West.' "

In transmitting train orders by telegraph, time may be stated in figures only or duplicated in words.

In transmitting train orders by telephone the names of stations must be plainly pronounced, and then spelled, letter by letter, thus: Aurora, A-u-r-o-r-a; all numerals must first be pro-

nounced, and then followed by spelling, thus: 1-0-5, O-n-e N-a-u-g-h-t F-i-v-e; the train dispatcher must write the order as he transmits it and underscore it as it is being repeated. The letters duplicating names of stations and numerals will not be written in the order book nor upon train orders.

Even hours must not be used in stating time of day in train orders, such as 10 00 a. m.

207. To transmit a train order, the signal "31" or the signal "19" followed by the direction must be given to each office addressed, the number of copies being stated, if more or less than three—thus, "31 West, copy 5," or "19 East, copy 2."

208. A train order to be sent to two or more offices must be transmitted simultaneously to as many of them as practicable. When not sent simultaneously to all, the order must be sent first to the superior train.

The several addresses must be in the order of superiority of trains, each office taking its proper address, and when practicable must include the operator at the meeting or waiting point.

Copies of the order addressed to the operator at the meeting or waiting point must be delivered to the trains affected until all have arrived from one direction.

A train order must not be sent to a superior train at the meeting point if it can be avoided. When an order is so sent, the fact will be stated in the order and special precautions must be taken to insure safety.

D-208. A train order to be sent to two or more offices must be transmitted simultaneously to as many of them as practicable. When not sent simultaneously to all, the order must be sent first to the superior train.

The several addresses must be in the order of superiority of trains, each office taking its proper address.

209. Operators receiving train orders must write them in manifold during transmission. If they cannot at one writing make the requisite number of copies, they must make others from one of the copies previously made, and repeat to the train dispatcher from the new copies each time additional copies are made. They must retain a copy of each train order.

NOTE TO RULE 207.—Where forms "31" and "19" are not both in use the signal may be omitted.

210. When a "31" train order has been transmitted, operators must, unless otherwise directed, repeat it at once from the manifold copy in the succession in which the several offices have been addressed, and then write the time of repetition on the order. Each operator receiving the order should observe whether the others repeat correctly.

Those to whom the order is addressed, except enginemen, must then sign it, and the operator will send their signatures preceded by the number of the order to the _____. The response "complete," and the time, with the initials of the _____, will then be given by the train dispatcher. Each operator receiving this response will then write on each copy the word "complete," the time, and his last name in full, and then deliver a copy to each person addressed, except enginemen. The copy for each engineman must be delivered to him personally by _____.

Enginemen must show train orders to firemen and when practicable to forward trainmen. Conductors must show train orders when practicable to trainmen.

211. When a "19" train order has been transmitted, operators must, unless otherwise directed, repeat it at once from the manifold copy, in the succession in which the several offices have been addressed. Each operator receiving the order should observe whether the others repeat correctly. When the order has been repeated correctly by an operator, the response "complete," and the time, with the initials of the _____, will be given by the train dispatcher. The operator receiving this response will then write on each copy the word "complete," the time, and his last name in full, and personally deliver a copy to each person addressed without taking his signature. But when delivery to enginemen will take the operator from the immediate vicinity of his office, the engineman's copy will be delivered by _____.

When a "19" train order restricting the superiority of a train is issued for it at the point where such superiority is restricted, the train must be brought to a stop before delivery of the order.

Enginemen must show train orders to firemen and when practicable to forward trainmen. Conductors must show train orders when practicable to trainmen.

NOTE TO RULE 210.—On railroads where the signature of the engineman is desired, the words, "except enginemen," and the last sentence in the second paragraph may be omitted. If preferred, each person receiving an order may be required to read it aloud to the operator.

212. When so directed by the train dispatcher, a train order may be acknowledged before repeating, by the operator responding: "X; Number of Train Order to Train Number," with the operator's initials and office signal. The operator must then write on the order his initials and the time.

213. "Complete" must not be given to a train order for delivery to an inferior train until the order has been repeated or the "X" response sent by the operator who receives the order for the superior train.

214. When a train order has been repeated or "X" response sent, and before "complete" has been given, the order must be treated as a holding order for the train addressed, but must not be otherwise acted on until "complete" has been given.

If the line fail before an office has repeated an order or has sent the "X" response, the order at that office is of no effect and must be there treated as if it had not been sent.

215. Eliminated.

216. For train orders delivered by the train dispatcher the requirements as to the record and delivery are the same as at other offices.

217. A train order to be delivered to a train at a point not a train order office, or at one at which the office is closed, must be addressed to

"C. and E. _____ at _____, care of _____," and forwarded and delivered by the conductor or other person in whose care it is addressed. When form 31 is used "complete" will be given upon the signature of the person by whom the order is to be delivered, who must be supplied with copies for the conductor and engineman addressed, and a copy upon which he shall take their signatures. This copy he must deliver to the first operator accessible, who must preserve it, and at once transmit the signatures of the conductor and engineman to the train dispatcher.

Orders so delivered must be acted on as if "complete" had been given in the usual way.

For orders which are sent, in the manner herein provided, to a train, the superiority of which is thereby restricted, "complete" must not be given to an inferior train until the signatures of the conductor and engineman of the superior train have been sent to the _____.

218. When a train is named in a train order by its schedule number alone, all sections of that schedule are included, and each must have copies delivered to it.

219. An operator must not repeat or give the "X" response to a train order for a train which has been cleared or of which the engine has passed his train-order signal until he has obtained the signatures of the conductor and engineman to the order.

220. Train orders once in effect continue so until fulfilled, superseded or annulled. Any part of an order specifying a particular movement may be either superseded or annulled.

Orders held by or issued for or any part of an order relating to a regular train become void when such train loses both right and schedule as prescribed by Rules 4 and 82, or is annulled.

When a conductor or engineman, or both, is relieved before the completion of a trip, all train orders and instructions held must be delivered to the relieving conductor or engineman. Such orders or instructions must be compared by the conductor and engineman before proceeding.

221 (A). A fixed signal must be used at each train-order office, which shall indicate "stop" when there is an operator on duty, except when changed to "proceed" to allow a train to pass after getting train orders, or for which there are no orders. A train must not pass the signal while "stop" is indicated. The signal must be returned to "stop" as soon as a train has passed. It must be fastened at "proceed" only when no operator is on duty.

Operators must have the proper appliances for hand signaling ready for immediate use if the fixed signal should fail to work properly. If a signal is not displayed at a night office, trains which have not been notified must stop and ascertain the cause, and report the facts to the —— from the next available point of communication.

Where the semaphore is used, the arm indicates "stop" when horizontal and "proceed" when in a vertical or diagonal* position.

221 (B). A fixed signal must be used at each train-order office, which shall indicate "stop" when trains are to be stopped for train orders. When there are no orders the signal must indicate "proceed."

When an operator receives the signal "31," or "19," followed by the direction, he must immediately display the "stop

NOTE TO RULE 221 (A).—The conditions which affect trains at stations vary so much that it is recommended each railroad adopt such regulations supplementary to this rule as may best suit its own requirements.

*Angle above or below the horizontal.

signal" for the direction indicated and then reply "stop displayed," adding the direction; and until the orders have been delivered or annulled the signal must not be restored to "proceed." While "stop" is indicated trains must not proceed without a clearance card (Form——(A)).

Operators must have the proper appliances for hand signalling ready for immediate use, if the fixed signal should fail to work properly. If a signal is not displayed at a night office, trains which have not been notified must stop and ascertain the cause, and report the facts to the —— from the next available point of communication.

Where the semaphore is used, the arm indicates "stop" when horizontal and "proceed" when in a vertical or diagonal position.

222. Operators must promptly record and report to the — the time of departure of all trains and the direction of extra trains. They must record the time of arrival of trains and report it when so directed.

223. The following signals and abbreviations may be used:

Initials for signature of the ——.

Such office and other signals as are arranged by the ——.

C & E—for Conductor and Engineman.

C & M—for Conductor and Motorman.

X—Train will be held until train order is made "complete."

Com—for Complete.

O S—Train Report.

No—for Number.

Eng—for Engine.

Sec—for Section.

Psgn—for Passenger.

Frt—for Freight.

Mins—for Minutes.

Jet—for Junction.

Dispr—for Train Dispatcher.

Opr—for Operator.

31 or 19—to clear the line for Train Orders, and for Operators to ask for Train Orders.

S D—for "Stop Displayed."

The usual abbreviations for the names of the months and stations.

NOTE TO RULES 221 (A) and 221 (B).—The Committee has recommended two forms of Rule 221, leaving it discretionary to adopt one or both of these forms according to the circumstances of the traffic.

FORMS OF TRAIN ORDERS

NOTE.—In the following forms those marked "D," such as D-H, are applicable to double track.

A**Fixing Meeting Points for Opposing Trains**

- (1.) *No 1 meet No 2 at B.
No 3 meet Second 4 at B.
No 5 meet Extra 95 east at B.
Extra 652 north meet Extra 231 south at B.*
-
- (2.) *No 2 and Second 4 meet Nos 1 and 3 at C and Extra 95 west at D (and so on).
No 1 meet No 2 at B Second 4 at C and Extra 95 east at D.*
-

Trains receiving these orders will run with respect to each other to the designated points and there meet in the manner prescribed by the Rules.

B**Directing a Train to Pass or Run Ahead of Another Train**

- (1.) *No 1 pass No 3 at K.*
Both trains will run according to rule to the designated point and there arrange for the rear train to pass promptly.
-
- (2.) *No 6 pass No 4 when overtaken.*
Both trains will run according to rule until the second-named train is overtaken and then arrange for the rear train to pass promptly.
-
- (3.) *Extra 594 east run ahead of No 6 M to B.*
The first-named train will run ahead of the second-named train between the points designated.
-
- (4.) *Extra 95 west run ahead of No 3 B until overtaken.*
The first-named train will run ahead of the second-named train from the designated point until overtaken, and then arrange for the rear train to pass promptly.

(5.) *No 1 pass No 3 at K and run ahead of No 7 M to Z.*

When an inferior train receives an order to pass a superior train, right is conferred to run ahead of the train passed from the designated point. Unless some form of block signals is used, the following train will run with caution, looking out for the designated train ahead until the order is fulfilled.

C

Giving Right Over an Opposing Train

(1.) *No 1 has right over No 2 G to X.*

If the second-named train reaches the point last named before the other arrives, it may proceed, keeping clear of the opposing train as many minutes as such train was before required to clear it under the rules. If the first-named train is met between the designated points, the conductor of the second-named train must inform it of his arrival.

(2.) *Extra 37 east has right over No 3 F to A.*

The regular train must not go beyond the point last named until the extra train has arrived, unless directed by train order to do so.

These orders give right to the train first named over the other train between the points named. If the trains meet at either of the designated points, the first-named train must take the siding, unless the order otherwise prescribes.

D

Giving Regular Trains the Right Over a Given Train

Omitted. (Not used.)

E

Time Orders

(1.) *No 1 run 50 mins late A to G.*

This makes the schedule time of the train named, between the stations mentioned, as much later as stated in the order, and any other train receiving the order is required to run with respect to this later time, as before required to run with respect to the regular schedule time. The time in the order should be such as can be easily added to the schedule time.

- (2.) *No 1 run 50 mins late A to G and 20 mins late G to K, etc.*

This makes the schedule time of the train named, between the stations mentioned, as much later as stated in the order, and any other train receiving the order is required to run with respect to this later time as before required to run with respect to the regular schedule time. The time in the order should be such as can be easily added to the schedule time.

- (3.) *No 1 wait at H until 9 59 a m for No 2.*

The train first named must not pass the designated point before the time given, unless the other train has arrived. The train last named is required to run with respect to the time specified, at the designated point or any intermediate station where schedule time is earlier than the time specified in the order, as before required to run with respect to the schedule time of the train first named.

- (4.) *Nos 1 and 3 wait at N until 9 59 a m*

P until 10 30 a m

R until 10 55 a m etc.

The train, or trains, named must not pass the designated points before the times given. Other trans receiving the order are required to run with respect to the time specified at the designated points or any intermediate station where schedule time is earlier than the time specified in the order as before required to run with respect to the schedule time of the train, or trains, named.

D-E

Time Orders

- (1.) *No 1 run 50 mins late A to G.*

This makes the schedule time of the train named, between the stations mentioned, as much later as stated in the order, and any other train receiving the order is required to run with respect to this later time, as before required to run with respect to the regular schedule time. The time in the order should be such as can be easily added to the schedule time.

- (2.) *No 1 run 50 mins late A to G and 20 mins late G to K, etc.*

This makes the schedule time of the train named, between the stations mentioned, as much later as stated in the order, and any other train receiving the order is required to run with respect to this later time, as before required to run with respect to the regular schedule time. The time in the order should be such as can be easily added to the schedule time.

-
- (3.) *Nos 1 and 3 wait at N until 9 59 a m*

P until 10 30 a m

R until 10 55 a m etc.

The train, or trains, named must not pass the designated points before the times given. Other trains receiving the order are required to run with respect to the time specified at the designated points or any intermediate station where schedule time is earlier than the time specified in the order as before required to run with respect to the schedule time of train, or trains, named.

F

For Sections

- (1.) *Eng 20 display signals and run as First 1 A to Z.*

To be used when the number of the engine for which signals are displayed is unknown, and is to be followed by (2), both being single-order examples.

-
- (2.) *Eng 25 run as Second 1 A to Z.*
-

- (3.) *No 1 display signals A to G for Eng 65.*

Second 1 display signals B to E for Eng 99.

-
- (4.) *Engs 20 25 and 99 run as First Second and Third 1 A to Z.*
-

To add an intermediate section, (5) will be used.

- (5.) *Eng 85 display signals and run as Second 1 A to Z.*
Following sections change numbers accordingly.

The engine named will display signals and run as directed, and following sections will take the next higher number.

To drop an intermediate section, (6) will be used.

(6.) *Eng 85* is withdrawn as *Second 1* at *H*. Following sections change numbers accordingly.

The engine named will drop out at *H*, and following sections will take the next lower number.

To substitute one engine for another on a section, (7) will be used.

(7.) *Eng 18* instead of *Eng 85* display signals and run as *Second 1 R* to *Z*.

The second-named engine will drop out at *R*, and be replaced by the first-named engine.

If the second-named engine is the last section, the words "display signals and" will be omitted. Following sections need not be addressed.

To discontinue the display of signals, (8) will be used.

(8.) *Second 1* take down signals at *D*.

The train named will take down signals as directed, and a following section must not proceed beyond the designated point.

To pass one section by another, (9) will be used.

(9.) *Engs 99 and 25* reverse positions as *Second* and *Third 1 H* to *Z*.

Conductors and enginemen of the trains addressed will exchange orders and signals. Following sections, if any, need not be addressed.

Each section affected by these orders must have copies, and must arrange signals accordingly.

To annul a section for which signals have been displayed over a division, or any part thereof, when no train is to follow the signals, Form K must be used.

When sections are run to an intermediate point of a schedule, the train orders must specify which section or sections shall assume the schedule beyond such point.

G**Extra Trains**

(1.) *Eng 99 run extra A to F.*

(2.) *Eng 99 run extra A to F and return to C.*

The extra must go to F before returning to C.

H**Work Extra**

(1.) *Eng 292 works extra 6 45 a m until 5 45 p m between D and E.*

The work extra must, whether standing or moving, protect itself against extras within the working limits in both directions as prescribed by the rules. The time of regular trains must be cleared.

This may be modified by adding:

(2.) *Not protecting against eastward extra trains.*

The work extra will protect only against westward extra trains. The time of regular trains must be cleared.

(3.) *Not protecting against extra trains.*

Protection against extra trains is not required. The time of regular trains must be cleared.

When a work extra has been instructed by order to not protect against extra trains, and, afterward, it is desired to have it clear the track for, or protect itself after a certain hour against, a designated extra, an order may be given in the following form:

(4.) *Work Extra 292 clears, or protects against, Extra 76 east between D and E after 2 10 p m.*

Extra 76 east must not enter the working limits before 2:10 p. m., and will then run expecting to find the work extra clear of the main track, or protecting itself, as the order may require.

To enable a work extra to work upon the time of a regular train, the following form will be used:

- (5.) *Work extra 292 protects against No 55, or _____ class trains, between D and E.*

The work extra may work upon the time of the train or trains mentioned in the order, and must protect itself against such train or trains. The regular train or trains receiving the order will run expecting to find the work extra protecting itself.

When a work extra is to be given exclusive right over all trains the following form will be used:

- (6.) *Work Extra 292 has right over all trains between D and E 7 15 p m until 1 15 a m.*

This gives the work extra the exclusive right between the points designated between the times named.

Work extras must give way to all trains as promptly as practicable.

Whenever extra trains are run over working limits, they must be given a copy of the order sent to the work extra. Should the working order instruct a work extra to not protect against extra trains in one or both directions, extra trains must protect against the work extras; if the order indicates that the work extra is protecting itself against other trains, they will run expecting to find the work extra protecting itself.

The working limits should be as short as practicable; to be changed as the progress of the work may require.

D-H

Work Extra

- (1.) *Eng 292 works extra on eastward track, or both tracks, 6 45 a m until 5 45 p m between D and E.*

The work extra must, whether standing or moving, protect itself within the working limits against extras moving with the current of traffic on the track or tracks named. The time of regular trains must be cleared.

—
This form may be modified by adding:

- (2.) *Not protecting against extra trains.*

Protection against extra trains is not required. The time of regular trains must be cleared.

To enable a work extra to work upon the time of a regular train, the following form may be used:

- (3.) *Work Extra 292 protects against No 55, or —— class trains, between D and E.*

The work extra may work upon the time of the train or trains mentioned in the order and must protect against such train or trains.

The regular train or trains receiving the order will run expecting to find the work extra protecting itself.

When it is desired to move a train against the current of traffic over the working limits, provision must be made for the protection of such movement.

When a work extra is to be given exclusive right over all trains, the following form will be used:

- (4.) *Work Extra 292 has right over all trains on eastward and westward tracks between G and H 7 01 p m until 1 01 a m.*

This gives the work extra the exclusive right to the track, or tracks, mentioned between the points designated between the times named.

Work extras must give way to all trains as promptly as practicable.

The working limits should be as short as practicable; to be changed as the progress of the work may require.

J

Holding Order

Hold No 2.

Hold all, or eastward, trains.

When a train has been so held it must not proceed until the order to hold is annulled, or an order given to the operator in the form:

— may go.

These orders will be addressed to the operator and acknowledged in the usual manner, and will be delivered to conductors and enginemen of all trains affected.

Form J will be used only when necessary to hold trains until orders can be given, or in case of emergency.

K**Annulling a Schedule or a Section**

No 1 due to leave A Feb 29th is annulled *A to Z.*

Second 5 due to leave E Feb 29th is annulled *E to G.*

The schedule or section annulled becomes void between the points named and cannot be restored.

L**Annulling an Order**

Order *No 10* is annulled.

If an order which is to be annulled has not been delivered to a train, the annulling order will be addressed to the operator, who will destroy all copies of the order annulled but his own, and write on that:

Annulled by Order No _____.

An order which has been annulled must not be reissued under its original number.

M**Annulling Part of an Order**

That part of Order *No 10* reading *No 1 meet No 2 at S* is annulled.

That part of Order *No 12* reading *No 3 pass No 1 at S* is annulled.

D-M**Annulling Part of an Order**

That part of Order *No 10* reading *Extra 263 west pass No 1 at S* is annulled.

That part of Order *No 12* reading *No 3 pass No 1 at S* is annulled.

P**Superseding an Order or a Part of an Order**

This order will be given by adding to prescribed forms the words "instead of _____."

(1.) *No 1 meet No 2 at C instead of B.*

(2.) *No 3 pass No 1 at D instead of C.*

(3.) *No 1 has right over No 2 G to R instead of X.*

(4.) *No 1 display signals for Eng 85 A to Z instead of G.*

An order which has been superseded must not be reissued under its original number.

When a train is directed by train order to take siding for another train, such instructions apply only at the point named in that order, and do not apply to the superseding order unless so specified.

D-P

Superseding an Order or a Part of an Order

This order will be given by adding to prescribed forms, the words "instead of _____,"

(1.) *No 1 pass No 3 at C instead of B.*

(2.) *No 1 display signals for Eng 85 A to Z instead of G.*

An order which has been superseded must not be reissued under its original number.

D-R

Providing for a Movement Against the Current of Traffic

(1.) *No 1 has right over opposing trains on No 2, or eastward, track C to F.*

The designated train must use the track specified between the points named and has right over opposing trains on that track between those points. Opposing trains must not leave the point last named until the designated train arrives.

An inferior train between the points named moving with the current of traffic in the same direction as the designated train must receive the copy of the order, and may then proceed on its schedule, or right.

This order may be modified as follows:

(2.) *After No 4 arrives at C No 1 has right over opposing trains on No 2, or eastward, track C to F.*

The train to be moved against the current of traffic must not leave the first-named point until the arrival of the first-named train.

A train must not be moved against the current of traffic until the track on which it is to run has been cleared of opposing trains.

D-S

Providing for the Use of a Section of Double Track as Single Track

No 1, or westward, track will be used as single track between *F* and *G*.

If it is desired to limit the time for such use, add *from 1 01 p m to 3 01 p m.*

All trains must use the track specified between the stations named and will be governed by rules for single track.

Trains running against the current of traffic on the track named must be clear of the track at the expiration of the time named, or protected as prescribed by Rule 99.

TRAIN ORDERS

Double Order System

Train orders are sent in two forms, "19" and "31."

"19" orders are frequently called "assisting orders." They are used quite extensively in notifying trains of defective places in the track, and of sidings being blocked with cars preventing trains from using them as passing sidings, etc. They are delivered by the operator handing them to the engineman and conductor by means of a hoop as the train passes, without stopping, thereby permitting the train to employ the time in running which would have been lost had they stopped and signed for a "31" order.

"31" orders are delivered after the train has stopped and they have been signed by the conductor or engineman or both.

In issuing an order both forms may be used to different offices and trains in the same order as in the following example order No. 2, it being issued to No. 9 at K S (Warsaw) as a "31" order because No. 9 is a superior train, and it is therefore absolutely necessary for No. 9 to have the order to allow the inferior trains, 2nd and 3rd Nos. 72 and Exa 7421 East to

act upon it. It will be appreciated by this statement that no trouble would arise if either of the inferior trains failed to get the order, while if No. 9 should fail to receive its copies a serious disaster might result.

Order No 1.

"31" To c & e 12 S X.
"31" To c & e 9 K S.

No 12 Eng 7048 will meet No 9 Eng 7228 at Bourbon instead of Inwood.

C. D. L.

We assume in this order that Inwood is the regular meeting point for these trains, but owing to No 9 being behind time, they will meet at Bourbon on the date of this order.

Order No 2.

"31" To c & e 9 K S.
"19" To c & e 2nd & 3rd 72 P.
"19" To c & e Exa 7421 East HA.

No 9 Eng 7228 will wait at Bourbon until six ten 610 P M at Inwood until six twenty 620 P M for 2nd & 3rd No 72 Engs 7334 & 7429 and Exa 7421 East.

C. D. L.

In this order the three inferior trains, 2nd & 3rd No 72, and extra east engine 7421, are given a privilege, not granted on the time schedule, to run to either of these stations within a stated time as against a superior train.

Order No 3.

"31" To c & e 4th 72 V.
"31" To c & e 95 K A.

No 95 Eng 7219 has right over 4th No 72 Eng 7273 Hanna to Winslow.

C. D. L.

In this order No. 95, the inferior train, becomes the superior one between the points designated.

Order No 4.

"31" To c & e 22 V.
"19" To c & e 94 & 1st 75 K A.
"19" To c & e 2nd 75 & 77 P.
"19" To c & e Exa 7331 West H N.

No 22 Eng 7307 will run one 1 hour and five 5 mins late Valparaiso to Hamlet Xng and fifty-five 55 mins late Hamlet Xng to Bourbon.

C. D. L.

In this order, inferior trains, to which this order has been addressed, may add one hour and five minutes between Valparaiso and Hamlet Crossing, and fifty-five minutes between Hamlet Crossing and Bourbon, to the schedule time of No 22 and employ this additional time in running to other than regular meeting points to meet No 22.

Order No 5 (a).

"19" To c & e 93 S X.

"19" To c & e all frts west P.

No 66 due to leave Valparaiso Saturday May 20th is annulled between Valparaiso and Warsaw.

C. D. L.

Order No 5 (b).

"19" To c & e 93 S X.

"19" To c & e all frts west P.

No 66 due to leave Valparaiso this date Saturday May 20th is abandoned.

C. D. L.

This order would be addressed to trains inferior to No. 66. Either form (a) or (b) will explain its meaning.

Order No 6.

"31" To c & e 3rd & 4th 76 V.

Engs 7217 and 7393 will reverse positions as 3rd & 4th No 76 Hanna to East Yard.

C. D. L.

In this order, the former third section becomes the fourth section, and the former fourth section becomes the third section east of Hanna.

Order No 7.

"31" To c & e Eng 7077 V.

Eng 7077 will run extra Valparaiso to Davis.

C. D. L.

This order permits engine 7077 to run as an extra between the points named, keeping out of the way of all regular trains.

Order No 8.

"31" To c & e 4th 72 W S.

"31" To c & e 95 S X.

Order number three 3 is annulled. No 95 Eng 7219 will side track and wait at Wanatah for 4th No. 72 Eng 7273.

C. D. L.

This order countermands the unused portion of order number three, and requires No 95 to side track and wait at Wanatah for fourth No 72.

Order No 9.

"19" To c & e all frts and Exas East V.

"19" To c & e all frts West P.

The bumping post at east end of Wanatah coal track has been pushed out of place. Trainmen should be careful in taking out cars.

C. D. L.

This order is issued to trains likely to use the track referred to.

Notes

Train despatchers in transmitting train orders will give the order number, the different addresses, the body, and the superintendent's initials.

Operators in repeating "31" train orders will give form number, their office call, the order number, the train or trains addressed, period, the body of the order, the superintendent's initials, the conductor's and engineer's signatures, and their own initials.

Operators in repeating "19" train orders will give form number, their office call, the order number, the train or trains addressed, period, the body of the order, the superintendent's initials, and their own initials or name.

Operators in acknowledging a train order will give form number, their office call, the order number, the train or trains addressed, the letter "X", and their initials.

No order can be delivered until a "complete," given by the train despatcher, has been received for it.

NORTHWESTERN INDIANA RAILWAY COMPANY

FORM—A

CLEARANCE CARD

Dover	9 15 A M	January 1 19 21	
Conductor and Engineman	No. 12		
I have	3	No further	orders for your train.
Stop signal is displayed		For Extra 452	
*Block	Clear		
		John Jones	Operator.

**This does not affect any orders you may have received.*

Conductor and Engineman must each have a copy, and see that their train is correctly designated in the above form.

***Where Clearance Card, Form A, is used when the block is not clear, the line giving block indication will be left blank, and Permissive Card, Form C, used in addition to Form A.**

Standard Train Order Blank for 19 OrderFORM
19FORM
19**NORTHWESTERN INDIANA RAILWAY COMPANY**TRAIN ORDER NO. 10

To _____ At _____

X Initials Opr., 145 A M

Conductor and Engineman must each have a copy of this order.

Made Complete time 2 16 A M Black Opr.

Standard Train Order Blank for 31 Order

FORM
31FORM
31**NORTHWESTERN INDIANA RAILWAY COMPANY**TRAIN ORDER NO. 10

To _____ At _____

X Initials Opr., 1 45 A M

Conductor and Engineman must each have a copy of this order.

Repeated at 2 20 A M,

Conductor	Engineman	Train	Made	Time	Opr.
Jones	Brown	45	Complete	2:20 AM	Black
(Omit					
this column					
where					
Engineman					
is not					
required					
to sign)					

Rules Governing the Movement of Trains With the Current of Traffic on Two or More Tracks by Block Signals

D-251. On portions of the road so specified on the time-table, trains will run with the current of traffic by block signals whose indications will supersede time-table superiority.

D-252. The movement of trains will be supervised by the _____ who will issue instructions to signalmen when required.

D-253. A train having work to do which may detain it more than _____ minutes, must obtain permission from the signalman at the last station at which there is a siding before entering the block in which work is to be done. The signalman must obtain authority to give this permission from the _____.

D-254. Except as affected by Rules D-251 to D-253, all Block Signal Rules and Train Rules remain in force.

Rules Governing the Movement of Trains Against the Current of Traffic on Two or More Tracks by Block Signals

NOTE.—Railroads operating under these Rules must provide proper signals to control the approach and movement of trains.

D-261. On portions of the road so specified on the time-table, trains will run against the current of traffic by block signals, whose indications will supersede time-table superiority and will take the place of train orders.

D-262. The movement of trains will be supervised by the _____, who will issue instructions to signalmen.

D-263. A train must not cross over, except as provided in Rule D-261, without authority from the _____.

D-264. Except as affected by Rules D-261 to D-263, all Block Signal Rules and Train Rules remain in force.

Additional Rules for Three or More Tracks

F-271. The main tracks shall be designated by numerals, and their use indicated by special instructions.

F-272. On portions of the road so specified on the time-table, trains will run with the current of traffic by block signals, whose indications will supersede time-table superiority.

F-273. A train by night running with the current of traffic, on _____ track, will display two red lights to the rear.

A train by night running with the current of traffic, on _____ track, will display a green (or yellow) light to the rear on the side next to _____ track in the direction of the current of traffic, and a red light on the opposite side.

A train by night using any track against the current of traffic will display two green (or yellow) lights to the rear, one on each side, with a red light on the platform or cupola.

A train by night on a siding will display two green or yellow lights to the rear.

F-274. Engine and Motor Whistle Signals

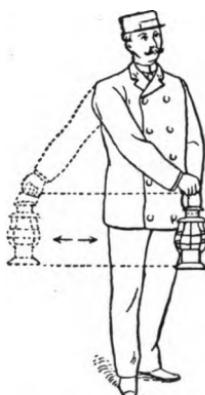
NOTE—The signals prescribed are illustrated by “o” for short sounds; “—” for longer sounds. The sound of the whistle should be distinct, with intensity and duration proportionate to the distance signal is to be conveyed.

SOUND	INDICATION
(a) -----	Flagman for Track No. 1 may return.
(b) -----	Flagman for Track No. 2 may return.
(c) ----- o	Flagman for Track No. 3 may return.
(d) ----- o	Flagman for Track No. 4 may return.
(e) o -----	Flagman for Track No. 5 may return.
(f) o -----	Flagman for Track No. 6 may return.
(g) o ----- o	Flagman for Track No. 7 may return.
(h) o ----- o	Flagman for Track No. 8 may return.

F-275. Except as affected by Rules *F-271* to *F-274*, all Block Signal Rules and Train Rules for Double Track remain in force.

DIAGRAMS OF HAND, FLAG AND LAMP SIGNALS

NOTE.—The hand, or a flag, moved the same as the lamp, as illustrated in the following diagrams, gives the same indication.



Stop—Swung across the track.
See Rule 12 (a)



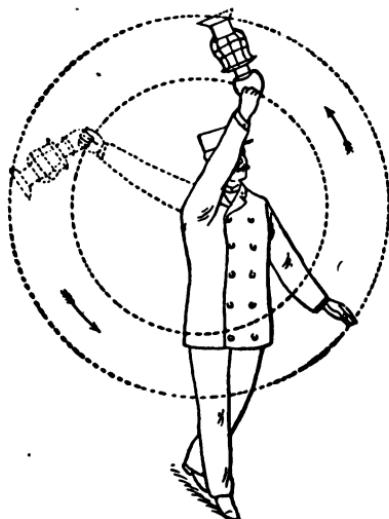
Proceed—Raised and lowered vertically.
See Rule 12 (e)



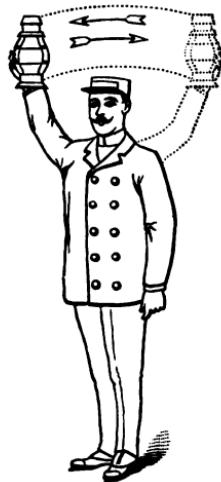
Reduce Speed—Held horizontally at arm's length, when the train is moving.
See Rule 12 (b)



Back—Swung vertically in a circle at half arm's length across the track, when the train is standing.
See Rules 12 (d) and 14 (h).



Train Has Parted—Swung vertically in a circle at arm's length across the track, when the train is running.
See Rules 12 (e) and 14 (f).



Apply Air Brakes—Swung horizontally above the head, when the train is standing.
See Rule 12 (f).

Release Air Brakes—Held at arm's length above the head, when the train is standing.
See Rule 12 (g).

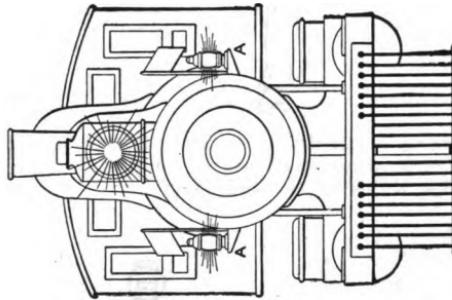
Diagrams of Train Signals

Notes

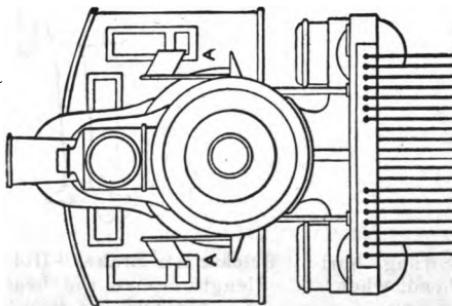
The diagrams are intended to illustrate the general location of the train signals, not the exact manner in which they are to be attached.

Combination lamps with four illuminated colored faces are represented in the diagrams.

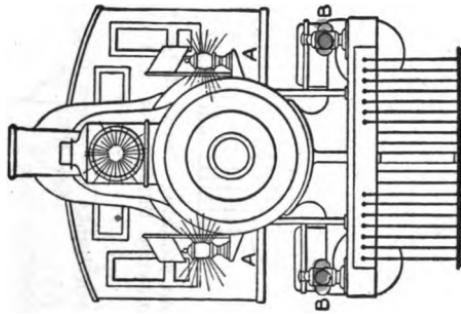
Where railroads desire to discontinue the use of markers by day on passenger trains, it is permissible to do so.



Engine Running forward by Night
as an Extra Train.
White lights and white flags at
A. A.
See Rule 21.

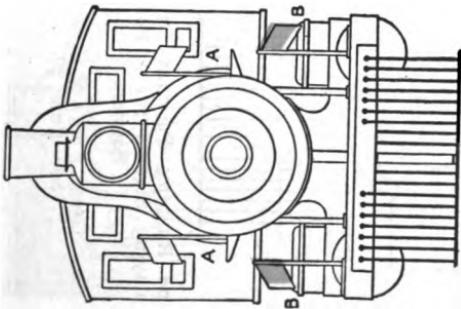


Engine Running forward by Day
as an Extra Train.
White flags at A. A.
See Rule 21.



**Engine Running Backward by Day
as an Extra Train, Without Cars
or at the Rear of a Train
Pushing Cars.**

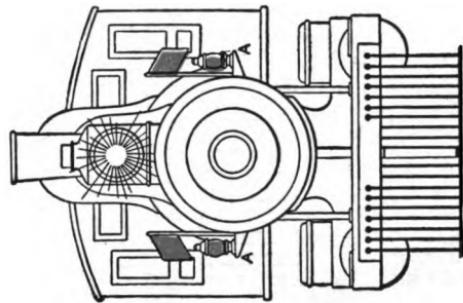
White flags at A A. See Rule 21.
Green (or yellow) flags (or marker
lamps—not lighted) at B B, as
markers. See Rules 19 and D-19.



**Engine Running Backward by Night as an
Extra Train, Without Cars or at the
Rear of a Train Pushing Cars.**

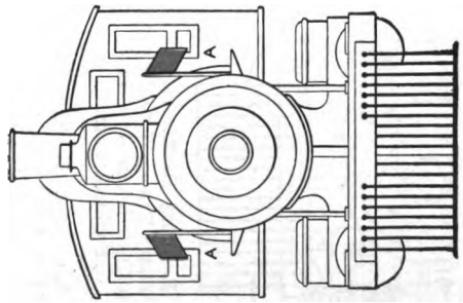
White lights and white flags at A A.
See Rule 21.

Lights at B B, as markers, showing green
(or yellow) at side and in direction engine
is moving and red in opposite direction. See
Rules 19 and D-19.



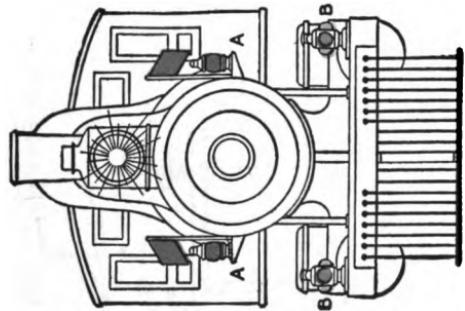
**Engine Running Forward by Night Dis-
playing Signals for a Following
Section.**

Green lights and green flags at A A.
See Rule 20.



