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# Telegraphy: railroading, express and freight

Julien Elizabeth  
Soulé



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TELEGRAPHY  
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# TELEGRAPHY

## CHAPTER I

### CIRCUIT

A CIRCUIT is formed by two wires connecting the key and sounder of the instrument with the battery.

It is the consummation of the minerals composing the batteries that occasions the friction necessary to move the instrument or cause the sounder to vibrate. Without a complete circuit the instrument will not sound, for there is no friction.

The action of one mineral or metal upon another causes this movement.

### COMPOSITION OF BATTERIES

Wet batteries, generally used by telegraph companies, are composed of water, blue-stone, copper, and zinc.

### CONDITION OF BATTERIES

Batteries must be kept in good condition; that is, cleaned and renewed about every three months. The crow-feet, or zincs, must be well covered by water. A good protection for a battery, after it is made up, is linseed oil poured over the top of the water. This

## 2 TELEGRAPHY

prevents the water from evaporating, while it does not affect the friction at all.

### DRY BATTERIES

Dry batteries, sometimes used by telephone companies and short line telegraph offices, are composed of carbon and zinc. The term "dry" is not strictly correct, but the electrotube is so prepared that it cannot spill out of the jar.

The glass jar is replaced by a zinc cup, which serves the double purpose of being the retaining cup, and the positive element.

### QUESTIONS

1. Of what does a circuit consist?
2. Is one wire sufficient to form a complete circuit?
3. Of what is a wet battery composed?
4. How should a battery be kept? Name a good protection for a battery.
5. Of what is a dry battery composed?
6. Is a dry battery as strong and lasting as a wet battery? Can you give a reason?

## CHAPTER II

### ALPHABET BY SOUND

E I S H P 6  
 A U V 4  
 N D B 8  
 T M 5  
 L o  
 F K 2  
 O R &  
 C Y Z  
 K J  
 Q 3  
 G 7  
 W 1

9 -...- ? -...-

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 ..... & ..... 1 .-... 2 ..-... 3 ....-.  
 4 ..... 5 --- 6 ..... 7 ---... 8 .....  
 9 -...- o —  
 . -...-., -...-; ...-...: -...-... ( ) .....-  
 “ ” ...-... Paragraph ---

Practice the above sounds on the instrument, not allowing the pupil to have the *dot-dash plan* before him.

*Teaching by sound* accomplishes the very best results.

#### PLAN OF TEACHING ALPHABET

After teaching the letters made by dots (e, i, s, h, p, 6), the characters made by dashes (t, m, 5, l, o) are taught, to show the pupil the difference between dots, dashes, and long dashes.

The balance of the alphabet and figures, etc., is taught from these, thus:

A :: ET	K :: NT	2 :: UI
U :: IT	J :: NN	9 :: DT
V :: ST	1 :: AN	? :: DN
4 :: HT	X :: AI	. :: UD
N :: TE	Q :: UE	, :: AA
D :: TI	3 :: VE	; :: SI
B :: TS	O :: E E	: :: KO
8 :: TH	R :: E I	() :: PN
W :: EM	& :: E S	Quotation :: QN
G :: ME	C :: I E	Paragraph :: MM
7 :: MI	Y :: I I	
F :: EN	Z :: S E	

(The spaces are made between certain characters to make the work plain to the teacher.)

#### SHORT WORDS FOR PRACTICE

A At, at, at, an, an, an, am, am, am, and, and, and,  
as, as, as, all, all, all, are, are, are, aim, aim,  
aim.

- B** Be, be, be, by, by, by, bat, bat, bat, but, but, but, bar, bar, bar, ball, ball, ball, been, been, been, bear, bear.
- C** Cut, cut, cut, cur, cur, cur, cot, cot, cot, cap, cap, cap, case, case, case, can, can, can, cure, cure, cure, camp.
- D** Do, do, do, dye, dye, dye, die, die, die, due, due, due, dare, dare, dare, desk, desk, desk, den, den, den, deliver.
- E** Ear, ear, ear, eat, eat, eat, ease, ease, ease, early, early, earn, earn, earn, ever, ever, ever, eel, eel, eel, east, east.
- F** Fan, fan, fan, fat, fat, fat, foe, foe, foe, feet, feet, feet, fear, fear, fear, far, far, far, farm, farm, farm.
- G** Go, go, go, get, get, get, gas, gas, gas, gone, gone, gone, gear, gear, gear, George, George, George, gun, gun, gun.
- H** Has, has, has, he, he, he, have, have, have, have, her, her, her, here, here, here, hear, hear, hear, him, him, him, his.
- I** It, it, it, is, is, is, if, if, if, ice, ice, ice, ire, ire, ire, in, in, in, ill, ill, ill.
- J** Joe, Joe, Joe, James, James, James, join, join, join, jet, jet, jet, joy, joy, joy, joist, joist, joist, just, just.
- K** Key, key, key, kiss, kiss, kiss, kite, kite, kite, Kate, kind, kind, kind, know, know, know, kneel, kneel, kneel, kin.
- L** Let, let, let, lie, lie, lie, like, like, like, love, love, love, live, live, live, less, less, less, loan, loan, lend.



- M Me, me, me, my, my, my, mine, mine, mine,  
meet, meet, meet, more, more, more, mist,  
mist, mist, must, must, must, meat.
- N No, no, no, night, night, night, nay, nay, nay,  
none, none, none, ninety, ninety, ninety, nine,  
nine, nine, net, net, net.
- O Of, of, of, on, on, on, one, one, one, ore, ore, ore,  
over, over, over, oar, oar, oar, other, other,  
other, oil, oil, oil.
- P Pay, pay, pay, pan, pan, pan, pain, pain, pain,  
pair, pair, pin, pin, pin, pass, pass, pass, pie,  
pie, pie, post, post.
- Q Quick, quick, quick, quote, quote, quote, quire,  
quire, quire, queer, queer, queer, question,  
question, question.
- R Race, race, race, row, row, row, rue, rue, rue,  
rear, rear, rear, ream, ream, ream, rose, rose,  
rose, raise, raise, rut.
- S So, so, so, saw, saw, saw, sun, sun, sun, seem,  
seem, seem, sad, sad, sad, sin, sin, sin, sign,  
sign, sign, set, set.
- T To, to, to, too, too, too, tie, tie, tie, tye, tye, tye,  
two, two, two, the, the, the, there, there, there,  
these, these, these, these, them, them, them,  
that, that, that, their, their, their, they, they,  
they, then, then, then.
- U Use, use, use, unite, unite, unite, union, union,  
union, ugly, ugly, ugly, unity, unity, unity.
- V Vim, vim, vim, vain, vain, vain, vain, voice,  
voice, voice, vice, vice, vice, vine, vine, vine,  
vine, vein, vein, vain.
- W Way, way, way, wire, wire, wire, while, while,

while, was, was, was, who, who, who, wo, wo,  
wo, were, were, were, when.

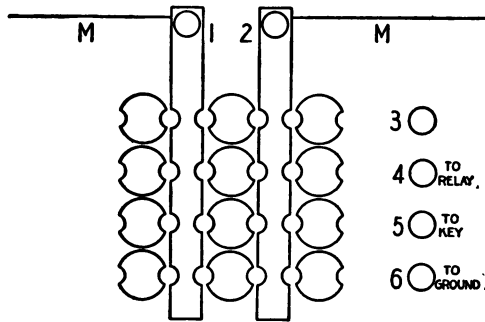
- X Express, express, express, extra, extra, extra, ex-  
empt, exempt, exempt, expire, expire.
- Y You, you, you, yet, yet, yet, year, year, year,  
yes, yes, yes, yon, yon, yon, ye, ye, ye.
- Z Zest, zest, zest, zeal, zeal, zeal, zone, zone, zone,  
zoo.

NOTE.—Let the pupil become thoroughly ac-  
quainted with the above short words, before attempt-  
ing any special reading matter.

## CHAPTER III

### THE SWITCHBOARD

THE use of the switchboard is to connect, or "cut out," other offices, or in other words to connect the current, or cut off the current.



The Switchboard

Discs are connected only across the switchboard.

All of rows 4 and 5 connect with the relay and key.

All of row 6 connects with the ground.

The switchboard is simply a board of well seasoned wood, fitted in front with metal strips running vertically, and terminating in the thumbscrews. Horizontally across the board are rows of small circles of metal, called discs, whose stems pass through the board, at the back of which each row is connected with a wire terminating in front at one side of the board. The strips and discs are so constructed with

reference to each other that connection can be made between them by a metal peg. The different rows of discs (each row having a connecting wire at the back) have their terminals in the thumbscrews 3, 4, 5, 6, as shown in the accompanying diagram. Screws 4 and 5 make direct connection with the relay and key, and screw 6 makes connection with the ground.

Suppose the way stations are to be between Philadelphia and Brooklyn. Let M-1 represent Philadelphia and M-2 represent Brooklyn. By connecting the two with disc 3, the terminal stations can work with each other, but the way stations are "cut out."

Move the pegs in M-1 3, and M-1 4, and the main line circuit is open, because there is only connection between discs of the same row. Move the discs in 3 2, and 5 2, and the apparatus is said to be "cut in." If the learner will remember that the discs are only connected with each other in *straight lines across the board* he can trace out for himself other connections and the changes they bring in the circuit.

Remove the pegs from 1 4 to 1 6, and from 5 2 to 6 2, and the wires from both directions are grounded.

When the operator leaves the office his pegs should be in 1 3 to 3 2, or "cut out."

#### USE OF THE GROUND WIRE

A ground wire is necessary to ground all messages during a storm, or at other times when friction may be very great in order to prevent danger.

To ground a message means to ground or stop the current at that point. In this way other offices may be cut out.

## USE OF THE RELAY

In case of long distance lines the relay is used, because it is better balanced than the sounder and more easily moved, causing clearer vibrations.

## QUESTIONS

1. Of what use is the switchboard?
2. How is the switchboard connected with the instrument?
3. Is a switchboard necessary on the line, and why?
4. How do you connect North and South on the switchboard? Northeast with Southwest?
5. How do you stop the current?
6. How do you ground messages? Of what use is the ground wire?

## CHAPTER IV

### TRANSMITTING MESSAGES

IN calling another office the operator will sign his own office call, or signature, at short intervals. New York calls Chicago thus: "CO CO CO" and signs "NY," repeating the same many times in succession until Chicago responds, "II II CO."

After receiving response from the distant office, the sending operator proceeds with the message in the following order:

- 1— Hr . . . . Meaning here, or at the key.
- 2— Tru or City. A through message, or city message.
- 3— Red . . . . If the word "Red" is sent, the receiving operator will use a "Night Message Blank," as by it is designated the Night Message.
- 4— No . . . . Meaning number of the message.
- 5— . . . . . The operator's personal signal, or call.
- 6— Check . . . Check of the message.
- 7— Fm . . . . From place, followed by date of message.
- 8— To . . . . The address of the message, followed by the period.
- 9— . . . . . Body of message.
- 10— Sig . . . . Meaning signature, followed by the signature of the message.

## CONCERNING MESSAGES

Two forms of message blanks are used. One is known as the day message, the other as the night message, which is designated by the word "Red," sent after "Tru" or "City" in the regular form of messages. The Night Message blanks are printed with red ink to designate them from the Day blanks.

After the signal "II II," etc., from a distant office is given in response to a call, the sending operator will transmit the abbreviation "Hr," meaning here, or at the key. Then "Tru," meaning through message, followed by the number of the message, the personal call of the sender, the check meaning the number of words in the message, and "Fm," followed by the city or station from which the message is dated. Then follows the date, which comprises the date of the month only, but the receiving operator completes the date by the number of the month and year. "To" is followed by the address of the party to whom the message is addressed or sent. All superfluous words in any address are counted in the check. The word "Collect" is also counted in the check, but not charged for. After the address a period is transmitted as the signal of the body of the message which follows, and this is also followed by a period. Then "Sig," meaning signature, is sent, followed by the signature of the writer of the message.

City messages contain the word "City" instead of "Tru" in the regular forms.

The sending operator will write upon each message sent the time of sending, and his own and the receiving operator's personal signal or call.

TRANSMITTING MESSAGES

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NOTE. — In recent messages the sending operator omits his personal signal or call which of course does not appear upon the face of telegram. However, this is not in compliance with rules.

NIGHT MESSAGE

Receiver's No. 14	Time Filled 7:PM	Check 8 Paid
----------------------	---------------------	-----------------

SEND the following night message subject to the }  
terms on back hereof, which are hereby agreed to. } July 15 1910

TO CARRUTHERS PRODUCE Co.,  
CLEVELAND, O.

Have to-days	shipped express.	five	cases	eggs J. McCall & Co.
-----------------	---------------------	------	-------	-------------------------

DAY MESSAGE

RECEIVED at 49 Broadway, New York.

43 C Ho Fi 9 Paid,

PHILADELPHIA, Pa., July 28, 1910.

JOHN BRADLEE,

126 Chambers St.,

NEW YORK.

Wynoma expects to arrive New York second or  
third August.

CAREY & Co.

11:48 AM



## NECESSARY ABBREVIATIONS

OK	All right	AM	Forenoon
Fm	From	PM	Afternoon
Opr	Operator	M	Noon
Tru	Through	Red	Night message
No	Number	Eng	Engine
Biz	Business	C	Conductor
Wo	Who	E	Engineer
U	You	Min	Minute
RR	Repeat, or Railroad	Com	Complete
DN	? (used when error occurs in transmitting message)	Hr	Here at the key, or at the beginning of every message.
GN	Good Night	OT	On time
19 } 31 }	Train Order	II	Answer to call.
1	Wait a minute		Here
Sg } Sig }	Signature	DH	Dead Head, or free message

## QUESTIONS

1. How many forms of message blanks are used?
2. How is the night message designated from the day message?
3. Give the regular form of a message.
4. Give the form of a night message.
5. What is meant by the word "Tru" or "City"?
6. What is meant by the word "Red" in a message?
7. What is meant by the check of a message?
8. How would you call up another office to transmit a message?

9. How would you answer a call from a distant office?
10. What is meant by the abbreviation "HR"?
11. What personal calls or signals must appear on the message? (Ans. That of the sender and receiver of the message, in spaces marked "Sent by" and "Recd. by.")
12. Is it necessary to mark the time received on a message? Why?
13. What is meant by "Sg or Sig"?
14. What is meant by "body of the message"?
15. What words are counted in the check?
16. Is the address of a person counted in the check?
17. Write out a telegram as sent. Write one as received.

## CHAPTER V

### RULES TO BE OBSERVED BY SENDING OPERATOR

THE sending operator will decide the route of the message.

In sending a message the operator will observe the following order of transmission:

- 1 — The number of the message.
- 2 — The operator's personal signal or call.
- 3 — The check of the message.
- 4 — The place from and date of the message.
- 5 — The address of the message.
- 6 — The body and signature of the message.

All figures and words in the check of a message will be transmitted except, —

- 1 — The amount of tolls in case of a prepaid message to a *this line* office.
- 2 — The reason why free, in case of a free message.

The sending operator will write upon each message sent, the time of sending, and his own and the receiving operator's personal signal or call.

No message will be regarded as sent until acknowledged by the receiving office by the usual signal (OK); but if a number of messages be transmitted in succession, the acknowledgment of the last is sufficient for all.

When messages cannot be properly transmitted the operator will note the cause on the back of the mes-

sage, and report same to the chief operator, or manager.

In receiving a message the operator will write his personal signal in the space headed "Received by;" he will write the name of his office immediately after, and on the same line with the words "Received at" and the time of the reception of the message also on the line, or immediately over the check. The acknowledgment of the receipt of a message will be made by transmitting the signal (OK) and the receiving operator's personal signal or call.

The receiving operator will count the words, verify the check, and satisfy himself that a message is correct before allowing it to leave his hands.

#### MESSAGES TO MORE THAN ONE ADDRESS

When a message is addressed to A or B, it may be sent as a single message, but if addressed to A and B, or to several persons, the order of its transmission will be determined by the manager, or chief operator, of the sending office, so as to use the facilities at his command to best advantage.

Night messages are sent as far as possible on the day of date. If any night messages are left over until the next morning, they are transmitted before new business.

If to correct an error in a message, or for any other reason, a second transmission is necessary, the sending operator will begin with the word "Duplicate," which the receiving operator will write conspicuously on the form above the message.

No operator will change his personal signal with-

out the consent of the manager, nor will two operators in the same office have the same signal.

Contention for circuit is positively prohibited.

#### NUMBER REPORTS

At each office before closing, the operators will examine the number sheets, exchange number reports of the day's business with other offices, and immediately correct any errors discovered.

At each office it is the duty of some employee before filing for record all *sent messages* to see that they bear the proper indication of transmission.

#### WIRE TESTS

The word "Wire" will give the right to circuit at all times for testing, which is made by the manager, or chief operator.

The manager of the principal office will keep a daily diary of the incidents which occur on the lines.

The ground wire is only used in the event of an interruption of the circuit, and then only to notify the chief, or testing, operator of the incident, and to receive instructions.

Each manager will see that the local batteries are kept in good condition, and that each cell is thoroughly insulated, so as to prevent the escape of the current. The floors and fixtures of the battery room must be kept scrutinously clean and dry.

Before closing the office for the night care must be taken to cut out its instruments, and make sure that

the circuit through the switch, or cut-off, is complete, or, in other words, leave the pegs in discs 1 3 to 3 2 on the switchboard.

QUESTIONS

1. Who decides the route of a message?
2. What is the order of transmission of a telegram?
3. What figures or words are not transmitted in the check of a message?
4. What should the sending operator write upon the message?
5. How is a message acknowledged by the receiving office?
6. What of an improper transmission of a message?
7. Where is the time of the reception marked on a message? Where should the receiving operator's personal signal appear on the message?
8. What is said regarding the check of a message as to approval?
9. What of messages to more than one address?
10. What is said of night messages?
11. What is said of repetition of a message? What word is transmitted before repeating the message?
12. What is said of contention for circuit?
13. What are number reports? Explain them.
14. What is said of "sent" messages?
15. What right does the transmission of the word "Wire" give to the circuit?
16. When is the ground wire used?
17. What is said of the batteries, etc.?
18. What must be done before closing the office for the night?

## CHAPTER VI

### RECEIVING MESSAGES

**EACH** message for transmission will be written upon a form provided for the purpose, or will be attached to such form by the sender, so as to leave the printed heading in full view above the message.