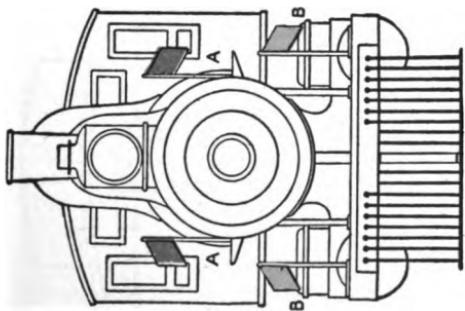
**Engine Running Forward by Day Dis-
playing Signals for a Following
Section.**

Green Flags at A A.
See Rule 20.



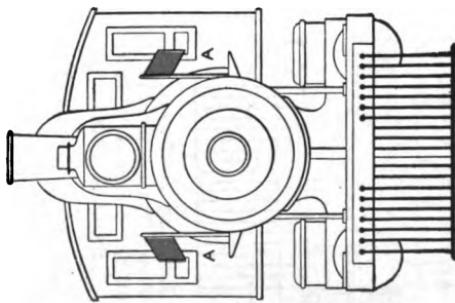
**Engine Running Backward by Night, Without Cars
or at the Rear of a Train Pushing Cars, and
Displaying Signals for a Following Section.**

Green lights and green flags at A A. See Rule 20.
Lights at B B, as markers, showing green (or
yellow) at side and in direction engine is moving
and red in opposite direction. See Rules 19 and
D-19.



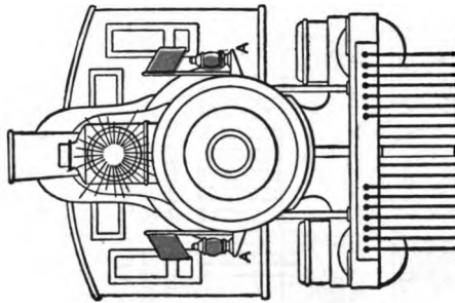
**Engine Running Backward by Day,
Without Cars or at the Rear of a
Train Pushing Cars, and Dis-
playing Signals for a Fol-
lowing Section.**

Green flags at A A. See Rule 20.
Green (or yellow) flags (or marker
lamps—not lighted) at B B, as markers.
See Rules 19 and D-19.



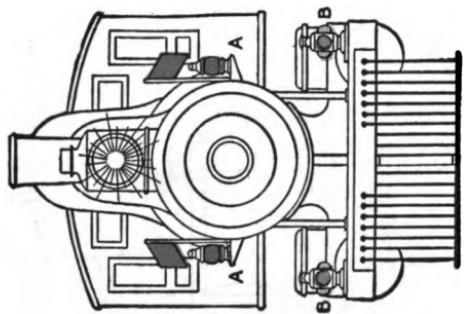
Engine Running Forward by Day Dis-
playing Signals for a Following
Section.

Green Flags at A A.
See Rule 20.



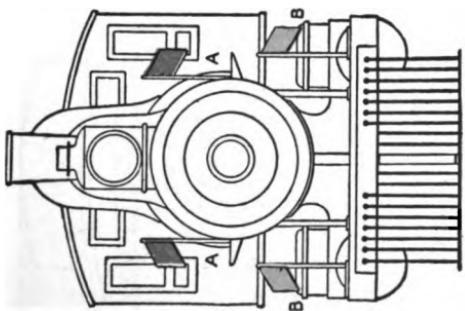
Engine Running Forward by Night Dis-
playing Signals for a Following
Section.

Green lights and green flags at A A.
See Rule 20.



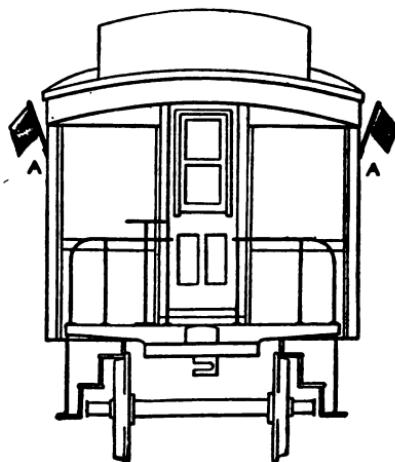
**Engine Running Backward by Night, Without Cars
or at the Rear of a Train Pushing Cars, and
Displaying Signals for a Following Section.**

Green lights and green flags at A A. See Rule 20.
Lights at B B, as markers, showing green (or
yellow) at side and in direction engine is moving
and red in opposite direction. See Rules 19 and
D-19.



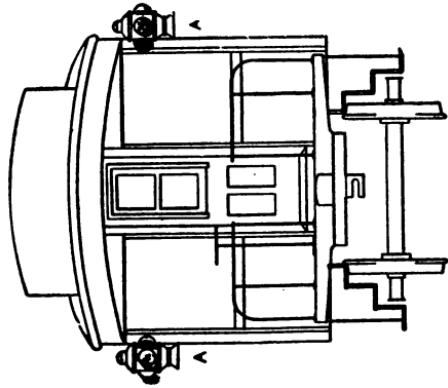
**Engine Running Backward by Day,
Without Cars or at the Rear of a
Train Pushing Cars, and Dis-
playing Signals for a Fol-
lowing Section.**

Green flags at A A. See Rule 20.
Green (or yellow) flags (or marker
lamps—not lighted) at B B, as markers.
See Rules 19 and D-19.



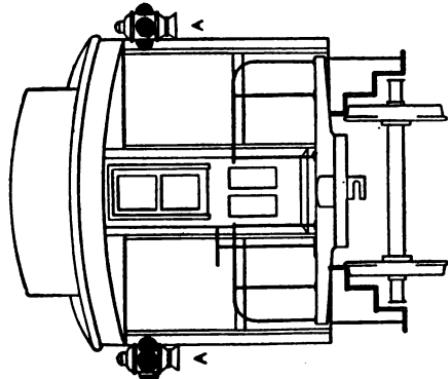
Rear of Train by Day

Green (or yellow) flags (or marker lamps—not lighted) at A A, as markers. See Rules 19 and D-19.



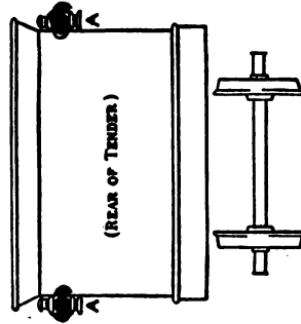
Rear of Train by Night While Running.

Lights at A A, as markers, showing green (or yellow) toward engine and side and red to rear.
See Rules 19 and D-19.



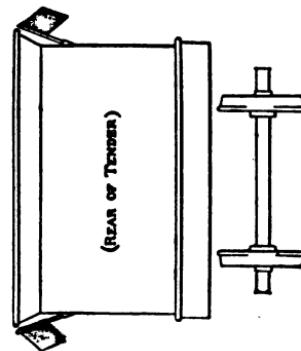
Rear of Train by Night When on Siding to be Passed by Another Train.

Lights at A A, as markers, showing green (or yellow) toward engine, side and to rear.
See Rules 19 and D-19.



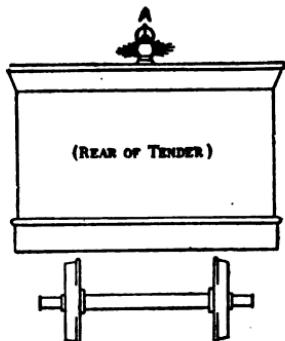
Engine Running Forward by Night,
Without Cars or at the Rear of a
Train Pushing Cars.

Lights at A A, as markers, showing
green (or yellow) to the front and
side and red to rear.
See Rules 19 and D-19.



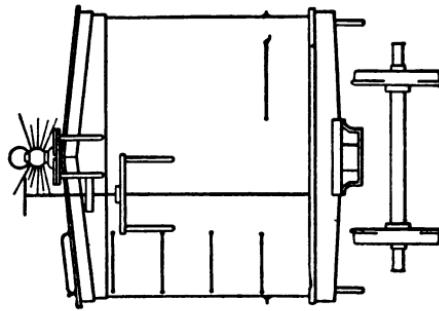
Engine Running Forward by Day,
Without Cars or at the Rear of a
Train Pushing Cars.

Green (or yellow) flags (or marker
lamps—not lighted), as markers.
See Rules 19 and D-19.



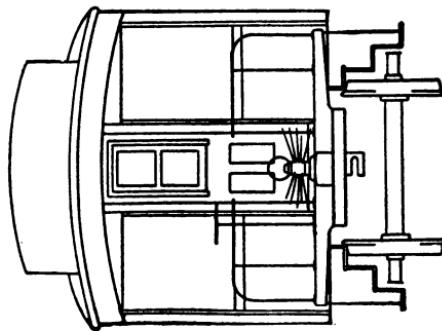
**Engine Running Backward by Night Without Cars or at the Front
of a Train Pulling Cars.**

White light at A.
See Rules 17 and D-17.



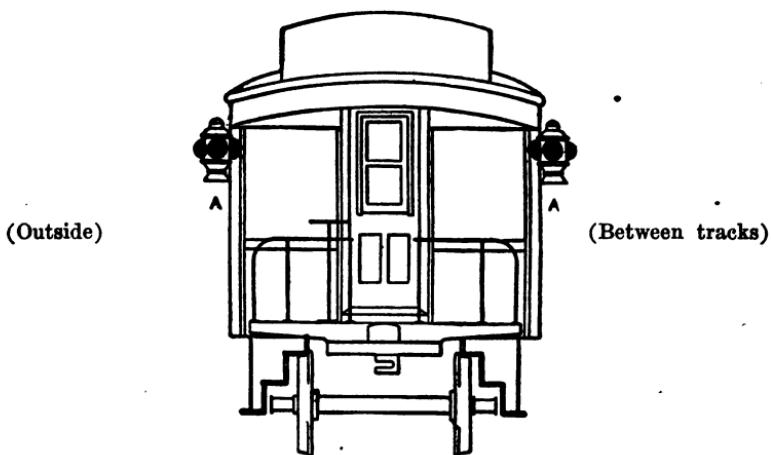
Freight Cars Being Pushed by an Engine by Night.

White light on front of leading car.
See Rule 24.



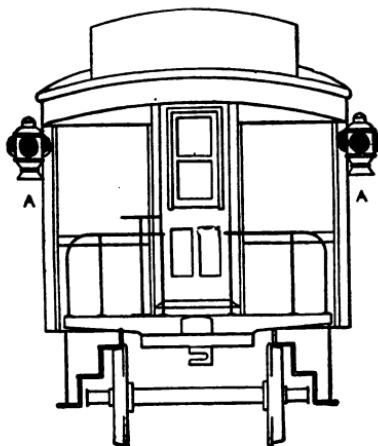
Passenger Cars Being Pushed by an Engine by Night.

White light on front of leading car.
See Rule 24.



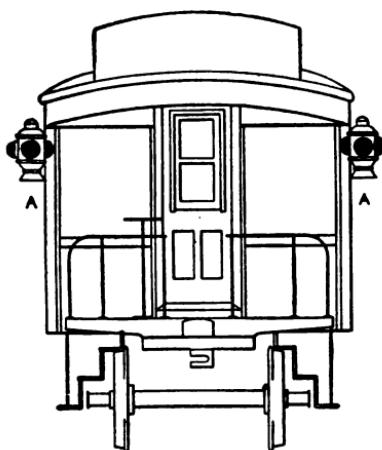
Rear of Train by Night Running Against the Current of Traffic.

(This illustration is for a road which uses the right-hand track.)
 Lights at A A, showing green (or yellow) to front and side and green (or yellow) to the rear on the side next to the main track on which the current of traffic is in the direction the train is moving and red to the rear on the opposite side, as per Rule D-19.



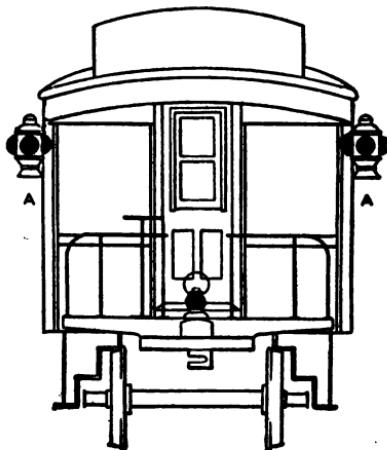
**Rear of Train by Night Running With the Current of Traffic
on _____ Track.**

Lights at A A, showing red to the rear, as per Rule F-273, first paragraph.



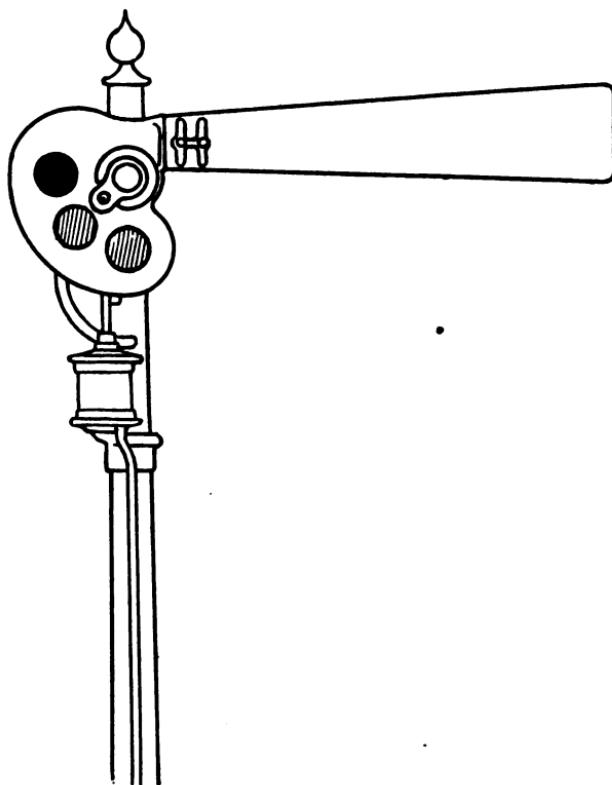
**Rear of Train by Night Running With the Current of Traffic
on _____ Track.**

Lights at A A, showing green (or yellow) to the rear on the side next to _____ track in the direction of the current of traffic and red on the opposite side, as per Rule F-273, second paragraph.

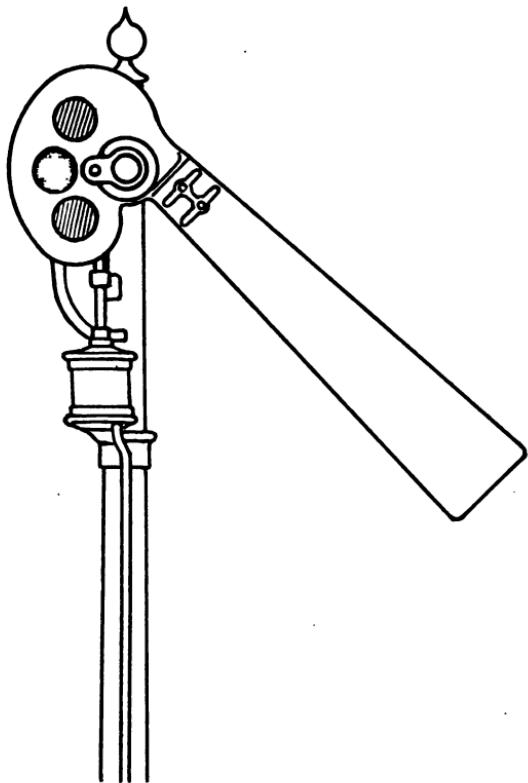


**Rear of Train by Night Running on Any Track Against the
Current of Traffic.**

Lights at A A, showing green (or yellow) to the rear, with a red light on the platform or the cupola, as per Rule F-273, third paragraph.

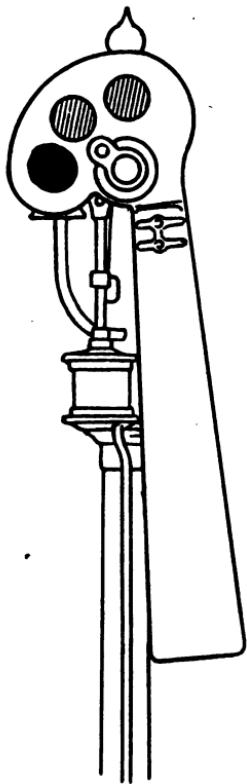
Semaphores**Danger—Stop!**

Semaphores, which are in fact fixed signals, are used for stopping trains or allowing them to proceed with train under control or at full speed. They are placed at telegraph offices, yard limits and railroad crossings. They are also used for stopping or slowing trains to which train orders and messages

**Caution.**

may be addressed, and to keep trains running in the same direction the required time apart.

Strictly defined: "An apparatus for giving signals by the disposition of oscillating arms and lights."

**Safety—Proceed.**

Trains are governed by the right-hand arm and the light facing the train. When the arm is in a horizontal position the light appears "red"—meaning DANGER; when in an inclined diagonal position, the light appears "yellow"—CAUTION; when vertical, the light appears "green" and is a signal to proceed at full speed.

STANDARD CODE OF BLOCK SIGNAL RULES**Definitions**

BLOCK.—A length of track of defined limits, the use of which by trains is governed by block signals.

BLOCK STATION.—A place from which block signals are operated.

FIXED SIGNAL.—A signal of fixed location, indicating a condition affecting the movement of a train.

BLOCK SIGNAL.—A fixed signal governing the use of a block.

HOME BLOCK SIGNAL.—A fixed signal at the entrance of a block to govern trains in entering and using that block.

DISTANT BLOCK SIGNAL.—A fixed signal used in connection with a Home Block Signal to govern the approach thereto.

BLOCK SYSTEM.—A series of consecutive blocks.

MANUAL BLOCK SYSTEM.—A series of consecutive blocks, governed by block signals operated manually, upon information by telegraph, telephone or other means of communication.

CONTROLLED MANUAL BLOCK SYSTEM.—A series of consecutive blocks governed by block signals, controlled by continuous track circuits, operated manually upon information by telegraph, telephone or other means of communication, and so constructed as to require the co-operation of the signalmen at both ends of the block to display a Clear or a Permissive Block Signal.

AUTOMATIC BLOCK SYSTEM.—A series of consecutive blocks governed by block signals operated by electric, pneumatic or other agency actuated by a train, or by certain conditions affecting the use of a block.

Manual Block System**Requisites of Installation**

1. Signals of prescribed form, the indications given by not more than three positions; by lights of prescribed color; or by both.

2. The apparatus so constructed that the failure of any part controlling the operation of a signal will cause it to display its most restrictive indication.

3. Signals located preferably over or upon the right* of and adjoining the track to which they refer. For less than three tracks signals for trains in each direction may be on the same signal mast.
4. Semaphore arms that govern, displayed to the _____† of the signal mast as seen from an approaching train.
5. The normal indication of Home Block Signals—Stop.

Adjuncts

The following may be used:

- A. Distant Block Signals interlocked with Home Block Signals; normal indication—Caution.
- C. Repeaters, audible or visible, to indicate the position of block signals to the signalman operating them.
- D. The automatic release of block signals to display their most restrictive indication.
- E. The locking of switches with block signals.
- F. Track circuits.
- H. Lock indicators for main track switches.
- J. Take siding indicators.
- K. Means of communication between block stations and outlying switches.
- L. The locking of telegraph keys with block signals.

*Where a railroad is operated with the current of traffic to the left the block signals may be placed upon the left.

†Right or left.

Rules

NOTE—The aspects shown are typical and may be given in any one of the other quadrants. Each road should show the aspects and colors of lights it uses.

The following signals will appear where conditions require their use.

301 A.



INDICATION—STOP.
NAME—STOP-SIGNAL.

Requisites of Installation.
Signal will appear when—

Block is not clear.

301 C.



INDICATION—PROCEED.
NAME—CLEAR-SIGNAL.

Block is clear.

301 G.



INDICATION—PROCEED WITH CAUTION
PREPARED TO STOP SHORT OF
TRAIN OR OBSTRUCTION.
NAME—PERMISSIVE-SIGNAL.

Block is occupied.

The following signals will appear where conditions require their use.

Requisites of Installation.
Signal will appear when—

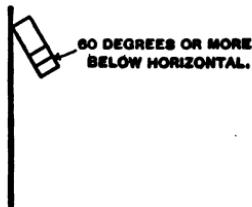
302 A.



Block is not clear.

INDICATION—STOP.
NAME—STOP-SIGNAL.

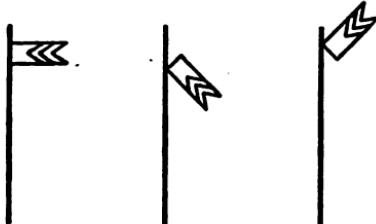
302 C.



Block is clear.

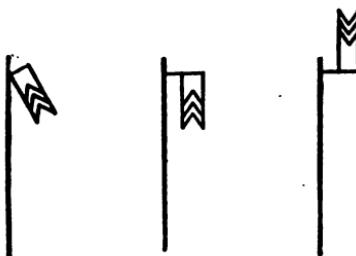
INDICATION—PROCEED.
NAME—CLEAR-SIGNAL.

303 J.



Home signal is not clear.

INDICATION—APPROACH HOME SIGNAL WITH CAUTION.
NAME—CAUTION-SIGNAL.

303 K.

Home signal indicates proceed.

**INDICATION—PROCEED.
NAME—CLEAR-SIGNAL.**

305. Block signals govern the use of the blocks, but, unless otherwise provided, do not supersede the superiority of trains; nor dispense with the use or the observance of other signals whenever and wherever they may be required.

306. When a block station is open at an irregular hour, trains must be notified by train order or by special instructions, and special precautions must be taken to call the attention of trains approaching such block station to the indications of the block signals.

Signalmen

311. The normal indication of Home Block Signals—Stop; of Distant Block Signals—Caution.

312. Signals must be operated carefully and with a uniform movement. If a signal fails to work properly its operation must be discontinued and the signal secured so as to display its most restrictive indication until repaired.

313. Signalmen must observe, as far as practicable, whether the indications of the signals correspond with the positions of the levers.

314. Signalmen must not make nor permit any unauthorized repairs, alterations or additions to the apparatus.

315. A block record must be kept at each block station.

NOTE TO RULE 303—Where Distant Block Signals are not used Rule 303 will be omitted.

NOTE TO RULE 311—Where Distant Block Signals are not used the words “of Distant Block Signals—Caution” will be omitted.

NOTE TO RULE 315—The different items to be entered on the block record have not been prescribed in this rule, but it has been left to each railroad to complete the rule by adding such items as may be necessary to meet the conditions governing its traffic.

316.

Communicating Code

- 1—Display Stop-signal.
- 13—I understand.
- 17—Display Stop-signal. Train following.
- 2—Block clear.
- 3—Block wanted for train other than passenger.
- 36—Block wanted for passenger train.
- 4—Train other than passenger has entered block.
- 46—Passenger train has entered block.
- 5—Block is not clear of train other than passenger.
- 56—Block is not clear of passenger train.
- 7—Train following.
- 8—Opening block station. Answer by record of trains in the extended block.
- 9—Closing block station. Answer by 13.

When two or more tracks are used in the same direction, signalmen in using the communicating code must also specify the track.

317 A. To admit a train to a block, the signalman must examine the block record, and, if the block is clear, give "1 for _____" to the next block station in advance. The signalman receiving this signal, if the block is clear, must display the Stop-signal to opposing trains, and reply "2 for _____." If the block is not clear, he must reply "5 of _____," or "56 of _____." The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block unless it is clear, except as provided in Rule 332 or by train order.

317 B. To admit a train to a block, the signalman must examine the block record, and, if the block is clear, give "1 for _____" to the next block station in advance. The signalman receiving this signal, if the block is clear, must display the Stop-signal to opposing trains and reply "2 for _____." If the block is not clear, he must reply "5 of _____," or "56 of _____." The signalman at the entrance of the block must then display the proper signal indication.

NOTE TO RULE 316—Additions to the communicating code may be made if desired. When the telephone is used the code will be used without the numerals.

NOTE TO RULE 317 A.—317 A is for absolute block for following and opposing movements on the same track.

NOTE TO RULE 317 B.—Rule 317 B is for absolute block for opposing movements, and permissive block for following movements on the same track.

A train must not be admitted to a block which is occupied by an opposing train or by a passenger train except as provided in Rule 332 or by train order.

To permit a train to follow a train other than a passenger train into a block, the signalman must give "17 for _____" to the next block station in advance. The signalman receiving this signal, if there is no passenger train in the block, must reply "5 of _____ 13 for _____." The approaching train will then be admitted to the block _____.*

318 A. To admit a train to a block, the signalman must examine the block record, and, if the block is clear, give "3 for _____," or "36 for _____," to the next block station in advance. The signalman receiving this signal, if the block is clear, must reply "2 for _____." If the block is not clear, he must reply "5 of _____," or "56 of _____." The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block unless it is clear, except as provided in Rule 332 or by train order.

318 B. To admit a train to a block, the signalman must examine the block record, and, if the block is not occupied by a passenger train, give "3 for _____," or "36 for _____," to the next block station in advance. The signalman receiving this signal, if the block is clear, must reply "2 for _____." If the block is not clear, he must reply "5 of _____," or "56 of _____." The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block which is occupied by a passenger train, except as provided in Rule 332 or by train order.

A train may be permitted to follow a train other than a passenger train into a block _____.*

*Under Permissive-signal or with Permissive Card (Form C).

NOTE TO RULE 318 A.—Rule 318 A is for absolute block for following movements only.

NOTE TO RULE 318 B.—Rule 318 B is for permissive block for following movements only.

NOTE TO RULES 317 A, 317 B, 318 A and 318 B.—Where it is desired that train dispatchers shall control the display of block signals, railroads may modify Rules 317 A, 317 B, 318 A and 318 B so as to provide for such practice.

319. When a train enters a block, the signalman must give "4 _____," or "46 _____" and the time, to the next block station in advance, and when the train has passed the Home Block Signal and the signalman has seen the markers he must display the Stop-signal, and when the rear of the train has passed _____ feet beyond the Home Block Signal, he must give the record of the train to the next block station in the rear.

This information must be entered on the block records.

320. Unless otherwise provided, signalmen must not ask for the block until they have received a report of the train from the next block station in the rear.

321. Signalmen must observe all passing trains and note whether they are complete and in order, and the markers properly displayed.

322. Should a train pass a block station with any indication of conditions endangering the train, or a train on another track, the signalman must immediately notify the signalman at the next block station in advance, and each must display Stop-signals to all trains that may be affected, and must not permit any train to proceed until it is known that its track is not obstructed.

323. Should a train pass a block station without markers, the signalman must notify the signalman at the next block station in each direction, and must not report that train clear of the block until he has ascertained that the train is complete.

324. Should a train pass a block station in two or more parts, the signalman must stop all trains moving in the same direction and notify the signalman at the next block station in advance. A signalman having received this notice must stop all trains moving in the opposite direction. The Stop-signal must not be displayed to the engineman of the parted train if the train can be admitted to the block in advance under Block Signal Rules; but the Train-parted Signal must be given. Should a train in either direction be stopped, it may be permitted to proceed when it is known that its track is not obstructed.

NOTE TO RULES 317 A, 317 B, 318 A, 318 B and 319.—The blanks in Rules 317 A, 317 B, 318 A, 318 B and 319 are to be filled by the number or designation of the train, except as otherwise noted.

325. A signalman informed of any obstruction in a block must immediately notify the signalman at the other end of the block and each must display Stop-signals to all trains that may be affected and must not permit any train to proceed until it is known that its track is not obstructed.

326. When a train takes a siding the signalman must know that it is clear of the block before giving 2 or displaying a Clear-signal for that block.

The signalman must obtain control of the block before permitting a train on a siding to re-enter the block.

327. To permit a train to cross over or return, unless otherwise provided, the signalman must examine the block record, and if all the blocks affected are clear of approaching trains he must arrange with the signalman at the next block station in each direction to protect the movement, and when the proper signals have been displayed permission may be given. Until the block is clear no train must be admitted in the direction of the cross-over switches except under Permissive-signal or with Permissive Card (Form C).

All cross-over movements must be entered on the block records.

328. When coupled trains are separated as prescribed by Rule 364, the signalman must regard each portion as an independent train.

329. If necessary to stop a train for which a clear or Permissive Home Block Signal has been displayed and accepted, the signalman must give hand signals in addition to displaying the Stop-signal.

330. A signalman having train orders for a train must display the block signal at Stop. He may permit trains so stopped to proceed under Block Signal Rules after complying with Rules for Movement by Train Orders.

331 A. If from the failure of block signal apparatus the block signal cannot be changed from the normal indication, a signalman, having information from the signalman at the next block station in advance that the block is clear, may admit a train to the block by the use of a Clearance Card (Form A).

331 B. If, from the failure of block signal apparatus, the block signal cannot be changed from the normal indication, a signalman having information from the signalman at the next block station in advance that the block is clear, may admit

NOTE TO RULE 331 A.—Rule 331 A is for absolute block.

NOTE TO RULE 331 B.—Rule 331 B is for permissive block.

a train to the block by the use of a Clearance Card (Form A); if the block is occupied by a train, other than an opposing train or a passenger train, the signalman may admit a following train by the use of Permissive Card (Form C).

332. If, from any cause, a signalman is unable to communicate with the next block station in advance, he must stop all trains approaching in that direction. Should no cause for detaining a train be known, it may then be permitted to proceed with Caution Card (Form B), provided _____ minutes have elapsed since the passage of the last preceding train.

333. Signalmen must have the proper appliances for hand signaling ready for immediate use. Hand signals must not be used when the proper indication can be displayed by the block signals, except as prescribed by Rule 329 or 343. When hand signals are necessary they must be given from such a place and in such a way that there can be no misunderstanding on the part of enginemen or trainmen as to the signals, or as to the train or engine for which they are given.

334. Block signals for a track apply only to trains moving with the current of traffic on that track. Signalmen will use _____ for blocking trains moving against the current of traffic.

335. Signalmen will be held responsible for the care of the block station, lamps and supplies; and, unless otherwise provided, of the signal apparatus.

336. Lights in block stations must be so placed that they cannot be seen from approaching trains.

337. Lights must be used upon all block signals from sunset to sunrise and whenever the signal indications cannot be clearly seen without them.

338. If a train overruns a Stop-signal, the fact must be reported to _____.

339. If a Stop-signal is disregarded, the fact must be reported to the next block station in advance and then to _____.

340. To open a block station the signalman must give 8 to the next block station in each direction and record the trains that are in the extended block. He must then display

NOTE TO RULE 333.—Hand signaling includes the use of lamp, flag, torpedo and fusee signals.

NOTE TO RULE 334.—Each railroad may fill in the blank in Rule 334 with the kind of signals that are to be displayed or with the form of card to be used by the signalmen.

the normal signal indication and notify the next block station in each direction that the block station is open.

When trains, which were in the extended block when the block station was opened and which had passed his block station before it was opened, clear the block in advance he must repeat the record to the block station in the rear.

341. A block station must not be closed except upon authority of _____.

342. Unless otherwise provided, a block station must not be closed until the block in each direction is clear of all trains.

To close a block station, the signalman must give 9 to the next block station in each direction, and when he receives 13 enter it on his block record, with the time it is received from each block station.

The block signals must then be _____, all lights extinguished and the block wires arranged to work through the closed block station.

343. When a block station is open at an irregular hour, signalmen must use hand signals, in addition to block signals, to give the required indications until all trains have passed which have not been notified by train order or by special instructions that the block station is open. Signalmen must take special precautions to call the attention of trains approaching the block station to the indications of the block signals.

344. Signalmen must not permit unauthorized persons to enter the block station.

Enginemen and Trainmen

361. Block signals for a track apply only to trains moving with the current of traffic on that track. _____ will be used for blocking trains moving against the current of traffic.

362. Trains must not pass a Stop-signal without receiving Clearance Card (Form A), Caution Card (Form B), Permissive Card (Form C), or train order authorizing them to do so.

363. Trains must not proceed on hand signals as against block signals.

364. Unless otherwise directed, when two or more trains have been coupled and so move past any block station, they

NOTE TO RULE 361.—Each railroad may fill in the blank in Rule 361 with the kind of signals that are to be displayed or the form of card to be used by the signalmen.

must be separated only at a block station and the signalman notified.

365. When a train takes a siding it must not again enter the block without the permission of the signalman.

A train having passed beyond the limits of a block must not back into that block without permission from the signalman.

366. Unless otherwise provided, when it is necessary for a train to cross over, the signalman must be notified and permission obtained before crossing over or returning.

367. The engineman of a train which has parted must sound the whistle signal for Train-parted when approaching a block station.

368. An engineman receiving a Train-parted signal from a signalman must answer by the whistle signal for Train-parted.

369. When a parted train is recoupled the signalman must be notified.

370. If there is an obstruction between block stations notice must be given to the nearest signalman.

371. If a train is stopped by a block signal the conductor and engineman must immediately ascertain the cause.

372. Conductors must report to —— any unusual detention at block stations.

373. A block station must not be considered as closed, except as provided for by time-table or special instructions.

FORM A.

NORTHWESTERN INDIANA RAILWAY COMPANY

C L E A R A N C E C A R D

Dover	9 15 A.M.	January 1	19 <u>21</u>
Conductor and Engineman	No 12		
I have	<u>3</u> No	No further	orders for your train.
Stop-signal is displayed		For Extra 452	Cannot be Cleared
Block	Clear		
		John Jones	Operator.

This does not affect any orders you may have received.

Conductor and Engineman must each have a copy, and see that their train is correctly designated in the above form.

Where Clearance Card, Form A, is used when the block is not clear, the line giving block indication will be left blank, and Permissive Card, Form C, used in addition to Form A.

(See Rules 331 A, 331 B and 362.)

FORM B.

NORTHWESTERN INDIANA RAILWAY COMPANY**CAUTION CARD**

BLOCK STATION ; M., 192

To ENGINEERMAN,* train..... on..... track:

This card is authority to pass Stop-signal for..... track. You may proceed with caution. Signal indicates stop on account of.....
.....
.....
.....
.....

Signalman.

Engineer* receiving this card properly filled in and signed by the signalman may proceed with the train under control prepared to stop short of any obstruction.

When Form B is used on account of failure of means of communication, this card must be delivered to the signalman at the next block station in advance, and the engineer must personally obtain from the signalman permission to proceed.

*On railroads where it is desired to give Caution Cards to the Conductor, the word "conductor" may be incorporated in the form.

(See Rules 332 and 362.)

FORM C.

NORTHWESTERN INDIANA RAILWAY COMPANY**PERMISSIVE CARD**

Block Station.....;M.,
192

To ENGINEMAN,* train.....on.....track:

Proceed, expecting to find a train in the block between this station and.....

.....,
....., Signalman.

Form C may be used when a Stop-signal is displayed* and it is permissible to admit a following train to the block.

Enginemem* receiving this card will proceed as indicated.

*On railroads where it is desired to give Permissive Cards to the conductor, the word "conductor" may be incorporated in the form.

(See Rules 317 B, 318 B, 327, 331 B and 362.)

FORM D.

(To be used only on single track.)

NORTHWESTERN INDIANA RAILWAY COMPANY

CAUTION CARD

Block Station.....;M.,M.,M.,, 192

To ENGINEMAN,* train.....:

Means of communication have failed. Signal cannot be cleared. You may proceed with caution by Stop signal, expecting to find a train in the block, broken rail, or switch not properly set.

....., Signalman.
....., Signalman.
....., Signalman.

When a block signal is also an interlocking signal, the signalman must know that the switches through the interlocking are properly set and locked before issuing this card.

Enginemen* of regular trains receiving this card, properly filled in and signed by the signalman, may proceed on their time-table authority and as directed above.

*On railroads where it is desired to give Caution Cards to the conductor, the word "conductor" may be incorporated in the form.

Controlled Manual Block System

NOTE.—The rules by which the Controlled Manual Block System is governed are similar to those governing the Manual Block System, except when a signalman desires to admit an approaching train to a block, he must have the next signalman in advance unlock the block signal in the rear before a clear or caution block signal can be displayed.

Automatic Block System

Requisites of Installation

1. Signals of prescribed form, the indications given by not more than three positions; by lights of prescribed color; or by both.
2. The apparatus so constructed that the failure of any part controlling the operation of a signal will cause it to display its most restrictive indication.
3. Signals located preferably over or upon the right* of and adjoining the track to which they refer.
4. Semaphore arms that govern, displayed to the ——† of the signal mast as seen from an approaching train.
6. Continuous track circuits.
7. Signal connections and operating mechanism so arranged that a Home Block Signal will display its most restrictive indication after the front of a train shall have passed it.
8. Switches in the main track so connected with the block signals that the Home Block Signal in the direction of approaching trains will display its most restrictive indication when the switch is not set for the main track.

Adjuncts

The following may be used:

- A. Distant Block Signals connected with corresponding Home Block Signals.
- J. Take Siding indicators.
- S. Switch indicators for main track switches.
- T. Automatic and Train Order Signals interconnected.