Each message will be timed by the receiving clerk, who will see that the month and day are carefully noted thereon; he will also carefully read each message before accepting it, and when necessary will make it plain by marginal notation, before it is sent to the operator.

The receiving clerk should give any aid or explanation necessary to enable the sender to prepare his message so that errors and delays may be avoided.

No change should be made in any message by an employee of the company, but misspelled or abbreviated words may be courteously referred to the sender for correction. If the sender declines to make correction, the message must be accepted as written.

The importance of the address cannot be overestimated. When the address given seems insufficient, a better one should be requested.

If a message be offered without signature the sender's attention should be called to the omission, and if

the sender then declines to sign the message the receiving clerk will write in place of the signature the words "*Not signed.*"

#### WORDS TO BE COUNTED AND CHARGED FOR

In a prepaid message, the following words will be counted and charged for:

All words in an extra date.

All extra words in an address.

(In the address of a message to one person, or to a firm, or to Mr. & Mrs. —, there are no extra words, but in the address of a message to either of two or more persons in the same place or town, as John Smith, or James Brown, 80 Wall St., New York, there are three extra words, viz.: "or James Brown," which will be included in the count and charged for.)

All words, figures, and letters, as per list given below, in the body of the message.

All signatures, when there are more than one, except the last.

All words in excess of two in a title after the last or the only signature. (In a signature such as Mr. and Mrs. —, or John Smith and Family, or Henry Jackson, Vice-President, there are no extra words, but in a signature such as James Brown, First Vice-President and Secretary, there are two extra words, viz.: "And Secretary," which will be included in the count and charged for.)

All words after the signature, which are not title words, and in the check, the words "Deliver and report charges," "Delivery charges guaranteed," "Report delivery," and "Repeat back." In a collect



message, this rule will apply, except that the word "Collect" in the check will be counted but not charged for.

When a message bears two or more addresses, and the delivery is to be made to each address, it will be charged for as two or more messages, as the case may be. For instance, a message addressed to "W. Brown, 197 Broadway, and B. Wells, 60 Exchange Place, N. Y.," will be charged as two messages. The additional addresses will be considered as extra words.

In counting a message, dictionary words, initial letters, surnames of persons, names of cities, towns, villages, states, or territories, and names of Canadian Provinces will be counted and charged for each as one word. Their abbreviations will be counted and charged for as if written in full. Abbreviations in weights and measures in common use will be counted each as a word.

In names of countries or counties, all words will be counted and charged for.

To prevent liability of error, numbers and amounts should be written in words, and when not so written, the receiving clerk will request that it be done. If the customer refuses to write the amounts in words the message will be accepted as written, and the figures counted as indicated in the following paragraph:

Figures, decimal points and bars of division, and letters will be counted each separately as one word, except the pronounceable groups of letters, when such are not dictionary words, or combination of dictionary words, which will be counted at the rate of ten letters, or fractions of ten letters, to a word. When such are made up as combinations of dictionary

words each dictionary word will be counted as one word.

In ordinal numbers the affixes st, d, nd, rd, and th will each be counted as one word. Thus, 2nd = two words.

Van Dorne . . . . .	1	word
McGregor . . . . .	1	"
O'Connor . . . . .	1	"
DeWitt . . . . .	1	"
Brown Jr. . . . .	2	"
New York . . . . .	1	"
New York State . . . . .	2	"
D. C. or District of Columbia . . . . .	1	"
North Carolina . . . . .	1	"
Queen Ann County . . . . .	3	"
North America . . . . .	2	"
U. S. . . . .	2	"
44.42 . . . . .	5	"
42B618 . . . . .	6	"
74 3/4 . . . . .	5	"
No 185 22nd St . . . . .	8	"
1000000 . . . . .	8	"
Ten millions . . . . .	2	"
3d (or 3rd) . . . . .	2	"
10th . . . . .	3	"
Lbs . . . . .	1	"
Cwt . . . . .	1	"
Adbantia . . . . .	1	"
Byxtrm90 . . . . .	8	"
Xyflq4sm . . . . .	8	"
All-right or alright . . . . .	2	"

## EXCEPTIONS

A.M. . . . .	1	word
P.M. . . . .	1	"
F.O.B. (fob) . . . . .	1	"
C.O.D. . . . .	1	"
C.I.F. or C.F.I. (or cif or cfi) . . . . .	1	"
O.K. . . . .	1	"
C.A.F. (or caf) . . . . .	1	"
Per cent . . . . .	1	"

## REGARDING CHECKS AND MESSAGES

The receiving clerk's check upon a paid or collect message will be made in accord with the following examples:

REMARKS.— The check of a ten-word message to a *this line* office will be, for example:

“10 paid 25,” or

“11 collect.”

The check of a ten-word message to *another line* office will be, for example:

“10 paid and 30 via Chicago,” or

“11 collect, 25 via Chicago.”

The check of a ten-word message for special delivery from a *this line* office, when the charges are known, will be, for example:

“10 paid, 25 and 1.00 delivery” or

“11 collect.” (See note below.)

If the delivery charges are unknown the check will be as follows:

“14 paid 33 deliver and report charges,” or

“11 collect.”

If the delivery charges from *another* line office be, for example, fifty cents, and the *this* line office and *other* line rates each twenty-five cents, the check will be:

“10 paid 25 and 75 via Chicago,” or

“11 collect 25 via Chicago.”

(The 75 includes the *other* line tolls and fifty cents for delivery.)

NOTE.— Offices with *other* lines will note that in these checks the amount which indicates the *this* line

tolls appears in the check before the amount for *other* lines. Insert these tolls immediately after the word paid or collect.

If the sender of a message requests a notice of its delivery the receiving clerk will insert in the check the words "Report delivery," and charge for same as part of the check of the message. The request will be answered by a collect message addressed to the sender of the message, stating the time of the delivery of the message, or, if not delivered, the reason why.

If the sender requests the repetition of a message the receiving clerk will insert in the check the words "Repeat back," which will also be included in the count and charged for. The repetition of the message will cost the sender half rate in addition to the full rate for the original message.

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 probable cost of delivery.

The words "Deliver and report charges," when the charges are to be paid by the sender, or the words "Delivery charges guaranteed," when they are to be paid to the addressee, will be inserted in the check of the message, and will be counted and charged for.

When it so happens that an extra date occurs in a telegram it must be charged for. For example, if a letter is sent requesting a telegram to be sent arriving at office a day or so after the date written, it would be sent as follows:

“Buffalo, N. Y. Oct 24  
via Chicago, Oct 25.”

Thus in charging for the message, the five words “Buffalo, N. Y. Oct 24,” will also be included.

When messages which are to be forwarded are received *collect* the forwarding office will check them so that the tariff from that office to the destination shall appear in the check as *this* line tolls, and the tariff from the originating office to the forwarding office as *other* line tolls.

If a message is offered when communication is known to be interrupted, it will be accepted only if the sender chooses to leave it for transmission when communication is restored. Upon such a message write the words “Subject to delay,” and request the sender to affix thereto his signature or initials.

Employees are particularly cautioned against making any promises to customers respecting the transmission or delivery of a message.

The address of the sender of a message unless it be well known will be requested and recorded.

### NIGHT MESSAGES

Night messages will be written upon night message forms and will be accepted only between the hour of opening and midnight. An office closing before midnight will not accept a night message that cannot be started before the closing hour. In case of an interruption of the lines, which it is believed will prevent the transmission of a message before the following morning, such messages will not be accepted.

## PROFANE MESSAGES

A message containing profane or obscene language will not be accepted for transmission over the wires of any company.

## 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 (Stamp) Franks, Directors' Franks.

The holder of franks of any kind is not entitled to transmit cable messages free.

## RAILROAD MESSAGES

A message of an officer, or agent, of a railroad company with which a telegraph company has a contract, when on business of that railroad company may be sent free without a frank between stations on that road; but when such a message is offered beyond, or off that road, it will not be sent free unless covered by a frank.

## SERVICE MESSAGES

Service messages between the employees of the company will be limited to matters of urgent nature. The mails will be used in all cases when the service will not suffer by delay. Service messages will not be sent free for information of customers, nor to correct their errors.

## PERSONAL MESSAGES

Personal messages of an employee of an urgent social or domestic character may be sent free upon the written approval of the manager or superintendent.

## FREE AND HALF-RATE MESSAGE CHECKS

The receiving clerk's check of a free message will show the reason for its acceptance without the payment of tolls. A half-rate frank message will be checked as a full-rate message. The following are examples of free message checks:

"10 D.H. Frank No. —"

"10 D.H. Employee"

"10 D.H. Answer to D.H."

"10 D.H. Frank No. — and paid 25 via Chicago."

"10 D.H. Frank No. — and D.H. frank No. —"

(When free over both *this* line and *other* lines.)

## QUESTIONS

1. Is it necessary for the sender of a message to write his message upon a message form? Why?
2. Where is the time of transmission of a message noted?
3. Can an employee change the wording of a message after same has been given him for transmission?
4. Can a message be accepted for transmission without a signature?
5. What words are charged for in a message?