*Where a railroad is operated with the current of traffic to the left the block signals may be placed upon the left.

†Right or left.

501.

Home Block Signals**Rules**

SIGNAL.	OCCASION FOR USE.	INDICATION.	NAME.
Color.	The signal will appear when	For enginemen and trainmen.	As used in rules.
(a) Red. (b) Yellow. (c) Green.	Block is not clear. Block is clear. Second block in advance is not clear. Block is clear.	Stop. Approach next home signal prepared to stop. Proceed.	Stop-signal. Caution-signal. Clear-signal.

Where the semaphore is used the indications are given by positions:

Horizontal as the equivalent of (a).

Diagonal ——* as the equivalent of (b).

Vertical or Diagonal ——* as the equivalent of (c).

Where a single disc is used for two indications these are given by position of a —— (color) disc as seen from an approaching train:

Disc displayed as the equivalent of (a).

Disc withdrawn as the equivalent of (c.)

When Distant Block Signals are used the following should be added to Rule 501:

Distant Block Signals

SIGNAL.	OCCASION FOR USE.	INDICATION.	NAME.
Color.	The signal will appear when	For enginemen and trainmen	As used in rules.
(d) Yellow	Home signal is at (a) or track obstructed between distant and home signal.	Proceed with caution to the home signal.	Caution-signal.
(e) Green	Home signal is at (e).	Proceed.	Clear-signal.

NOTE TO RULE 501.—Each road will suit its own requirements as to kind of signals and color of lights used.

*Angle above or below the horizontal.

Where the semaphore is used, the governing arm is displayed to the right of the signal mast as seen from an approaching train, and the indications are given by positions:

Horizontal as the equivalent of (d).

Vertical or Diagonal _____ (angle above or below the horizontal) as the equivalent of (e).

Where a single disc is used for two indications these are given by position of a _____ (color) disc as seen from an approaching train:

Disc displayed as the equivalent of (d).

Disc withdrawn as the equivalent of (e).

505. Block signals govern the use of the blocks, but, unless otherwise provided, do not supersede the superiority of trains; nor dispense with the use or the observance of other signals whenever and wherever they may be required.

506. Lights must be used upon all block signals from sunset to sunrise and whenever the signal indications cannot be clearly seen without them.

Enginemen and Trainmen

508. Block signals for a track apply only to trains moving with the current of traffic on that track.

509. When a train is stopped by a Stop-signal it must stay until authorized to proceed, or in case of failure of means of communication it may proceed when preceded by a flagman to the next signal displaying a proceed indication.

When a train is stopped by a Stop and Proceed-signal it may proceed—

(A) On single track _____.

(B) On two or more tracks at once at slow speed, expecting to find a train in the block, broken rail, obstruction or switch not properly set.

510. When a train is stopped by a block signal which is evidently out of order, and not so indicated, the fact must be reported to _____.

511. Both switches of a cross-over must be open before a train starts to make a cross-over movement, and the movement must be completed before either switch is restored to normal position.

512. Where switch indicators are used, the indications displayed do not relieve enginemen and trainmen from protecting their train as required by the rules.

NOTE TO RULE 512.—Where switch indicators are not used Rule 512 will be omitted.

INTERLOCKING RULES

As Recommended by the American Railway Association

Definitions

INTERLOCKING.—An arrangement of switch, lock and signal appliances so interconnected that their movements must succeed each other in a pre-determined order.

INTERLOCKING PLANT.—An assemblage of switch, lock and signal appliances, interlocked.

INTERLOCKING STATION.—A place from which an interlocking plant is operated.

FIXED SIGNAL.—A signal of fixed location indicating a condition affecting the movement of a train.

INTERLOCKING SIGNALS.—The fixed signals of an interlocking plant.

HOME SIGNAL.—A fixed signal at the entrance of a route or block to govern trains in entering and using said route or block.

DISTANT SIGNAL.—A fixed signal used in connection with one or more home signals to govern the approach thereto.

DWARF SIGNAL.—A low home signal.

Requisites of Installation

1. Signals of prescribed form, the indications given by not more than three positions; by lights of prescribed color; or by both.
2. The apparatus so constructed that the failure of any part controlling the operation of a signal will cause it to display its most restrictive indication.
3. Signals located preferably over or upon the right of and adjoining the track to which they refer.*
4. Semaphore arms that govern, displayed to the ——† of the signal mast as seen from an approaching train.
5. The normal indication of Home Signals—Stop.
9. Latch locking, or its equivalent.
10. Interlocked levers, or their equivalent, by which switches, locks and signals are operated.
12. The interlocking of switches, locks, railroad crossings, drawbridges and signals through levers, or their equivalent.
13. Locks for all switches.

*Where a railroad is operated with the current of traffic to the left the interlocking signals may be placed upon the left.

†Right or left.

14. Detector bars, or their equivalent, for all interlocked switches.

15. Pipe, or its equivalent, compensated for changes in temperature, in mechanical interlocking, for connecting levers, with switches and locks.

16. The interlocking of signals with switches, locks, railroad crossings, or drawbridges, so that a signal permitting a train to proceed cannot be displayed unless the route to be used is set and Stop-signals displayed for all conflicting routes.

17. The established order of interlocking such that:

A signal permitting a train to proceed cannot be displayed until the switches in the route to be set are in position and locked; derails, if any, in conflicting routes set to diverge and all opposing or conflicting signals display their most restrictive indication. The display of a signal to proceed shall lock the arrangement.

18. Interlocking and Block Signals, interconnected, where both are operated from the same station.

Adjuncts

The following may be used:

A. Distant Signals interlocked with Home Signals; normal indication—Caution.

B. Dwarf Signals; normal indication—Stop.

C. Repeaters, audible or visible, to indicate the position of signals to the signalman operating them.

E. The locking of switches by signals.

F. Track Circuits.

G. Annunciators indicating the approach of a train, or for other purposes.

J. Take siding indicators.

M. Electric locking of derails, facing point switches and drawbridges so that they cannot be opened after a train has passed the clear Distant Signal until the train has passed over them.

N. Derails, or diverging switches, for railroad crossings, drawbridges, junctions, and in sidings connected with the running tracks; normal position—Open.

O. Detector bars, or their equivalent, at railroad crossings and junctions.

P. Route Indicators.

Q. Torpedo Placers.

R. Time releases.

Rules**601.****Home Signals**

SIGNAL.	OCCASION FOR USE.	INDICATION.	NAME.
Color.	The signal will be displayed when	For enginemen and trainmen	As used in rules.
(a) Red.	Route is not clear.	Stop.	Stop-signal.
(b) Green or white.	Route is clear.	Proceed.	Clear-signal.

Where the semaphore is used, the governing arm is displayed to the right of the signal mast as seen from an approaching train, and the indications are given by positions:

Horizontal as the equivalent of (a).

Vertical or Diagonal—* as the equivalent of (b).

Where distant signals are used, the horizontal position of the arm, or yellow light, indicates caution, or proceed to home signal expecting to find it at Stop. Vertical position of the arm, or green light, indicates Proceed, home signal at Clear.

605. Interlocking signals govern the use of the routes of an interlocking plant, and as to movements within Home Signal limits, their indications supersede the superiority of trains, but do not dispense with the use or the observance of other signals whenever and wherever they may be required.

Signalmen

611. The normal indication of Home Signals—Stop; of Distant Signals—Caution.

612. Levers, or other operating appliances, must be used only by those charged with that duty and as directed by the rules.

613. When the route is set the signals must be operated sufficiently in advance of approaching trains to avoid delay.

614. Signals must be restored so as to display their most restrictive indication as soon as the train or engine for which they were cleared has passed—.

NOTE TO RULE 601.—Each road will suit its own requirements as to kind of signals used and color of lights.

*Angle above or below the horizontal.

NOTE TO RULE 611.—Where Distant Signals are not used the words “of Distant Signals—Caution” will be omitted.

615. If necessary to change any route for which the signals have been cleared for an approaching train or engine, switches must not be changed or signals cleared for any conflicting route until the train or engine, for which the signals were first cleared, has stopped.

616. A switch, or lock, must not be moved when any portion of a train or an engine is standing on or closely approaching the switch, detector bar or circuit.

617. Levers must be operated carefully and with a uniform movement. If any irregularity, indicating disarranged connections, is detected in their working, the signals must be restored so as to display their most restrictive indication and the connections examined.

618. During cold weather the levers must be moved as often as may be necessary to keep connections from freezing.

619. During storms or while snow or sand is drifting special care must be used in operating switches. If the force whose duty it is to keep the switches clear is not on hand promptly when required, the fact must be reported to _____. .

620. If a signal fails to work properly its operation must be discontinued and until repaired the signal secured so as to display its most restrictive indication.

621. Signalmen must observe, as far as practicable, whether the indications of the signals correspond with the positions of the levers. .

622. Signalmen must not make nor permit any unauthorized repairs, alterations or additions to the plant.

Any defects in the interlocking plant must be promptly reported to the _____. .

623. If there is a derailment or if a switch is run through, or if any damage occurs to the track or interlocking plant, the signals must be restored so as to display their most restrictive indication, and no train or switching movement permitted until all parts of the interlocking plant and track liable to consequent injury have been examined and are known to be in a safe condition.

624. If necessary to disconnect a switch, derail, detector bar, or its equivalent, or a lock, all switches or derails affected must be safely secured.

625. When switches or signals are undergoing repairs, signals must not be displayed for any movements which may be affected by such repairs, until it has been ascertained from the repairmen that the switches are properly set for such movements.

626. Signalmen must observe all passing trains and note whether they are complete and in order; should there be any indication of conditions endangering the train, or any other train, the signalman must take such measures for the protection of trains as may be practicable.

627. If a signalman has information that an approaching train has parted he must, if possible, stop trains or engines on conflicting routes, clear the route for the parted train, and give the Train-parted signal to the engineman.

628. Signalmen must have the proper appliances for hand signaling ready for immediate use. Hand signals must not be used when the proper indication can be displayed by the interlocking signals. When hand signals are necessary they must be given from such a place and in such a way that there can be no misunderstanding on the part of enginemen or trainmen as to the signals, or as to the train or engine for which they are given.

629. If necessary to discontinue the use of any interlocking signal, hand signals must be used and _____ notified.

630. Signalmen will be held responsible for the care of the interlocking station, lamps and supplies; and, unless otherwise provided, of the interlocking plant.

631. Lights in interlocking stations must be so placed that they cannot be seen from approaching trains.

632. Lights must be used upon all interlocking signals from sunset to sunrise and whenever the signal indications cannot be clearly seen without them.

633. If a train or engine overruns a Stop-signal, the fact must be reported to _____.

634. Signalmen must not permit unauthorized persons to enter the interlocking station.

Enginemen and Trainmen

661. If a signal, permitting a train to proceed, after being accepted, is changed to a Stop-signal before it is reached, the stop must be made at once. Such occurrence must be reported to _____.

662. Trains or engines must not pass a signal indicating stop, except as provided in Rule 663.

663. Trains or engines must not proceed on hand signals as against interlocking signals until enginemen and trainmen are fully informed of the situation and _____.

NOTE TO RULE 628.—Hand signaling includes the use of lamp, flag, torpedo, and fusee signals.

664. The engineman of a train which has parted must sound the whistle signal for Train-parted on approaching an interlocking plant.

665. An engineman receiving a Train-parted signal from a signalman must answer by the whistle signal for Train-parted.

666. When a parted train has been re-coupled the signalman must be notified.

667. Sand must not be used over movable parts of an interlocking plant.

668. Conductors* must report to ——any unusual detention at interlocking plants.

669. Trains or engines stopped by the signalman in making a movement through an interlocking plant, must not move in either direction until they have received the proper signal from him.

670. A reverse movement within the limits of an interlocking plant, or a forward movement after making a reverse movement, must not be made without the proper interlocking signal or permission from the signalman.

Repairmen

681. Repairmen are responsible for the inspection, adjustment and proper maintenance of all the interlocking plants assigned to their care.

682. When the condition of switches or track does not admit of the proper operation or maintenance of the interlocking plant, the fact must be reported to ——.

683. When any part of an interlocking plant is to be repaired a thorough understanding must first be had with the signalman, in order to secure the safe movement of trains and engines during repairs. The signalman must be notified when the repairs are completed.

684. If necessary to disconnect a switch, derail, detector bar, or its equivalent, or a lock, all switches or derails affected must be safely secured before any train or engine is permitted to pass over them.

685. Alterations or additions to an interlocking plant must not be made unless authorized by ——.

*Or enginemen of yard engines.

EXAMINATION QUESTIONS ON BOOK OF RULES FOR OPERATORS

NOTE.—The person examined must be able to repeat the definitions, must be familiar with hand, flag and lamp signals, whistle signals, torpedo and fusee signals, and must know how and when to use them.

Q. Is a station track a siding for meeting or passing trains?
A. Not unless it has been so designated.

Q. Where is it designated? A. On the time-table.

Q. Are main tracks ever part of a yard? A. Only when there are yard limit boards defining such limits.

Q. May yard engines occupy the main track in a yard where there are no yard limit boards? A. Only as an extra by train orders.

Q. Does the pilot relieve the trainmen of responsibility, and does pilot have to sign train orders? A. They are not relieved of responsibility, and the pilot signs orders.

Q. What is the standard time, and what time is it received over the wire? A. Ninetieth meridian or central time, and is transmitted over the wire at 11 A. M. daily except Sunday.

Q. When only one time is shown on a time-table, what does it indicate? What, when two times are shown? A. One time shown indicates the leaving time, and two times shown indicate the arriving and leaving time.

Q. What are schedule meeting and passing points indicated by, and how are the numbers of trains shown on time-table at meeting and passing points? A. Meeting and passing points are indicated by full-faced type, and the numbers of the trains to be met or passed will be shown in small type adjoining the full-faced type.

Q. What letters are used on time-table to indicate regular and flag stops for trains? A. S for regular stop and F for flag stop.

Q. What is required of employes whose duties necessitate giving signals? A. Provide themselves with red, green and white flags, combined green and white flag, and the same in lamps, keep them in good order and ready for immediate use.

Q. From what side of the track do you signal a train, and on what rail would you place torpedoes? A. Engineman's side.

Q. What are the decorations for a yard engine? A. Display a headlight to the front and rear by night; if no headlight at the rear two white lights must be displayed.

Q. Do they display classification signals and markers? A. No.

Q. When two or more engines are coupled together, which display classification signals? A. All engines.

Q. Would one flag or light displayed where two are prescribed indicate the same as two? A. Yes.

Q. What does a blue flag by day or a blue light by night, displayed at one or both ends of an engine, car or train, indicate? A. Indicates that workmen are at work in or about the engine, car or train, and the same must not be moved or coupled to, until signal is removed.

Q. What does the absence of or the imperfect display of a signal indicate and how acted upon? A. Stop and report to the Superintendent.

Q. What is a combined green and white signal used for? A. To stop a train only at flag stations.

Q. When it is necessary to stop a train at a point which is not a flag stop for that train, what kind of a signal must be given? A. Red signal, as the train would not pay any attention to the green and white signal.

Q. Should torpedoes be placed near stations, road crossings, or in yards where persons are liable to be injured by them? A. No.

Q. Is there any superiority between passenger extra, freight extra, or work extra? A. No.

Q. Can there be superiority by direction on double track? A. No; it is limited to single track.

Q. Which direction is superior? A. Eastward and northward.

Q. When does a train lose its right? A. When it is twelve or more hours late.

Q. May a train arrive at a station in advance of its scheduled arriving time? A. No.

Q. May it leave in advance of its scheduled leaving time? A. No.

Q. Does a train which falls back upon the time of another train of the same class lose its rights, and how does it proceed? A. No; proceeds on its own schedule.

Q. When signals are taken down on single track at any point before the following section arrives, what must the con-

ductor and operator do? A. Notify in writing all opposing trains of the same or inferior class leaving such point that the section for which the signals were displayed has not arrived, unless instructed otherwise by the dispatcher.

Q. Do you understand that messages or orders respecting the movement of trains, or the condition of the track or bridges, must be in writing? A. Yes.

Q. What track do trains use while running on double track? A. On most railroads they keep to the right.

Q. What signal must dispatcher use to indicate train orders and tell the operator what form to use? A. 31 or 19, with number of copies required if more or less than three copies.

Q. If you do not take the requisite number of copies of an order at one writing, what do you do? A. Make others from one of the copies previously made, and repeat to the train dispatcher from the new copies each time additional copies are made.

Q. Do you listen to operators repeating orders, and how? A. Yes; by checking the lowest copy.

Q. What is the "X" response? A. An acknowledgment of a train order. Red signal must be displayed until the order is completed and delivered.

Q. When a train is stated in an order by its schedule number alone what does it indicate? A. All of the sections are included.

Q. Is the operator responsible for the delivery of a copy of an order to all sections, whether he has enough copies or not? A. Yes.

Q. What action would you take about repeating or giving the "X" response on an order addressed to a train, the engine of which has passed your block signal? A. Would not "X" or repeat the order until I had notified trainmen and obtained the signatures of the conductor and engineman to the order.

Q. Would you accept an order for a train if you were in doubt as to whether or not it had passed? A. No.

Q. Train orders once in effect continue so how long? A. Until fulfilled, annulled or superseded.

Q. When a freight train is running on the irregular track at night, how should his markers show? A. Green to the front and sides, and to the rear a green light next to the regular track and a red light on the opposite side.

BLOCK RULES AND MISCELLANEOUS QUESTIONS

Q. What position is the governing arm of semaphore in as seen from the approaching train? A. To the right of the signal mast.

Q. What are the different positions and what do they indicate? A. Horizontal, Stop. Vertical, Proceed. Diagonal, Caution.

Q. What are the instructions about operating signals? A. Handle carefully and with uniform movement.

Q. Do you observe whether the indications of signals correspond with position of levers? A. Yes, when practicable.

Q. Are you permitted to make any alterations or additions to the apparatus? A. Not unless authorized by proper party.

Q. Do you keep a record of trains at your office and the adjoining office in each direction, also record of crossover movements? A. Yes.

Q. What do opposing and following movements only mean? A. For single track movement.

Q. What does absolute block for following movements only mean? A. For double track movement, with only one train in the block at a time.

Q. What does permissive block for following movements only mean? A. For double track movement with two or more trains allowed in the block at the same time.

Q. When a train enters the block how do you proceed to report it according to rules? A. Report to station in advance first, then to station in rear.

Q. What is the rule in regard to using Signal 1 or 3 before receiving Signal 4 from block station in rear? A. Do not use 1 or 3 until you receive 4.

Q. Do you observe all trains to see whether train is complete? A. Yes.

Q. If a train passes with no markers displayed, what would you infer and what action would you take? A. That train had parted, and notify block stations on each side and report same to dispatcher.

Q. If you are notified by next block station in either direction that a train which has entered block has parted, what

would you do? A. Make every effort to display a clear block signal and give "train-parted" signal to engineer as front portion approaches.

Q. If a train enters siding at your station or crosses over to be met or passed by another train, what must you know before reporting the block clear? A. That the markers on rear of train are clear of main track and that the switch is closed.

Q. Do trainmen have to ask permission to cross over or pull out of siding on main track? A. Yes.

Q. When trains coupled together have been separated between stations, do you regard each portion as an independent train? A. Yes.

Q. If necessary to stop a train for which clear or caution signal has been displayed, what signal would you use in addition to stop signal? A. Use hand signal.

Q. What is the proper signal and where placed when you have orders for a train? A. Red flag or red lamp for 31 orders; green flag or green lamp for 19 orders; placed on side of signal mast.

Q. What would be done in case you could not raise next block station for block or could not raise the dispatcher? A. Stop all trains approaching in that direction and make every effort possible to communicate with the dispatcher before allowing the train to proceed according to Rule 332.

Q. Do you ever give signals by hand when the same may be given by fixed signals? A. No.

Q. Who is responsible for the care of the block station, lamps, supplies and signal apparatus? A. The operator, unless otherwise provided.

Q. Is it necessary to conceal lights in block office so trains cannot see them? A. Yes.

Q. When do you light your block signal lights? A. Sunset to sunrise, and whenever the signals cannot be seen without them.

Q. What would you do if a train overruns a stop signal? A. Report to superintendent.

Q. If a stop signal is disregarded, what would you do? A. Report to next block station in advance and then to the superintendent.

Q. What must be done when an office is opened? A. Report to dispatcher and notify the block stations on each side, using Signal 8.

Q. Would you close your block office without receiving authority from the dispatcher? A. No.

Q. How would you arrange to close a block office? A. Use Signal 9 and get 2 for trains which have been admitted to the block in each direction, get permission to leave from dispatcher, secure block signals in clear position, and arrange wires to work through.

Q. What are instructions about trains coupled, arranging to uncouple on the block? A. Must be uncoupled only at a block station and signalman notified.

Q. If you give a train a "train-parted" signal, how would engineer answer it? A. By three long blasts of the whistle.

Q. Do trainmen notify operators when parted train has been recoupled? A. Yes.

Q. What would trainmen do at block station on double track where the operator was absent, so that instructions could not be obtained? A. Wait five minutes and proceed with caution to next block station and report to superintendent.

Q. If track is obstructed between block stations, what is required of trainmen? A. Notice given to the nearest block office.

Q. When a clear signal is given, how far does it indicate that block is clear? A. To next block station ahead.

Q. What record of movements of trains is kept and what time must the record commence? A. A record of train movements should be kept on a train register sheet and commenced at midnight.

Q. Do dwarf interlocking signals govern running tracks in their reverse directions? A. Yes.

Q. How do you arrange the block for a train that wants to back out after train met has passed on single track? A. Ask office in rear "1" for No. — to back out and let them do so as soon as the train has passed.

Q. How do you distinguish freight from passenger trains as referred to in block rules? A. By their equipment.

Q. What is a positive or absolute block? A. A block where there is only one train allowed at a time.

Q. What is a permissive block? A. A block where two or more trains are allowed at a time.

Q. If you had an order addressed to No. 16 and before delivery is made a new time-table takes effect, and there is no corresponding number on the new time-table, what would you do? A. The order would be void, and I would file it.

Q. When is it proper for an operator to report a train as by him? A. When the markers have passed the office 100 yards.

Q. Do you return your block signal to normal position from clear before displaying caution for a train? A. Yes.

Q. What danger is there in sending the signature of an order to the dispatcher before it has been signed by the conductor and engineer? A. It is not only a violation of the rules, but unsafe, as the operator may overlook delivering all orders he holds for a train, or while the train is held at his station it may be necessary to place it on a siding before conductor and engineer have signed the order, and if operator signs for conductor and engineer, or gives the signature before it is signed, the train may not be in clear and a collision result before the train crew are aware that their rights have been taken away from them.

THE COMMERCIAL TELEGRAPH

Commercial telegraph companies are those used by the public for the transaction of their business by telegraph.

The Western Union and Postal Telegraph companies are the largest two commercial companies in this country. There are but few others.

Commercial Telegraph Rules

As Generally Used by the Western Union and Postal Telegraph Companies

General Information

The places given in the list of offices in the Tariff Book, before the names of which there are numbers in the column headed "SQ," are "this line" offices.

"Other line" telegraph offices—i. e., offices on lines owned or operated by other than this company, are designated by single stars, thus:

*Climax (Ala.).

Stations, places, establishments or institutions to which messages are delivered from nearest telegraph offices are designated by two stars, thus:

**Avondale (Ala.).

Places to which messages are transmitted by telephone from the nearest telegraph offices are designated by three or four stars, thus:

***Alexandria (Ala.).

****Allenville (Ala.).

A three star station is one where there is no agent or representative of the telegraph company. A four star station is one where there is an agent of the telegraph company, for the delivery of messages to and the acceptance of messages from non-telephone subscribers.

The points at which messages originating at "other line" telegraph offices should be transferred to this company are shown in the Tariff Book immediately after the names of such "other line" points. For example:

*Climax 30-2.5 York.

This indicates that York is the proper place of transfer for messages originating at Climax.

The numbers under the heading "SQ" (Square) denote the squares in which "this line" offices are located.

In addition to a Tariff Book, each office should have a Tariff sheet showing Square and State rates. The Tariff sheet should be placed where it will be preserved, and where it can easily be referred to.

The exceptions to the Square or State rates are given by special instructions, and are to be used in accordance therewith.

Services Furnished

(a.) **Telegrams (Full rate messages):**

Accepted at any hour for immediate transmission.

(b.) **Night messages:**

Accepted up to two o'clock a. m. for delivery not earlier than the morning of the next ensuing business day.

(c.) **Day Letters:**

Accepted and forwarded as deferred service subordinate to the priority of transmission and delivery of full rate telegrams. Must be written in plain English; code language not admitted.

(d.) **Night Letters:**

Accepted up to two o'clock a. m. for delivery on the morning of the next ensuing business day. Must be written in plain English, code language not admitted.

(e.) **Press Dispatches:**

Complete instructions and rates in back of Tariff Book.

(f.) **Commercial News Service:**

Market quotations and reports, baseball and other news furnished by messenger, private wire or ticker.

(g.) **Marine Service:**

Report of the arrival of steamships.

(h.) **Money Transfer Service:**

Money is transferred by telegraph from and to offices especially designated to handle the service.

(i.) **Time Service:**

Electrical synchronizing clocks furnished to subscribers at certain monthly rental.

(j.) Messenger Service:

At offices where messengers are employed, messengers are furnished for the delivery of notes, packages, etc., on distance or hourly basis at rates depending upon local conditions.

(k.) Cablegrams:

(l.) Cable Letters:

(m.) Week End Letters:

(n.) Deferred Cablegrams:

(o.) Wireless Messages:

(p.) Government Messages:

Accepted in accordance with existing instructions as printed in the Tariff Book.

How to Find Rates

To ascertain the rate for a full rate telegram or a night message to a "this line" office, note first the number, if any, of the Square before the name of the office, and then refer to the sheet showing Square and State rates; if there be a Square rate to the number noted, which is *lower* than the State rate to the State, Territory or Province in which the office is situated, then the *Square rate* will be the rate desired; but if there be no Square rate to that number, or if the Square rate given be *higher* than the State rate, then the *State rate* will be the rate desired. Where a notation of instruction to *check* with some other office follows the name of an office, such notation will not make the rate the same as to the checking office; when that is intended the notation will be found to read "Tariff same as and check," or "Tariff same as."

Night Messages

The "night message" rate to a "this line" office is given on the Tariff sheet of Square and State rates.

Night messages to "one," "two," "three" and "four star" points may be accepted at night message rate for "this line," and full rate, or night message rate, if there be one, for "other line."

Those of the "one," "two," "three" or "four star" points for which night message rates have been established are indicated by the letter (N.), followed by the "other line" rate for night messages. See Henderson (Arkansas).

Day Letters

The rate for a Day Letter of *fifty* words or less to a "this line" office, is one and one-half times the rate for a *ten*-word full-rate telegram, and one-fifth of the fifty-word rate shall be charged for each additional ten words or less.

Those of the "one star," "three star" and "four star" stations for which Day Letter rates apply on both "this line" and "other line" are indicated in the Tariff Book by the letter (L.) following the names of the places. For example: *Demorest (L.) 30-2.5 Cornelius. If the "this line" rate to Cornelius be 60-3.5, the rate for a fifty-word day letter to Demorest is determined by adding 30 cents to 60 cents and multiplying the result by $1\frac{1}{2}$; *i. e.*, the Day Letter rate is \$1.35 for 50 words and 27 cents (one-fifth of \$1.35) for each additional 10-word group. To stations not designated by the letter (L.) the rate for Day Letters will be Day Letter rate for "this line," plus regular telegram rate for "other line."

Night Letters

The rate for a Night Letter of *fifty* words or less to a "this line" office is exactly equal to the rate on a *ten*-word full-rate telegram; and one-fifth of the fifty-word rate shall be charged for each additional ten words or less.

Those of the "one star," "three star" and "four star" stations for which Night Letter rates apply on both "this line" and "other line," are indicated in the Tariff Book by the letters (L.) or (N. L.) following the names of the places. For example: *Furnace. (N. L.) 15-1 Lexington. If the "this line" rate to Lexington be 30-2.5, the rate for a Night Letter to Furnace is 45 cents for 50 words and 9 cents for each additional 10-word group. To stations not designated (L.) or (N. L.) the rate for Night Letters will be Night Letter rate for "this line," plus regular rate for "other line."

Rates to "Other Line" Stations

With the name of each "other line" point will be found the "other line" rate beyond the transfer point. To ascertain the rate to an "other line" office, add the "other line" rate beyond the transfer point to the "this line" rate to the transfer point. For example:

***Altaville (Calif.) 60-5 Sonora.†**

The day rate to Altaville is the "this line" rate to Sonora plus the "other line" rate (sixty cents for ten words or less and five cents for each word over ten) from Sonora to Altaville.

†The name of Sonora's State is not given, for the reason that it is the same as that of Altaville. Where the State in which the connecting office is situated is not the same as that of the "other line" office, it will be found printed with the name of the connecting office.

Where the figure 0 appears as the additional word rate in "other line" rates, it means that there is no charge for additional words and hence the figure before the dash (e. g., the figure 25 in an "other line" rate of 25-0) designates a flat "other line" rate of that amount for all messages, no matter how long and irrespective of whether they are full day rate messages, night messages, day letters or light letters.

Where two or more "other line" rates are given, as in the case of the Canadian Provinces, two or more routes, for messages to the "other line" point, are thereby indicated. In such cases, the route giving the lowest combined rate should be chosen.

To telephone subscribers at many "two star" and "three star" points messages are delivered free of charge. This is indicated by the abbreviation "Sub. free" (Subscribers free). See Bellamy (Alabama). Where an additional charge is required for those who are not telephone subscribers, it is given either with the name of the station, as in the case of Bellamy; or, where it has not been ascertained or is a variable charge, it is collected from the addressee, as in the case of Canton Junc., Mass.

Messages to be Mailed

When the Tariff Book specifies or the sender directs that delivery at destination shall be made by mail, no charge should be made for postage.

SQUARE RATE SHEET
SQUARE RATES FROM VALPARAISO, IND. Square 302

To Squares in this column	To Squares in this column	To Squares in this column
30—2.5 Day 24—1.5 Night	36—2.5 Day 30—1.5 Night	48—3.5 Day 36—1.5 Night
248	225	213
260	236	224
261	237	235
272	247	238
273	249	246
274	259	250
284	262	271
285	283	275
302	286	300
313	315	324
314	337	328
325	340	349
326	350	353
327	352	361
338	362	364
339	363	374
351	375	376
		388
		389
		402

NOTE.—Use Square rate when lower than State rate. When the Square rate is higher than the State rate, or when there is no Square rate, use State rate.

STATE RATE SHEET**STATE RATES FROM INDIANA**

To be used when less than Square rates. See Note, page 169.

	RATE	
	Day	Night
Alabama	72— 5	48—1.2
Arizona	120—8.5	60—2.4
Arkansas	60—3.5	42—1.2
British Columbia	110— 7	90— 6
California (South)	120—8.5	60—2.4
California, Other Offices	120—8.5	60—2.4
Colorado	72— 5	48—1.2
Connecticut	60—3.5	42—1.2
Delaware	60—3.5	42—1.2
District of Columbia	60—3.5	42—1.2
Florida	72— 5	48—1.2
Georgia, Atlanta	60—3.5	42—1.2
Georgia, Other Offices	72— 5	48—1.2
Idaho	120—8.5	60—2.4
Illinois, Chicago	48—3.5	36—1.2
Illinois, Other Offices	60—3.5	42—1.2
Indiana, Indianapolis	30—2.5	24—1.2
Indiana, Other Offices	42—2.5	30—1.2
Iowa	60—3.5	42—1.2
Kansas	72— 5	48—1.2
Kentucky, Louisville	42—2.5	30—1.2
Kentucky, Other Offices	60—3.5	42—1.2
Louisiana	72— 5	48—1.2
Maine	60—3.5	42—1.2
Manitoba	65— 4	50— 3
Maryland	60—3.5	42—1.2
Massachusetts	60—3.5	42—1.2
Michigan, Detroit	48—3.5	36—1.2
Michigan (North)	60—3.5	42—1.2
Michigan, Other Offices	60—3.5	42—1.2
Minnesota	60—3.5	42—1.2
Mississippi	72— 5	48—1.2
Missouri, St. Louis	48—3.5	36—1.2
Missouri, Other Offices	60—3.5	42—1.2
Montana	90— 6	54—2.4
Nebraska, Omaha	60—3.5	42—1.2
Nebraska, Other Offices	72— 5	48—1.2

STATE RATE SHEET

(Continued)

	RATE	
	Day	Night
Nevada	120—8.5	60—2.4
New Brunswick	65— 4	50— :
New Hampshire	60—3.5	42—1.2
New Jersey	60—3.5	42—1.2
New Mexico	90— 6	54—2.4
New York, Buffalo	48—3.5	36—1.2
New York, Other Offices	60—3.5	42—1.2
North Carolina	60—3.5	42—1.2
North Dakota	72— 5	48—1.2
Nova Scotia	65— 4	50— 3
Ohio, Cincinnati	42—2.5	30—1.2
Ohio, Other Offices	48—3.5	36—1.2
Oklahoma	72— 5	48—1.2
Ontario	55— 4	45— 3
Oregon	120—8.5	60—2.4
Pennsylvania, Pittsburgh	48—3.5	36—1.2
Pennsylvania, Other Offices	60—3.5	42—1.2
Quebec	55— 4	45— 3
Rhode Island	60—3.5	42—1.2
South Carolina	72— 5	48—1.2
South Dakota	72— 5	48—1.2
Tennessee	60—3.5	42—1.2
Texas (West)	90— 6	54—2.4
Texas, Other Offices	72— 5	48—1.2
Utah	90— 6	54—2.4
Vermont	60—3.5	42—1.2
Virginia	60—3.5	42—1.2
Washington	120—8.5	60—2.4
West Virginia	60—3.5	42—1.2
Wisconsin	60—3.5	42—1.2
Wyoming	72— 5	48—1.2

The words "*North*," "*South*" and "*West*" refer to places so marked in Tariff Book (see Michigan, California and Texas pages).

ACCEPTANCE OF MESSAGES FOR TRANSMISSION**Rule 1****Classification of Messages—Messages to be on Message Forms—
Terms and Conditions Under Which Messages
Accepted—Dating of Messages**

All messages accepted for transmission shall be received subject to the classifications hereinafter set forth, and to the conditions and stipulations adopted for each of the respective classifications. When presented at an office of the company, each message for transmission shall be written upon the form provided by the company for that purpose, or shall be attached to such form by the sender or his agent, so as to leave the printed heading in full view above the message.

All messages taken by this company are subject to the following terms:

To guard against mistakes or delays, the sender of a message should order it REPEATED, that is, telegraphed back to the originating office for comparison. For this, one-half the unrepeated message rate is charged in addition. Unless otherwise indicated on its face, THIS IS AN UNREPEATED MESSAGE AND PAID FOR AS SUCH, in consideration whereof it is agreed between the sender of the message and this Company as follows:

1. The Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any REPEATED message, beyond fifty times the sum received for sending the same, *unless specially valued*; nor in any case for delays arising from unavoidable interruption in the working of its lines; *nor for errors in cipher or obscure messages*.

2. In any event the Company shall not be liable for damages for any mistakes or delays in the transmission or delivery, or for the non-delivery, of this message, whether caused by the negligence of its servants or otherwise, beyond the sum of FIFTY DOLLARS, at which amount this message is hereby valued, unless a greater value is stated in writing hereon at the time the message is offered to the Company for transmission, and an additional sum, paid or agreed to be paid based on such value equal to one-tenth of one per cent. thereof.

3. The Company is hereby made the agent of the sender, without liability, to forward this message over the lines of any other Company when necessary to reach its destination.

4. Messages will be delivered free within one-half mile of the Company's office in towns of 5,000 population or less, and within one mile of such office in other cities or towns. Beyond these limits the Company does not undertake to make delivery, but will, without liability, at the sender's request, as his agent and at his expense, endeavor to contract for him for such delivery at a reasonable price.

5. No responsibility attaches to this Company concerning messages until the same are accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

6. The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

7. *Special terms governing the transmission of messages under the classes of messages enumerated below shall apply to messages in each of such respective classes in addition to all the foregoing terms.*

8. *No employe of the Company is authorized to vary the foregoing.*

Classes of Service

Telegrams

A full-rate expedited service.

Night Messages

Accepted up to 2 A. M. at reduced rates to be sent during the night and delivered not earlier than the morning of the ensuing business day.

Day Letters

A deferred day service at rates lower than the standard telegram rates as follows: One and one-half times the standard Night Letter rate for the transmission of 50 words or less and one-fifth of the initial rates for each additional 10 words or less.

Special Terms Applying to Day Letters

In further consideration of the reduced rate for this special "Day Letter" service, the following special terms in addition to those enumerated above are hereby agreed to:

A. Day Letters may be forwarded by the Telegraph Company as a deferred service and the transmission and delivery of such Day Letters is, in all respects, subordinate to the priority of transmission and delivery of regular telegrams.