6. How are numbers generally transmitted over the wires? Why?
7. What is meant by a "this line" office? "Other line" office?
8. Is the word "Collect" counted in a message check? Is it charged for?
9. Is the amount of charges marked upon the message? Is it necessary to mark the amount of charges upon the delivery envelope?
10. Is it necessary to insert "this line" and "other line" tolls after the check of a message?
11. If a report of the delivery of a message is required, how is same made known?
12. If the sender of a message wishes the messages "Repeated back," what is the charge for same, and what form is used in the check of the message? Are the words "Repeat back" charged for?
13. What is said of the charge for extra words in an address?
14. Upon what forms are night messages written? What hours are messages accepted for night transmission? What is said of delivery of such messages?
15. What is said of profane messages?
16. What is a frank? How used?
17. What is a railroad message? A service message? What is said of employees' personal messages?
18. What are free and half-rate message checks? How are free messages counted in the check?



CHAPTER VII

CABLE MESSAGES

THE ..... TELEGRAPH CO.  
.....

Receiver's No. 14	Time Filed 7:15	Check 12 Paid
----------------------	--------------------	------------------

SEND the following message subject }  
to the terms on back hereof, which are } 12-2 1910  
hereby agreed to. }

To M. Atherton  
Havana, Cuba

Will ship cigar boxes via Tampa ACL care Mallory  
Line.

L. TAYLOR.

*Read Notice and Agreement on Back.*

MESSAGES BY CABLE

Every message must be prepaid unless otherwise authorized, and all words in the address, text, and signature must be counted and charged for.

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 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 incorrect and insufficient address. Corrections and alterations can only be made by another message, which must be paid for.

#### PLAIN MESSAGES

Plain messages (*i. e.*, neither code nor cipher) may be written in any language that may contain the Roman letters. In such a message 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 as a word. Thus, sixteen letters would be two words.

#### CODE MESSAGES

Code messages may contain words belonging to one or more of the following languages: English, French, German, Dutch, Italian, Portuguese, Spanish, and Latin. The use of other languages is not allowed. Code messages may also contain artificial words, that is, groups of letters so combined as to form pronounceable words in at least one of the eight 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 the word.

## CIPHER MESSAGES

In cipher messages, which may be composed of groups of figures or groups of letters, the groups are counted at the rate of five figures, or five letters, or fraction thereof to the word. Words in plain languages inserted in such messages are counted as in the "Plain message rule" above.

The mixture in the body of a cipher or code message of letters or figures, or groups of letters or figures, is not allowed.

## COUNTING WORDS

Every isolated figure, letter, or character counts as one word. Words joined by a hyphen, or separated by an apostrophe, are counted as separate words.

Signs, punctuation, hyphens, apostrophes, and fresh paragraphs are not counted nor sent.

When the letters "ch" come together in the spelling of a word, they are counted as one letter.

Abbreviated and misspelled words and illegitimate compound words combined in a manner contrary to their use in any of the languages authorized, also unpronounceable groups of letters (not trade-marks or marks of commerce) are admissible, but if they should accidentally appear in a message they will be counted at the rate of five letters or fraction of five letters to one word.

Inverted commas, the two signs of parenthesis, and each separate figure, letter, or underline will be counted as one word. Groups of figures will be counted and charged for at the rate of five figures or fraction of five figures to one word.

## CABLE BUSINESS

Cable business must be entered in the regular monthly account current under the heading "Sundry receipts." It must not be entered in the "Check report." A distinct record of cable business must be kept, and at the end of each month reported upon Form 67, in accord with instructions printed thereon, and promptly forwarded to the superintendent.

The rates established for U. S. Government messages between the Western Union offices will be found in the first table of rates in the Western Union Rate Book. As there indicated, these rates are for twenty or less words, address and signature counted.

Government messages shall have priority in their transmission over all other business.

All messages offered at Government rates should be endorsed by the senders "Official Business."

## QUESTIONS

1. On what condition are messages transmitted by cable?
2. What is said of addresses?
3. What are plain messages?
4. What are code messages?
5. What are cipher messages?
6. How is cable business entered? Under what heading?
7. What is a Government message?

## CHAPTER VIII

### WIRELESS TELEGRAPHY

WIRELESS stations are now becoming very popular, as wireless telegraphy has been found to be a reality instead of a mere dream, and many of the incoming and outgoing vessels are fitted with the apparatus for transmitting messages.

The apparatus comprising the transmitter consists of the electromotive force, a battery or dynamo, a key much the same as other telegraph keys, an induction coil, or transformer, and an oscillator. The appliances forming a receiver of a similar type include a wave detector, a cell, a telephone receiver, and a resonator. In the earlier systems a relay, a tapper, and a Morse register were added.

**UNITED WIRELESS TELEGRAPH COMPANY**  
INCORPORATED  
**AEROG RAM**  
 DIRECT COMMUNICATION WITH SHIPS  
 AT SEA AND ON THE GREAT LAKES

CHECKS THIS STATION	
This line	
Other lines	
Spec'l Del'y	
<b>Total</b>	

NUMBER	SENT BY	RECEIVED BY	CHECK	TIME	STATION, VIA
1	JS	W	6 Paid	12: 10	Egmont Key

**SEND** THE FOLLOWING MESSAGE SUBJECT TO THE TERMS AND CONDITIONS  
 PRINTED ON THE BACK HEREOF, WHICH ARE HEREBY AGREED TO.  
Jan. 4 1911

**To** M. Mason

S/S Olivette

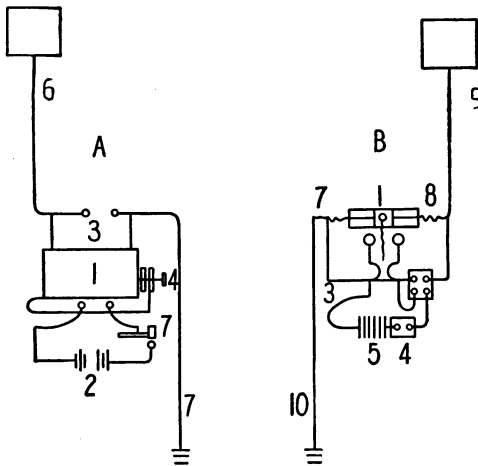
Arrive Key West Noon eighteenth report cargo.

J. Murphy

Form No. 1A **PLEASE ASK FOR CARBON COPY OFFICIAL RECEIPT**

FITTING UP A STATION

As shown in the accompanying diagram, the transmitter (A) includes an induction coil (1), energized by battery (2), the current being broken by the key (3). The coil is equipped with a spring interrupter (4); the terminals of the secondary are con-



Marconi Transmitter and Receiver

nected to either side of the spark gap, which, with the aerial wire (6) and the ground wire (7), form the oscillator system. The receiver (B) is made up of a coherer (1), the polarized relay (2), and the cell (3), all of which are connected in series and comprise the first internal circuit.

The second internal circuit includes the contact points of the relay (2), the Morse register (4), the bat-

tery (5), and the tapper (6). The tapper and the register may be in parallel; the aerial wire (9) and the earth terminal or ground wire form the resonator. Choking coils (7 and 8) are placed in the first internal circuit between the coherer and the relay to prevent oscillations from the resonator from wasting their energy in the relay coils, as well as to prevent those originating at the contacts of the relay from acting on the coherer. To free the ends of the aerial wires, large sheets of metal termed the aereas were attached; but these are no longer necessary.

#### MESSAGES

Prepaid messages may be accepted at the sender's risk, for transmission by wireless telegraph.

The sender should be informed that if for any reason his message cannot be delivered to the vessel addressed, his money, less the amount by land, will be refunded.

Employees are furnished with a rate book giving full information and names of steamships fitted with wireless apparatus.

#### QUESTIONS

1. How is a station equipped for wireless telegraphy?
  2. What causes the distant instrument to sound?
  3. What is said of accepting messages for transmission?
  4. Can you explain the Marconi system of setting up wireless apparatus?
  5. What electrical energy was found the most effective in the operation of the wireless system?
- Ans. 60 cycles.

## CHAPTER IX

### DELIVERY OF MESSAGES

EACH message for delivery must be copied and enclosed in an envelope furnished for this purpose, carefully sealed, and plainly addressed.

When tolls are to be collected, the amount in words must be plainly written in ink upon the envelope, and also upon the messenger's delivery sheet.

Instructions from a sending office in regard to delivery of a message must be carefully observed. A request from the sending office to report delivery of a message must be answered by a collect message addressed to the sender of the message, stating the time of the delivery of the message, or, if not delivered, the reason why.

When messages require an answer the word "Answer" must be plainly written upon the envelope. The messenger will be supplied with blanks upon which to write the reply. In case he should fail to secure an answer the reason must be stated to the delivery clerk.

Messages will be delivered free within a half mile radius from the telegraph office in any city or town of less than five thousand inhabitants, and within a radius of one mile from the office in any town or city of five thousand or more inhabitants. Beyond these limits, only the actual cost of delivery service will be charged, and this cost must be as reasonable as possible.



If the services of a special messenger are 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 charges from the sender, who, if he pays or guarantees delivery charges, will also pay for the message, ordering special delivery, or will guarantee the collection of the tolls thereon. If the sending office is unable to collect, or if no reply to the notice to the sending office is received, a copy of the message will be mailed to the addressee, and if another copy is afterwards delivered, the word "Duplicate" must be plainly written across the face of the form.

In case of failure to collect delivery charges the sending office must be notified by a service message of the failure to collect the amount of charges.

Messages are not to be left in the hands of a janitor or porter, or any other unauthorized person for delivery.

Messengers must obtain a receipt for each message delivered which will include the time, and the name or address of the person to whom delivery is made. In no case must a messenger receipt for an addressee.