B. Day Letters shall be written in plain English. Code language is not permissible.

C. This Day Letter may be delivered by the Telegraph Company by telephoning the same to the addressee, and such delivery shall be a complete discharge of the obligation of the Telegraph Company to deliver.

D. This Day Letter is received subject to the express understanding and agreement that the Company does not undertake that a Day Letter shall be delivered on the day of its date absolutely and at all events; but that the Company's obligation in this respect is subject to the condition that there shall remain sufficient time for the transmission and delivery of such Day Letter on the day of its date during regular office hours, subject to the priority of the transmission of regular telegrams under the conditions named above.

No employe of the Company is authorized to vary the foregoing.

Night Letters

Accepted up to 2:00 A. M. for delivery on the morning of the ensuing business day, at rates still lower than standard night message rates, as follows: The standard telegram rates for 10 words shall be charged for the transmission of 50 words or less, and one-fifth of such standard telegram rate for 10 words shall be charged for each additional 10 words or less.

Special Terms Applying to Night Letters

In further consideration of the reduced rate for this special "Night Letter" service, the following special terms in addition to those enumerated above are hereby agreed to:

A. Night Letters may at the option of the Telegraph Company be mailed at destination to the addressees, and the Company shall be deemed to have discharged its obligation in such cases with respect to delivery by mailing such Night Letters at destination, postage prepaid.

B. Night Letters shall be written in plain English. Code language is not permissible.

No employe of the Company is authorized to vary the foregoing.

Every message filed for transmission at an office or agency of this company shall show as its point of origin the name of the city or town where such office or agency is located, and shall show the date when it is filed with this company, with the exceptions shown in the following paragraphs of this rule.

A message from a point listed in the Tariff Book of this company as a three-star or four-star point, telephoned by the sender to this company's office at the transfer point designated in the Tariff Book, for transmission, shall show as its point of origin the name of the city or town from which it is telephoned. Existing practices governing the acceptance of messages telephoned by the sender from a point where this company has an office or agency, at a time when such office or agency is closed, may be continued in force until otherwise ordered.

A message originating at a point on a connecting telegraph line at which there is no "this line" office and transferred to the lines of this company at the transfer point designated in the Tariff Book of this company, shall show as its point of origin and as its date the name of the city or town where, and the date when, it was originally filed with the connecting company and need not show the name of the place where or the date when it is filed with this company.

No message received by this company for transmission shall bear a point of origin or date otherwise than in accordance with the foregoing.

Where there are two or more places of the same name in the same state, a message filed at one of them shall show in the date the name of the county in which the place of origin is located.

NOTE.—For instructions governing the forwarding of messages, see Rule 8.

Rule 2

Examination of Messages Before Acceptance

Read each message carefully before acceptance and when necessary make indistinct words plain by marginal notation before transmission.

Give any aid or explanation necessary to enable sender to prepare his message.

Make no change in any message, but refer misspelled or abbreviated words to the sender for correction. If sender declines to make correction, accept message as written. Concerning messages containing figures, punctuation marks, symbols, etc., see Rule 4.

Record place from, time filed, day, month and year.

Request and record the sender's address unless it is well known.

Do not accept a message containing profane, obscene or libelous language.

If the sender should fail to sign his message, call his attention to the omission. If he does not then sign it, write in place of the signature the words "not signed."

Code signatures will not be carried free. If the sender insists on the use of a code signature, it should be counted and charged for and the designation "Sig. Ctd." should be added to the check of the message.

For instructions concerning charge for extra words in signatures, see Rule 4.

Rule 3

Addresses

Request full and complete address. The importance of a complete address cannot be over-estimated.

Do not accept a domestic message with a code address. Such a message inadvertently accepted and transmitted will be reported undelivered by the office of destination.

"Try Hotels" is not a sufficient address. If proper address cannot be furnished, endorse message, "Accepted at sender's risk" after having so informed the sender.

The proper address for messages which are to be called for by the addressee at the office of destination is "Will Call." The practice of using "Care Telegraph Company" is confusing at large offices because such addresses suggest that the addressee is employed by the company, thereby necessitating a review of the list of employes in the city before placing the messages in the "will call" box. The expression "Care Telegraph Company" should be restricted to messages addressed to employes of the company.

The address of a message to a passenger on a train should show the name of the railroad, train number or name or time due, and the place where message is to be delivered, and also the point for which the passenger is bound. If the train is run in sections, the section should be specified, if known.

Example:

John Jones, En route Chicago, N. Y. C. Train Three, due Cleveland 10.35 P. M., Cleveland, O.

Such messages should be prepaid and destined to a regular scheduled stop.

Persons filing messages addressed to passengers on trains at terminal points should be advised that there is no assurance of their delivery. (See Rule 45). All such messages should, if possible, be addressed to an intermediate point.

Addresses of private messages to officers and enlisted men at army posts or military camps should, whenever possible, specify the branch of the service, regiment, company and rank of the addressee (e. g., Private John Jones, Co. A, 7th Regt. Infantry, Fort Sam Houston, Texas).

Record "Phone" or "Don't Phone" after name of addressee if the sender requests a message delivered or not delivered by telephone, as the case may be. The words "Phone" or "Don't Phone" will not be counted as extra words or charged for.

Senders of messages addressed to a rural free delivery route, for example, "J. H. Henry, R. F. D. No. 3, Plymouth, Kans." should be asked if delivery can be made by telephone and, if so, the direction "Phone" should be placed in the address. If it is not known whether telephone delivery can be made or not, and if delivery by special messenger is desired, the sender should be required to pay or guarantee delivery charges, as provided in Rule 5.

When the message is an answer and the sender is unable to give sufficient address, write in the address (not in the check) the words "An Answer," followed by the word "date" if the message to which it is an answer is of the same date, or the figures indicating the date if it be a back date message, provided the sender can supply the information. If the date of the message to which it is an answer shows an office call, add the word "care" and the office call shown in the date of the original message. The matter so written in the address is not to be counted as extra words or charged for.

For example, if the message be an answer to a telegram *dated the same day*, from Canton, O., signed John Jones, and the person filing the reply can give no definite local address for his answering message, the answering message should be addressed:

JOHN JONES,
An Answer Date,
Canton, O.

If it be an answer to a *back-date* message (e. g. an answer, filed on the 14th of the month, to a message dated the 12th) the answering message should be addressed:

JOHN JONES,
An Answer 12,
Canton, O.

If the message be an answer to a message dated "*MS New York*" *the same day*, it should be addressed:

JOHN JONES,
An Answer Date, care MS,
New York, N. Y.

If it be an answer to a *back-date* message dated "*MS New York*" the 12th of the month, it should be addressed:

JOHN JONES,
An Answer 12, care MS,
New York, N. Y.

When a message addressed to a point in one of the Southern States is filed by a colored person, it should be suggested to the sender that, if the addressee be colored, the word "Colored" should be added after the name of the addressee in the address.

in order to facilitate delivery of the message. The word "Colored" in the address will not be counted or charged for.

For instructions concerning charge for extra words in addresses, see Rule 4.

Rule 4

How to Count and Charge for Messages

I. Application of Rule

This rule applies to domestic messages, i. e., messages to points in the United States, Alaska, Canada and Mexico.

For count of cable messages, see Cable Rules.

The necessary address and a signature are not counted or charged for.

For the rules concerning extra, chargeable matter in address and signature, see subdivisions III and IV of this rule.

II. The Count

The body of the message and chargeable matter in the address and signature will be counted as follows, and the message charged for accordingly:

Dictionary words taken from the English, German, French, Italian, Dutch, Portuguese, Spanish or Latin languages will be counted as one word each, irrespective of length.

Examples:

Excursion (English dictionary)	1	word
Herzlichen Glueckwunsch (German dictionary)	2	"
Nous arriverons dimanche (French dictionary)	3	"
Dolce far niente (Italian dictionary)	3	"
Mijne groete aan me vrouw (Dutch dictionary)	4	"
Tudo esta perdido (Portuguese dictionary)	3	"
Un cabello haze sombra (Spanish dictionary)	4	"
Errare est humanum (Latin dictionary)	3	"

Combinations of two or more dictionary words, or mutilated dictionary words, written together contrary to the usage of the language will be counted according to the number of words of which they are composed:

Examples:

Firstclass (Properly written "first class")	2	words
Carlots (" " " " "car lots")	2	"
Warrisk (" " " " "war risk")	2	"
Billading (" " " " "bill lading")	2	"

Allright (or alright) (Properly written "all right")	2	"
Dothe (for "do the")	2	"
Itis (for "it is")	2	"
Havyu (for "have you")	2	"

It is important that the message shall carry its original count throughout its transmission and that its progress shall not be delayed by questioning of the check between operators. Therefore, the employe with whom the message is filed shall indicate his count of any compound word or combination of words, concerning the count of which there may be doubt on the part of operators in the course of further transmission, and his count of any group of separate words which are counted together as one word, by underscoring the word or words, and writing the figure indicating his count under the underscore. When a combination written as one word is counted as more than one word, he shall also indicate by a vertical line the point of separation between the words separately counted as one each.

Examples:

Carload

1

war|risk

2

New|year

2

any|one

2

post|office

2

rear|end

2

per cent

1

The following will be counted as indicated:

Western Union.....	1 word
Dayletter (or Day Letter).....	1 "
Nightletter (or Night Letter).....	1 "
Parcelpost (or Parcel Post).....	1 "
New Year (or Newyear).....	2 words
Per Cent. (or Percent).....	1 word
Cannot or can't.....	1 "
Can not.....	2 words

All groups of letters, when such groups are not dictionary words of one of the eight languages enumerated, or combinations of such dictionary words, or proper names, will be counted at the rate of one word for every five letters or fraction of five letters.

Examples:

Ababa	1 word
Hhgga	1 "
Egadol	2 words
Ccghxo	2 "
Dutimerodal	3 "
Gghrcceqdr	3 "

When a message contains any such combination or combinations of more than five letters and hence counted as more than one word each, the message will be given a double check, the first figure in the check showing the number of words counted and charged for and the second figure the number of words as written by the sender.

For example, a message reading :

"Offer for September shipment ympirgoamo netirbosoc prompt acceptance"

will be checked "10/8 Paid" if it be a paid message, or "11/9 Collect" if it be a collect message.

Surnames of persons will be counted as one word each.

Examples:

Van Dorne	1 word
McGregor	1 "
O'Connor	1 "
DeWitt	1 "

Initials will be counted as one word each.

Examples:

G. W. E. A.....	4 words
W. H. Brown.....	3 "
B. & O.....	3 "

Exceptions:

A. M.	1 word
P. M.	1 "
F. O. B. (or fob).....	1 "
C. O. D. (or cod).....	1 "
C. I. F. or C. F. I. (or cif, or cfi).....	1 "
C. A. F. (or caf).....	1 "
L. C. L. (or lcl).....	1 "
O. K.....	1 "
S. S. (steamship).....	1 "

Proper names will be counted according to the number of words and initials which they contain.

Examples:

John L. Sullivan.....	3 words
Hudson Bay.....	2 "
Long Island.....	2 "
Puget Sound.....	2 "
S.S. Admiral Goodrich.....	3 "
Nippon Maru (or Nipponmaru).....	2 "

Exceptions:

Names of countries, states, territories, provinces, counties, cities, towns and villages and abbreviations of such names will be counted as one word each. When the word "City" is customarily used in connection with the name of a city, it will be considered as a part of the name.

Examples:

United States (Country).....	1 word
New York (State or City).....	1 "
New York City.....	1 "
District of Columbia.....	1 "
Nova Scotia (Canadian Province).....	1 "
Red Hill (County).....	1 "
St. Louis (City).....	1 "
East St. Louis (City).....	1 "
Red Bud (Town).....	1 "
South Orange (Village).....	1 "
New York, New Haven & Hartford Railroad.....	5 words
N. Y.	1 word
S. C.	1 "
D. C.	1 "

Names of forts, barracks, army posts, army stations and military camps listed in the Tariff Book will be counted as one word each.

Examples:

Fort Slocum.....	1 word
Camp Upton.....	1 "

When initials and connectives, which are ordinarily written separately, are obviously combined into one word for the purpose of evading the proper count, each initial and connective making up the combination is counted as one word, and the

message will be double checked in the same manner as provided in former paragraph.

Examples:

Bando (B. & O.).....	3 words
Cando (C. & O.).....	3 "
Pandr (P. & R.).....	3 "
Crrofnj (C. R. R. of N. J.).....	4 "

If groups of letters having the appearance of such illegitimate combinations are actually bona fide code words in the code of the sender, and are so used, they will be counted as such, with no double check. Whether they are or are not legitimate code words can always be demonstrated by exhibition of the code in which they are claimed to appear.

Abbreviations of weights and measures and other abbreviations in common use will be counted as one word.

Examples:

Lbs.	1 word
Cwt.	1 "
Hhds	1 "
No.	1 "
St.	1 "
Ave.	1 "
Dr.	1 "

Figures, decimal points and bars of division will be counted as one word each. In groups consisting of figures and letters each letter and figure will be counted as one word. In ordinal numbers the affixes st, d, nd, rd and th will be counted as one word.

Examples:

4442 (Figures).....	4 words
44.42 (Figures and decimal point).....	5 "
74 $\frac{3}{4}$ (Figures and bar of division).....	5 "
A1 (Letters and figures).....	2 "
42B618 (" " ")	6 "
A3GHF (" " ")	5 "
GVC24	5 "
1st (Ordinal number and affix).....	2 "
10th (" " " ")	3 "
No. 185 West 22nd St.....	9 "

When a message containing figures is presented, it should be pointed out to the customer that there is less liability to error, and in many cases greater economy in telegraph tolls if the amounts are written in words, but if he declines to substitute words for the figures, the message will be accepted as written.

When figures and a decimal point are to be transmitted, underscore the combination, draw an arrow pointing to the decimal mark, as follows:

44.42



and write the words "dot ctd" (dot counted) in the check.

Punctuation marks are transmitted only when specially directed by the sender, and in such cases will be counted as one word each, except

" " (quotation marks) 1 word
() (parentheses) 1 "

When a message is written so that its meaning is dependent on punctuation, it should be tactfully suggested to the sender that he may desire to rearrange it to avoid the possibility of misunderstanding by the addressee. It may be suggested that the word "stop" may be used to advantage to indicate the end of a sentence in the message, when otherwise the meaning may be obscure.

When a period or periods or other punctuation marks are at the sender's request to be transmitted, add the words, "Period ctd" (Period counted), or "Pntns ctd" (Punctuations counted), as the case may be, to the check.

When the symbols shown below appear in a message, the sender should be requested to substitute the corresponding words to insure correct transmission. The cost to him will be the same.

% should be written "percent."

" " " " "No." or "Number."

c " " " " "cent," "cents," "ct." or "cts."

@ " " " " "at" or "to" (according to the sense in which it is used).

° (signifying degrees) should be written "degrees."

' (" minutes) " " " " "minutes."

' (" feet) " " " " "feet."

" (signifying seconds) should be written "seconds."
 " (inches) " " " " " inches."

Accents (as in à, é, â, ñ, etc.), and the double dots used in certain languages over vowels to denote diphthongs (as in ä, ö and ü) cannot be transmitted.

III. Addresses

The address of a message, that is to say, whatever matter is required to afford the necessary information to enable the company to identify and locate the addressee, is carried free. All additional matter will be counted and charged for.

In an address such as

John Brown,
care E. C. Brown & Co.

or

Mr. Jones,
E. C. Brown & Co.

the words "care E. C. Brown & Co.," or "E. C. Brown & Co.," are added to aid the telegraph company to find Mr. Brown or Mr. Jones, and hence are a part of the address proper and not extra words.

In an address such as

James Brown, President

James Brown, President American Mfg. Co., etc.

the words "President" or "President American Mfg. Co.," inasmuch as they serve to identify the addressee, will not be charged for.

An address such as

Jones & Co.,
Dept. 15

indicates that the message is addressed to Department 15 of Jones & Company's establishment, and the words, "Dept. 15" are not extra words.

Matter added to the address to indicate the disposition or treatment of the message after delivery or for some other purpose not related to the delivery of the message, and not necessary to enable the telegraph company to deliver the message, will be counted and charged for.

Examples (extra words indicated by underscore) :

E. C. Brown & Co., attention Mr. Harris.

John H. Brown, personal.

The words "phone" or "don't phone," added to an address are not charged for as extra words.

In alternative addresses, the words constituting the alternative will be counted and charged for.

Examples (extra words indicated by underscore):

John Smith or James Brown, 80 Wall St.,	
New York	3 extra words
John Smith, 1191 Broadway, or James Brown,	
61 Wall St., New York.....	7 "
John Brown, 61 Wall St., or 162 Madison Ave.,	
New York	6 "
John Brown, Haskell 6123, or Main 5238 (al-	
ternative telephone numbers).....	6 "
John Brown, Statler Hotel, or care Smith	
Jones Co., Buffalo, N. Y.....	5 "
John Brown, Statler Hotel, or care some im-	
plement house, Buffalo, N. Y.....	5 "

It should be pointed out to the sender that such uncertain addresses do not offer a sufficiently definite basis to insure delivery, and if the sender is unable to furnish a definite address, he should be informed that the message will be accepted at sender's risk only.

In an address giving both the street number and telephone number of the addressee, as for instance:

James Brown,
62 Brown St., Main 432,
Kalamazoo, Mich.

the telephone number is not an alternative address and is not to be counted or charged for as extra words.

A message addressed to more than one person will, except as noted below, be treated as a separate message to each of the persons addressed.

Examples:

John Jones and Henry Brown, 25 Halsey St., Chicago, Ill.
John Jones, 25 Halsey St., and Henry Brown, 216 La Salle
St., Chicago, Ill.

The number of messages should be noted in a conspicuous place on the original as follows:

① messages.
② messages.

(Concerning transmission, see Rule 27).

When the names in the address constitute a firm name, the message will be treated as a single message. In such cases the message will be marked

① message.

When the sender of a message addressed jointly to two or more persons, wishes to indicate to each of the addressees that he is sending the same message to the other addressee or addressees, he should do so by appropriate notation in the text.

A message addressed to two or more members of the same family, as

Mr. and Mrs. John H. Brown
John H. Brown and Family

will be treated as a single message.

In none of the foregoing cases will there be any charge for extra words in the address.

The words "phone" or "don't phone" in an address will not be charged for.

IV. Signatures

One signature will be carried without charge.

Where there are more than one signature, all signatures except the last will be counted and charged for.

This applies only to messages signed jointly by a number of individuals or concerns. It should not be confused with cases where there is really only one signature proper, and a name or other matter is added to the signature, as explained in paragraphs following.

Examples (extra words underscored):

J. H. Jones, Wm. C. Brown, Edw. W. Green.
J. H. Jones and Wm. C. Brown.

No extra words will be counted and charged for where such a signature constitutes the firm name of a single concern.

In the case of family messages signed by more than one member of a family, as for instance:

"Mother and Father"

"John and Emma"

"John, Emma, James and Henry"

"Mother, Father, George and Mary"

"H. A. Brown and family"

the entire signature will be treated as a single signature and there will be no charge for extra words.

When a signature consists of the name of a company or firm, preceded by the title of an official, the title and the name of the concern together constitute one signature and there are no extra words.

Examples:

President Federal Rubber Co.

Treasurer Adams Express Co.

Cashier First National Bank.

Agent Prudential Insurance Co.

Words added to the signature proper by way of description or identification of the sender or to indicate the status, capacity or authority of the sender will be counted and charged for.

Examples (extra words underscored):

John Brown, President.....1 extra word

Geo. H. Wilson, General Manager.....2 " words

Thomas Green, Agent.....1 " word

Henry Jones, Receiver.....1 " "

Union Trust Company, Trustee.....1 " "

John Jones, Receiver American Mfg. Co......4 " words

John Jones, President American Shoe Mfg. Co......5 " "

Thomas S. Witherspoon of Dallas.....2 " "

Titles or their abbreviations in their ordinary use, preceding the name of the sender, such as "Dr.," "Rev.," "Lieut.," etc., will not be counted or charged for, but count and charge for descriptive designations added after the signature, as for example:

John Jones, Second Lieutenant.....2 extra words

Matter added to the signature by way of explanation or information to the addressee, or to indicate by which particular

branch or department of, or individual connected with, a firm or concern the message was sent or authorized will be counted and charged for.

Examples (extra words underscored) :

Cronck Mfg. Co., <u>Dept. 14</u>	3 extra words
Star Oil Co., <u>Atlas Branch</u>	2 " "
<u>Atlas Branch</u> , Star Oil Co.....	2 " "
Manning, Maxwell & Moore, Inc., <u>Bridgeport Works</u>	2 " "
John J. Ryerson & Son, <u>Credit Dept</u>	2 " "
Ryerson, <u>Credit</u>	1 " word
Studebaker, <u>New York Export</u>	2 " words
<u>General Motors Truck Co.</u> , <u>Division of General Motors Corporation</u>	6 " "
Smith & Co., by <u>John Smith</u>	3 " "
American Shoe Mfg. Co., <u>John Jones, President</u> .3	" "
Annie L. Lowry Band of Mercy, <u>John F. Cozens, Director</u>	4 " "
Nash Motors Co., by <u>John Johnson</u>	3 " "
Nash Motors <u>Johnson</u>	1 " word
Packard <u>Jones</u>	1 " "
Chevrolet <u>Campbell</u>	1 " "

The designations "Sr.," "Jr.," or "3rd" added to the names of persons, and "Inc." or "Ltd." added to the names of firms or corporations, form a part of the name and are not extra words when appearing in connection with a free address or signature. When appearing in the body of the message or in chargeable matter added to an address or signature, they will be counted and charged for.

For example, if a message is addressed or signed, "John Smith, Jr.," the "Jr." is not an extra word, but "John Smith, Jr.," appearing in the body of a message will be counted as 3 words, and in an address, "Continental Manufacturing Co., attention Mr. John Smith Jr.," there are five extra words, and in a signature "Smith Mfg. Co., by John Smith Jr.," 4 extra words, as indicated by the underscore.

When extra words in the address or signature are counted and charged for, the number of extra words will be indicated

in the check. For example, where there are 10 text words and 3 extra words in the address or signature, the message, if a paid message, will be checked

“13 Paid 3 Extra”

or, if a collect message, will be checked

“14 Collect 3 Extra.”

The words “Deliver and report charges,” “Delivery guaranteed,” “Report delivery,” “Repeat back” and “Valued \$.....” in the check will be counted and charged for.

The word “collect” in the check of a collect message will be counted, but not charged for.

Rule 5

Request to Report Delivery—Special Delivery—Repeated Messages—Valued Messages—Messages to Points Listed “Sub. Free”

If the sender requests a report of delivery the words “Report delivery” will be placed in the check. (See Rules 4, 32.)

A message to be specially delivered beyond the free delivery limits of the terminal office, and for which the delivery charge is not given in the Tariff Book, will be accepted upon the payment or guarantee of an amount sufficient to cover the message tolls and the probable cost of delivery, and will carry in the check the words “Deliver and report charges,” when they are to be paid by the sender, or the words, “Delivery guaranteed,” when they are to be paid by the addressee. (See Rules 4, 35, 37.)

If the sender requests a repetition of his message, the words “Repeat back” will be placed in the check, and an additional charge of one-half of the regular rate on the message will be made. The words “Repeat back” in the check will be counted and charged for. (See Rules 4, 29.)

If the sender wishes to value his message at a greater amount than Fifty Dollars, he will be required to write on the face of the message the words “Valued at” and the amount at which he wishes to value the message, followed by his signature, for example, as follows:

“Valued at \$100.
John Brown.”

The amount of the valuation will be shown in the check as follows: "Valued \$100," and a charge of one-tenth of one per cent will be collected from the sender in addition to the tolls on the message. The words "Valued \$100" in the check will be counted and charged for.

If the sender requests a repetition of the message and also wishes to value it at a greater amount than Fifty Dollars, he will be required to write his valuation on the face of the message, followed by his signature, as provided in the paragraph above; the words "Repeat back" and the valuation will be placed in the check, as for example: "Repeat back valued \$100"; and the charge for the message will be one and one-half times the regular tolls on the message, plus one-tenth of one per cent of the sender's valuation. The words "Repeat back valued \$100" in the check will be counted and charged for.

When a message is tendered destined to a one-star, two-star or three-star point, the listing of which shows an "other-line" rate, and free service or a lower rate to telephone subscribers, as, for instance:

***Annsville. 25-0 (Sub. free) Peekskill.

**Hecktown. 50-0 Bethlehem (Tel. Sub. 10-0),
the receiving clerk at the originating office will accept without question the statement of the sender that the addressee is or is not a telephone subscriber, as the case may be. If the sender states that he does not know whether the addressee is a telephone subscriber the "other line" charge will be collected, subject to refund as provided by Rule 36.

Rule 6

Checks

Check a paid or collect full rate message in accordance with the following examples:

1. Check of a ten-word message to a "this line" office:
 "10 paid 30," or
 "11 collect."
2. Check of a ten-word message to an "other line" office:
 "10 paid 36 and 30," or
 "11 collect."
3. Check of a ten-word message to an "other line" office
 which has differing "other line" rates (for example,
 Arverne. 10-0 Far Rockaway. (Tel. Sub. free),
 where the addressee is not a telephone subscriber:
 "10 paid 60 Delivery 10," or
 "13 collect 2 extra, delivery guaranteed."

4. Same example as in paragraph 3 except that addressee is a telephone subscriber:
“10 paid 60 Sub. free,” or
“11 collect.”
5. Check of a ten-word message for special delivery from a “this line” office when the delivery charges are known:
“10 paid 30 Delivery \$1.00,” or
“13 collect 2 extra, delivery guaranteed.”
6. Check of a ten-word message where delivery charge is unknown:
“14 paid 40, 4 extra, deliver and report charges,” or
“13 collect 2 extra, delivery guaranteed.”
7. Check of a ten-word message bearing a delivery charge of 50 cents from an “other line” office; the “this line” and “other line” rates each being 30 cents:
“10 paid 30 and 30 Delivery 50,” or
“13 collect 2 extra, delivery guaranteed.”
8. Check a ten-word collect message on which originating “other line” tolls are to be collected from the addressee (if, for example, the “other line” tolls are 30c and “this line” tolls from transfer point to destination are 60c):
“11 collect 60 and 30.”

When the “other line” tolls on a collect message originating at a three-star or four-star point are paid by the sender, check the message:

“11 collect.”

Check a day letter, night message or night letter in the same manner as shown above, and in addition insert after the word “paid” or “collect” the designation “Blue” for a day letter, “Nite” for a night message, or “N. L.” for a night letter.

For instructions governing transmission of checks, see Rule 22.

For checks on CAK or DH messages, see rule 13.

Rule 7**Messages Offered During Interruption of Lines**

If a message is offered when communication is known to be interrupted, inform the sender it can only be accepted subject to delay, for transmission as soon as the lines are restored. Write upon such a message the words, "Subject to delay."

Rule 8**Forwarding of Messages**

When a message has been transmitted to the place to which it was originally addressed, and is then forwarded to another point, the message as forwarded will show, in addition to the name of the place from which it is forwarded and the date, the name of the place and state from which it was originally sent and the word "via," and the name of the place and state from which it was originally sent and the word "via" will be counted and charged for. For example, if the following message were originally sent from New York to Troy, N. Y., and forwarded from Troy to Buffalo, it would be checked and dated thus:

"13 paid 3 extra
New York, N. Y.,
Via Troy, N. Y., Oct. 24
John Brown,
Buffalo, N. Y.
Meet me next Monday at ten o'clock in the forenoon.
H. Smith."

In this message the words "New York, N. Y." and "via" will be forwarded as a part of the message and charged for.

If the message to be forwarded is a back-date message, the original date will be shown in figures, counted and charged for according to the number of numerals which the figure representing the back-date contains. For example (assuming the same message as above, but as a back-date message) :

"14 paid 4 extra
New York, N. Y. 3
Via Troy, N. Y., Oct. 4."

In this message the words "New York, N. Y., 3" and "via," four words, will be forwarded as a part of the message, and charged for.

If the original date were Oct. 23 and the forwarding date Oct. 24, the message would be checked and dated:

“15 paid 5 extra
New York, N. Y., 23
Via Troy, N. Y., Oct. 24”

and the words “New York, N. Y. 23” and “via,” five words, counted as extra words and charged for.

If the original date were January 31, and the forwarding date February 1, the message would be checked and dated:

“15 paid 5 extra
New York, N. Y. 31
Via Troy, N. Y., Feb. 1”

the word “January” need not be inserted; “New York, N. Y. 31” and “via,” five words, will be counted as extra words and charged for.

If a message is received as a paid message and is to be forwarded collect, the forwarding office will show in the check of the forwarded message the tolls to be collected to cover its transmission from the forwarding point to the place to which it is forwarded, and will date the message as shown in this rule. For example: A 10 paid message from New York, N. Y., to Troy, N. Y., forwarded collect from Troy, N. Y., to Buffalo, N. Y., (the rate from Troy, N. Y., to Buffalo, N. Y., being 42-2½) will be checked and dated as follows:

“14 collect 3 extra 50
New York, N. Y.;
Via Troy, N. Y., Oct. 24.”

If the message be a back-date message, the original date will be shown and the number of extra words increased as shown in a former paragraph.

The amount to be collected at destination to cover the forwarding charges will be transmitted as a part of the check (see Rule 22).

When a message, which has been received over the lines of this company and which is to be forwarded, is a “received collect” message, the forwarding office will check it so that the tariff from the forwarding office to destination, and the tariff from the originating office to the forwarding office, shall appear separately and as a double check.

Illustration: Suppose the tariff from New York to Troy to be 30 and $2\frac{1}{2}$, and from Troy to Buffalo, 42 and $2\frac{1}{2}$, and a ten-word message has been sent, "collect" by New York to Troy, which the latter office is to forward to Buffalo; Troy should check the message (counting three extra words): "14 collect 3 extra, 50 and 30." The "50" represents the tolls for thirteen words from Troy to Buffalo and "30" represents the tolls for ten words from New York to Troy. If the message be a back-date message, Troy should check the message: "15 collect 4 extra, 52 and 30," or "16 collect 5 extra, 55 and 30," according to whether the figures indicating the back-date consist of one or two numerals.

The figures representing the amount of tolls to be collected will be transmitted as part of the check (see Rule 22).

When a "received collect" message originally coming over the lines of another telegraph company is tendered to this company at the point to which it was originally addressed, for forwarding to another point, the forwarding "this line" office will not pay the other company's tolls covering the original transmission over its lines, and the forwarded message will be dated and checked as provided in a former paragraph.

In a message forwarded more than once only the originating place and the last forwarding place will be shown in the date.

All service messages relating to forwarded messages carrying a via should be addressed to the via point and not to the originating point.

Rule 9

No Promise as to Transmission or Delivery

Do not make any promise respecting the transmission or delivery of a message.

Rule 10

Collect Messages—Guarantee Deposits

Accept collect, without the deposit of a guarantee an answer to a prepaid message; a message signed by a member of a social or commercial organization of recognized standing identifying himself as such by presentation of a membership card or otherwise; and a message offered by any person of apparent responsibility. A deposit to cover the tolls on the message should be required only if the message is tendered by an obviously ir-

responsible person, or under circumstances affording definite reason to believe that the message will not be paid for either by the addressee or the sender.

Rule 37 provides that refusal of the addressee to pay for a collect message, or to pay delivery charges on a message, special delivery charges on which have been guaranteed by the sender, shall be reported to the originating office by postcard, and not by service message. A deposit made by the sender to guarantee payment of the tolls on a collect message or payment of special delivery charges will therefore be held for a period sufficient to allow a postcard to travel by mail from the office of destination to the office of origin plus 24 hours, and on the expiration of that period, if no advices of non-payment of the charges at destination have been received, the deposit will be returned to the sender. If before the expiration of the period mentioned affirmative evidence is received that the charges have been paid at destination, then the deposit will be returned to the sender at once.

If notice of failure to collect is received, deduct the amount due the company and return the remainder.

When a collect message which originated with another telegraph company at a point listed in the Tariff Book as a three-star or four-star point, is tendered by the other telegraph company at the transfer point designated in the Tariff Book as the proper transfer point for the three-star or four-star point in question, pay the tolls of the other telegraph company and show in the check the "this line" tolls and the amount paid for "other line" tolls (for example, "11 collect 60 and 30").

The "other line" tolls on collect messages originating on other telegraph lines will be paid only when the message is filed with this company at the proper transfer point, as shown in this company's Tariff Book.

Rule 11

Franks

Franks are issued to persons who are entitled to send messages free or at half rates, and are of four classes, viz.:

Business franks.

Half-rate franks.

Complimentary franks (stamp or card).

Directors' franks.

Rule 12**Acceptance of Contract and Deadhead Messages**

Messages sent under business franks and messages filed by railroad company officials without franks under special arrangements are not free, but are charged by the General Auditor against the accounts of the frank-holders. Such messages are referred to as "Contract Messages," and will be checked "CAK."

The term "deadhead message" or "free message" and the designation "DH" apply to messages sent under complimentary stamp franks, complimentary cards and directors' franks, and to company messages and employes' free messages.

A message offered for transmission under a frank will be carefully scrutinized before acceptance, so that any improper or fraudulent use of the frank may be prevented; but the message will not be refused unless the evidence is clear that its transmission is not authorized by the frank. A message offered as "CAK Answer" or "DH Answer" shall be supported by production of the message to which it is a reply, or, when this is impracticable, the message to which it is a reply shall be identified by quoting the date and message number.

The reason why deadhead, or the frank number and letter, will be recorded in the check of each contract and deadhead message.

Sufficient stamps will be affixed to a message covered by a complimentary frank stamp to cover the tolls. In certain cases, such as on trains, where a message is offered, and the tolls cannot then be determined, the message may be accepted with stamps affixed in estimated amounts. If the value of the stamps does not equal the correct amount of tolls, a note will be affixed to the message and sent in with the Monthly Contract and Deadhead Message Report.

An answer to a contract or deadhead message will be accepted by telephone over local exchange lines, provided it is offered in the same place (i. e., city or town) where the message to which it is an answer was delivered.

A message to an "other line" office, offered for transmission under a frank, will be accepted upon payment by the sender of the "other line" tolls, provided that the place of transfer is within the territorial limits indicated on the frank.

Through tolls from place of origin to destination will be collected on a message to a "this line" office beyond the limit of a frank.

Business franks and identification cards will not be honored for day letters, night letters, night messages, or cable messages, unless otherwise indicated on the card. Complimentary franks and Directors' franks will, however, be honored for all classes of messages except cable messages.

Personal messages of employes of an urgent social or domestic character may be sent free on the written approval of the manager or an officer of the Company.

A message of an officer or agent of a railroad company with which this company has a contract, will be accepted CAK without a frank when on business of such railroad company, for transmission between stations on such road. If offered at, or for a place beyond or off such road, it will not be accepted CAK unless covered by a frank.

Messages necessary in the transmission of the company's money transfer service, filed by a regular transfer agent, or by a bank authorized to act for the company and addressed to another bank or to a transfer agent and relating only to the payment of a money transfer, will be checked and sent "free." No entry of such a message shall be made in the Contract and Deadhead Message Report.

Rule 13

Contract and Deadhead Checks

Contract and deadhead messages will not be counted before transmission, but should be counted after transmission and before booking. Check contract and deadhead messages according to the frank, or according to the arrangement under which they are filed, as follows:

CAK No.—

CAK Answer

DH No.—

DH Employe

DH Answer

CAK No.—and CAK No.—

DH No.—and DH No.—

CAK and Paid; DH and Paid; Paid and CAK and Paid and DH messages will be counted before transmission and checked as shown in the following paragraphs:

Check a contract or deadhead message going to an "other line" point, as shown in the following examples:

10 CAK No.—and Paid 30, or

10 DH No.—and Paid 30.

Rule 14**Government Cards—Identification Cards**

Government and Identification Cards are issued to persons entitled to send messages and have the tolls charged; that is, the tolls are not to be collected from the sender.

Government messages must be endorsed "Official Business" by the sender.

Rule 15**Collect Cards**

A Collect Card is issued to a responsible person. It permits of a message being sent "collect," from any "this line" office without a guarantee.

NOTE.—Do not confuse a "collect" card, an "identification" card, or "Government" card with a business, director's or complimentary frank, nor check a message filed under either of the first three classifications as CAK or DH.

Rule 16**Service Messages**

No unnecessary service message should be sent. Use the mails in all cases when the service will not suffer by the delay.

Service messages will not be sent free for the information of customers nor to correct their errors.

Service messages should be made as concise as is compatible with clearness of expression and the covering of essential points.

All service messages requiring answers must be replied to promptly. When relating to telegrams of current date, they should be answered within fifteen minutes, unless delayed by the necessity of communicating with the sender.

If a received telegram shows a branch office call in its date, a service message relating to it must be addressed to the branch office so shown. For example, a service message relating to a received message dated FX New York must be addressed FX New York.