In case a receiving office fails to collect for a "Collect" message, the sending office must be notified of the failure, and must collect tolls from the sender.

A night message, unless called for, will not be delivered until the morning of the next day after its date, but when called for, it will be delivered on the day of its date, upon payment of full day rates in case of a collect message, and the difference between

the night and day rates in the case of a paid message. The additional amounts collected will be accounted for as "Sundry receipts."

When an insured message is received at an office from which it is to be delivered, it will be the duty of the manager to satisfy himself that prompt delivery is made.

The manager, or delivery clerk, will examine the delivery sheets or books of the 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.

#### QUESTIONS

1. What is required of the operator before delivery of a message?
2. How is report of delivery made? To whom?
3. What is meant by the transmission of the word "Answer"?
4. What is said of the services of a special messenger?
5. What is the radius for free delivery of messages?
6. What of failure to collect for messages? Who is notified?
7. In whose hands should a message be left for delivery?
8. What is said of the delivery of night messages?
9. What of insured messages?
10. What is required of the operator in regard to the inspection of messengers' sheets or books?

## CHAPTER X

### ACCOUNTS, REPORTS, AND REMITTANCES FOR OFFICES

FOR the purpose of accounting and reporting offices are classified as follows:

First class, those whose messages number over 1000 per month.

Second class, those whose messages number over 200 but not over 1000 per month.

Third class, those whose messages number less than 200 per month.

An office of one class must not change its method of keeping its books to the method of another class without the consent of the superintendent.

A daily record of messages must be kept by each office for this purpose. Offices of the first class use Forms 40, 68, 69, and 77; offices of the second class use Forms 40 and 77; and offices of the third class use Form 40 only.

Offices of the first class must enter on Form 69 all messages accepted for transmission at the time and in the order of their acceptance, and on Form 68 all messages received for delivery at the time and in the order of their reception.

Offices of each class must each day enter on Form 40 the "Paid" and "Collect" messages of the preceding day, including the "Half-rate frank" messages which must be entered as paid full rates. The mes-

## ACCOUNTS, REPORTS, REMITTANCES 41

sages must be entered, so that the names of the offices with which the business was done will appear in exactly the same order in which they are in the tariff book, that is, so that the names of the States or abbreviations of them, and also the names of the offices in each State, will appear in alphabetic order. The amount entered in the last column ("This office checks for *other* lines") must be made up of the amount paid to *other* lines, the amount paid for special delivery service, and their part of the tolls on forwarded messages, that is, the amount due this office as tariff from this office to destination, entered as *this* line tolls, and the tariff from the originating office to the forwarding office (*this* office) as *other* line tolls.

### ENTRY OF OTHER LINE MESSAGES

A message to or from another line office must be entered with messages of the office *via* which it reaches or leaves *this* line.

A separate record of "Free messages," not including "Service messages and Local Railroad messages" (*i. e.*, messages between two stations both located on the same road), must be made by each office of each class on Form 40. This record must state the number of messages sent *to*, and the number received *from*, each office, together with the total amount of "this" line tariff on the message at the *full day* rate, the tariff on sent messages being entered as *credits*, and the tariff on received messages being entered as *checks*. No account of "other" line tariff should be taken in this record of free messages.

In the case of a message free for *this* line and paid for *other* lines, an entry in both the free and paid message records must be made. A copy of the message must be made for paid message files, and the original placed with free messages.

Sunday messages must be entered as a part of the previous Saturday's business, except when the first day of the month falls on Sunday, in which case Sunday messages must be entered as a part of the business of the following Monday.

A paid or collect message must be entered as originally transmitted. Checks are not to be changed.

After the entry of a day's messages on Form 40, offices of the first and second class must transfer the record to Form 77, keeping a separate ledger for free business. Offices of the third class need make no entries except on Form 40.

#### RECORD OF CABLE MESSAGES

Daily records of Atlantic Cable Halifax and Bermuda Cable, Cuba Cable, Bahamas Cable, Central & South American Cable, British Pacific Cable, Commercial Pacific Cable messages (seven separate records) must be kept on Form 67. These records form part of the monthly report.

The total amount received for cable messages, after deducting the amounts refunded by the Cable Rules in the Tariff Book, must be entered on Form 4, under "Sundry Receipts."

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### UNCOLLECT, GUARANTEED, HALF-RATE AND FREE MESSAGES

Before filing away the day's business, the under-mentioned messages must be taken out and held to be sent in with the monthly reports.

Copies of messages "Received Collect," for which payment has not been obtained, together with the telegraphic messages relating thereto, required by Rule 58 of Rule Book.

The original messages "Sent Collect" which have been reported by delivery offices as uncollectible.

The original messages "Sent Paid" by the copies of those "Received Collect" for holders of half-rate franks, on which less than full tolls have been paid.

The originals of all *sent* messages (except service and local railroad messages) which have been transmitted free.

When more than three in number, the uncollectible messages referred to above must be listed on Form 34 and the half-rate frank messages on Form 33, and the guaranteed messages on Form 35.

### FILING MESSAGES

All messages not required as specified above for other purposes must be filed in the order in which they appear on Form 40 and properly labeled by days and months. Each month's messages must be retained for a period of six months, at the end of which time, unless otherwise ordered, they must be sent to the office of the superintendent with the monthly reports.

## MONTHLY REPORTS

Immediately after the close of the month offices not otherwise instructed by the superintendent must make out and return reports on Forms 4, 7, 38, and 67.

If no free business has been done, the report on Form 33 will be omitted, and the words "No free business," will be endorsed on Form 7 under the manager's signature. If no cable business has been done, the report on Form 67 will also be omitted.

The above named reports with their enclosures must be sent to the superintendent by offices of the third class within three days after the close of the month, by offices of the second class within five days, and by offices of the first class within seven days.

## PAID OTHER LINES

The amount entered in the column headed "Paid *Other Lines*" on Form 4 must be made up of the amount paid to *other* lines, the amount paid for "Special Delivery," and the *other* line tolls on forwarded messages. The total of the amounts in this column must be entered under "Schedule of Ordinary Disbursements," opposite the item "Paid Other Lines."

## RECEIVED FOR GUARANTEED MESSAGES

Under "Sundry Receipts" on Form 4, opposite the item "Received for Guaranteed Messages," must be entered the amount received for the payment of messages which other offices have reported "Uncollectible." The originals of such messages must be sent

in with the report, and on those upon which no tolls have been collected, the reason why no collection was made must be reported.

#### REFUNDED AND UNCOLLECTIBLE

The amount opposite the item "Refunded and Uncollectible" on Form 4 must be made up of the amount refunded for errors, etc., the total amount on refunds and half-rate frank messages, and the amount of tolls on uncollectible messages received from *other* line offices.

All the messages included under the head of "Refunded and Uncollectible" must be sent in with the report as vouchers for the unpaid tolls. Each uncollected message must be referred to in the service message referred to in the "Delivery of Messages," thus, — tolls will be collected from the sender of the "collect message."

#### CHECK REPORTS

A check report, Form 7, is required from every office.

The names of offices to which messages have been sent, or from which messages have been received, during the month must be entered in this report in the order indicated by the note in the heading of the form, and opposite each name must be entered the amounts as indicated by the heading on the form. The total of the columns under the heading "This Office Receives" must agree with the totals on Form 4 under the heading "Telegraph Receipts," and the total of the column headed "For Other Lines," under



“This Office Checks” must agree with the total of the “Paid Other Lines” column, and with the item “Paid Other Lines” under the heading “Schedule of Ordinary Disbursements.”

#### FREE MESSAGE REPORTS

On Form 38 must be made a check report of free messages and a statement of messages which have been sent free for any railroad, transportation, or express, or other company, or for any individual, showing the number of messages sent for each company or individual, and the amount of tariff at full day rates therefor as if paid for. The original messages will show the place of origin, checked with the number of words, the amount of tariff at full day rates (which rates should be marked in the upper right hand corner), and the reason why *free*. These must be sent to the superintendent with the report.

#### VOUCHERS, HOW MADE OUT, NUMBERED, ETC.

A voucher must be rendered for every expenditure of an office. Each voucher must be written and signed in ink, made out in such a manner as to explain itself clearly, and numbered to correspond with entry on Form 4.

The amount of the expenditure must be written with the receipt in words.

No vouchers bearing erasures, or alterations of figures or amounts, will be accepted.

Each voucher must be signed by the person to whom the voucher is made.

## ACCOUNTS, REPORTS, REMITTANCES 47

If the voucher is signed by any other person than the one to whom payment is due, it must be accompanied by a written order from that person giving authority for the payment and signature.

Signature by "his mark" must be witnessed by some person other than the one making payment.

### SERVICE VOUCHERS

A service voucher must state the full name of the person paid, the kind of service and where rendered, the dates between which the service was performed, and the rate per day, week, or month. When the payment is for part of a month, the number of days as well as the dates must be given, and the time computed according to the number of week days in the month.

### ERROR SHEETS

Each manager must give prompt attention to error sheets and answer inquiries respecting them with full and clear explanations.

### BALANCE DUE COMPANIES

Every office balance due the company must be remitted to the treasurer at the close of each month unless otherwise specially ordered by him.

### REMITTANCES

A remittance to the treasurer must be made either through the mail in the form of a draft on New York,

or, where bank drafts cannot be obtained at less expense, by an express money order.