A service message sent by a main office should be signed only with the name of the city or town from which it is sent.

Service messages sent by main office delivery department in very large cities, like New York, Chicago, Philadelphia, St. Louis, etc., where there are many branch offices, should show in the signature the contraction "DLY" as well as the name of the city from which the service message is sent.

A service message sent by a branch office must show in the signature the branch office call as well as the name of the city or town from which it is sent.

Service messages should not be signed with the names of individuals, unless special circumstances make it necessary to do so.

The address of a reply to a service message must read exactly like the signature of the service message to which it is an answer. For example, if a service message be received, signed "CO New York," the reply must be addressed "CO New York"; if the received service message be signed "Smith FX New York," the reply must be addressed "Smith FX New York," etc.

With a view to condensing necessary service correspondence within the smallest compass, the following contractions shall be used in service messages:

<i>Contraction</i>	<i>For</i>	<i>Contraction</i>	<i>For</i>
ADS	Address	GBA	Give better address
ADSD	Addressed	GSA	Give some address
ANS	Answer	GQA	Get quick answer
BKG	Bookkeeping Dept.	GONE	Addressee is said to have left for..... (City)
BLACK	Full Rate Telegram	GOVT	Government message
BLUE	Day letter	GNTEE	Guarantee
CABLE	Cable message	GNTEED	Guaranteed
CFN	Confirmation	HW	Herewith
CHGS	Charges	HA	Hurry answer
CK	Check	IIFD	If incorrect fix with office of destination
CLOSED	Addressee's place closed until A. M.	LC	Addressee is said to have left city,—forwarding address unknown
COLL	Collect or Collect tolls there, payment refused by addressee	LN	Usual notice has been left
CY	Copy	MK	Make
DH	Deadhead	MGR	Manager
DLD	Delivered	MSG	Message
DLR	Deliver	MOVED	Addressee has moved from address given, —present local address unknown
DLY	Delivery or Delivery Dept.	NAME TO	Addressee
DPR	Pay Press Rate	NPR	Night press rate
DSTN	Destination Point	NL	Night letter
DSTC	Delivered subject to correction	NITE	Night Message
DFS	Disregard former service	NH	Not at home
DUP	Duplicate	NR	No record
ESTC	Erase subject to correction	NSA	No such address
FAC	File and check	NSN	No such number
FLT	Filing time		
FM	From or originating point		

<i>Contraction</i>	<i>For</i>	<i>Contraction</i>	<i>For</i>
NSS	No such street	SGD	Signed
OFS	Office	SPL	Special
OGNL	Original	UNCALLED	Message returned undelivered — addressee failed to call
OUR	Our message of date	UNDLD	Undelivered
RADIO	Radio message	UNKN	Addressee is not known
RDS	Reads	WD	Word
REL	Release	YR	Your message date (If referring to back date message, follow by date, as "Yr 3d," etc.)
RP	Reply prepaid		
RPT	Repeat		
RPTN	Repetition		
RD	Report of Delivery		
SVC	Service message or Service Dept.		
SG	Signature		

Form of Service Messages:

The following examples are standards to be followed as closely as possible:

Notice of Non-Delivery:

"Yr R. C. Jones, 175 Wall St. (reason for non-delivery)."

(The service message should always contain the local address (for example, "175 Wall St.") as given in the received message. Otherwise the office to which the service message is addressed has no means of knowing whether the local address may not have been dropped in transmission of the original address, thus necessitating additional service messages.)

In the space marked "Reason for non-delivery," information as follows should be given:

"Unkn," if addressee is unknown at given number.

"NSN," if no such number.

"L C," if addressee is said to have left and whereabouts not known.

"Gone Boston," if addressee is said to have left city for Boston.

"Moved," if addressee has moved from address given and cannot be located.

If the notice of non-delivery refers to a collect message, the body of the service message should be preceded by the word "Collect."

Correction of Address:

"Our Jones, 275 Wall St. Rpt. 275." (See Rule 42).

Requesting Repetition of a Doubtful Word:

"Yr R. C. Jones, Rpt. 4th Orleans." (See Rule 54).

Answers to Above:

"Our Jones 4th Orleans OK."

"Our Jones 4th Orphan Rpt. Orphan."

Requesting Repetition of Entire Body of Telegram:

"Yr 21st R. C. Jones Rpt. body."

Answer to Above:

"Our Jones Rds (quote body of message)."

Report of Delivery after having Sent Notice of Non-delivery:

"DFS Yr Jones dld."

TRANSMITTING AND RECEIVING MESSAGES**Rule 17****Route and Count to be Decided Before Transmission**

Before transmitting a message decide as to proper route and as to the correct word count.

Rule 18**Office Calls**

When calling a distant office, sign your own office call at short intervals. Also sign it in answering calls. .

Rule 19**Speed of Transmission**

The sending operator will regulate the speed of transmission to suit the ability of the receiving operator.

Rule 20**Contention for Circuit—Wire Tests**

Contention for circuit is positively prohibited.

The word "wire" will be recognized as giving the right of circuit at all times for testing purposes.

Rule 21**Order of Transmission**

In transmitting messages observe the following order:

1. Message number.

2. Check.

3. Office call, if message originates at a branch office.

4. Place from.

5. On day messages, day letters, day press matter and CAK messages, the filing time.

6. Date.

7. Name to, address and destination.

8. Body or text.

9. Signature.

In sending a cable message, designate the class by preceding the transmission with the word "Cable."

On messages originating on the lines of another telegraph company and transferred to this company, no filing time will be shown except where the message as transferred to us shows the time when the message was filed at the point of origin, and in such cases the original filing time so shown will be transmitted.

When a message sent over the lines of this company is forwarded from the original point of destination to another point, the forwarding office will not show any filing time on the forwarded copy, but will date the message in accordance with Rule 8.

Rule 22**Transmission of Checks**

Transmit all figures and words in the check of a message except:

1. The indication "paid" and the amount of tolls.

2. The reason why CAK or DH in the case of a CAK or DH message.

When the check of a message shows prepayment of delivery charges, in accordance with paragraphs 3 and 5 of Rule 6, transmit the number of words, the abbreviation "Dly." and the amount paid for delivery. Example: Message checked

"10 Paid 60 Delivery 25,"
transmit check:

"10 Dly. 25."

Whenever the amount of tolls is shown in the check of a collect forwarded message, the figures representing the amount will be transmitted as a part of the check. (See Rule 8).

Whenever the check of a collect message shows the amount of "this line" and "other line" tolls, for example:

"11 Collect 60 and 25,"
transmit the full check.

When a message is checked in the manner shown in the following examples:

"10 CAK No.— and Paid 38," or
"10 DH No.— and Paid 20," or
"10 Paid 25 and CAK No.—," or
"10 Paid 50 and DH No. —," or
"CAK No.— and CAK No.—," or
"DH No.— and DH No.—"

transmit the full check, except the frank number and the amount of the tolls, as follows:

"10 CAK and Paid,"
"10 DH and Paid,"
"10 Paid and CAK,"
"10 Paid and DH,"
"CAK and CAK,"
"DH and DH."

Rule 23

Number, Time and Personal Signal

Write upon the face of each message sent the consecutive number to and the call of the distant office, the signals of the sending and receiving operators, and the time sent, in the order given.

Example: A23CH MA HA 815A.

Do not regard the message as sent until acknowledged by the distant operator, unless several messages have been sent in succession, when the acknowledgment of the last will be regarded as an acknowledgment of all.

No operator will change his personal signal without the consent of the manager or chief operator, nor will any two operators in the same office use the same signal.

Rule 24

Messages Delayed in Transmission

Note the cause of delay on the back of the message or number sheet, when for any reason a message cannot be transmitted promptly. Also report the facts to the manager or chief operator.

Rule 25**All Messages to be Transmitted Before Closing**

Transmit all messages to their destination or to the nearest relay office before closing. If for an unavoidable reason any are held over until the following morning transmit them before new business.

Rule 26**Order of Receiving**

Copy each message as transmitted. Enter on the blank after the number of the message, the call of the sending office and the receiving operator's signal.

Verify the check by counting the number of words. Make sure the message has been correctly received.

Write the time received below the signature and acknowledge receipt by giving the sending office an "O. K." followed by personal signal.

Rule 27**Messages to More Than One Address**

When a message is addressed, for example, to "A or B" for delivery to either, transmit it as a single message. When a message is addressed to "A and B," or to several persons, for delivery to each of them, transmit the check, place from, date, text and signature at one sending and fill in the addresses afterward so as to use the wire facilities to the best advantage.

Rule 28**Duplicate Transmission**

If a second transmission is necessary in order to correct an error in a message, or for any other reason, begin the second transmission with the word "Duplicate."

The receiving operator will write or stamp the word "Duplicate" conspicuously on the form above the message, also following the check.

If the service message requesting a duplicate is signed by a branch office or by an individual employe, insert as a part of

the address of the duplicate, before the destination, the word "care" followed by the name of the branch office or employe signed to the service message.

Do not send a service message with a duplicate unless for some special reason.

Rule 29

Transmission of Repeated and Valued Messages

Observe special care in sending or receiving a message bearing in the check the indication, "Repeat Back," or "Valued \$.....," or "Repeat back valued \$.....,"

Repeat back such messages at each stage of transmission from point of origin to destination.

Make careful comparison with the original as the message is repeated back, underlining or checking each word and, if found to be correct, write across the face of the message the words, "Repeated back O. K." followed by the signals of both operators.

Rule 30

Examination of Sent Messages for Evidence of Transmission—Comparison of Numbers

Before closing the office for the night, carefully examine all "sent" messages to see that they bear the proper indication of transmission.

Also examine the numbers, on messages sent and received, to see that none is missing. Compare numbers with other offices with which messages have been exchanged during the day, correcting any errors discovered.

Offices at which the closing hour is later than 12 midnight and offices open at all hours shall compare and close number sheets (which have not already been compared and closed) with offices in the same time belt at 12 midnight.

Number sheets on circuits or channels which are closed at or prior to 12 midnight shall be compared and closed at the time the circuit is closed.

When a circuit terminates at offices in different time belts, number sheets (which have not already been compared and closed) shall be compared and closed at the time corresponding to 12 midnight at the office located in the time belt farthest west. The office located in the time belt farthest west shall initiate the closing.

Rule 31**Wire Tests, Cutting Out Instruments at Night, Etc.**

Make early morning tests of the wires. Call attention to any that may be out of order and keep a daily record of all such interruptions.

Assist distant wire chiefs and linemen as much as possible in locating and clearing trouble.

Use the ground wire at an intermediate office in the event of an interruption of the circuit, but then only long enough to notify the distant wire chief and receive his instructions.

Before closing the office temporarily or for the night, cut out the instruments, being careful that the circuit through the switch or cut-off is complete.

Keep batteries in good condition, and see that each cell is thoroughly insulated so as to prevent any escape of current. Also keep the floors, shelves and fixtures of the battery room scrupulously clean. For detailed instructions concerning care of batteries, see Rule 49.

DELIVERY OF MESSAGES**Rule 32****Preparation for Delivery**

To permit ready reference, number each message consecutively for delivery in the order received, commencing with No. 1 each day. The wire number should be used for this purpose at all offices which handle less than 100 deliveries a day.

Copy each message for delivery and enclose it in the proper envelope, which should be carefully sealed and fully and plainly addressed.

Where charges are to be collected, write the amount in ink on the envelope and also on the messenger's delivery sheet.

Collect the tolls for both "this line" and "other lines" upon a message received "collect" from an "other line," "three-star" or "four-star" station, whenever the check shows both "this line" and "other line" tolls (for example, on a message checked "11 collect 50 and 25," collect 75 cents). Where no amount of tolls is shown in the check (for example, message checked "11 collect"), collect the "this line" tolls only.

Observe instructions from the sending office in regard to delivery. When a message is received with the notation "Report Delivery" in the check, indicating that the sender has

requested a report of delivery (see Rule 5), the request should be responded to by a collect message addressed to the sender of the original, stating the time of delivery, or if not delivered, the reason why.

Rule 33

Special Cases

Lay aside until disposed of, the copy of a message requiring an answer or one relating to illness, death, or containing extra words in the check such as "Report delivery," "Personal," "Repeat back," etc. Make sure in each instance that the service has been properly performed before returning the copy to the files.

Write the word "Answer" on the envelope containing a message the text of which indicates a reply is required and instruct the messenger to make diligent efforts to obtain a reply or, if he should fail to do so, to report the reason. See that messengers carry proper blanks upon which answers can be written.

When a message is received addressed, for example, to A or B, deliver it to either one or the other of the addressees.

Write or stamp the word "Duplicate" conspicuously and in full on every message received as a duplicate.

If an error appears to have occurred in transmission of a message and correction cannot be quickly made, deliver it with the words "Delivered subject to correction" endorsed thereon. Take immediate steps to secure a correct copy, and when received endorse it "Corrected Copy" and deliver it promptly. If no error be found, deliver a notice to that effect.

On receipt of a message containing the words "An Answer" in the address, refer to the original message, to which it is an answer, for the address.

On receipt of a message addressed to a rural free delivery route (see Rule 3), effort should be made to effect delivery by telephone either direct to the addressee or through a neighbor, particularly if the sender has not specified delivery by special messenger. If telephonic delivery is not practicable and provided the special delivery charges are paid or guaranteed, the message shall be sent out by a special messenger at once. If the special delivery charges are not paid or guaranteed, and delivery cannot be made by telephone, the message shall be promptly mailed for R. F. D. delivery, unless it is apparent from the contents of the message or the known circumstances

of the case that such delivery will be ineffective, in which latter case the originating office shall be serviced for prepayment or guarantee of charges for delivery by special messenger.

Rule 34

Free Delivery Limits

Messages will be delivered free within a radius of one-half mile from the office in any city or town of less than 5,000 inhabitants, and within a radius of one mile from the office in any city or town of 5,000 or more inhabitants. Beyond these limits only the actual cost of the delivery service will be collected; the manager will, however, see that such cost is as reasonable as possible.

Rule 35

Special Delivery

If the services of a special messenger be required, and the special delivery charges have not been provided for, the sending office will be promptly notified by telegraph of the cost of delivery, and that office will endeavor to collect the charges from the sender, who, if he pay or guarantee the delivery charges, will also pay for the message ordering special delivery or guarantee the collection of the tolls thereon. If the sending office is unable to collect, or if a reply from the sending office to the notice is not promptly received, a copy of the message will be mailed to the addressee, and if another copy is afterwards delivered, the word "Duplicate" will be plainly written or stamped across its face.

Rule 36

Refund of Unexpended "Other Line" or Delivery Charges Prepaid by Sender

When the sender has prepaid "other line" or delivery charges and delivery is actually effected without expense or at less expense than the amount prepaid by the sender for the purpose, the delivering office will notify the sending office by postcard accordingly.

The sending office will refund the unexpended amount to the sender and account for the refund as provided in Accounting Instructions.

Rule 37**Delivery of Collect or Special Delivery Messages When Payment is Refused**

If the addressee of a "collect" message, or one upon which the "special delivery charges" have been guaranteed, refuses payment, deliver the message, and immediately notify the sending office by postcard. In case of special delivery, state the amount to be collected.

Do not request the sending office to change the check of the message.

When the message reported uncollected shows a branch office call in its date, the branch office call, as well as the name of the originating point, must be written on the line opposite the word "Manager" in the address of the postcard; for example:

MANAGER MS New York, N. Y.

The date line of the postcard should always show the place from which the card is sent, as well as the date. The post mark is not always sufficient to indicate the point of origin of the card. The office call and check should be specified in connection with the description of the message on the postcard. The postcard must also in every case show the amount of the tolls in the place provided for its insertion and the amount of the war tax separately, as shown in the following example:

COLLECT THERE TOLLS \$.30 & .05 ON YOURS DATED July 16

In the case of a message originating at a one, two, three or four-star point or a tributary office, the postcard should be addressed to the "this line" office at the point of transfer or checking office shown in the Tariff Book.

Exceptions:

If the received collect message is an answer to one sent CAK or DH, charge the tolls to the addressee's frank upon his request.

On account of irregular mail service to Mexican points the use of the postcard is impracticable in connection with the Mexican traffic. Refusal of the addressee to pay for a collect message originating at a point in Mexico should therefore be reported back by service message and not by postcard, and credits taken for such items under "Uncollected Messages" on monthly report should be supported by copies of the service messages reporting non-payment.

When a message has been reported uncollected and the office of destination later collects the tolls, notice of such collection shall be reported to the office of origin by mail, and not by wire. In such case the original notice of non-collection shall not be disregarded for accounting purposes, but both offices shall account for the message as guarantee and uncollected.

This rule relates only to "collect" messages or messages carrying a guarantee of special delivery charges which are delivered and payment for which is refused by the addressee. When the message itself is undelivered, notify the sending office of the non-delivery by service message, as provided in Rule 41, and do not mail postcard.

Rule 38

Messages Not to be Delivered to Unauthorized Persons

A message must not be left with a janitor or porter of a building for delivery by him, nor be slipped under a door, nor left in a letter-box, unless the addressee has filed with the manager a written request for such delivery; nor will a messenger allow any unauthorized person to know to whom a message is addressed.

Rule 39

Messengers to Obtain Receipts—Inspection of Delivery Sheets

A messenger, or other employe or person delivering the message, will obtain a receipt on the proper form for each message delivered, which receipt will include the name of the person to whom delivery is made and the time of delivery. A messenger will in no case receipt for an addressee.

The manager or delivery clerk will examine the delivery sheets or books of messengers on their return from each service, and at the close of the day, to see that faithful delivery has been made, and that all proper notifications have been given. He will endorse upon the delivery sheet the time of the return of the messenger from each route.

Rule 40

Notice to Addressees of Undelivered Messages

When a message cannot be delivered because the addressee's place of business or residence is closed, or because no author-

ized person can be found to receive the message, the messenger will leave notice at the place of address, to the effect that a message for the addressee is at the office of the company, awaiting delivery. The undelivered message will then be returned to the office, with the reason of the non-delivery endorsed upon the envelope, and will be delivered as early thereafter as possible.

Rule 41

Non-Delivery Because of Wrong Address, Etc.

If a message cannot be delivered because of a wrong or inadequate address, or for any other reason, record the facts upon the envelope. Consult city or telephone directories, office record of addresses, or any other available means of locating the addressee. When feasible, examine the files of the current and previous day's sent business to ascertain if the message is a reply, and make simultaneous inquiry of hotels and post-office. If the message is still undelivered, mail a postcard to the address given and promptly notify the sending office by telegraph, writing in the service message the address as received and the reason for non-delivery. (See Rule 16.)

Forward "Collect" a message received after the addressee has left town, providing his whereabouts can be ascertained, unless the character of the message indicates it would serve no useful purpose. Notify the originating office by service message of action taken.

Do not destroy an undelivered message or the envelope in which it was enclosed. File for future reference.

Rule 42

Procedure on Receipt of Notice of Non-Delivery

Upon receipt of advice of non-delivery, compare the address as it appears in the service message with that in the original message, and correct by telegraph any error found. If no error is apparent notify the sender, who, if he desires to change the address, must either send a new message or pay for the service message necessary to change the address of the original.

Do not send a received service message to a customer, but, when necessary, give him the information contained therein by telephone or by written notice so worded that it can be readily understood.

When a message is missent, as, for example, a message intended for Springfield, Ill., sent to Springfield, Ohio, and reported undelivered, the originating office shall immediately resend it to the correct destination, place a skeleton of the missent message in its files, and send a service message to the office to which the message was wrongly sent, as follows:

"Our (.....name of addressee.....) We resend." In the case of a paid message, the tolls on both messages shall be taken into the office account of the originating office in the usual manner. In the case of a sent collect message the tolls on the missent message shall be accounted for as a Guarantee. In both cases, the tolls on the missent message shall be taken credit for as a Refund, and a copy of the message and of the service message reporting non-delivery, with explanation endorsed thereon, shall accompany the monthly report.

When through error in transmission the destination of a message is changed to a place where there is no office, the originating office should in taking the missent message into its accounts use the state rate to the state to which the message was erroneously directed, for example, if in a message from Pueblo, Colo., to Hattiesburg, Miss., the point of destination is changed in transmission to Hattiesburg, Minn., and there is no office by that name in Minnesota, the Pueblo office should in rating the erroneously transmitted message use the state rate to Minnesota.

Rule 43

Delivery of Night Messages and Night Letters

A night message will not, unless called for, be delivered until morning, but if called for, it may be delivered on payment of full day rates in the case of a collect message and the difference between the night and day rates in the case of a paid message.

A night letter will not, unless called for, be delivered until morning, but if called for it may be delivered on payment of day letter rates in the case of a collect night letter and the difference between the night letter and the day letter rates in the case of a paid night letter.

The additional amount collected in accordance with the foregoing will be accounted for as "Miscellaneous" on the monthly balance sheet.

Rule 44**Delivery by Telephone**

Make use of the telephone for delivery of a message when prompt messenger service is not available, or when the addressee is located in a distant part of the community, provided the addressee or some authorized person will accept it. Request the message repeated back in each case to insure accuracy.

Do not deliver by telephone a congratulatory message or a message relating to serious accident, illness, death, financial embarrassment, etc., unless necessitated by unusual conditions.

When a telephone delivery has been made, record on the face of the message, also on the impression or carbon copy, the time telephoned, and the name of the person who received it.

Rule 45**Delivery of Messages Addressed to Passengers on Trains**

When a message is received addressed to a passenger on a train, instruct the messenger to pass through the train, if there is sufficient time, calling the name of the addressee. If there is not sufficient time, instruct him to request the train conductor to receipt for the telegram, endeavor to make delivery, and if the addressee is not on the train, to endorse the envelope "Unable to deliver," adding his signature and the number of his train, and to hand the message to the operator at the first station at which the train stops.

The operator at that station will report non-delivery to the point of origin, except that, if there is a second section of the train, the operator will deliver the message to the conductor of the second section, who will endeavor to effect delivery, and likewise report, if unsuccessful, to the operator at the next stop. If there are any further sections of the train, the same procedure will be repeated.

When it has finally been determined that delivery cannot be made, non-delivery will be reported to the originating office.

When a message addressed in care of a train is received after the train has left or too late to reach the train before its departure, the message should be forwarded prepaid to the office at the next stop, treating the message as a relay and advising the sending office by service message.

While messages addressed to a passenger on a train at terminals are to be discouraged and accepted only at sender's

risk, if such a message is received at an office for delivery, efforts will be made to deliver it as the passengers leave the train, by loudly calling the name of the addressee and using such other means of finding him as may be available.

Rule 46

Delivery of Messages Addressed in Care of Post Offices

Messages which are addressed "Care Post Office," "Box No.," "General Delivery," or in any other manner indicating that delivery is to be made through the Post Office, should be enclosed in an envelope, stamped and mailed at the Post Office at once.

If it is obvious from the text of the message that its purpose will be defeated by the delay in the mails, inquiry should be made at the Post Office for the addressee's local address in an effort to make delivery by messenger if possible.

Whenever messages are placed in the Post Office the address of the delivery office should be written or stamped on the envelope in order that they may be returned if undelivered. In the absence of a return address the messages are likely to be forwarded to the deadletter office.

Non-delivery of messages returned undelivered by post-offices shall be reported in the same manner as in the case of messages returned undelivered by hotels. (See Rule 47.)

Rule 47

Delivery of Messages Addressed in Care of Hotels

Messages specifically addressed in care of a hotel may be left at the hotel desk, since the addressee, if not already registered, usually is scheduled to arrive at an early date.

Messages addressed "Personal" should not be left with the hotel clerk unless the messenger is assured that the addressee is registered and that personal delivery cannot be made by the messenger.

If it develops that the addressee has left the hotel, the messenger should secure the forwarding address from the hotel clerk. The message should then be forwarded collect to the address given unless it is apparent that nothing would be accomplished in so doing.

The practice which prevails at some hotels, of holding indefinitely messages addressed in their care, but which have not been called for, is a source of inconvenience and annoyance to

the senders, and in order to overcome this undesirable situation delivery clerks should send a trustworthy messenger to all hotels each day to pick up all uncalled-for messages over 24 hours old, the addressees of which are not definitely scheduled to arrive later, leaving notices in lieu thereof. At the larger offices a senior clerk should be assigned to the duty so that the contents of messages on hand may be examined as a guide in arranging an intelligent handling, and, if advisable, resealed in a new envelope, appropriately marked, timed and returned to the hotel clerk.

Advice of non-delivery of messages returned undelivered by hotels shall be reported to the originating office by postcard, excepting when such undelivered messages are of an urgent character, such as those relating to sickness, death, etc., when the notice of non-delivery shall be transmitted by service message. The advice on the postcard shall be constructed in the same manner as in service messages.

MISCELLANEOUS

Rule 48

Manager's Jurisdiction

Each manager will exercise jurisdiction over the property, employes and business of his office, and unless otherwise ordered such jurisdiction will extend to branch offices, if any, in the same city or town.

Rule 49

Care of Property, Preservation of Old Material, Care of Batteries

Each manager will be held to a strict accountability for the property of the company in his possession or under his control; and he will hold employes under his direction responsible for the careful use and preservation of such property.

No article belonging to the company will be sold or transferred without authority from the superintendent.

Old copper, zinc, waste paper and other old or surplus materials of value, will be carefully preserved and at regular intervals, reported to the superintendent.

Rules for the care of gravity battery:**Maintenance:**

Battery cabinets and battery racks must be kept thoroughly clean and dry.

All connections must be kept clean and tight.

The "blue line" dividing solutions should be kept about midway between the zinc and copper.

When the blue line falls close to the copper, draw off some of the light upper solution (zinc sulphate) and replace it with water.

When the blue line rises close to the zinc, short circuit the cell until the blue line falls to the proper level.

The top of the solution must be kept above the zinc. Replenish with water if necessary.

To Set up a Cell:

(1) Unfold the copper in the bottom of the jar, bringing the stem straight up and out at the top.

(2) Put about $1\frac{1}{2}$ pounds of blue stone between and about the copper leaves.

(3) Hang the zinc in position.

(4) Fill the jar with water above the level of the zinc.

(5) Cover the solution with a $\frac{1}{8}$ -inch layer of battery oil, and wipe dry the edge and outside of the jar.

NOTE.—A cell set up as above will not reach its full strength for some time. The action may be hastened by replacing some of the water with a little clear zinc sulphate solution obtained from other cells. If this solution is not available, and the cell is not required immediately, it should be short circuited until the blue line is midway between the zinc and the copper.

To Clean a Cell:

(1) Draw off and save the clean portion of the upper solution (zinc sulphate).

(2) Carefully clean the zinc and the jar, and wash the copper.

(3) Set up the cell as above, using the retained clear solution to start the action of the cell.

Battery Refuse:

All battery refuse must be saved.

Zinc and zinc oxide shall be kept separate from coppers and copper oxide.

Place battery refuse so separated in a suitable container, and ask District Plant Superintendent or Superintendent of Telegraph to secure and advise shipping instructions.

Rule 50**Instruments, Etc., Sent to Supply Department**

When instruments or other articles are sent to the supply department by order of the superintendent, they will be carefully packed and accompanied by a copy of such order, and by a letter from the manager stating disposition to be made of them.

Rule 51**Expenditures for Office Fittings, Etc.**

No expenditures for renovations, alterations or furniture will be made without authority from the superintendent. No article should be purchased locally which can be secured on requisition.

Rule 52**Privacy of Telegrams, Operating Rooms, Etc.****Applications for Copies of Messages****Forms to be Used Only for Designated Purposes**

Messages, books, press reports and other papers of the company will be guarded with the greatest care and held in the strictest privacy. Employes are expressly forbidden to disclose any information in regard to the contents of a message, or the name of the sender or addressee thereof.

A manager will refuse to admit to the operating room or behind the counter any person not an employe under his own direction, except when permission to enter has been given by a superintendent or other officer of the company.

The addressee or the sender of a message may be furnished with a copy of the same on application, but such copy must be clearly and distinctly marked "copy" or "duplicate." Under no circumstances will a blank received message form or a message envelope be furnished to anyone.

Employes will not certify to the correctness of any message or copy thereof, nor will they show any message to any person other than the sender or addressee thereof, except by authority from an executive officer of the company.

The printed forms of the company will be used only for the purposes for which they are designed. Under no circumstances will forms for received messages or message envelopes be given to the public, except in the usual delivery of messages.

Rule 53**Requisitions**

Make requisitions for supplies periodically in accordance with instructions from the superintendent.

Forward such requisitions at least sixty days before the beginning of the period for which the supplies are needed, being careful not to order more than actually required.

Report over-stock of blanks or supplies of any kind to the superintendent.

Keep stationery shelves in order and avoid waste or misuse of blanks or supplies.

Rule 54**Correction of Errors**

If the addressee claims that an error has been made ask the originating office by service message to repeat the doubtful word or words or to duplicate the message. Whenever the correctness of a word is questioned, the doubtful word must be quoted in the service message asking for repetition. (See Rule 16.) If an error is disclosed, endorse the duplicate "Corrected copy" and deliver it to the addressee. If no error is disclosed, advise the addressee to that effect.

Rule 55**Complaints, Refunds, Etc.**

Give patient and courteous attention to any person complaining of the service. Always deal with a complainant from his point of view, assuming that his complaint is justified.

Acknowledge every written complaint immediately. If more than 60 days (in Texas 95 days) have elapsed since the date of the message, state that the investigation will be made without prejudice to the situation created by the failure to bring the occurrence to our notice at an earlier date.

Make satisfactory explanation at once, if possible, from the evidence submitted or available at the local office, and if the service was defective, refund or cancel the tolls, express regret, and state that corrective measures will be taken. When tolls are refunded or cancelled, take a voucher for the amount and forward voucher with Monthly Balance sheet.

If investigation at other points is necessary to permit of a proper explanation, so inform the complainant, and refer the

case to the superintendent, unless general or special instructions prescribing a different procedure have been received, in which case proceed in accordance with such instructions.

Reply promptly to complaint inquiries received, being guided by existing instructions.

Rule 56

Summons and Other Legal Processes

Report the service of all summons or legal papers in any legal proceeding affecting the company immediately by telegraph to the superintendent, stating briefly the contents of the paper and the hour and day when it was served.

Transmit to the superintendent by first mail a copy of the summons or other legal papers so served, with a statement of such facts relating to the matter as are within the knowledge of the manager or other employes. Retain the original paper, subject to instructions.

Rule 57

Court Orders for Production of Messages

Produce before a court or other legal tribunal, including a grand jury, any message called for by subpoena duces tecum, and return the message to the files after it has served its purpose. Original messages are the property of the company, and their preservation is required by the act to regulate commerce and the regulations adopted by the Interstate Commerce Commission, and they should not be permitted to be taken from the possession of the company's agents. Even under subpoena messages should not be produced elsewhere than before a legal tribunal (which includes a grand jury), nor should they be exhibited or surrendered to any prosecuting or other attorney outside the courtroom.

A subpoena duces tecum to be regular and valid within the jurisdiction of the court where suit is pending, should describe the message called for by giving name of sender and addressee, and place where filed and destination, with sufficient description of the body or contents to enable the company to identify it. But generally a description of a message is held sufficient which will enable the company to recognize it in the files. A manager on receipt of a subpoena should refer it to his superintendent, who should in doubtful cases call for instructions.

from the Law Department. If the subpoena is issued at the instance of the sender or addressee of the message, it is immaterial whether or not it is properly described.

Where a subpoena duces tecum requires a protracted search such as involves an actual expense in excess of the subpoena fees, the attention of the attorney issuing the subpoena should be called to this fact, and he should be advised of the estimated cost of making the search. If, as is customary, the estimated amount is paid or satisfactorily guaranteed, the objection based on the indefinite character of the subpoena may be waived and the search proceeded with; otherwise the circumstances should be reported briefly by wire to the Law Department.

PRESS DISPATCHES

The following rates will be charged newspapers devoted to general news and press associations serving only newspapers devoted to general news, on special dispatches in plain English language, addressed to such newspapers or press associations, filed by their authorized correspondents, to be paid for by such newspapers or press associations, and containing bona fide reading matter for publication in newspapers devoted to general news: From 6 A. M. to 6 P. M. one-third of the regular telegram rate, commercial count. From 6 P. M. to 6 A. M., one-sixth of the regular telegram rate, commercial count.

Day press rates apply to special dispatches filed for transmission between 6 A. M. and 6 P. M.

Special dispatches to be forwarded at night press rates may be accepted at any time during the day, but they will not be transmitted until after 6 P. M., except in cases where it may be more convenient or desirable for the company to forward them earlier. In such instances the symbol "N P R" will be transmitted in the check.

The local time of the place at which the dispatch is filed will govern in determining proper check.

No special dispatch or query will be rated as containing less than ten words.

The foregoing rates apply, as to matter addressed to newspapers, to special dispatches for publication, at point addressed, in one newspaper only. This restriction, however, does not debar newspapers from giving their special dispatches to correspondents to forward to newspapers devoted to general news published in other cities, when they are to be forwarded by this company's lines.

Do not deliver more than one copy of a special dispatch to a newspaper or press association without special instructions covering each case.

When impracticable to count the number of words contained in a press dispatch before transmission, the number of words should be carefully counted before booking.

The filing time shall be transmitted on all day press rate matter. Except in such states as have by law required it on intrastate messages, do not transmit the filing time of a night press rate special dispatch to a newspaper or press association unless placed in the body thereof, in which case count and charge for it as a part of the special.

Persons filing matter for transmission to the press, who are not known to be the authorized correspondents of the papers or press associations to which their matter is addressed, should be required to present proper authority before their dispatches are accepted.

No employe of this company will be permitted to act as agent or correspondent of any newspaper or press association except on extraordinary occasions, and then only by the direction or approval of his superintendent.

Queries are messages in plain language (not in code or cipher), ordering or relating strictly to newspaper specials transmitted or to be transmitted over this Company's lines.

Such messages will be counted and charged for the same as matter for publication.

The check of queries, as well as of special dispatches, will always be transmitted and contain the words "Day Press Rate" (D. P. R.), or, "Night Press Rate" (N. P. R.), as the case may be, so as to prevent confusion in checks between sending and receiving offices. No query will be rated as containing less than ten words.

Commercial rates will be charged for advertisements; for special dispatches containing cipher or code words; for special dispatches not in plain English language; for business messages of newspapers, their representatives or correspondents not containing news matter for publication; for all messages containing matter intended for publication in papers or periodicals not devoted primarily to the dissemination of the current general news; and for all other messages not falling within the provisions of the rules.

Do not accept at press rates special dispatches addressed to newspapers or press associations in foreign countries, other than the Dominion of Canada, without a special order in each case.

GOVERNMENT MESSAGES

All government messages will be counted at commercial count, address and signature free. Extra words, code signatures, etc., will be counted exactly as in commercial messages.

Any of the four classes of service (day message, day letter, night letter, night message) may be used for government messages.

The check will show the designation GOVT, will show the number of words according to commercial count, and in the case of Night Messages, Day Letters and Night Letters, the class of service, as shown in the following examples:

Government Day Message:	23 GOVT
Government Night Message:	13 GOVT NITE
Government Day Letter:	48 GOVT BLUE
Government Night Letter:	48 GOVT NL

The same restrictions concerning the use of plain English language and prohibiting code language applying to commercial Day Letters and Night Letters apply to government Day Letters and Night Letters. It is customary for some of the Government departments to begin and end their message with a group of four figures. These figures are used for departmental routine identification, and they will not be considered as barring messages in which they are employed from the day letter or night letter services, so long as the remainder of the message is couched in plain English language and contains no code language.

The charge for government messages will be 40 per cent of the tolls on a commercial message of the same class and length. If the result shows a fraction of a cent, the fraction, if less than one-half cent, will be dropped; if one-half cent or more, it will be counted as one cent.

The minimum charges for government messages will be as follows:

For a Day Message.....	25c
" " Night Message.....	20c
" " Night Letter.....	30c
" " Day Letter.....	45c

CABLE RULES

Full Rate Cablegrams

Every message must be prepaid, unless otherwise specially authorized, and all words in the address, text and signature must be counted and charged for. No charge is made for the transmission of the name of the originating office.

In the address of any message, the name of the office of destination, the name of the country and the name of the territorial subdivision (if any) of the country of destination are each counted as one word, no matter how many letters are employed.

The address of every message must consist of at least two words, the first indicating the name of the receiver and the second the name of the office of destination.

The sender is responsible for an incorrect or insufficient address. Corrections and alterations can only be made by a paid service message.

If an indication of any particular route be given by the sender and its transmission is considered necessary by the company, it will be forwarded free. Such indication, when given must be transmitted immediately after the address, that is, as a part of the address, and before the text of the message.

Messages destined to places beyond the lines of telegraph must contain the name of the place from which they are to be posted or otherwise delivered. The requisite instructions in such cases must be inserted as a part of the address, and must be paid for.

Plain language messages (i. e., neither Code nor Cipher) may be written in any language that can be expressed in Roman letters. In such messages each word of fifteen letters or less is counted as a word, and words of over fifteen letters are counted at the rate of fifteen letters or fractions of fifteen letters to a word.

Code messages may contain words belonging to one or more of the following languages: English, French, German, Italian, Dutch, Portuguese, Spanish and Latin. The use of words of other languages is not allowed. Code messages may also contain artificial words—that is, groups of letters so combined as to be pronounceable in at least one of the eight admitted languages. In code messages each code word (whether genuine or artificial) of ten letters or less is counted as a word, and no code word of more than ten letters can be accepted. If any

words in plain language, and of more than ten letters each, are used in code messages, they should be counted at the rate of ten letters or fraction of ten letters to a word.

In cipher messages, which may be composed of groups of figures or of groups of letters, the groups are counted at the rate of five figures or letters, or fraction thereof, to a word. Words in plain language inserted in such messages are counted as instructed in plain language messages.

Counting of Words, Etc.

When the letters "ch" come together in the spelling of a dictionary word, they are counted as one letter. In artificial words the combination is counted as two letters.

Inverted commas, the two signs of the parenthesis and each separate figure, letter, underline or character will be counted as one word.

Signs of punctuation, hyphens and apostrophes are not counted or sent except upon formal demand of the sender, in which case they will be charged for as one word each.

Groups of figures will be counted and charged for at the rate of five figures, or fraction thereof, as one word. Decimal points and commas, used in the formation of numbers, also bars of division and letters added to figures to form ordinal numbers, are to be counted as figures and charged for at the rate of five figures or fraction thereof, as one word.

Words joined by a hyphen or separated by an apostrophe are counted as so many separate words.

Abbreviated and misspelled words and illegitimate compound words and words combined in a manner contrary to the usages of any of the languages authorized are inadmissible.

Prepaid Replies

The sender of a message may pay for a reply. The indication "R. P." (meaning Reply Paid), together with the number of words prepaid, must be inserted immediately before the address, that is, as a part of the address, and *must be charged for*. The indication "R.P. 5," "R.P. 10," "R.P. 14," etc., counts as one word.

When accepting a message for which a reply *has been prepaid*, the originating office *must collect*, in addition to the charges therefor, the full charges for the reply as indicated.

Upon the receipt of a message to which a reply has been prepaid, the delivery clerk will write under the message, before delivery, the words "Reply of..... words paid for."

Deferred Cablegrams

Deferred messages are subject to transmission at the convenience of the company when the cables are free of full-paid traffic. They must bear the prefix LCO (language country of origin), LCD (language country of destination) or LCF (language country French), WRITTEN BEFORE THE ADDRESS, which indication must be counted and charged for.

Messages taken at Deferred Rates must be written in plain language of the country of origin or destination or they may be written in French as a universal language. The use of more than one language in the same message is not permitted, and code words and arbitrary trade terms are excluded, although code addresses may be employed.

Numbers, except in addresses, must be written in words spelled out.

Except as above the regular rules for the counting and charging of cable messages, and the general conditions appertaining to the cable service, apply to Deferred cables.

The tariff on Deferred cablegrams is one-half the regular rates, except that on messages destined to points in Great Britain and Ireland it is 3 cents per word less than half regular rates. From points having a 25 cents tariff to London the deferred rate to Great Britain and Ireland is 9 cents per word.

A reply to a Deferred plain-language message may be pre-paid, but the instruction must be expressed in terms of full rates. The indication RP, including the number of words paid for at full rates, should be counted and charged for as one word.

Consult tariff book for list of countries with which Deferred service is in operation. *

Cable Letters

This form of service is predicated upon the use of cable facilities at times when they would otherwise be unemployed, and is designed primarily for a class of plain-language business and social communications which should not be subjected to the oversea mail's delay, but are not of sufficient urgency and importance to warrant payment of full cable tolls on the same.

Unlike the Regular Full Rate Fast Service and the Deferred Service, which are on a word basis, Cable Letter tolls are based on an initial minimum charge covering a given number of words, plus added charges for excess words.

Cable Letters must be written in plain language of the country of origin, or the language of the country of destination may be employed if through Cable Letter service is in force therewith. Code language is not admissible, although code addresses may be used. The use of more than one language in the same message is not permitted.

Cable Letters intended for telegraphic delivery, will be prefixed CLT (Cable Letter Telegraphed). Cable Letters for mail delivery beyond designated points will be prefixed CLP (Cable Letter Posted). These prefixes must be written immediately before the address and count as one word and are charged for.

Except as above, the regular rules for the counting and charging of cable messages and the general conditions appertaining to the cable service apply to Cable Letters.

Week-End Letters

These messages differ from Cable Letters only in the increased number of words included in the minimum charge, and in the time of delivery.

The minimum number of words charged for is 25, including the necessary prefix, WLT for messages intended for telegraphic delivery, and WLP for European messages to be mailed beyond a designated point.

Week-End Letters may be filed at any time up to midnight Saturday, and are due for delivery the following Monday morning.

Week-End Letters must be written in plain language of the country of origin, or the language of the country of destination may be employed if through Week-End Letter service is in force therewith. Code language is not admissible, although code addresses may be used. The use of more than one language in the same message is not permitted.

Except as above, the regular rules for the counting and charging of cable messages, and the general conditions appertaining to the cable service, apply to Week-End Letters.

Consult tariff book for list of countries accepting Cable Letter and Week-End Letter service, and for rates.

COMMERCIAL TELEGRAMS

Commercial telegrams, or messages, are those which are sent and received by the public, through commercial telegraph companies. They should be accepted and transmitted in accordance with the rules of the commercial companies. Accuracy,

neatness, promptness and discretion should be employed in their transmission and reception; particularly more so than with any other class of messages. Errors, which seemingly are but trifling, often lead commercial telegraph companies into costly litigation, hence, it is important that every employe use the greatest care and judgment.

Both the sending and receiving operators should bear in mind that they share the responsibility of the correct transmission of a message. The receiving operator should always call the sending operator's attention to any part of a message which he thinks might be in error. A wrong state, or date, are common mistakes for the sending operator to make, and his attention should always be called to this, when they are apparent in the opinion of the receiving operator.

EXAMPLES

(a) (Chicago's received copy):

27 "VO" "HX" 10

VALPARAISO IND 2 20 P "JULY" 12

C L BROWN & CO

1321 WABASH AVE CHICAGO

(.) HAVE YOU SHIPPED OUR ORDER OF JULY
EIGHTH WIRE ANSWER

(SG) MARTIN & WHEELER
"2 28 PM"

The foregoing message answered.

(b) (Valparaiso's received copy):

43 "CH" "HW" 10 COLLECT

CHICAGO 3 40 P "JULY" 12

MARTIN & WHEELER

AN ANS DATE VALPARAISO IND

(.) YOUR ORDER WAS SHIPPED YESTERDAY SHOULD
REACH YOU TOMORROW

(SG) C L BROWN & CO
"3 49 PM"

(c) (Chicago's received or relayed copy):

28 "VO" "HX" 12

VALPARAISO IND 2 45 P "JULY" 12

A L CARTER

721 THIRD ST DES MOINES IA

(.) ABBIE DIED THIS MORNING FUNERAL FRIDAY
TWO PM MAY WE EXPECT YOU

(SG) H L MERRILL

"2 47 PM"

(d) (Chicago's received or relayed copy):

29 "VO" "HX" 13 3 EXA DELY CHGS GTD

VALPARAISO IND 2 46 P "JULY" 12

M A THOMAS

5 MILES WEST PEKIN ILL

(.) ABNER QUITE SICK NOT DANGEROUS BUT
NELLIE SHOULD COME ANSWER

(SG) M E BUTLER

"2 49 PM"

(e) (Warsaw's received copy):

"VO" "MH" DH

VALPARAISO IND 3 P "JULY" 12

C B WRIGHT

CARE CONDR PENNA TRAIN NO 28

DUE 4 10 PM WARSAW IND

(.) I WILL MEET YOU AT HUNTINGTON TOMORROW

(SG) A C RANDALL

"3 07 PM"

(f) (Chicago's received or relayed copy):

30 "VO" "HX" 8 GOVT

VALPARAISO IND 3 30 P "JULY" 12

M C BAKER

DISTRICT INSPECTOR 804 RANDOLPH BLDG

CLEVELAND OHIO

(.) MEET ME GREAT NORTHERN HOTEL CHICAGO
SATURDAY FORENOON

(SG) HINSHAW
"3 34 PM"

(g) (Chicago's received or relayed copy):

31 "VO" "HX" 10 COLLECT

VALPARAISO IND 4 P "JULY" 12

MERRITT KNIMAN

KANKAKEE ILL

(.) YOUR WIFE SICK WANTS YOU TO COME HOME
ANSWER

(SG) BUCKNER & RODNEY
"4 06 PM"

(h) (Chicago's received copy):

32 "VO" "HX" 12 4 EXA REPORT DELY

VALPARAISO IND 3 55 P "JULY" 12

A B WHITE

MEAT INSPECTOR ARBUCKLE & CO

FLAT C 492 ASHLEY AVE CHICAGO

(.) SEND HINSDALE HERE FIRST TRAIN IN
MORNING ANSWER

(SG) WHITMAN & CO
GENL AGTS
"4 07 PM"

(i) (Chicago's received or relayed copy):

33 "VO" "HX" 11 4 EXA

VALPARAISO IND 4 50 P "JULY" 12

A B GLEASON

WINAMAC IND

(.) FORGING ANATOMY CAMBRIC MUSLIN AUGUST
DELIVERY TEMPEST

(SG) J G GRAVES

AGENT WHITE STAR LINE

"4 56 PM"

(j) (Chicago's received or relayed copy):

34 "VO" "HX" 12 NITE

VALPARAISO IND "JULY" 12

HAMMELGARN & CO

TWELFTH & LINCOLN STS PITTSBURG PENNA

(.) OFFER TWO CARS NUMBER TWO RED SEVENTY ONE
AND HALF FOB VALPARAISO

(SG) B L JORDAN & CO

"5 08 PM"

(k) (Chicago's received or relayed copy):

35 "VO" "HX" 10 COLLECT

VALPARAISO IND 6 25 P "JULY" 12

B L WHITAKER

MILFORD HOTEL MILWAUKEE WIS

(.) MR DORAS WIRES HE CANNOT BE IN CHICAGO
SATURDAY

(SG) H W THOMPSON

"6 33 PM"

(l). (Chicago's received copy):

36 "VO" "HX" 8

LEE WHITE CO IND 6 40 P "JULY" 12

MILTON SONS & CO

RANDOLPH ST CHICAGO

(.) SHIPPED FIFTEEN CASES EGGS BY EXPRESS
THIS AFTERNOON

(SG) JOHN L BARNES
"6 44 PM"

(m) (Chicago's received copy):

37 "VO" "HX" 9

VALPARAISO IND 7 55 A "JULY" 12

H B BLUFFTON & CO

629 SOUTH REED ST CHICAGO

(.) SELL TEN MAY WHEAT OPENING STOP HALF
CENT ADVANCE

(SG) HILL
"8 03 AM"

PRESS MESSAGE

(n) (Chicago's received or relayed copy):

38 "VO" "HX" 12 COLLECT N P R

VALPARAISO IND "JULY" 12

HERALD

CINCINNATI OHIO

(.) JUDGE MCMILLAN RENDERS DECISION ON MASON
RACE TRACK TONIGHT HOW MUCH

(SG) HASTINGS
"7 06 PM"

PRESS SPECIAL

(o) (Chicago's received or relayed copy):

39 "VO" "HX" COLLECT N P R
VALPARAISO IND "JULY" 12
LEADER

ST LOUIS MO

(.) A DISASTROUS RAIN AND WIND STORM PASSED
THROUGH THE NORTH END OF THIS COUNTY THIS
MORNING DESTROYING A GREAT DEAL OF PROPERTY
ROOFS WERE BLOWN OFF A NUMBER OF SMALL
BUILDINGS AND NUMEROUS TREES WERE UPROOTED
A BARN BELONGING TO JAMES SAMPSON WAS STRUCK
BY LIGHTNING KILLING THREE HORSES AND BURNING
SEVERAL TONS OF HAY STORED THEREIN

FILED 7 35 PM

(SG) HASTINGS
"7 49 PM"

CABLE MESSAGE

(p) (Chicago's received or relayed copy):

40 "VO" "HX" 5
VALPARAISO IND "JULY" 12
MURDENT
LONDON
(.) WHITAKER ARRIVED

(SG) HENNIG
"7 50 PM"

(q) (Chicago's received or relayed copy):

41 "VO" "HX" 14

VALPARAISO IND 7 55 P "JULY" 12

HASTE & MCNAL HARVESTER CO

KANSAS CITY MO

(.) EXPRESS QUICK ONE P 6 TWO V 4 TWO X 3
ONE B 8

(SG) MCDONALD & CO
"8 07 PM"

(r) (Chicago's received or relayed copy):

42 "VO" "HX" 8

VALPARAISO IND 8 45 P "JULY" 12

JOHN MILDRED

HASTINGS NEB

(.) HARRIS QUITE ILL CANT SOME OF YOU COME

(SG) JENNIE
"8 52 PM"

(s) (Chicago's received copy):

43 "VO" "HX" 25 NL

VALPARAISO IND "JULY" 12

MRS J R FULLERTON

175 MT VERNON AVE CHICAGO

(.) ARRIVED SAFE THIS MORNING AND FOUND ALL
WELL THIS PLACE IS PERFECTLY DELIGHTFUL
DO NOT EXPECT ME HOME VERY SOON HAVING A
JOLLY TIME HERE

(SG) STELLA
"9 02 PM"

(t) (Chicago's received copy):

44 "VO" "HX" 35 BLUE

VALPARAISO IND 9 05 P "JULY" 12

MILLIGAN & DREYFUS

CONTRACTORS CHICAGO

(.) WORK PROGRESSING RAPIDLY THIRTY TEAMS
HAULING TODAY WILL NEED THREE MORE WHEEL
SCRAPERS NEXT WEEK AT NORTH END WHEN WILL YOU
SHIP THE SHOVELS AND PICKS I WILL BE IN
CHICAGO MONDAY MORNING TO REPORT

(SG) MARTIN

"9 15 PM"

Notes and Explanations of the Foregoing Messages

Valparaiso represents the sending office and Chicago the receiving office in all of the example messages, excepting messages (b) and (e); with the former Valparaiso is the receiving office and Chicago the sending office, while with message (e) Warsaw is the receiving office.

All combinations of letters and characters enclosed in parenthesis () are sent by the sending operator, but are not copied by the receiving operator, while those enclosed in quotations " " are written by the receiving operator but not transmitted by the sending operator.

Offices having considerable business with each other number each message as sent, hence all of the example messages are numbered except message (e), which it is assumed is being sent to an office with which the sending office, Valparaiso, has but little business. In all examples except (b) "VO" is the office call of the sending office, Valparaiso. In example (b) "CH" or Chicago is the sending office. "HX" is the receiving operator's personal signal in all of the example messages, except (b) and (e); in the former "HW," in the latter "MH" being the receiving operators' personal signals. In all exam-

ples the sending operator's personal signal is omitted. The period (.) indicates the beginning of the body of the message. "Sg" the signature.

In a prepaid message the indication "paid" is not transmitted in the check; simply the figures representing the number of words in the message. See example (a). In a "collect" message the word collect is transmitted. Example (g).

The time that a message is received should be placed immediately under the signature.

All of the example messages excepting (e), (f), (j), (n), (o), (p), (s) and (t) are the usual day or black messages. Message (e) is a dead-head or free message; (f) is a government message, which has priority over other business, and is sent at reduced rates; (j) is a night or red message, being sent at reduced rates; (n) is a press message, frequently called a "query"; (o) is a press special, and like a press message is sent at press or reduced rates; (p) is a cable message, which can only be sent prepaid; (s) is a night letter, and (t) a day letter.

Messages (i) and (q) are cipher or code messages, the meaning of which is entirely unknown to the telegraph operators handling them. Keys or codes, however, which are held by the sender and addressee explain the meaning of them.

Message (q) is a difficult message to transmit and receive; the characters in the body or text will explain the reason for this. The sending operator should send slowly, accurately, and break and resend the combination characters "P 6," "V 4," "X 3," and "B 8," as he would proceed with the message. For instance, after transmitting "P 6," he should break himself and add "tts t ltr p and fig 6"; and do likewise with the other characters.

Copies of messages sent should always bear the evidence of transmission in the following form: Example message (a)—"27 CH HW HX 2:28 P." "27" is the number of the message to Chicago office on that day; "CH" is the call of the Chicago office to which it is being sent; "HW" the personal signal of the sending operator; "HX" the personal signal of the receiving operator, and "2:28 P" sending time.

Transmit uncommon or misspelled words slowly, using the "break" signal after transmitting, adding abbreviations,

"tts it" or "tts cy" and then repeat them. Examples: "impignorate—interrogation mark—tts it—impignorate," "immediately—interrogation mark—tts cy—immediately."

NOTE.—While the rules of commercial companies state plainly that all messages should be sent as written, it is frequently suggestive for the sending operator to transmit correctly any misspelled word, so long as he is sure it will not change the meaning of a message. This suggestion would not be applicable in any way to cipher or code messages or those written in any foreign language.

Whenever, in transmitting, the receiving operator "breaks," and says *go ahead* some word which does not appear in the sending operator's copy, the sending operator will say "nt in it," "nt tr," or "wrs tt." It would be evident in this instance that the receiving operator had made a "bull," and he would then ask the sending operator to go ahead from some other previous word he had received.

Transmit a duplicate message by sending the word "duplicate" immediately preceding the message number, also immediately after the check. The receiving operator should write this word in large letters in one or two conspicuous places upon his copy.

The receiving operator should always be certain of the accuracy of a check and the completeness of a message before allowing the sending operator to continue on another message.

Forwarded Messages

See Rule 8, Commercial Rules.

Checks

The check of a message represents the number of words to be counted and charged for, except in the case of a collect message, one word is added in the check to assist in indicating that the tolls of the message are to be collected. The extra word, however, in the latter instance would not be charged for.

Discrepancies in Checks

We will assume, for example, in the transmission of message (a) that either Valparaiso (the sending office) failed to send the 9th word "wire," or Chicago (the receiving office) failed to copy it. In this instance, Chicago would, at the conclusion of the message, say "9 w," meaning that he had but 9 words. Valparaiso would then review the message and, finding that

there were 10 words, would say "10," and then "letter it," by giving the first letter of each word in the body or text, as in the following way: "period h y s o o o j e w a." Chicago would then say "ga eighth," which is the word immediately before "wire." By the addition of the missing word "wire," the error would be discovered.

Now, in case that message (d) addressed to M. A. Thomas, 5 miles west, Pekin, Ill., should have passed the receiving and sending operators at Chicago, with an error in the check unnoticed, for instance, the three extra words missing, and the operator at Pekin, Ill., discovered it at the time he received it, he would call the Chicago sending operator's attention to it by saying "10 w no exa"; the Chicago operator would then review the message and, finding that to be the case, would say "bk hold it, I wi get it fixed." The Chicago operator would then take it to the Valparaiso wire and tell Valparaiso to get his No. 29 when he would add "10 w no exa." Valparaiso would then immediately discover the error and repeat the extra words to Chicago, who, after inserting them, would return to the Pekin, Ill., wire and straighten the check with that office.

Phillip's Press Code

The Phillip's Press Code is an abbreviated form for sending newspaper specials and press matter by wire. By the use of this code nearly twice as much matter can be transmitted and copied in a stated time than if the words were spelled in full. Operators capable of doing this class of work receive the highest salaries and enjoy the shortest hours. The best talent in the telegraph service is required for this work. Both the sending and receiving operators must be conversant with all the abbreviated words and phrases. A speed of 65 to 75 words per minute is obtainable by the use of this code.

The receiving operator, as may be well appreciated could not copy at this speed with a pen, but is required to use a typewriter.

The Phillip's Press Code is frequently called "Telegraphic Shorthand."

The following newspaper special "Cut in Phillips" will illustrate its application (the copy written in full and as it would be written by the receiving operator is message (o), page 232): "A dsx rain es wind storm psd tru t nt end o ts eo tsm dsyg a gt deal o prpy, roofs wr blon off a no o sma

blgs es nux trees wr uprtd. A barn blng to James Sampson ws stru by lghtg kig 3 horses es burng svl tons of hay stored trin."

Service Messages

Service messages must be brief, reduced to the smallest dimensions compatible with clear expression and the covering of all essential points. The filing time should always be shown on a service message when prepared for transmission. Service messages received should be promptly answered, and when relating to telegrams of current date, they should be answered within fifteen minutes, unless delayed by the necessity for communicating with sender.

See Rule 16, Commercial Rules, for Service Message instructions and abbreviations.

Form Used in Transmitting

(Chicago's received or relayed copy):

43 "VO" "HX"

MICHIGAN CITY IND

(.) Y D JAMES A WHITE UNKN

(SG) VALPARAISO IND "JULY" 12

"9 20 PM"

Application of Forms Used

NOTE.—These forms of service messages apply to messages found following Commercial Telegrams, page 226.

Assuming in message (c) that A. L. Carter, the addressee, was unknown at 721—3rd St., Des Moines, Iowa, would prepare and send to the sending office, Valparaiso, the following message:

"VALPARAISO IND

Y D A L CARTER 721 THIRD ST UNKN

DES MOINES IOWA JULY 12*

Valparaiso upon the receipt of this message would compare the address as given in the service with the one on the sender's copy, and if found to be correct, would notify the sender, H. L. Merrill, of the fact. If the address as given in the

service message from Des Moines had been 751—3rd St. or some other number or street than the correct one, Valparaiso would wire the Des Moines Office as follows:

***DES MOINES IOWA**

**SYS OD A L CARTER IS ADDRESSED 721 THIRD ST NOT 751
VALPARAISO IND JULY 12"**

Des Moines, upon the receipt of this message, would immediately try 721 and if the addressee, A. L. Carter, was found at that address, would immediately wire Valparaiso of the fact in the following way:

***VALPARAISO IND**

DFS Y D CARTER DELD

DES MOINES IOWA JULY 12"

Assuming in message (f) that M. C. Baker, the addressee, had closed his office for the day before the telegraph messenger arrived, and his residence was unknown, Cleveland would send the following to Valparaiso:

***VALPARAISO IND**

**YR GOVT DATE M C BAKER 804 RANDOLPH BLDG CLOSED
CLEVELAND OHIO JULY 12"**

Assuming in message (g) that Merritt Kniman, the addressee, could not be found, Kankakee, Ill., would send the following message to Valparaiso, Ind.:

***VALPARAISO IND**

Y D MERRITT KNIMAN CANT LOCATE

KANKAKEE ILL JULY 12"

In message (h) Chicago, the receiving office would act as requested in the check, and as in accordance with Rules 5 and 32 commercial rules, sending a message to the senders similar to the following:

***CHECK 11 COLLECT**

CHICAGO ILL JULY 12

WHITMAN & CO

GENL AGENTS VALPARAISO IND

**YOURS DATE TO A B WHITE DELIVERED FOUR FORTY PM
MANAGER"**

Assuming that the destination in message (l) had been "bulled" in transmission and sent to St. Louis, Mo., instead of Chicago; St. Louis after being unable to find the addressees, Milton Sons & Co., on Randolph St., in that city, would send the following message to Valparaiso:

***VALPARAISO IND**

Y D FROM LEE WHITE CO IND TO MILTON SONS & CO
RANDOLPH ST UNKN

ST LOUIS MO JULY 12"

Valparaiso would then inspect their copy, and if the destination as shown in their copy was St. Louis, would advise Lee, White Co. of the fact, who would likely discover the error and inform Valparaiso accordingly. Valparaiso would then resend the message to Chicago, and advise St. Louis of the error in the following way:

***ST LOUIS MO**

OUR MILTON SONS & CO WE RESEND

VALPARAISO IND JULY 12"

Assuming in message (m) that no such number as 629 could be found on South Reed St., Chicago, the receiving office would send the following message to Valparaiso:

***VALPARAISO IND**

Y D H B BLUFFTON & CO 629 SOUTH REED ST NSN

CHICAGO ILL JULY 12"

If we assume in message (k) that Mr. Whitaker, the addressee, left word for his telegrams to be forwarded to him to the Clifton House, Chicago, the message as sent from Milwaukee to Chicago would be in the following form:

***CHECK 13 COLLECT 35 & 36 3 EXA**

VALPARAISO IND VIA MILWAUKEE WIS JULY 12-

B L WHITAKER

CLIFTON HOUSE CHICAGO

MR DORAS WIRES HE CANNOT BE IN CHICAGO SATURDAY

H W THOMPSON"

NOTE.—“Valparaiso Ind via” in the above would be the three extra words. The 35 given in the check represents the tolls from Milwaukee to Chicago and the 36 tolls from Valparaiso to Milwaukee.

Assuming in message (i) that A. B. Gleason, the addressee, believed there was an error in his message, Winamac, Ind., the receiving office, would send the following to Valparaiso, Ind.:

***VALPARAISO IND**

DUP QK Y D A B GLEASON

WINAMAC IND JULY 12"

Assuming in message (j) that Hammelgarn & Co., the addressees, had moved from 12th and Lincoln Sts., and their present address was unknown, Pittsburg, Pa., would wire the following to Valparaiso, Ind.:

***VALPARAISO IND**

YR RED 12 HAMMELGARN & CO TWELFTH & LINCOLN STS
SGD JORDAN & CO MOVED

PITTSBURG PENNA JULY 13"

Assuming in message (k) that B. L. Whitaker, the addressee, had left town a short while before message was received, Milwaukee would wire the following service to Valparaiso:

***VALPARAISO IND**

Y D B L WHITAKER L C

MILWAUKEE WIS JULY 12"

Assuming in message (r) that John Mildred, the addressee, lived three miles in country at Hastings, Nebr., Hastings would send the following message to Valparaiso:

***VALPARAISO IND**

YR 12 JOHN MILDRED SGD JENNIE LIVES 3 MILES
OUT NO PHONE DO YOU GNTEE DOLLAR DELY
HASTINGS NEB JULY 13"

Private or Leased Wires

Private wires are invariably leased from Commercial telegraph companies by large mercantile, brokerage, and other concerns which find it to their advantage and profit instead of conducting their business through the regular channels of commercial companies. Metropolitan newspapers are also great lessees of wires.

Private or leased wires usually require expert telegraph operators.

Private Wire Messages

The transmission of messages, press reports, etc., upon private or leased wires requires brevity, speed and accuracy.

The checks are omitted on these messages.

TRAIN DESPATCHER'S SHEET.

NORTHWESTERN INDIANA RAILROAD COMPANY.

192—

WESTWARD.

EASTWARD.

Trains	EASTWARD.									
Brines										
Conductors										
Enginemen										
Cars										
Tons										
Ft. Wayne										
Columbia City										
Pierceton										
Warsaw										
Bourbon										
Inwood										
Plymouth										
Hamlet										
Hanna										
Wenatah										
Valparaiso										

RAILROAD MESSAGE.

TELEGRAM	The Northwestern Indiana R. R. Co.			Form 3
Filed at _____	This form will be used for both sending and receiving messages.			
Office Call	Sent by	Received by	FROM	To _____

**NORTHWESTERN INDIANA
TELEGRAPH COMPANY**

TELEGRAM

CLASS OF SERVICE SYMBOL	
Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

If none of these three symbols appears after the check (number of words) this is a telegram. Otherwise its character is indicated by the symbol appearing after the check.

M. E. PACKMAN,
Vice Pres.
G. M. DODGE,
President.

CLASS OF SERVICE SYMBOL	
Telegram	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

If none of these three symbols appears after the check (number of words) this is a telegram. Otherwise its character is indicated by the symbol appearing after the check.

RECEIVED AT

PRIVATE WIRE MESSAGE.

NORTHWESTERN INDIANA COMMISSION COMPANY.

PRIVATE WIRE.

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Grain, Provision and Stock Quotation Abbreviations

The following abbreviations are used for quoting the different options and commodities by wire, hence if 70½ cents was being bid for September wheat, the wire quotation would read "w u 70½ b"; if sellers at that price—"w u 70½ a"; if the previous quotation had been more than ¼ cent different, upon an ordinary market, the letters "n b" would follow the quotation, as "w u 70½ b n b."

Grains and Provisions

W—Wheat
C—Corn
O—Oats

P—Pork
L—Lard
S R (or) R—Short Ribs

Option Months

F—January	N—July
G—February	Q—August
H—March	U—September
J—April	V—October
K—May	X—November
M—June	Z—December

Example Market Report (C. N. D.)

Chicago Ill Jan 1 1921

WZ 164¾ AX	K 175½ to 175	N 148 to 147¾
CZ 90¾ A ½ B	K 92¼ to 92½	N 91¾ B
OZ 51¾ AX	K 55¾ AX	N 53¾ AX

Words and Phrases

N—Nominal.
N B—None between.
A, S (or) AX—Asked (or) sellers.
B—Bid (or) buyers.
Pr (or) Pfd—Preferred.

Prominent Stocks

A—Atchison, Topeka & Santa Fe Ry.
AB—N. Y. Air Brake Co.
ABK—American Brake Shoe & Foundry Co.
ABL—Atlanta, Birmingham & Atlantic Ry. Co.
ABM—Atlanta and Birmingham.
ABN—American Bank Note Co.
ABS—American Beet Sugar Co.
AC—American Telegraph & Cable Co.
ACC—American Cities Co.
ACL—American Coal Co. of New Jersey.

- ACS—American Ship & Commerce Corp.
ACT—Acme Tea Co.
ADK—American Dock & Imp. Co.
ADO—Associated Oil Co.
ADS—American Druggists Synd.
AE—Adams Express.
AEO—Atchison, T. & Santa Fe East. Okla. Div.
AF—American Car & Foundry Co.
AFG—American La France Fire Engine Co.
AFR—Anglo-French Loan.
AG—Atlantic Gulf & West Indies S. S. Lines.
AGR—American Agricultural Chemical Co.
AGS—Alabama Great Southern.
AH—Allis Chalmers Mfg. Co.
AIC—American International Corpn.
AJS—Atchison, T. & S. Fe Adjustment.
AK—Alaska Gold Mines Co.
AKN—Atlanta, Knoxville & Cin.
AL—American Linseed Co.
ALB—Province of Alberta 4½s.
ALI—National Aniline & Chem. Co.
ALK—Mathieson Alkali Works.
ALO—American Locomotive Co.
ALT—Chicago & Alton Ry.
ALY—United Alloy Steel Corpn.
AM—American Express.
AMR—Armour & Co. Real Estate Bonds.
AMS—American Sumatra Tobacco Co.
AN—Ann Arbor R. R. Co.
AO—American Cotton Oil Co.
AR—American Smelting & Refining Co.
ARG—Argentine Republic.
AS—Albany & Susquehanna R. R.
ASL—Atchison Transcontinental Short Line.
ASN—Assets Realization Co.
ASU—American Shipbuilding Co.
ASY—American Smelters Securities Co.
AT—American Tobacco Co.
ATT—American Telephone & Telegraph Co.
ATX—American Tobacco Sec. Corp.
AU—Auto Sales Corp.
AV—Allegheny Valley R. R.
AW—American Writing Paper Co.
AX—Atlantic Coast Line R. R.

AY—Allegheny & Western Ry.
AZ—American Zinc, Lead & Smelting.
B—Brooklyn Rapid Transit Co.
BB—Burns Bros.
BC—Butte Copper & Zinc Co.
BCH—Beech Creek R. R.
BCK—Butterick Company.
BD—Braden Copper Mines Co.
BDX—City of Bordeaux Bonds.
BE—Brooklyn Edison Co.
BF—Booth Fisheries Co.
BFQ—Buffalo & Susq. R. R.
BH—Bush Terminal Co.
BHM—Bethlehem Motors Corp.
BI—National Biscuit Co.
BK—Brunswick Terminal & Ry. Sec. Co.
BL—Baldwin Locomotive Works.
BLR—Barnet Leather Co.
BM—Batopilas Mining Co.
BMB—N. Y., Br'klyn & Manhattan Beach R. R.
BN—Brooklyn, Queens Co. & Suburban.
BO—Baltimore & Ohio R. R.
BOS—Amn. Bosch Magneto Co.
BP—Union Bag & Paper Co.
BR—Buffalo, Rochester & Pittsburgh Ry.
BS—Bethlehem Steel Corporation.
BSQ—Buffalo and Susquehanna Iron Co.
BSY—Ches. & Ohio, Big Sandy Ry. Co.
BT—Butte & Superior Mining Co.
BU—Brooklyn Union Gas Co.
BV—Brooklyn Union Elevated R. R.
BW—Brown Shoe Co.
BWV—B. & O., Pitt., L. E. & W. Va. System.
BWY—Broadway & Seventh Ave. R. R.
BX—Balto. & Ohio Southwestern Ry.
BY—The Barrett Co.
C—Anaconda Copper Mining Co.
CA—Canadian Pacific Co.
CAB—Ills. Central Cairo Bridge.
CAH—Cahaba Coal Mining Co.
CAN—American Can Co.
CAR—Carolina Central Ry.
CB—Central Branch, Union Pacific Ry. Co.
CBG—Central R. R. and Banking Co. of Ga.

CBR—Cuba Railroad Co.
CC—Cleveland, Cin., Chic. & St. Louis Ry.
CCK—Cripple Creek Central Railway Co.
CCL—Carolina, Clinchfield & Ohio.
CCM—Consolidation Coal Co., of Maryland.
CCO—Coca Cola Co.
CD—Consolidated Tobacco Co.
CDN—Dominion of Canada Bonds.
CDP—Cerro de Pasco Copper Corp.
CDT—Central Dist. Telephone Co.
CE—Chicago & Eastern Illinois R. R.
CEN—N. Y. Central & Hudson River R. R.
CF—Colorado Fuel & Iron Co.
CG—Columbia Gas & Electric Co.
CGB—Con. Gas, Electric Light & Power Co. of Baltimore.
CGC—Consumers' Gas Co., of Chicago.
CGL—Chicago Gas Light & Coke Co.
CGM—Columbia Graphophone Co.
CGR—Consolidated Cigar Corp.
CGS—California Gas & Electric Corp.
CH—Nash., Chattanooga & St. L. Railway.
CHD—Cincinnati, Hamilton & Dayton Ry.
CHE—Chicago & Erie R. R.
CHI—Chicago, St. Louis & N. O. R. R.
CHL—Chile Copper Co.
CHM—Chandler Motor Car Co.
CHN—Chinese Gov't, Hu-Kuang Rys.
CHO—Choctaw, Oklahoma & Gulf R. R.
CHR—Chicago Railways Co.
CHU—Chicago Union Station.
CHW—Chicago and West Michigan.
CI—Caddo Centl. Oil & Refg. Co.
CIL—Chi. Ind. & Louisville Ry.
CIM—Con. Interstate-Callahan Mining Co.
CIN—Cin., Indianapolis, St. L. & Chic. R. R.
CIP—U. S. Cast Iron Pipe and Foundry Co.
CIS—Continental Insurance Co.
CK—Central Coal & Coke Co.
CL—Central Leather Co.
CLN—Cincinnati, Lebanon & Northern.
CLO—Colorado Industrial Co.
CLS—N. Y. Central, Lake Shore 3½s.
CLU—Cluett, Peabody & Co.
CLV—Cleveland Short Line.

CLW—Cleveland, Lorain & Wheeling Ry.
CM—Colorado Midland Ry.
CMC—N. Y. Central, Michigan Cen. 3½s.
CML—Commercial Cable Co.
CMM—Calumet & Arizona.
CMP—Computing, Tabulating Recording Co.
CMT—Cumberland Telephone & Tel. Co.
CN—Columbus & Ninth Ave. R. R.
CNN—Continental Candy Corporation.
CNS—Cuba Cane Sugar Co.
CO—Chesapeake & Ohio Railway.
COT—Continental Can Co.
CP—Central Pacific Ry.
CPK—California Packing Corp.
CPT—Chicago Pneumatic Tool Co.
CPU—California Petroleum Corporation.
CR—Corn Products Refining Co.
CRT—Certain Teed Products Corp.
CRU—Crucible Steel Co. of America.
CRW—Conn. Railway & Lighting Co.
CRX—Crex Carpet Co.
CS—Canada Southern Railway.
CSA—Central & South American Tel. Co.
CSM—Chicago, St. Paul & Minneapolis.
CST—Chicago, St. Louis & Pittsburgh R. R.
CSU—Cuban American Sugar Co.
CTC—Comstock Tunnel Co.
CTX—Consolidated Textile Corp.
CU—Republic of Cuba Bonds.
CUV—Union Elevated of Chicago.
CVT—Central Vermont Ry.
CW—Chicago & Western Indiana R. R.
CX—Colorado & Southern Ry.
CY—Chino Copper Co.
D—Denver & Rio Grande R. R.
DE—Detroit & Mackinac Ry. Co.
DEG—Detroit Gas Co.
DER—Deere & Co.
DES—Des Moines & Ft. Dodge R. R.
DH—Delaware & Hudson Canal Co.
DHO—Durham Hosiery Mills.
DI—Duluth & Iron Range R. R.
DK—New York Dock Co.
DL—Delaware, Lackawanna & West'n R. R.