If neither a bank draft nor an express money order can be obtained, a post office money order should be forwarded, and in case none of these are obtainable, currency should be forwarded by express, or as a last resort by registered letter.

The small treasurer's envelope, Form 123 Western Union, must be used when remittances are made by mail, and Form 124, the large envelope, should be used when remittances are made by express.

Mutilated silver coin is uncurrent and its value as bullion is much less than its nominal value. Offices should not accept either foreign or mutilated silver coin and must not remit it to the treasurer.

When a remittance is made by express the amount must be plainly endorsed on the envelope and the express company's receipt taken.

An explanatory letter on Form 65 stating on what account the money applies must be enclosed with each remittance.

### BANK DEPOSITS

When an employee deposits funds of a company in a bank the deposit must be made either to his credit in his official name, or to the credit of the company in its corporate name. In the latter case the funds will be subject to checks by the treasurer only. Deposits must be made in banks designated by the treasurer.

QUESTIONS

1. How are first, second, and third class offices designated?
2. What of daily records? How kept?
3. What form is used by all three offices, 1st, 2nd, and 3rd class?
4. How is entry for *other* line messages made? Upon what form?
5. What is said of Sunday messages?
6. What is said of cable messages?
7. How are Uncollect, Guaranteed, and Half-rate messages entered? On what forms? What of free messages? How is record made?
8. How are messages filed?
9. To whom is monthly report sent?
10. What is meant by "Paid Other Lines"?
11. Where is the amount collected on messages which *other* line offices have reported "Uncollectible" entered on the report?
12. What is said of refunded and uncollectible messages? From whom is an uncollectible message collected? Ans. The sender of the message.
13. State what is meant by "Check Reports."
14. What is a free message report? How made out?
15. What is said of vouchers?
16. What is a service voucher?
17. What is an error sheet?
18. How are remittances made to the treasurer?
19. How are bank deposits made?

# CHAPTER XI

## RAILROAD TELEGRAPHY — TRAIN ORDERS

..... RAILROAD COMPANY

Train Order No. 65

Atlanta 12/17 1910

Form  
31

Form  
31

*Engineman is required to read order to his fireman.*

For Savannah To C & E of Train 330  
 No three thirty 330 Dec 3rd annulled Savannah to Macon  
 Eng 665 will run extra Savannah to Macon No twenty one  
 21 Eng 533 will wait at Macon until seven thirty 7:30 AM for  
 extra 665 East.

**CONDUCTOR AND ENGINEMAN MUST EACH HAVE  
A COPY OF THIS ORDER**

Time Received 4:19 AM OK Given at 7:30 AM

Conductor	Train	Made	Time	Operator
Parker	330	Complete JUH	4:50 AM	Keller

Train orders are among the most important railroad and telegraph work, for the improper transmission or reception of a *train order* might mean death to scores of passengers. Therefore the importance of their reception and delivery cannot be too much impressed upon the mind of the receiving operator.

A "19" train order will not be used except by special instructions from the Superintendent of Transportation.

#### MANNER OF TRANSMITTING A TRAIN ORDER

After having called an office in the usual manner, and having received a response from it, the signal "31" is transmitted by the train dispatcher or by his authority. The receiving operator provides himself with Form 31 (a train order blank) under which he places carbons in order to make three copies at one time. Following the signal "31," the number of the train order is transmitted, thus — "31 No 26" etc. Then the place from which the order is sent and the date, thus — "New York 3/12" "To C & E," meaning conductor and engineman, also number of train, — "Train 330," followed by destination of order, thus — "Philadelphia, Pa." Then follow the body of the order and the signature of the dispatcher.

#### RULES REGARDING TRAIN ORDERS

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

Train orders will be numbered consecutively each day, beginning with No. 1 at midnight.

Regular trains will be designated in train orders by their numbers, as — “No 10,” or “2nd No 10,” and extra trains by their engine numbers as — “Extra 798,” with the direction if necessary, as — “Extra 798 N,” or “Extra 798 S” (N and S meaning north and south), etc. Other numbers and time will be stated in figures only.

In transmitting train orders the signal “31” is first transmitted to each office addressed. If more or less than three copies of the order are to be made it is transmitted thus, “31 copy 5,” etc.

When a 31 train order has been transmitted, the receiving operator must, unless otherwise directed, repeat it at once from his manifold copy. After the order has been repeated, if correct, the signal “O.K.” will be transmitted by the dispatcher, which the receiving operator will mark upon his train order, together with the time in the space marked on order blank “Time received.” He then replies “i i O K” with his office signal.

Those to whom the order is addressed, except the engineman, will sign it. The receiving operator will then transmit the number of the train order, together with the signature of the receivers to the Superintendent of Transportation. The word “Complete” is then transmitted to the operator, also the time and initials of the Superintendent, which the receiving operator marks upon his train order in the space marked “Made” for the word “Complete,” and “At” meaning time.

The receiving operator writes the initials of the

Superintendent of Transportation at the foot of the body of the train order and his own name in full in the space marked "Operator." The signatures of the conductor and engineman are written in spaces marked "Conductor" and "Engineman" respectively. The operator then delivers a copy to each of those to whom the order is addressed, who in turn reads it aloud to the operator, except the engineman, who reads his copy to the conductor. The conductor reads his copy to the flagman, and the engineman to his fireman.

The "OK" and the word "Complete" must each be preceded by "31," also the number of the order, thus — "31 No 10." In transmitting the signature of the conductor it must be preceded by "31" the number of the order and the train number, thus — "31 No 7 train No 10." After each transmission the sending operator gives his office signal.

Operators must preserve their lowest copy for reference.

The following signals demand instant use of the circuit:

- 19-31. Clear the line for train order.
- 29. Signal used by President, General Manager, etc.
- 33. Chief Engineer, Superintendent of Transportation, and District Superintendent.
- 28. Car report.
- OS. Train report.
- X. Train will be held until order is made complete.

A fixed signal must be used at each train order office which shall indicate "Stop," when trains are to



receive orders. The signal must indicate "Proceed," when there are no orders. Operators must have hand signals for immediate use, in case other signals fail to work properly.

When an operator receives the signal "31" over the wire he must immediately display the "Stop" signal, and reply "SD," meaning "Stop Displayed." The signal to proceed must not be given until the order has been given or annulled, as the case may be.

At the office of the train dispatcher all train orders will be written in full in a book provided for the purpose, and with each order will be recorded the names of those who signed for it, the time and the signature which show where and from what offices the order was repeated, the responses transmitted, and the dispatcher's initials. These records must be made at once, and never from memory or memorandum.

The following abbreviations are customary in rail-roading:

Com	Complete	Jct	Junction
OS	Train report	Dspr	Dispatcher
Sec	Section	SD	Stop displayed
Psg	Passenger	GN	Good-night

Operators must not close their keys at night before getting "GN" from the train dispatcher.

#### TRAIN REPORTS

The departure of all trains must be reported to the train dispatcher. "OT" (on time) is usually transmitted when trains are on time, giving the number of the train, etc., thus, —

“OS Train No 230 OT JM” (office signal)  
 “OS Extra 33 40 min late J” “ “ “

A record of the arrival and departure of all trains must be kept by the operator in a book provided for the purpose.

All accidents are reported by telegraph, either by code or cipher, given on Form 18, or other similar forms.

ACCIDENT REPORTS

FORM 18.

..... RAILROAD COMPANY

TELEGRAPHIC REPORT OF WRECK

.....STATION....., 190.....

To Superintendent Transportation, .....

Report of accident..... Section of Train No .....

Engine....., Engineman....., Conductor.....

Date..... 190., Hour..... o'clock..... M.

1. Place of accident .....
2. In cut, or embankment, or on level ground .....
3. Cause of accident .....
4. Who injured, and to what extent .....
5. Is the track obstructed and to what extent .....
6. Can trains pass wreck by running through side track.....
7. Is engine disabled.....
8. Is engine or tender off track and in what position.....
9. How many loaded cars off track .....
10. How many cars behind cars wrecked .....
11. How many cars ahead of cars wrecked .....
12. How much track damaged .....
13. How much force will be required to clear track .....
14. How long will it take to clear track .....
15. How many trucks needed .....
16. Remarks: .....

.....  
 .....

Signature .....

Conductors and others making this report of accident by telegraph will use this form. In making this report be careful to fill up all questions noted above.

In transmitting the report, operators will give NUMBERS of the report only.

Conductors and operators must keep a supply of these blanks on hand constantly.

#### TELEGRAPH OPERATOR

He reports to and receives instructions from the Chief Train Dispatcher, and must obey the orders of the station agent, when they do not interfere with his duty as operator.

At offices where only one operator is required, office hours are usually from 8:00 A.M., to 8:00 P.M., unless closed earlier by orders of the Chief Train Dispatcher. Where there are night operators also, the night operator takes charge of the office from 8:00 P.M. until 8:00 A.M. On Sundays the Chief Train Dispatcher may vary the hours at his discretion, as the exigencies of the service may require. Where there is no independent commercial office the offices must be kept open from 9:00 to 10:00 A.M. and from 4:00 to 5:00 P.M. for commercial business. At offices where two or more operators are employed, the service must be continuous, one relieving the other for meals, etc., and each must transfer to the relief operator, all train orders and unfinished business, and must explain the same.

At stations where work trains lie over for the night, the operator must furnish the conductor with train orders each morning.