DN—Diamond Match Co.
DO—Dome Mines Co.
DOM—Dominion Republic 5s.
DP—Dupont De Nemours Powder Co.
DR—Distillers' Securities Corporation.
DRU—United Drug Co.
DS—Duluth, South Shore & Atlantic Ry.
DT—Detroit Edison Co.
DU—Detroit United Railways.
DUT—Royal Dutch Tempy. Ctf., Amn. Shares.
DW—Dayton Power & Light Co.
DX—Duluth Superior Traction Co.
DY—Associated Dry Goods.
E—Erie R. R.
EB—Electric Storage Battery Co.
EG—Emerson Brantingham Co.
EGL—Erie General Lien.
EH—Elkhorn Corpn.
EJ—Endicott Johnson Corpn.
EJO—Elgin Joliet & Eastn. Ry.
EK—Edison Illuminating of Brooklyn.
EM—Eastman Kodak Co. of N. J.
EN—National Enameling & Stamping Co.
EP—Erie & Pittsburgh R. R.
ET—East Tenn., Virginia & Georgia R. R.
EV—Evansville & Terre Haute R. R.
EVI—Evansville & Indianapolis R. R.
EW—Lake Erie & Western R. R.
FD—Fort Worth & Denver City Ry.
FG—Fort Worth & Rio Grande Ry.
FI—Fairbanks Co.
FK—Fisk Rubber Co.
FL—Florida East Coast Ry.
FM—Famous Players Lasky Corpn.
FN—Flint & Pere Marq., Port Huron Div.
FP—Flint & Pere Marquette R. R.
FR—Fisher Body Corpn.
FRS—American Foreign Securities Co.
FRU—United Fruit Co.
FS—Federal Mining and Smelting Co.
FT—Freeport Texas Co.
FU—Mutual Fuel Gas Co.
FW—Pittsburgh, Fort Wayne & Chic. Ry.
FX—Central Foundry Co.

- FY—American Steel Foundries.
G—Consolidated Gas Co.
GB—Granby Consolidated Mining, Smelting and Power Co., Ltd.
GC—General Chemical Co.
GCN—Georgia, Carolina & Northern.
GDV—Gray & Davis, Inc.
GE—General Electric Co.
GF—Gulf & Ship Island R. R.
GH—Geo. W. Helme Co.
GI—Gila Valley, Globe & Northern Ry.
GK—Gaston Williams & Wigmore, Inc.
GL—Georgia & Alabama Ry.
GM—Genl. Motors Co.
GMD—Genl. Motors Deb. Stock.
GN—Green Bay & Western Ry.
GNP—Greene Cananea Copper Co.
GNR—Great Northern Railway.
GO—Central of Georgia Ry.
GP—Georgia Pacific R. R.
GPW—Great Falls Power Co.
GQ—Gt. Northern pfd.
GR—B. F. Goodrich Co.
GS—Gold & Stock Telegraph Co.
GST—Gulf States Steel Co.
GU—Gulf, Mobile & Northern R. R.
GW—Chicago & Great Western Railway.
GX—Galv., H. & San A., Mex. & Pac. Div.
GY—General Cigar Co., Inc.
H—New York & Harlem R. R.
HK—Harbison Walker Refractories Co.
HL—American Hide & Leather Co.
HM—Homestake Mining Co.
HN—Havana Electric Ry.
HNR—Havana Elec. Rly. Light & Power Co.
HP—N. Y. Gas & Elec. Light, Heat & P. Co.
HR—International Harvester Co. of N. J.
HRT—Hartman Corporation.
HRV—International Harvester Corp.
HS—Haskell & Barker Car Co.
HT—Houston & Texas Central R. R.
HU—Hudson & Manhattan R. R. Co.
HV—Hocking Valley Ry.
HW—Hackensack Water Co.

- HX—Houston East & West Texas.
IA—Iowa Central Railway.
IB—Interborough Metropolitan Co.
IBC—Interboro Cons. Corpn.
ICR—Island Creek Coal Co.
ID—U. S. Industrial Alcohol Co.
IG—Indiana Natural Gas and Oil.
IGL—International Agricultural Corpn.
IJ—Ills. Cen. Chi. St. L. & N. O. Joint Bonds.
IK—International Nickel.
IL—Illinois Central R. R.
ILO—Illinois Central, Louisville Division.
ILS—International Salt Co.
ILX—Illinois Central, St. Louis Division.
IM—St. L., Iron M. & Southern Ry.
IMO—International Motor Truck Corp.
IMR—St. L., Iron Mtn. & S. Riv. & Gulf. Div.
IN—Institute Iri. Work & Dev. Agri. S. A.
INA—Indiana, Illinois & Iowa R. R.
IND—Chicago & Indiana Coal Railway Co.
INP—Iron Products Corp.
INS—Inspiration Consolidated Copper Co.
IP—International Paper Co.
IR—Ingersoll-Rand Co.
IRT—Interborough Rapid Transit Co.
IS—American Ice Co.
ISC—Illinois Steel Co.
IT—International & Great Nor. R. R.
IX—Indiana Steel Co.
J—Central R. R. of New Jersey.
JCP—J. C. Penney Co.
JF—Jefferson & Clearfield Coal & Iron Co.
JG—St. Joseph & Grand Island R. R.
JIC—J. I. Case Threshing Machine Co.
JK—Jamestown, Franklin & Clearfield R. R.
JO—Joliet & Chicago.
JP—Imperial Japanese Govt. Bonds.
JT—Jones Bros. Tea Co.
JU—Alasaka Juneau Gold Mining Co.
JW—Jewel Tea Co.
JX—Ajax Rubber Co.
K—Missouri, Kansas & Texas Ry.
KA—Julius Kayser & Co.
KCP—Kansas City & Pacific.

KCS—St. Paul & Kansas City Short Line.
KE—Missouri, Kansas & Eastern.
KG—S. S. Kresge Co.
KK—Keokuk & Des Moines R. R.
KM—Kanawha & Michigan Ry.
KN—Kennecott Copper Corp.
KNY—Kansas City Terminal Ry.
KO—Knoxville & Ohio R. R.
KP—Kelly-Springfield Tire Co.
KR—Kings County Electric Lt. & Power Co.
KS—S. H. Kress & Co.
KST—Keystone Tire & Rubber Co.
KSU—Kansas City & Southern Ry.
KSY—Kansas City, Ft. Scott & Memphis R. R.
KU—Kansas City, Ft. Scott & Memphis Ry.
KV—Kings County Elevated R. R.
KW—Kelsey Wheel Co.
KY—Kentucky Central R. R.
L—Liberty Loan.
LF—Loft Incorporated.
LG—Laclede Gas Co. of St. Louis.
LI—Long Island R. R.
LK—Lackawanna Steel Co.
LM—Liggett & Myers Tobacco Co.
LMO—Lou. & Nash., New Orleans & Mob. Div.
LN—Louisville & Nashville R. R.
LNS—Louisville & N. R. R. & S. Ry. Monon 4s.
LO—Loose-Wiles Biscuit Co.
LOR—P. Lorillard Co.
LR—Lee Rubber & Tire Corp.
LS—Lake Shore & Michigan Southern Ry.
LT—National Lead Co.
LU—Underground Electric Ry. of London.
LV—Lehigh Valley R. R.
LW—Loews Incorporated.
LX—Lexington Ave. & Pavonia Ferry R. R.
LY—City of Lyons Bonds.
M—Intl. Merc. Marine.
MA—Amn. Malt & Grain Co.
MAH—Mahoning Coal Railroad Co.
MAN—Manhattan Elevated Ry.
MAS—Manhattan Shirt Co.
MAY—May Department Stores Co.
MB—Manhattan Beach Co.

MC—Michigan Central R. R.
ME—Morris & Essex R. R.
MEX—United States of Mexico.
MG—Michigan State Telephone Co.
MH—Monongahela Valley Traction Co.
MI—Miami Copper Co.
MIL—Milwaukee & Northern R. R.
MK—The Mackay Companies.
MKO—Missouri, Kansas & Oklahoma.
MM—St. Paul, Minneapolis & Manitoba R. R.
MMO—Maxwell Motor Co.
MN—Mexican Petm. Co.
MNO—Mexican Northern Ry.
MNR—Manila Electric R. R. & Light Co.
MNS—Mullins Body Corp.
MNT—Montana Power Co.
MNU—Manati Sugar Co.
MO—Mobile & Ohio R. R.
MOH—Mohawk & Malone.
MON—Montana Central R. R.
MOR—Morgan's Louisiana & T. R. R. & S. S.
MOS—Mobile & Ohio, St. L. & Cairo.
MP—Missouri Pacific Railway.
MPW—Moline Plow Co.
MR—Marlin Rockwell Corpn.
MRS—Morris & Co.
MRT—Martin, Parry Corp.
MS—Minneapolis & St. Louis R. R.
MSM—Minn., St. Paul & Sault Ste. Marie.
MSO—Middle States Oil Corp.
MSS—City of Marseilles Bonds.
MSY—Manhattan Electrical Supply Co.
MT—Montreal Tramways Co.
MU—Montgomery Ward & Co.
MV—Midvale Steel & Ordnance Co.
MW—Milwaukee, Lake Shore & West. R. R.
MX—National Railways of Mexico.
MXC—Mexican Central Railway.
MXO—National R. R. Co. of Mexico.
MXT—Mexican Telegraph Co.
MY—Milwaukee Electric Ry. and Light Co.
M&B—Mobile & Birmingham R. R.
N—Norfolk & Western Ry.
NA—North American Co.

NC—National Conduit & Cable Co.
NCC—New Central Coal Co.
NCM—National Acme Co.
NCS—National Cloak & Suit Co.
NF—Niagara Falls Power Co.
NFS—Nashville, Florence & Shef'd Ry.
NH—New York, New Haven & Hart. R. R.
NJ—United New Jersey R. R. & Canal Co.
NJT—New York & New Jersey Telephone.
NK—N. Y. State Canal Imp. Bonds..
NL—New York, Lackawanna & W. R. R.
NLW—N. Y. L. E. & West. Dock & Imp.
NN—Northern Central Railway.
NNR—New York Connecting R. R.
NOR—Northern Railroad of Cal.
NP—Northern Pacific Ry.
NPO—Norfolk and W. Pocahontas Coal Co.
NPW—Northern States Power Co.
NQ—Nova Scotia Steel & Coal Co.
NR—Northern Ohio Ry.
NRD—Norfolk & Western, New River Div.
NRY—N. Y. Railways Co.
NS—Norfolk Southern R. R. Co.
NSH—National Starch Co.
NSO—Norfolk & Southern R. R.
NST—New York State Railways.
NSU—National Surety Co.
NT—New York Telephone Co.
NTU—National Tube Co.
NTX—New Orleans, Texas & Mexico Rly. Co.
NU—Nassau Electric Ry.
NV—Nevada Consolidated Copper Co.
NW—Chicago & Northwestern Ry.
NWT—Northwestern Telegraph Co.
NX—New Orleans Railway and Light Co.
NY—City of N. Y. Corporate Stk. or Bonds.
NYM—New York Mutual Gas Light Co.
NYS—N. Y. State Highway Bonds.
OB—Owens Bottle Machine Co.
OD—Ogdensburg & Lake Champlain.
OF—Ohio Fuel Supply Co.
OHW—Ohio, Indiana & Western R. R.
OK—Oklahoma Prod. & Refg. Co.
OM—Chicago, St. P., Minneapolis & Omaha.

ONT—Ontario Silver Mining Co.
OP—Old Dominion Co.
OPW—Ontario Power, Niagara Falls.
OR—Oregon Railroad & Navigation Co.
ORC—Oregon & California R. R.
ORE—Great Northern Temporary Ctfs. for Ore Properties.
ORS—Oregon Short Line R. R.
ORW—Oregon-Washington R. R. Co. & Nav. Co.
OS—Ohio Cities Gas Co.
OST—Otis Steel Co.
OT—Otis Elevator Co.
OTT—Ottumwa, C. F. & St. Paul R. R.
OV—Willys Overland Co.
OW—New York, Ontario & Western Ry.
P—Pacific Mail Steamship Co.
PA—Pennsylvania R. R.
PAB—Pabst Brewing Co.
PAC—Pacific Telephone & Telegraph Co.
PAS—City of Paris Bonds.
PB—United Paper Board Co.
PBW—Phila., Balto. & Wash. R. R.
PC—Pittsburgh Coal Co.
PCG—Pacific Gas & Electric Co.
PD—Pond Creek Coal Co.
PDV—Pacific Development Corp.
PE—Peoria & Eastern Railway.
PG—Pittsburgh Steel Co.
PGS—Chi., Mil. & Puget Sound Ry.
PH—Philadelphia Co.
PI—Pierce Oil Corp.
PK—Pettibone Mulliken Co.
PMO—Pacific R. R. of Missouri.
PMY—Pittsburgh, McKeesport, Young.
PO—People's Gas Light & Coke Co.
PP—Pan American Petm. & Transport Co.
PPU—Peoria & Pekin Union R. R.
PQ—Pere Marquette R. R.
PQR—Pere Marquette prior pref. Voting Trust Ctfs.
PRS—Pressed Steel Car Co.
PRT—Porto Rican Tobacco Co.
PRX—Parish & Bingham Corp.
PS—Pittsburgh, Shenango & Lake Erie.
PSG—Punta Alegre Sugar Co.
PSU—South Porto Rico Sugar Co.

- PSV—Public Service Corp. of N. J.
PSX—Penn. Seaboard Steel.
PSY—Providence Securities Co.
PT—Pitts., Cin., Chicago & St. Louis R. R.
PTT—Cleveland & Pittsburgh R. R.
PU—Pullman Company.
PV—Philadelphia Rapid Transit.
PW—Pittsburgh & W. Virginia Ry. Co.
PX—Pacific Coast Co.
PY—Pitts., Youngstown & Ashtabula R. R.
PZ—Pierce Arrow Motor Car Co.
Q—Chicago, Burlington & Quincy R. R.
R—Reading Co.
RA—Ches. & Ohio, Richmond & Alleg'y Div.
RB—New York & Rockaway Beach R. R.
RBC—Republic Iron & Steel Co.
RC—Ray Consolidated Copper Co.
RD—Royal Dutch Co. Tr. Cts., N. Y. Shares.
RDN—Richmond & Danville R. R.
RGS—Rio Grande Southern R. R.
RI—Chicago, Rock Island & Pacific Ry.
RJ—Reading Co., Jersey Central, Coll. 4s.
RK—Rock Island, Arkansas & Louisiana.
RL—U. S. Realty and Improvement Co.
RM—Republic Motor Truck Co.
RNS—Rensselaer & Saratoga R. R.
RO—Rio Grande & Western Railway.
RP—Rochester & Pittsburgh R. R.
RPX—Replogle Steel Co.
RR—Remington Typewriter Co.
RS—United Retail Stores Corpn.
RSY—R. R. Securities Co., Ill. Cen. Stock.
RU—United States Rubber Co.
RUS—Russian 4s.
RV—Rutland Railroad.
RW—Rome, Watertown & Ogdensburg R. R.
RX—Advance Rumely Co.
RY—Railway Steel Spring Co.
S—American Sugar Refining Co.
SA—San Antonio & Arkansas Pass Ry.
SAK—St. Lawrence & Adirondack Ry.
SAV—Sixth Ave. R. R.
SB—Seaboard Air Line.
SBT—Southern Bell Telephone Co.

- SC—Sinclair Consolidated Oil Corp.
SCG—South Carolina & Georgia R. R.
SD—St. Paul & Duluth R. R.
SF—St. Louis & San Francisco R. R.
SFR—St. L. & S. F. Cts. Chi. & Eastern Ill.
SG—Standard Gas & Electric Co.
SH—Shell Transport & Trading Co.
SJ—St. Joseph Lead.
SK—Sears-Roebuck Co.
SL—New York, Chicago & St. Louis R. R.
SLR—St. Louis, Rocky Mountain & Pacific Co.
SLS—Sloss, Sheffield Steel & Iron Co.
SM—Standard Milling Co.
SN—Saxon Motor Car Corp.
SNA—South & North Alabama R. R.
SNU—American Snuff Co.
SP—Southern Pacific Co.
SR—Southern Railway.
SRM—Southern Ry., Mobile and Ohio Cts.
SS—St. Louis Southwestern R. R.
SSO—St. Louis Southern.
SSU—Superior Steel Corp.
ST—Chicago, Milwaukee & St. Paul Ry.
STM—Stromberg Carburetor Co. of America.
STR—Un. Rys. of St. L., St. L. Transit Co.
STU—Studebaker Corporation.
STW—St. Louis, Peoria & North West.
STX—Stewart Warner Speedometer.
SU—Wis. Cen. Sup. & Dul. Div. & Term.
SUZ—Stutz Motor Car Co. of America.
SV—Scioto Valley & New England.
SVG—Savage Arms Corp.
SVW—Savannah, Florida & Western.
SW—New York, Susquehanna & Western R. R.
SX—St. Paul & Sioux City R. R.
SY—Cincinnati, Sandusky & Cleveland R. R.
SYR—Syracuse Lighting Co.
SZ—Shattuck Arizona Copper Co.
T—Texas & Pacific Railway.
TAS—Terminal R. R. Association of St. Louis.
TAV—Third Ave. R. R.
TB—Tobacco Products Corp.
TC—Tennessee Copper Co.
TCC—Tennessee Copper & Chem. Corp.

- TCN—Trans-Continental Oil Co.
TD—Toledo Railways and Light Co.
TH—American Thread Co.
TI—Tennessee Coal, Iron & R. R. Co.
TLT—Texas Pacific Land Trust.
TOU—Toledo, St. Louis and Western Ry.
TP—Toledo, Peoria & Western R. R.
TR—Tri-City Railway & Light Co.
TU—Transue & Williams Steel Forging.
TV—Tide Water Oil Co.
TW—Twin City Rapid Transit.
TWY—Toledo, Walhonding Valley & Ohio.
TX—Texas & New Orleans R. R.
TXO—Texas Co.
TY—Toledo & Ohio Central Railway.
TYO—City of Tokyo Bonds.
U—Union Pacific R. R.
UB—Utica & Black River R. R.
UC—United Cigar Stores.
UD—Ulster & Delaware R. R.
UF—U. S. Food Products Corp.
UG—United Fuel Gas Co.
UH—Utah & Northern.
UK—United Kingdom of Great Britain and Ireland.
UN—Underwood Typewriter Co.
UO—Union Oil Co.
UNR—United Rail Roads of S. F.
UPW—Utah Power & Light Co.
USL—United Railways Co. of St. Louis.
UT—Utah Copper Co.
UV—U. S. Smelting Refining & Mining Co.
UW—United Railway Investment Co. of S. F.
UX—United States Express.
UY—United Dyewood Corp.
UZ—Utah Securities Corp.
V—Victory Liberty Loan.
VAN—Vanadium Corp. of America.
VB—Virginia 6s, Brown Bros. Cts.
VC—Virginia Carolina Chemical Co.
VD—Virginia 6s, Deferred Cts.
VK—Virginia Iron, Coal & Coke Co.
VM—Virginia Midland Railway.
VN—Vandalia R. R.
VR—Virginian Railway Co.

VW—Virginia & South Western.
VX—Vulcan Detinning Co.
VY—Virginia Ry. & Power Co.
W—Western Union Telegraph Co.
WA—Wabash R. R. Co.
WB—Weyman Bruton Co.
WC—Wisconsin Central Ry.
WCN—Washington Central Ry.
WCR—N. Y., Westchester & Boston R. R.
WE—Wilkes-Barre & Eastern.
WF—Wells Fargo Express.
WH—Westchester Lighting Co.
WHI—The White Motor Co.
WIL—Wilson Co., Inc.
WK—Westinghouse Air Brake Co.
WL—Wheeling & Lake Erie Railway.
WM—Western Maryland.
WN—Western Electric Co.
WNC—Western North Carolina R. R.
WNY—Western New York & Penn. R. R.
WOR—Worthington Pump & Machinery Corp.
WR—Western Pacific R. R. Corpn.
WRS—Western Pacific R. R. Co.
WS—West Shore R. R.
WW—F. W. Woolworth Co.
WX—Westinghouse Electric & Mfg. Co.
WY—American Woolen Co.
X—United States Steel.

Typewriting

It is essential that the typewriting student follow the instructions closely. Failure to do so will invariably be regretted, as one cannot attain accuracy and speed otherwise.

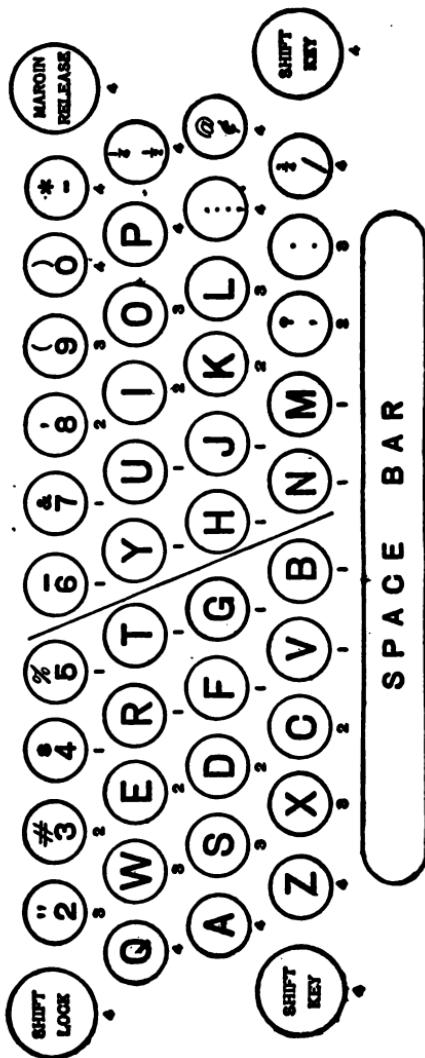
Single Keyboard

The L. C. Smith Bros. Typewriter



The Underwood Typewriter





The diagram represents the single keyboard as used on both the L. C. Smith Bros. and Underwood machines. The position of all keys, as shown in diagram, is the same in both keyboards, and the exercises and instructions as to fingering apply to either machine :

Draw an imaginary line through the keyboard from top to bottom, passing between "5" and "6," "T" and "Y," "G" and "H," and "B" and "N." The fingers of the right hand should be used in striking the keys to the right of this dividing line, and the fingers of the left hand, those to the left of the line. The thumbs being reserved for the space-key.

Lesson I

Sit in an easy and erect position just far enough from the machine to allow the small fingers to rest lightly upon "a" and the semicolon. They are used as guide keys on which the small fingers must rest when not in use in striking other keys.

Place the end of the paper to be written upon just back of the platen and in front of the paper table and advance the paper to the correct position by turning the top of the platen toward the back of the machine with one of the platen-knobs.

The exercise in this lesson is made up of letters in the second row of keys.

The figures beneath the letters on the keyboard diagram indicate the fingering which must invariably be used. The first finger of each hand is used to strike the two letters in each row to the right and left of the dividing line on the keyboard. Without removing the fingers from guide-keys or changing the position of the hands the first fingers must reach the letters nearest the dividing line.

To learn the location of the keys write four lines of the row beginning with "a" and ending with the semicolon. Space after "g" with the right thumb and after the semicolon with the left thumb. Always space with the thumb opposite the hand with which the last preceding stroke was made.

If the line-spacing lever is on the right, return the carriage for a new line by a quick stroke of the small finger or thumb of the right hand; if on the left, return with the first finger of the left hand.

Write four lines of each word in the exercise. Strike the keys with a quick blow and withdraw the fingers instantly.

Exercise

as	dash	alfalfa	ash
all	has	fall	slag
sad	sash	had	shah
gall	shad	lash	flag
gas	hall	jag	flask
gash	salad	ask	fad
add	flash	half	shall
ah	lag	slash	glad
sag	hash	glass	

Lesson II

The words of the exercise to be written in this lesson are made up of letters in the row of keys beginning with "q" and ending with "p." As directed in the first lesson, keep the small fingers on the guide-keys when they are not in use in striking other keys. If a word contains the letter "q" or the letter "p," let the small finger reach into the upper row and strike this letter and immediately return to the guide-key. The other fingers should not be returned to the letters in the middle row, but should be held in an easy position slightly above the keyboard ready to strike any desired key.

Always strike the keys with the fingers indicated in the diagram. Invariability of fingering and spacing is essential to speed and accuracy.

Do not fail to form the habit of spacing with both thumbs. It promotes speed, accuracy, grace, and balanced hand-action. If but one thumb is used in spacing, the opposite hand will be lifted higher and the first and second fingers will not be kept in the proper relation to the keyboard. Space with the left thumb after right-hand letters, and with the right thumb after left-hand letters.

To fix in mind the location of the letters used in this lesson, write four lines of the letters in the row, beginning at the left and spacing after "t" with the right thumb and after "p" with the left thumb. Make a double line space and write four lines of each word in the exercise. Make a double line space after each group.

Learn to think where the letters are. Write slowly and with an even stroke. A small amount of correct practice is better than a large amount with errors. Slow and careful

work in the beginning will establish habits of accuracy. No attempt should be made to write rapidly until the work can be produced without errors.

Exercise

quite	write	pry	rip
pity	try	proper	quit
wire	prow	tip	etiquette
you	utter	type	propriety
queer	troop	query	troupe
putty	tree	your	territory
true	tyro	pepper	require
quire	twit	too	property
weep	wry	rope	piquet
root	power	witty	
top	quiet	wipe	

Lesson III

This lesson is designed to give practice on all the small letters, each word including one or more letters in the lower row of keys. A thorough practice of this lesson will familiarize the student with the location of all the letters.

Strike the keys with the fingers indicated in the diagram, and follow the rules given in the previous lessons for the use of the thumbs in spacing. When the small fingers are used to strike keys in the upper or lower rows they should be immediately returned to the guide-keys.

Before practicing the exercise given, write three lines of the letters and punctuation-marks in the lower row, beginning at "z" and spacing after "b" with the right thumb, and after the fraction-mark with the left thumb. Strike the punctuation-marks very lightly to avoid puncturing the paper. After completing the preliminary exercise make a double line-space and write three lines of each word. Always make a double line-space between the groups.

Strive for evenness of stroke. If there is a tendency to slight certain letters make a special effort to strike such letters with a harder stroke. This will soon give strength to the weak fingers.

Strike the letters in even time. A rhythmical movement is conducive to speed. Nothing is gained by hurrying through part of a word as it cultivates a jerky, uneven movement which tends to retard speed.

Exercise

cheer	above	current	breeze
track	watchman	quick	camera
active	meaning	revenue	touch
cash	hammock	verily	complex
favor	excite	both	exercise
lavish	taxation	bunch	variation
having	expanses	manner	numerous
very	foxy	lamp	journal
bring	fixture	perplex	opening
ability	zero	waxen	women
business	zone	pretext	believe
cabin	frozen	blazon	duration

Lesson IV

Before writing general matter it is necessary to learn to make capitals, figures, punctuation-marks, and special characters.

The capital letters are made by holding down a shift-key and striking the desired key. Do not strike the shift-key and the letter at the same time, but allow the carriage to reach the proper position before striking the letter. After an upper-case letter has been struck the shift-key must be released before striking a lower-case letter.

Learn to use both shift-keys, operating them with the small fingers. If the letter to be struck is on the right side of the keyboard hold down the left shift-key; if it is on the left side of the keyboard hold down the right shift-key.

A good exercise to give facility in writing capitals is the practice of the alphabet, alternating the small letter and the capital and spacing after each, thus: a A b B c C d D e E f F g G h H i I, etc.

If full words or lines are to be written with capitals press down the key marked "shift lock." To release it strike the left shift-key.

The exercise in this lesson gives drill on the capitals and teaches the use of the period and comma. The punctuation-marks should be struck lightly. Space once after a comma or semicolon. Space twice after a period or other mark at the close of a sentence, and once after a period following an initial or abbreviation.

The period can be made in either the upper or lower case.

The exclamation point (!) is made by holding the space key down and striking the period and apostrophe at the same point.

Write four lines of each word in the exercise and write each sentence ten times. They furnish practice on all the capitals.

Exercise

Cincinnati	New Jersey	Yosemite	Zanesville
Havana	De Kalb	Rhode Island	Quebec
Brooklyn	Lexington	Ontario	Utica
Mount Vernon	San Francisco	Xenia	Atlanta
Galena	Trenton	El Paso	Worcester

We sold the farm to M. B. Zartman for cash.

Keep Mr. Norton informed as to all your movements.

The account appears on the books in the name of C. D. Vance.

J. H. Edmonds and R. S. Upton recently formed a partnership.

Your letter to G. F. Young was delivered today by messenger.

Let me hear from you as soon as you decide on the contractor.

I have twice made the trip from Quincy, Illinois, to Xenia, Ohio.

A. B. Packard has put in a line of stylish shoes for men and boys.

Lesson V

In writing figures the small "l" is used for "one."

When a key contains more than one character, the upper one is made by holding down the shift-key, the same as for a capital letter. The character above the figure 6 is the underscore. It is used for making a continuous line under words, columns of figures, etc. Draw the carriage back to the beginning of the words or figures to be underscored and strike the underscore key as many times as may be necessary.

The character above the figure 8 is the apostrophe.

Several of the more common fractions are found on the outside right hand keys. When fractions not so provided are required, they are made with the ordinary figures and the fraction-mark; thus: 2/3, 7/12. In writing the fractions found on the keyboard it is not necessary to space between the whole

number and the fraction ($22\frac{1}{4}$), but when using the ordinary figures and the fraction-mark it is necessary to space between the whole number and the fraction; thus: 25 5/12.

A good exercise for practice on the figures is to write from 1 to 100, spacing after each number; thus: 1 2 3 4 5 6 7 8 9 10 11 12, etc. In this practice the student should carefully follow the fingering indicated.

In writing figures, as a general rule, place a comma every third figure from the end, except that cents are separated from dollars by a period. The period is generally omitted in billing and tabulated work, but a space must be made to indicate the separation of dollars and cents.

In writing dates, street numbers, car numbers, the serial numbers of machines, checks, drafts, receipts, etc., the comma is usually omitted if there are not more than six figures.

The sentences below contain all the punctuation-marks and special characters. Write each sentence five times. Repetition is the best means of gaining speed.

Exercise

The principal is \$2,485.00; interest \$74.55; total \$2,559.55.

We shipped 47,800 tons of ore in May as against 36,600 in April.

We are selling cotton sheetings at $22\frac{1}{4}$, $25\frac{1}{2}$, and $29\frac{1}{4}$, cents a yard.

The boxes should be made 26 3/16 x 16 9/16 x 10 (inside measures).

Address the letter as usual to Hardy & Randall, #482 State Street.

The item bore the startling headline: "Narrow Escape from Wolves!"

Please explain the third item of your bill, which reads, "27 lbs. Imperial Coffee @ 25c \$6.75, less 2%."

Do you think the bid of Lakewood & Andrews is bona fide, and that they would do good work under the contract?

Lesson VI

One of the best ways to gain speed on the typewriter is to practice sentences containing all the letters of the alphabet. Each of the following sentences contains all the letters, and should be written from ten to one hundred times. In doing this the operator should avoid spasmodic motions, and should strike the keys in even time and with equal force. An even stroke adds much to the appearance of the typewritten page. Every lesson well learned and faithfully practiced makes the next one easier to write.

Exercise on Alphabetic Sentences

A quick movement of the enemy would jeopardize six gun-boats.

We quickly extemporized just six rafts to leave the sinking boat.

The bank recognizes the claim as valid and quite just, and we expect a full payment.

To excel, telegraphers must be very zealous, quick, faithful and judicious in their work.

The quality of modern explosives allows projectiles of remarkable weight and size to be used.

Dexterity in the vocation of typewriting may be acquired by judicious work and zealous effort.

A few specimens of onyx, jasper, and several kinds of quartz crystals have been given to the museum.

Counsel having duly authorized the dismissal of the case, we expect to make an equitable adjustment.

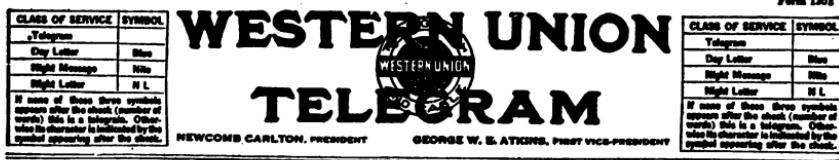
The frequently inexplicable verdicts of juries emphasize the need of a marked change in the whole system.

A Board of Equalization will adjust all claims of over-assessment before making the levy of special taxes.

A large number of our citizens have signed a petition which makes request for a more just system of taxation.

It required just seven weeks for the experts to determine the amount of the shortage caused by the embezzlement.

Example of Western Union Telegram
 (Toledo's Received Copy)



RECEIVED AT
 49 CH RA 14 COLLECT

PH CHICAGO 2 16 P JAN 1 1921

JAMES A MCGRAW

719 EAST FIFTH ST TOLEDO 0

UNABLE REACH TOLEDO TODAY EXPECT TO ARRIVE SUNDAY THREE PM VIA
 NEW YORK CENTRAL

ELSIE A BABSON
 2 32 P

Example of Western Union Night Letter
 (Columbus' received copy)



RECEIVED AT
 11 CH RA 83 NL

OMAHA NEB JAN 1 1921

AGNEW & SMITH

418 NORTH HIGH ST COLUMBUS 0

WE HAVE JUST INTERVIEWED YOUR CLIENT PHILLIP SANBORN AND LEARN
 THAT YOU ARE NOT IN A POSITION TO TRY CASE SET FOR NEXT FRIDAY IN THE
 APPELLATE COURT SANBORN INTIMATES THAT THE CASE MIGHT BE SETTLED OUT
 OF COURT THIS WOULD BE AGREEABLE TO US IF YOU WILL PAY ALL COURT
 COSTS AND ONE HALF OUR FEE WHICH AT THIS TIME AMOUNTS TO ONE
 HUNDRED AND SEVENTY FIVE DOLLARS WILL BE GLAD TO ENTERTAIN ANY
 PROPOSITION YOU HAVE TO MAKE IN THE MATTER

CRUMPACKER & DALY

7 16 A JAN 2

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**DODGE'S TELEGRAPH, RAILWAY ACCOUNTING, AND
RADIO (WIRELESS) INSTITUTE, VALPARAISO, IND.****Established 1874.**

We own and maintain two large buildings for the instruction of Morse or Wire (Railway and Commercial) Telegraphy, Radio (Wireless) Telegraphy, Railway Accounting as applied to Station Agency work, Typewriting and Penmanship. A Grand Trunk Western Railway wire and a Western Union Telegraph Company wire are installed for the instruction of advanced students. A complete 2 K.W. Marconi Marine set and thoroughly equipped laboratory obtain in the Wireless Department.

All teachers are practical men with years of varied experience. School is in session the entire year and students may enroll at any time.

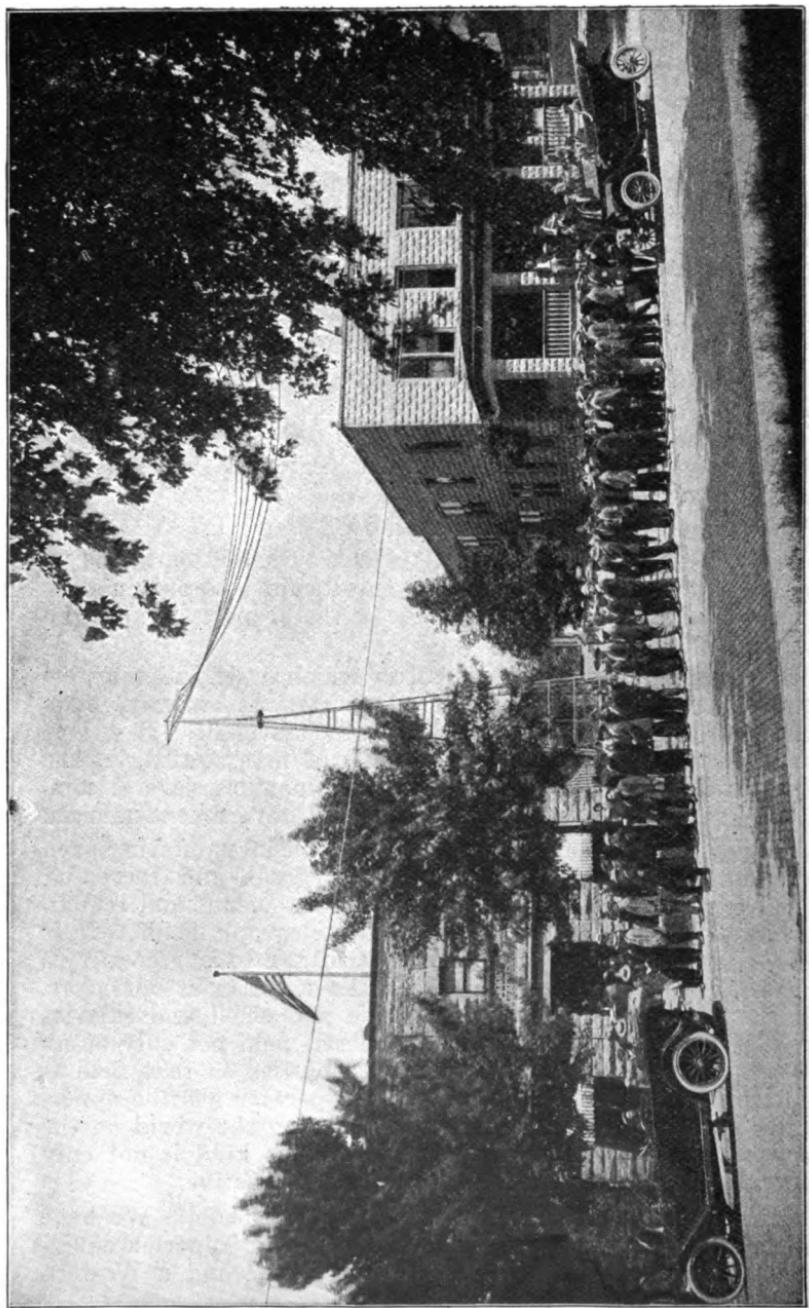
Send for free and large illustrated Catalog "I."