He must also keep a full set of signals on hand for use in accord with the rules of the company.

He must remain in his office when trains are at the station, unless required to leave his post on account of business connected with trains.

He must adjust the relays carefully, especially during wet weather. In case of a break or an interruption of circuit, he must carefully examine the office connections, switchboard, and instruments, and if the trouble is not in reach, apply the ground wire, reporting to the terminal office in the other direction. The ground wire must not be used for any other purpose. If the current is broken for any unusual length of time, he must notify the track foreman. In case of a storm which may damage the instrument, he must cut the office out, but if possible report to the Train Dispatcher's office before doing so.

At 5:00 P.M., daily, except Sundays, the signal "28" will be transmitted, beginning exactly one minute before five o'clock, — meaning car report. Each operator must then make a report of cars, thirty seconds being allowed between reports for each operator to take his turn, those missing their turns waiting until the others have finished.

Car Reports are telegraphic reports furnished daily by the yard master, giving the number of cars in the yards, the car initials, kind of cars, and whether empty or loaded, etc.

This is an important duty, and care should be taken that these reports are absolutely correct, both in making up and in transmission.

The prescribed forms will be furnished by the company.

All messages received for transmittance must be strictly confidential.

The operator must have on hand at least thirty days' supply of stationery, telegraph blanks, etc.

### MONTHLY REPORTS

Special forms are furnished the operator and agent upon which to make out their monthly reports of all business transacted for the railroad company during the month. A strict account of all telegraphic reports and other business, such as train orders, telegrams concerning express or freight, or deadhead messages of any kind must be reported on the regular forms at the end of the month.

Special forms are furnished for monthly report of all express work, and a strict or accurate account of all work done must be noted on form as directed. (Follow directions on form.)

Special forms are furnished for the monthly report of all freight work transacted during the month, and the agent is requested to follow instructions on form. All money received for freight or express must be deposited in a bank named by the company to the credit of the company, or agent of the company, as the case may be.

### QUESTIONS

1. What is said of the importance of train orders?
2. Give order of transmitting train orders.
3. Explain what becomes of same, from time of transmission up to time of monthly report, and how report is made to Superintendent.

4. Write out a train order.
5. What is meant by reporting trains?
6. How often are trains reported, and to whom?
7. What is meant by Conductor's Telegraphic Report?
8. Is there more than one form of accident reports?
9. What is meant by signal " 28 " ? Explain it.
10. Explain some of the duties of the operator.

## CHAPTER XII

### WAY BILLS, BILLS OF LADING, ETC.

#### WAY BILL

..... RAILROAD COMPANY

#### BILL OF LADING

Received by..... Railroad Company  
 at Fayetteville, Tenn..... Station..... 2-21 ..... 1910  
 from C. G. Stafford & Co.

Marks and Numbers	Articles	Weight (Subject to correction)
Consignee A. Armand	60 Cases Eggs	3,000
<i>Destination.</i>	Place Havana, ..	.....
	County.....	.....
	State.. Cuba ..	.....
	Consignees ad- dress as informa- tion only and for purposes of deliv- ery .....	.....
Route .....	A CL Car 4347 to Tampa, Independent Line Steamers, Tampa to Havana.	

Charges advanced, \$34.80  
 and..... \$.....

JOHN HENSON, Agent.

(The signature of the agent here acknowledges only the receipt of  
 the property and the charges advanced, if any.)

# WAY BILLS, BILLS OF LADING, ETC. 61

*The Blank Spaces below must not be Filled up by Shipper*

The rate of freight from ..... to ..... is in cents:

PER ONE HUNDRED							
If Times 1st Class	If 1st Class	If 2d Class	If 3d Class	If 4th Class	If 5th Class	If 6th Class	If Class A

POUNDS.					Per Barrel	Per .....
If Class B	If Class C	If Class D	If Class E	If Class H	If Class F	IF SPECIAL.
						1.16

JOHN HENSON, Agent.

(The signature of the Agent here acknowledges only the rate given.)  
*Received \$34.80. . . . to apply in prepayment of the charges on the property described above.*

JOHN HENSON, Agent.

(The signature of the Agent here acknowledges only the amount pre-paid.)

Rates apply only on property shipped subject to the conditions of the standard bill of lading.

The contents of any package must be ascertained before it leaves the office or shipping point, or it must be charged as first class. No shipment is to be received for transportation which is marked "Sundries," "Mdse," or "Manuscript," without a careful investigation, the contents of the package ascertained, and the class marked upon the way bill and bill of lading.

The way bill is a bill for the routing of goods, while the bill of lading is a receipt for the shipper for the goods received for shipment, and for money paid in to



prepay charges, or largely to do so. The name of the shipper, point of shipment, class of goods, consignee, and destination must be marked plainly on both the way bill and bill of lading.

Immediately after the address of the consignee, the car number is given. The car number is also marked on the bill of lading, so that the goods may be easily traced.

The following points or spaces will be observed by the agent:

1. Time of departure, marked up in right-hand corner.
2. Number of packages, first space to left.
3. Value of articles, second space.
4. Name of shipper, third space.
5. Consignee, fourth space.
6. Destination, fifth space.
7. Weight of package, sixth space.
8. Through rates according to class, seventh space.
9. Extra charges for bridge tolls, extra handling, etc., eighth space.
10. Freight to be collected, ninth space.
11. Freight already collected, or amount of money collected, tenth space.
12. Amount of money paid through, eleventh space.
13. Remarks concerning the package or transportation of same, twelfth space.

In filling out the spaces be careful to give the correct rate, or minimum rate, as set apart by the rules of the company.

Add all columns, bringing down figures at the foot of column.

On all shipments made for a *this* line office and

*other* line offices where the destination is on *other* line, the way bill is marked "thro," meaning a through shipment.

The agent at the destination of the package must weigh it, and if the weight corresponds with the weight on the way bill, check it "OK" If incorrect, he must notify the agent at the point where the shipment was made.

The messenger in charge on trains will mark each transfer point on package in the spaces at the top of the way bill.

The time of the departure of the package is marked by the sending agent at the top of the way bill, in the right-hand corner.

Articles must be properly wrapped, crated, and protected before receiving them for shipment.

- |                                       |   |  |
|---------------------------------------|---|--|
| Articles classified<br>"In the rough" | } | (a) The classification of articles "In the Rough," applies to such articles, when sawed, hewn, planed, or bent, or other such manufacturing has begun. |
| Articles classified<br>"In the white" |   | (b) When articles have received one coat of priming but have not been finished, or have not been varnished.  |
| Articles classified<br>"Finished"     | } | (c) When articles have been finished or have passed the stage of manufacture covered by sections (a) and (b) of this rule.                             |
| Articles classified<br>"Nested"       |   | (d) When articles fit closely, one within another.   |
| Articles classified<br>"Packed"       | } | (e) When articles are properly packed, or crated in box, barrel, or similar carrier.   |
| Articles classified<br>"Boxes"        |   | Articles in slatted boxes must have the same rate as when shipped in boxes, unless otherwise specified.  |

Heavy and bulky articles are shipped at a minimum rate of so much per 1000 or 2000 lbs.

It is the duty of the agent before signing a receipt

for articles "In good condition" to examine the package first and discover if the statement is correct or not.

A minimum car weight is 20,000 lbs. regardless of the length of the car, and a carload is reckoned by the minimum weight unless otherwise specified.

#### CLASSIFICATION OF ARTICLES

1	1st class	1-1/2	One and one half times first class
2	2nd class	3TI	Three times first class
3	3rd class	4TI	Four times first class
4	4th class	A, B, C, D, E, F, and H stand for classes	
5	5th class		
6	6th class		

Duplicates of all way bills must be kept in the office.

Tissue copies are also required. The agent must record all way bills in the manner prescribed by the accounting department promptly on their arrival at stations, and must make complete record of train number, date, and name of conductor by whom received, on the face of way bills, also any exceptions to quantity discovered in unloading.

L. C. L. Stands for Less than a carload.

C. L. Stands for Carload.

N. O. S. Stands for Not otherwise specified in this classification.

S. U. Stands for Set up.

K. D. Stands for Knocked down.

A star (\*) denotes a change or addition since last issue.

Way bills are turned over to the agent by the express messenger in charge of the train. The rates or charges are given according to class per 100 lbs.



In the event of an apparent overcharge in the matter of freight, or express charges, which cannot be adjusted on account of inability to verify rate or other legitimate causes, it is well for the agent to collect for the full amount of the charge, refunding after the matter has been adjusted with the company.

#### MONEY ORDERS

Money orders issued by the express companies are payable all over the United States, Canada, Cuba, etc.

A receipt is given by the agent, and if the money is lost the amount is payable to the sender. It is not sent at the sender's risk.

A special rate is made for money orders, which will be furnished by company.

A money way bill is similar to a freight way bill.

(This report is sent to the Superintendent for each quarter.)

(A copy of all way bills is made upon the abstract sheet and is kept in the office for reference.)

#### RAILROAD TELEGRAMS.

Railroad telegraph blanks are used only in railroad service. It is necessary to count the words in the check the same as in any other message. Such railroad messages are transmitted "DH" (dead head), meaning free from charge, and are used in tracing shipments and other important railroad business.

#### TELEGRAPH OPERATOR

A full statement of the duties of the railroad telegraph operator will be found under the heading of "Telegraph Operator" on page 56.