Our school is the largest and most completely equipped of the kind in the world; the annual enrollment is approximately six hundred students and the value of the property is approximately \$30,000.00.

It is positively the only school in which a student may become thoroughly qualified for a position as railway, commercial and radio telegrapher and station agent. It enjoys the endorsement of numerous officials of many railways, the Western Union and Postal Telegraph Companies, several commercial wireless telegraph companies and government officials.

There is no other trade, profession or business offering such excellent opportunities, not only for great and increased earnings, but for quick advancement to important and remunerative positions as the railway and telegraph fields. It is authoritatively stated that eight out of ten of our country's greatest railway and telegraph men have begun as operators. The hours of telegraphers have been shortened and salaries greatly increased. The Radio (Wireless) field not only offers splendid opportunities but great possibilities as that field is in its infancy. The Radio (Wireless) operator has the opportunity of traveling "first class," and seeing the world on the very best steamships and a position of this kind is not only enjoyable and instructive, but quite remunerative.

Every possible advantage obtains at this school. We have in our Morse Department, in addition to our superior equipment, a Grand Trunk Western Railway wire and a Western



Union Telegraph Company wire, connected directly into our school for the practice of advanced students while not receiving instruction from their teachers and for practice of students occupying rooms in the dormitory part of the buildings, outside of school hours and on Saturdays and Sundays.

Our Railway Accounting (Station Agency) Department is one of real merit. Every feature that obtains at a local railway station is taught in this department. We were urged to open this department by a number of railway officials and we teach this work in conjunction with Morse (Wire) telegraphy. Students coming to this school with the idea of entering railway service, should avail themselves of this splendid course of instruction as it will prove of untold advantage and may be taken along with the regular telegraphic course, requiring no additional time and adding but a little more expense.

Our Radio (Wireless) Department stands without a peer. We confidently believe that the best course of Radio instruction in the world obtains at this school. The equipment in this department is complete in every detail. This department is recognized by officials of the Radio Corporation of America (formerly the Marconi Wireless Telegraph Company) and other commercial wireless telegraph companies, as well as government officials, as one of real merit.

Function of the Technical School

It is estimated that there are twenty-five millions of people in the United States engaged in gainful occupations as wage-earners.

Of all that vast army only a small percentage have had the opportunity of choosing their own lifework, or of receiving any training to fit them for it. They have simply been thrust by circumstances of heredity or of environment into the nearest position that offered.

With no consideration of capacity or natural fitness and without special training for the work undertaken, the sad but inevitable results seen on every hand could only follow: Years of slow and painful labor; the golden dreams of youth slipping away, health and strength sacrificed in the struggle against crushing odds, and opportunities of advancement lost for lack of training.

There is no room in the world today for the untrained man. Nobody wants him. Nobody will employ him except at wages which mean only a bare existence, and then only in the hard

and disagreeable tasks which no one else will accept. His plight is indeed deplorable, but it is inevitable. It is one of the results of the marvelous commercial development and the systematizing of all industries. The old slow days of apprenticeship are gone. Modern business cannot wait. It must have its trained men ready for immediate service, and it looks to the technical school alone to supply its needs. The only hope of escape for the unskilled man is through the door of technical training, and that too before his life be too far spent for him to hold his own against the competition of younger men.

What We Can Do

While we cannot change economic conditions, yet through our school, we can save many thousands from a life of hopeless drudgery in the ranks of the unskilled by giving them the training that will fit them for higher and better paying occupations.

This, in our judgment, is the function of the technical school, and this, we believe, is our contribution to the world's need; just what this institution is doing year after year for the hundreds of students who receive its training.

What Will You Do?

What then, will you do? What disposition will you make of your own life? How will you invest your capital of youth and hope? Will you cast your lot with the untrained, becoming a member of the already over-crowded and hopeless mass of the "not wanted," or will you put your talents to use, lifting yourself by training and preparation into the class of the capable whom the world is always seeking?

If you are now on a farm and find its opportunities too limited, its drudgery and lack of cultural influences distasteful, you may broaden your horizon and increase your earning capacities by opening the door into one of the most promising fields of American industry.

If you are a factory hand, weary of being treated as a piece of machinery; if you are a clerk in a store, subjected alike to the abuse of captious customers and the reproof of employers; or, if you are just out of school and find yourself poorly trained to fit in anywhere, yet ambitious, why not settle the question by allowing us to put into your hands the key which unlocks the gates to great opportunities, where you will not only earn good wages the entire year, but be in line of pro-

motion to some of the best positions in the country? If you are in the ruck of the unskilled, get out of it while you may.

The Way Out

Spend a few months at our school, which is located at Valparaiso, Indiana, forty-five miles east of Chicago. Our city is one of the most delightful small cities of America and our school is the oldest, largest and most reliable one of its kind in the world. Valparaiso is situated upon a rolling site, with paved streets and the best walks. The water, which comes from a chain of lakes three miles north of the city, has been pronounced by our state authorities as being of the purest, our sewerage system is splendid and Valparaiso is noted for its immense and splendid foliage, its magnificent public buildings and is commonly referred to as "the city of schools and churches." There are splendid lakes—summer resorts—on either side and an interurban line has cars running hourly to an amusement park located at one of these lakes.

One could not conceive of a more desirable place to spend a period of time. Every environment at Valparaiso is good. Our city is near enough to Chicago to make our school easily accessible for commercial and business purposes, yet we are far enough away to make frequent city trips impossible.

Length of Time Required

This, as a matter of fact, depends in a great measure upon the student's aptitude and the application he gives the study. Six months is usually sufficient for one to become proficient in the Morse or Wire work and the student may, at the same time, take either the Railway Accounting (Station Agency) course or the Radio (Wireless) course without spending any additional time. Classes have been so arranged that there is but little confliction.

Clean, Easy, Reputable Work

Telegraphy is an ideal profession. The duties are clean, easy, comfortable, healthful, delightful. The man at the key spends his hours in sunny, airy rooms, engaged in employment that is not too confining and not heavy. He enjoys it because it never becomes dry or monotonous. It is always interesting because there is always something new. Since all about him is life, and since in his leisure he can talk with friends miles away, he has no reason to become lonesome. A

few years ago the United States government did away with the long hours, so that the telegrapher finds as much time for home enjoyment as the next man.

Men of the profession enjoy excellent reputations. Their duties stamp them as men of steady habits and utter reliability. Trusted by their railroad, their steamship or their commercial company with full management of a link in these mighty chains of service, it stands to reason they will be respected by all who know them.

Besides, their work broadens them. This is impressed on us every day, as we receive letters and visits from our graduates, now engaged in work. We can refer to hundreds of men who came to us from everywhere, every station in life, who have "made good" in some form of endeavor and advanced to high positions.

Great Chance For Advancement

There is not another trade or profession today that offers so much to the young man in the way of opportunities for advancement as the Telegraph, Railway and Wireless fields. Records of the great men of our country prove the truth of this statement. Multimillionaires in the various industries, inventors, statesmen, publishers, managers, financiers, railroad presidents, builders of railroads, and thousands of the most successful men in modern life began their successful careers as telegraph operators. Thousands of the future great men of our country are now engaged in this field and in the newer yet equally promising field—the Wireless.

Qualifications Necessary

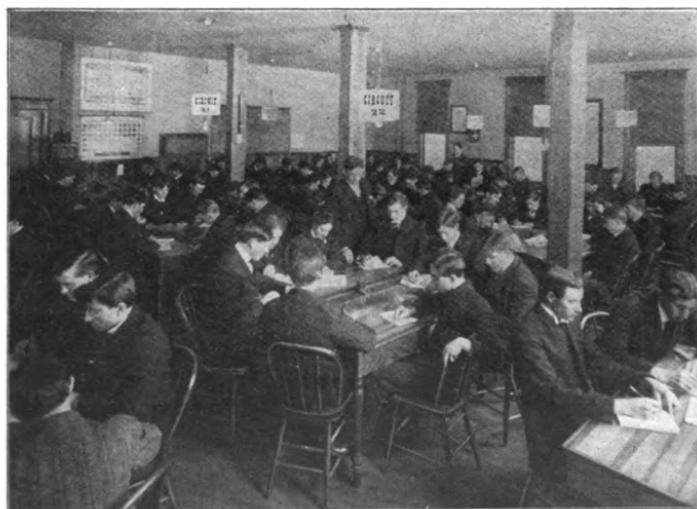
Only a very ordinary school education is necessary for one to become a successful telegrapher. There are, indeed, very few in the telegraph service who have attended college or, in fact gone further in the school work than the grammar grade and a great number who have not gone further in school than the fifth or sixth grades, who, after attending our school made a success of telegraphy. While it is true that some can learn telegraphy more readily and quickly than others, it is also a fact that there are but few, if any, who cannot learn telegraphy. In all of our experience we question whether there is more than one out of a thousand who could not become a telegrapher—not necessarily an expert, but a telegrapher whose services would be satisfactory. With the right dispo-

sition upon the student's part, he need not fear but that he will become successful by taking up the study of telegraphy at our school.

MORSE (WIRE) DEPARTMENT Railway and Commercial Telegraphy

Among the important branches embraced in this course are: The electric current; instruments employed and adjustment of same; the battery and care of it; the switchboard, explaining in detail the functions it performs, ground wires, etc.; transmitting or sending, including correct position and movement; receiving; circuit regulations, word and numerical wire signals; abbreviations used in both railroad and commercial telegraphy; definitions of technical terms used in railroad and telegraph work; duties of railroad employees; standard railway rules; rules for the movement of trains by telegraphic orders; block signaling, with definitions; telegraph block signals; block signal examination; railroad telegrams; commercial telegraph rules as used by the Western Union and Postal Telegraph companies; commercial telegrams, including service messages, etc.; Commercial Telegraph Bookkeeping; Typewriting.

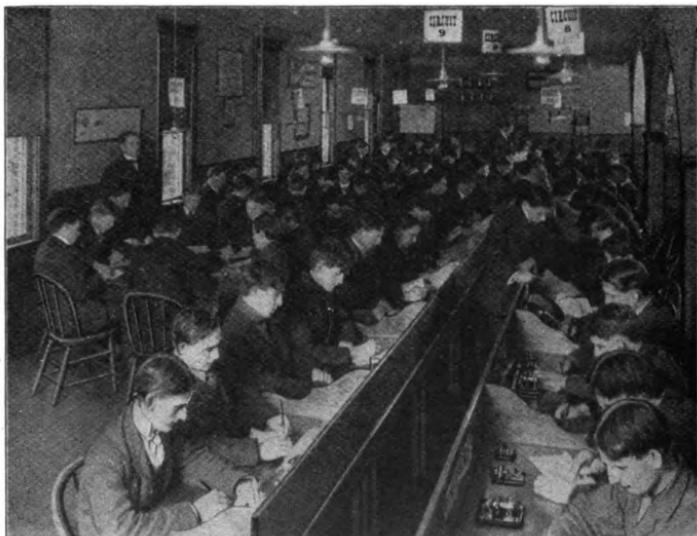
Primary Department: If one has no knowledge of telegraphy he is first taught the correct position and movement of



Primary Department

the arm at the telegraphic key. At the same time he familiarizes himself with the telegraphic code. This requires from two to four days. He is then placed at a table with others of equal ability where step by step in this primary department he attains the ability of sending and receiving straight newspaper matter at a speed of about fifteen words per minute. From here he enters the

Intermediate Department, where he not only receives and transmits at a little greater speed, but begins the study of



Advanced Primary Department

train orders (31) and (19), railroad messages, train schedules, standard rules of railroads governing rights of trains, railway signals, train sheets, clearance cards, block signaling, and definitions of technical terms used in the railroad and commercial telegraphic work. Also abbreviations with sentences using them in railroad and commercial telegraphy and wire testing, duties of railway and commercial telegraph operators, commercial messages, and commercial telegraph bookkeeping.

The Graduating Department

Has four completely equipped offices which have three full sets of instruments, including a train dispatcher's wire, a block wire and a message wire. Semaphores, hand signals and

all blanks necessary for correct handling of trains also obtain. Each office is equipped with a four wire Western Union pin plug switch board with ground wire connection. These lines are, in fact, an exact reproduction of an actual telegraph system affording the student unequalled opportunity to study main line and local circuits, wire patching and grounding of wires, with every description of wire testing being done. The way in which these lines have been constructed enables the student to readily understand the intricate parts of the in-



Intermediate and Graduating Department

struments and the manipulation of switch boards, for, as previously stated, the installation of instruments and switch boards is exactly the same as on regular telegraph lines. The telegraph wires receive their current from the main line batteries and return the same through the ground. The equipment consists of regular Western Union pin plug switch boards, three full sets of instruments at each office (key, relay and sounder), main line batteries and main line ground wires, local batteries and local or intermediate ground wires.

Mr. E. F. Rainier, Dean of the Railway and Commercial Telegraph Department, lectures on all of the foregoing to all advanced students, and not only this, but he requires each student to make connections as he will be called upon to do

when in active service. No arrangement of this kind obtains in any other school to our knowledge. An idea of the value of this work may be had when you consider the fact that all of our graduates know more about this than at least seventy-five per cent of the telegraph operators in actual service.

All students in the graduating department receive instruction for three hours daily and this does not include the instruction they receive in penmanship and typewriting. Two hours of the foregoing is devoted to wire instruction while one hour each day is given to special instruction, lectures, etc. Students alternate each day in occupying offices on the graduating lines so as to give the entire class an opportunity to do the actual work. Students of the graduating class while not in the offices are required to observe and criticize the work that is being done by other students and, in fact, answer questions that may be put to them by the teacher. A regular train service is carried on—trains being represented by cards with numbers thereon carried by the instructor who receives (31) train orders, accepts clearance cards and in a general way conducts a service as would the conductor of a regular train. This plan, in the opinion of many of those in a position to know, is believed superior to the "toy train service," which is in vogue at some schools. Manifold train order blanks, both (19) and (31), with carbon sheets, block sheets, message blanks, clearance and caution cards, releases, hand signals and, in fact, everything that is necessary for the complete instruction of the student is used in this work.

At the completion of this work one is qualified to assume a position as telegraph operator with almost any railroad and with either of the commercial telegraph companies.

Besides this course of instruction which is almost of inestimable value, we have a Grand Trunk Western Railroad wire and a busy Western Union Telegraph Company wire right in the schoolroom from which the students receive instruction and practice while not receiving instruction from our teachers. These wires are busy ones and are a most valuable adjunct to our regular course of instruction.

The Train Dispatcher's Office is supplied with four full sets of instruments with additional keys to be used by the copier, a 27-wire Western Union switch board and three sets of testing instruments.

RAILWAY ACCOUNTING—STATION AGENCY COURSE

Station Agency: A Railway Station Accounting course designed to fit the student for filling a position as railway agent, fully equipping him for the handling of both freight and passenger traffic and the general business that obtains at a railway station. The necessity of having such a course of training is very apparent. Railways are the arteries of commerce but, in the last analysis, just like everyone else, they are in the business for profit. Their agents, therefore, are their



Sectional View of Railway Accounting Department

business managers at the different stations along their lines. The agent procures the revenue for the railway and, if it were not for him, there would be no need for the great number of employes engaged in the railway work. The tremendous sums of money paid twice a month by the railways to their employes, have passed through the hands of the railway agent. The very nature of the agent's duties really qualifies him as an official of the railway. He is in charge of all the company's property, and all employes at his station are under his jurisdiction.

In order to master the business at the great majority of railway stations, one must not only be qualified as a telegrapher but must have a knowledge of the work to which reference has been made in the previous paragraph. He must

have an acquaintance with interstate law and a general knowledge of all the forms used and a thorough understanding of railway bookkeeping. It is, of course, possible for one working as a telegraph operator at a station, to become familiar with this work after several years of study but this, as a matter of fact, necessitates a long period of embarrassing experience. Most agents receive their appointments from the ranks of telegraphers, who have either worked as telegraph-clerk or have in some other way acquired a knowledge of railway accounting. The great majority of telegraph positions at way stations nowadays require that the operator do more or less clerical work. The qualification, therefore, becomes a requirement, and also proves to be the means of advancement of telegraphers.

For a number of years, or since the origin of our Railway Accounting department, the length of time to complete our Station Agency course required three months and while the work, as originally planned, is still covered in that length of time, Dean McNeely, realizing that work of a more advanced nature would prove of great value to the student, decided that he would add an additional month's time for what might be called post-graduate work and this has been done for those who decide to take the additional month and for which there is no additional charge for tuition. Mr. McNeely contends that the additional month is of great value to the student and states that the work done in that class would require years of actual working experience. He adds that it "rounds out the student," developing his resourcefulness and enabling him to meet the perplexing problems that occasionally present themselves. As a reward to those who complete the fourth month's course, passing satisfactory examinations, a "certificate of proficiency" for which there is no charge, is issued.

Every subject pertaining to the passenger and freight traffic at a railway station is not only thoroughly taught in theory, but the work actually done in the class room and each student is required to become familiar with all details.

There are numerous systems of railway station agency, for, as a matter of fact, some railroads have slight deviations from that which obtains upon others—some using the daily and others the weekly and monthly balance systems—yet all arrive at the same objective at the end of the month. We, therefore, decided to teach both the daily and monthly balance systems and have selected the systems containing the most difficult and greatest number of forms so that the student will

be perfectly familiar with any of the so-called "red tape" when he assumes his position. The course of instruction embraces:

Forwarded Business

- (a) Rules governing the acceptance of freight.
- (b) Receipts for shipments offered for transportation.

This includes the issuing of the different forms of receipts, viz.: Straight Bills of Lading, Order Bills of Lading, Shipping Tickets, Live Stock Contracts, Government Bills of Lading and Export Bills of Lading.

- (c) Classification, Rating and Actual Billing of the different kinds of shipments sent collect and prepaid, Collection of charges on prepaid shipments, Writing up cash collections and disbursements in the cash book and keeping the proper records of waybills, Abstracting of forwarded way-bills.
- (d) Detailed explanation of, instruction in, and the issuing of a daily balance sheet.

Received Business

- (a) Checking received freight, Noting O. S. & D.'s (over, short, and damaged), Recording seals broken and applied to cars opened at the station, Instruction in the issuing of over, short, damaged, refused and unclaimed reports.
- (b) Checking rates and extensions, Issuing corrections, Expensing, Booking and Abstracting of received way-bills.
- (c) Delivery of freight, Collecting freight charges, Storage, Car demurrage, etc.
- (d) Posting of accounts, Proper closing of cash account, Remittances, Adjustment of overcharges and under-charges.
- (e) Study and class discussion of Freight Department rules governing the handling of freight business.
- (f) Balancing of books at close of each month's business and making monthly balance sheets.

Passenger Traffic

- (a) Study and class discussion of Passenger and Baggage Department rules.
- (b) Instruction in how to look up passenger fares, Study of the forms of tickets, Manner of issuing, dating, limiting etc., Station record of ticket sales, Daily and monthly ticket reports.
- (c) Instruction in the checking and handling of baggage, Baggage reports, etc.

Interstate Commerce Law, Cars, Claims, Correspondence, Etc.

- (a) Interstate Commerce Law: Its general principles and applications likely to come within the scope of the station agent's duties, Instruction in the method of checking cars, Keeping car and seal records, Tracing lost shipments, Handling and adjustment of claims, Correspondence.

Ethics of Railroading

Trains, tariffs, schedules, traffic rules, and freight transportation have not all the value in themselves, save as they minister to human service. The railway employe is a public servant. The road itself is a common carrier. Neither railway officials nor employees, from president down to track-walker, have any private functions. They are one and all engaged in social service.

The old time idea, that railroads were private affairs, and were operated primarily for the benefit of station agents and train crews, the traveling public forming no part of the equation excepting as a nuisance to be abated whenever opportunity offered, must go.

Realizing the benefit to the young railway employe of timely advice upon these important matters which make up the daily life of a railroad man, and which count so heavily for or against him, but which have never been found in any course of study, Dean McNeely does, in his classes, endeavor to fortify the student against the trials that beset the agent in a busy railroad office so that he may meet them understandingly and intelligently with credit to himself and honor to his road. The accomplishment of this means certain promotion.

All the abbreviations used in railroading are taught. And all the blanks and forms in daily use by railroads are employed in this department.

Thus it will be seen that for the first time in the history of schools a complete, practical, workable course of training is here given in everything that has to be done in a railroad office. The graduate of this course can step directly into any railroad office in the country and find himself perfectly at home, so thorough and complete is the instruction.

We have been exceedingly fortunate in procuring the services of Mr. J. W. McNeely to conduct this department. He has had a wide experience on several different railways, both as agent and agent-telegrapher and he has the unusual qualification of being able to successfully impart his knowledge to others. You will feel well repaid for taking this course under Mr. McNeely's direction and instruction.

We are positively convinced that one may become more efficient in railway accounting (Station Agency) work in a period of four months at this school than he could by spending two to four years in actual railway clerical work.

RADIO (WIRELESS) DEPARTMENT

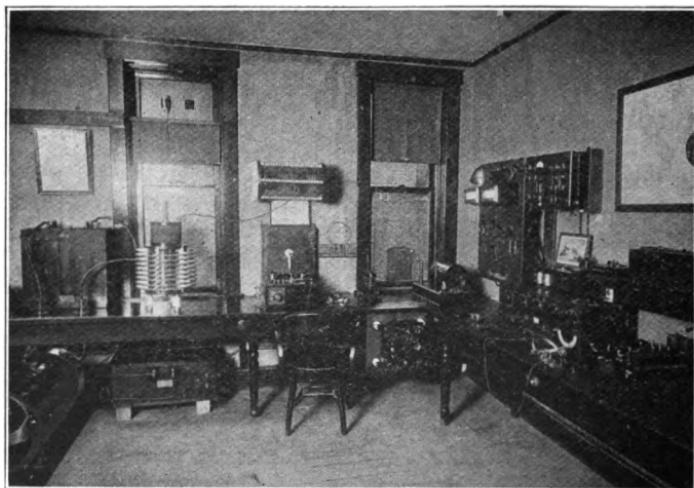
This comparatively new and profitable vocation offers unusual opportunities and great possibilities. It enables those who qualify to travel "first class," and see the world.

Wireless telegraphy—long the dream of scientists, first realized by Marconi, now classed as one of the seven wonders of the modern world, is recognized as one of the most wonderful, the most spectacular, and the most important achievements of the last 2,000 years. As yet its development is just in its infancy and though nearly every ship in the world's commerce carries wireless, or radio equipment and its radio officers, the great value and importance of this marvelous invention are just beginning to be fully realized.

During the years prior to the great World War, wireless telegraphy had been confined largely to use aboard ships and to relatively low power land stations for signaling to ships at sea, where no other means of communication was possible. It is true that several long distance stations were in operation, handling telegraphic business across vast stretches of ocean, but owing to the undeveloped state of the art, transmission was slow and not wholly dependable. The great importance of wireless communication in military and naval operations

had not been fully recognized, but with the outbreak of the war it was soon discovered that upon efficient wireless service depended largely the success or failure of all operations. As a result, departments for research work in wireless telegraphy were established by all governments and the commercial companies, spurred on by the heavy demands for more efficient radio apparatus, exerted tremendous efforts in the development of more perfect and reliable instruments for wireless signaling. The impetus thereby given the new art was enormous and the advances which were made are almost unbelievable. It has been said that the art of wireless telegraphy advanced as much during the years of the war as it would have done in ten years under normal conditions.

Some of the great advances in the science of radio communication that have resulted from the large amount of research work done during the war are enumerated in the following:



Partial View of Our Large 2 K. W. Station

1. More efficient and compact sending and receiving apparatus for ship service was developed.
2. Great improvements were made in long distance transoceanic radio service, through the discovery of methods of overcoming the effects of atmospheric electricity and in the development of more powerful transmitters, thereby greatly increasing the importance of wireless telegraphy.

3. Means were invented whereby it is possible to send and receive simultaneously from the same station, greatly increasing the amount of traffic which can be handled.

4. Continuous wave transmitters were developed to a high degree of efficiency, thus making it possible to operate many more radio stations close to each other.

5. The importance and practicability of wireless telegraphy to and between airplanes was definitely established, thus opening up an entirely new field for wireless.

6. The wireless telephone was perfected for short distance service and its value as an adjunct to the wireless telegraph on shipboard was clearly established.

7. The wireless Compass was developed to a high degree of efficiency and by its use ships and air craft are able to determine their positions with the greatest accuracy and under the most unfavorable conditions of weather.

8. The vacuum tube amplifier was developed to the point where it is possible to receive wireless messages from across the ocean on an antenna so small that it can be erected in a small room.

9. Radio sets, so small that they can be carried in a suit case, have been developed so that even the smallest ship or even an automobile may carry wireless.

10. Another great advance made in wireless telegraphy lies in the lessons which the war has taught of the almost unlimited possibilities which it holds. Where relatively few ships carried wireless equipment prior to the war, nearly every ship that sails the seas today carries this equipment and from two to five radio operators.

To any one who reads these lines it cannot but be evident what enormous opportunities wireless offers. On shipboard it is considered as important as the compass. In trans-oceanic service it has become a formidable rival of the cables. With the inauguration of airplane mail service between the larger cities of this country comes the announcement that the Post Office Department has already authorized the construction of several high-powered wireless stations for maintaining communication with the mail planes in flight, and that as soon as funds are available the number of stations will be greatly increased. Wireless telegraph stations are now a part of the regular telegraphic service of a number of large railroads, and others

are bound to follow their lead. It is reported that wireless equipment for the United States Forest Service is being developed by one of the largest manufacturers in the country. A comprehensive wireless service for reporting forest fires is contemplated. In addition to the few applications of wireless here mentioned, there are many business interests making use of wireless as a means of communication between factories, ship yards, department stores, mines and isolated points where other communication is not practical or economical. Indeed, the possible applications of wireless are almost without number.

The dean of our Radio Department, Mr. M. E. Packman, E. E., is a man of exceptional ability and has had a very wide experience as radio engineer, radio telegrapher and teacher of radio engineering subjects. He is favorably and widely known in the Radio field and enjoys a membership in the American Institute of Electrical Engineers and the Institute of Radio Engineers. Mr. Packman is conceded to be one of America's leading Radio engineers.

Mr. Dale R. Clemons, a 1913 graduate of this department, is his very able and efficient assistant. Mr. Clemons, after graduating at this school in 1913, served four years in the Trans-Atlantic Radio Service and during the period of the war was, for several months, Radio instructor at one of the principal cantonments of the United States Army.

This school has, in Messrs. Packman and Clemons, two of the very best teachers of radio telegraphy in America—a broad statement but literally true.

PENMANSHIP

Very few people realize the full value of a course in Penmanship. They don't appreciate what a tremendous influence for promotion clean and attractive handwriting is—how often it is the means of getting the attention and good will of some one higher up. Poor, scrawly Penmanship, on the contrary, is almost sure to arouse unfavorable comment, and gives the impression of the writer as being a slovenly, careless, shiftless individual.

In fact, legible handwriting is absolutely essential for a successful telegrapher, station agent or radio operator. Realizing this fact, years ago we added a course of drill penmanship, which has been made a regular feature of the course. Students practice penmanship at least thirty minutes daily. This department is under the direction of Mr. E. F. Rainier.

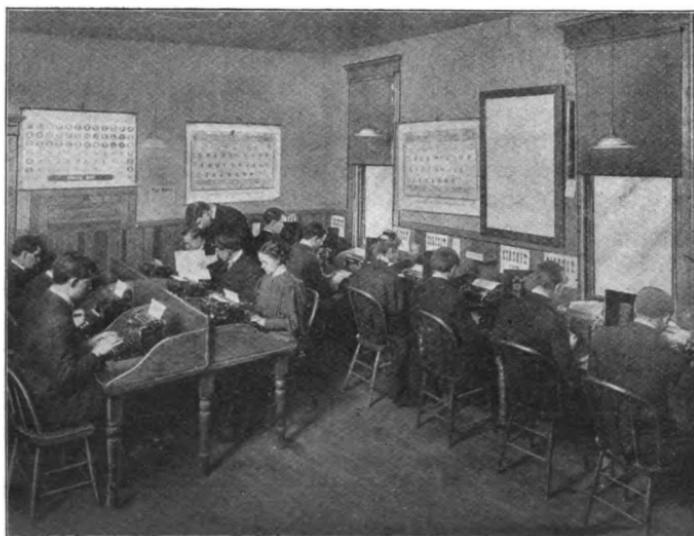
The Palmer Method of Business Writing is taught. No additional tuition is charged, and what we give in this work is usually sufficient to make a good penman out of an ordinary poor writer. This is our aim.

All students are required to attend the Penmanship drill classes.

TYPEWRITING

The typewriter is now used very extensively in not only all commercial but in a great number of railroad offices. Indeed all good telegraphers use the typewriter, hence, we have installed a number of the very best machines—Underwoods and L. C. Smiths, for our students' use.

We endeavor to keep our machines in splendid condition, exchanging at different intervals so as to have the latest models. In a number of the typewriting booths, we have installed telegraph instruments, the sounder being incased in a resonator. These telegraph instruments are connected



Typewriting Department

with our circuits and students can procure practice, from the very slowest to the highest speed obtainable, in the school. No extra charge is made for the use of any telegraph apparatus and a five months' course of typewriting is included free of charge with the scholarship tuition in the Morse department.

POSITIONS.

There is, perhaps, no other subject of such vital interest for one securing an education in the technical school, and rightly so, for technical knowledge is of little value unless it can be made remunerative after the subject has been mastered. The policy of this school has always been very conservative and we have adhered strictly to the motto, "Promise little and do much." It is very rare that a qualified graduate of this school finds it necessary to wait for a position. Indeed during recent years, scores, if not hundreds, of young men and women have gone from this institution to accept positions when they had not completed their studies. There has been a tremendous demand for both Morse and radio telegraphers and railway agents—the demand far exceeding the supply and, notwithstanding our large enrollment, we haven't been able to cope with the demand made upon us.

Another advantage for the graduate of this school, and to which we direct especial attention, is the fact that the officers and teachers of this school are recognized by railway, telegraph and wireless companies as being thoroughly capable, and certificates of efficiency from these men will invariably enable a student to procure employment where one without this endorsement would have difficulty. It is very rare that a student completing the work at our school, finds it necessary to wait more than a very short period of time for a position.

In concluding this subject, we wish to again call attention to the fact that this school is recognized as the leading one of its kind in America. True, this statement could be made by anyone but we shall gladly co-operate with anyone who has misgivings in this regard, in determining this statement to be an absolute fact. We have no hesitancy in saying to the young man or woman who will come here determined to give the work his best efforts, that we will be able to procure him a position as soon as he qualifies and with very little, if any difficulty.

Attractive Wages

This institution has for a great many years been sending young men and young women from the school, and almost daily, to lucrative positions with the railway, commercial telegraph and wireless telegraph companies where they have received splendid salaries.

Good wages are now offered everywhere. The minimum salary of the railway telegrapher is now approximately \$155.00 per month, many telegraphers earning as high as \$275.00 per month. The salaries of agent-telegraphers are still higher. The salaries of the radio telegrapher ranges from the equivalent of \$150.00 to \$200.00 per month.

The capability and trustworthiness of the individual filling the positions and the importance and the responsibility of the position itself determines, to a great degree, the salary paid.

SCHOOL EXPENSES AND TUITION

THE TUITION FOR A SCHOLARSHIP IN THE MORSE (WIRE) DEPARTMENT, the time of which is unlimited, in telegraphy, orthography (spelling), and drill penmanship, and which includes, free of any charge, a five months' course of typewriting, is \$75.00. This tuition entitles the student to remain an indefinite period, or he may attend a while, leave school and re-enter, not only once, but any number of times, without additional cost for tuition—\$75.00 does, in fact, pay for a life membership in the Wire work. The same work, exclusive of typewriting, may be obtained for a period of three months at \$50.00.

THE TUITION FOR A COMPLETE RADIO (WIRELESS) COURSE INCLUDING ALL LABORATORY WORK AND THE CONTINENTAL-MORSE CODE, is \$85.00. This tuition, like the scholarship tuition in the Morse (Wire) department, is unlimited. The cost of a scholarship tuition in both the Morse (Wire) department and the complete Radio (Wireless) course, including everything taught in both departments, is \$115.00, if subscribed for at the time of entrance.

It is strongly urged and advised that students matriculate in both the Morse and Radio departments for many reasons: Some of the wireless companies demand that their operators be conversant and familiar with both codes; all Coastal (land) Station operators must know the Morse Code in order that they may transmit commercial messages that they may have received from ships, by wire to the Western Union and Postal Telegraph offices. The student becoming proficient in both courses is qualified to accept a position in either line of work, and it affords him a greater field in which to secure employment and a much better understanding of the telegraph generally. It usually requires from three to four weeks longer for one to complete both courses than either course alone.

THE TUITION FOR THE RAILWAY ACCOUNTING (STATION AGENCY) COURSE ALONE is \$30.00, but a reduction of \$5.00 is made when this course is subscribed for at the time of entrance, with either the three months' or scholarship tuition in the Morse department; hence the cost of tuition for a complete course in both the Morse and Railway Accounting (Station Agency) departments is \$100.00; three months, both departments, \$75.00. It does not require any longer time for one to take the Railway Accounting course in conjunction with the telegraphic course than to take the latter course alone.

LIVING EXPENSES ARE VERY REASONABLE—good table board and a well furnished room may be obtained at from \$6.25 to \$7.00 per week, very few of our students paying more than the latter figure. A great number earn their board, and many all of their living expenses, by working outside of school hours. We can arrange this for you in case you so desire.

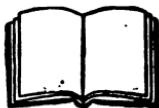
OUR STUDENTS AND OUR GRADUATES

Thousands of students who have received our instruction are now holding good positions, or have held them, in both the railway and commercial telegraph fields. These young men and women came to us from every section of the country and from every walk of life. Many come from other trades and callings where they have found the door of advancement closed to them. Perhaps the most significant thing about our attendance is the fact that a vast number of our new students come on the recommendation of former students, railway, telegraph and wireless officials—a number of them are brothers and near relatives of former students. This is perhaps our proudest testimonial: that the people who know us best of all, who have had intimate personal dealings with us for several months, who are sure to know whether or not we are all we claim to be, and who are the first to suffer if we do not place them immediately upon graduation in a paying position,—that these people, far away from any influence we may exert upon them, turn and urge their brothers, sisters, cousins and nearest friends to come and place themselves under our training. Can you find a more golden recommendation anywhere than this? And yet, as these hundreds of cases come to notice, in which this or that former student sends another student to us, we realize that it is not so much a friendship for us that prompted the sender as it was a desire to make his

friends acquainted with that wonderful telegraphic alphabet with which so many young people have spelled success, and they are here by reason of the fact that the sender knows his brother, relative or friend will be taught thoroughly and treated fairly and squarely.

It is our belief that there is no railroad in the United States, no matter how small its telegraphic service, but has at some time used the services of one of our students, and that every large railroad is using a great number in some department of its telegraphic and operating service. Besides these, our students are employed by the commercial telegraph companies, on the private wires of the Oil Line companies, on the large vessels that ply the Great Lakes and the ocean, in the United States Signal Corps, where they have traveled a great deal. We frequently receive requests from other telegraph schools for teachers, and some of our graduates have been called for in private business concerns.

SIXTY AND EIGHT-TENTHS PER CENT OF OUR NEW STUDENTS DURING 1920 HAD THE SCHOOL RECOMMENDED TO THEM BY FORMER STUDENTS, TELEGRAPH AND RAILWAY OFFICIALS. TWENTY-FOUR OF THIS NUMBER WERE BROTHERS, SISTERS, COUSINS, NEPHEWS AND SONS OF FORMER STUDENTS—A GOLDEN RECOMMENDATION.



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