Form H. A. **EXPRESS** Report No. \_\_\_\_\_ for Month of \_\_\_\_\_ Page No. \_\_\_\_\_  
 ORDER OF ARRANGEMENT—First Series Sheets, then Miscellaneous, then Other Companies.  
**Express Company.**  
**STATEMENT OF FREIGHT WAY-BILLS RECEIVED**  
 At \_\_\_\_\_ (First Name or Office) \_\_\_\_\_ 190\_\_\_\_  
 (State whether "Rail," "Miscellaneous," or "Other Companies.")

LINE NO.	FROM WHAT OFFICE RECEIVED		WAY-BILL		CHARGES ADVANCED	FREIGHT AND CHARGES ON VALUE	
	OFFICE	STATE	No.	DATE		WEIGHT	COLLECTED
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

**INSTRUCTIONS TO AGENTS REPORTING QUARTER MONTHLY.**

1. In Report for the First Quarter, include all Way-Bills received from the 1st to the 31st of the quarter.  
 2. In Report for the Second Quarter, include all Way-Bills received from the 1st to the 31st of the quarter.  
 3. In Report for the Third Quarter, include all Way-Bills received from the 1st to the 31st of the quarter.  
 4. In Report for the Fourth Quarter, include all Way-Bills received from the 1st to the 31st of the quarter.  
 5. Agents are authorized to hold their reports for last day of the month for three days after the first of the next month, so as to include in the same report all Way-Bills received during the month for which the report is made. Agents should report for October about the 31st of November, which would enable him to receive all Way-Bills to hand—(that were issued in October). The report of next month. Make supplementary report of all Way-Bills received after report of last the past m.

Statement of Way Bills Received





Form 597

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**Railroad Company--Telegram**

**BE BRIEF.** This telegraph must not be used for business which may be transmitted by train without detriment to the Company's interest. Operators are required to write all telegrams in INK.

Number	Filed	Sent by	Rec'd by	Time
1	10:15	JL	TO	7:15

Check 19 DH

10:10 A. M.

Fm Savannah Ga 2/17

To D. E. Freeman Agent

Tampa Fla.

Car Potatoes ARL 7235 delivered ACL 5:30 AM Feb 17.

SIG

JAMES MENZIES

Gen Frt Agt.

Railroad Telegram

# WAY BILLS, BILLS OF LADING, ETC. 71

All three of these blanks must be filled out by Agent and sent with Remittance to the Bank in which they Deposit the Company's funds for their Credit.

Form 2543

## Railroad Company. STATEMENT OF REMITTANCE.

Made to ..... Bank.

From ..... Agent ..... Station

Date forwarded from Station ..... 190...

Currency .....			Received..... 190  \$ .....  Per .....
Specie .....			
Gold .....			
Checks .....			
Vouchers .....			
" .....			Cashier.
Total .....			

Corrections .....

Agents will be given credit for amount remitted on day received by Bank. Agent.

## Railroad Company. STATEMENT OF REMITTANCE.

Station ..... 190 ..

Cashier .....

Below you will find Statement of remittance forwarded to your Bank this day per ..... total amount of which is \$ ..... to be placed to the credit of ..... LINE RAILROAD COMPANY, and to be credited to my account on the books of that Company. Agent.

	STATEMENT.	Date Received at Bank    Corrections .....
Currency .....		
Specie .....		
Gold .....		
Checks .....		
Vouchers, &c. ....		
Total .....		

## Line Railroad Company. STATEMENT OF REMITTANCE.

Station ..... 190 ..

Cashier .....

Below you will find Statement of remittance forwarded to your Bank this day per ..... total amount of which is \$ ..... to be placed to the credit of ..... LINE RAILROAD COMPANY, and to be credited to my account on the books of that Company. Agent.

	STATEMENT.	Date Received at Bank    Corrections .....
Currency .....		
Specie .....		
Gold .....		
Checks .....		
Vouchers, &c. ....		
Total .....		

Statement of Remittance

## CHAPTER XIII

### FILING

IN order that an office may be systematically arranged and conducted a method of filing should be employed which can be easily and readily understood by the office force. The following system is recommended to the progressive business office.

Files numbered from 1 to —. If last year or older, designated as follows, 123-O (old). If new, 123-N (new) or 123-9 (1909), 123-10 (1910). Thus figures or characters may represent the dates of the files.

These numbers are carried into an index book with numbers corresponding to the files, and this book is numbered in order. Following the number is the subject to which the respective file relates, thus:

“123-O. Rates on Wheat, Rice, and Corn, Chicago to Jacksonville, Florida.” (Or terminus of rates.)

“1234-N. Rates on Lumber, Bangor, Me., to Havana, Cuba.”

“154-N. Position as Stenographer. Application by —.”

Files relating to claims are the O. S. & D. files and are arranged in the same manner.

It is well to have several baskets where several subjects are very much discussed, which will preserve the file by avoiding handling, and to place carefully

in the basket letters relating to a certain subject with answers attached (pinning the answer neatly with a fastener on top of the letter received). File according to dates, the last letter received or the last correspondence occupying the top space. When the file is complete, place it in the original file marked and indexed.

In order that the trend of the correspondence may be accurately kept, the stenographer should prepare a card with numbers reading across the page, thus:

①	②	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24

When a letter relating to a *new subject* is received, and an answer is dictated, the stenographer in copying from his dictation comes to the letter without any given *file number* (which is always dictated where files have been arranged). He will then refer to the card and check the next **NEW NUMBER**, writing it at the top of his "Reply" and attaching a carbon copy of it to the "Received Letter" on top, and placing both either in the file or a basket.

### QUESTIONS

1. How and when are files numbered?
2. How should letters "Received" and "Answered" be filed? How according to dates?
3. How indexed?
4. What is said of filing claims?

5. Should this system of filing be established in every office?
6. How should the stenographer keep up with his new files?
7. Is system necessary in offices to advance the welfare of the business?

## CHAPTER XIV

### SIGNALS

FLAGS of the prescribed color must be used by day, and lamps of corresponding color by night.

Night signals are displayed from sunset to sunrise.

Red . . . . .	Stop
White . . . . .	Proceed
Green . . . . .	Proceed with caution
Green & White . . . . .	Stop at Flag Station
Blue . . . . .	Do not couple or move car, workmen about it.

A fusee near the track burning red must not be passed until burned out.

### HAND FLAG AND LAMP SIGNALS

Swung across the track . . . . .	Stop
Raised and lowered vertically . . . . .	Proceed
Swung vertically across the track when train is standing . . . . .	Back
Swung vertically in a circle at arm's length across the track when train is moving . . . . .	Train has parted
Swung horizontally in a circle when train is standing . . . . .	Apply air brakes
Held at arm's length above the head when train is standing . . . . .	Release air brakes

### AUDIBLE SIGNALS

The signals prescribed are indicated by "O" for short sounds and "—" for long sounds.

O . . . . .	Stop. Apply brakes
— — — — — . . . . .	Release brakes
— — O O O . . . . .	Flagman go back and protect rear of train
— — — — — . . . . .	Flagman return from west or south
— — — — — . . . . .	Flagman return from east or north
— — — — — . . . . .	When running, train parted; to be repeated until answered by hand signal
O O . . . . .	Answer to signals not otherwise provided for
O O O . . . . .	When train is standing, back
O O O O O . . . . .	Call for signals
— — — — — O O . . . . .	To call the attention of trains of the same or inferior class to signals displayed
— — — — — O O . . . . .	Approaching crossings at grade
— — — — — . . . . .	Approaching stations, junctions, and railroad crossings at grade

A succession of short whistles is an alarm for persons or cattle on the track, and calls the attention of the trainmen to danger ahead.

The explosion of a torpedo is a signal to "Stop." The explosion of two or more, not more than two hundred feet apart, is a signal to reduce speed and look out for a "Stop" signal.

Torpedoes must not be placed near crossings or stations where people are liable to be injured by them.

### AIR WHISTLES AND BELL CORD SIGNALS

SOUND	INDICATION
Two . . . . .	When train is standing, start
Two . . . . .	When train is running, stop at once
Three . . . . .	When train is standing, back
Three . . . . .	When train is running, stop at next station
Four . . . . .	When train is standing, apply or release air brakes
Four . . . . .	When train is running, reduce speed
Five . . . . .	When train is standing, call in flagman.
Five . . . . .	When train is running, increase speed

## TRAIN SIGNALS

The following signals will be displayed, one on each side of the rear of every train as markers to indicate the end of the train: by day a green flag, by night a green lamp to the front and side and a red light to the rear, except when the train turns out to be passed by another and is clear of the main track, in which case a green light must be displayed to the front, side, and rear.

Extra trains will display two white flags by day and two white lights by night in the places provided for that purpose.

When cars are pushed by an engine, except when shifting, a white light must be displayed on the front of the leading car by night.

## QUESTIONS

1. What are the colors used by day and by night, and what is used to represent them?
2. What is said of a fusee burning red near the track?
3. What is the signal to stop? To proceed? Back? Train has parted? Apply air brakes? Release air brakes?
4. How are long and short sounds indicated?
5. Give all the sounds and their meaning.
6. What is meant by a succession of short sounds?
7. What is meant by the explosion of a torpedo?
8. Give the different air whistle or bell cord signals and their meaning.
9. What are train signals, and how displayed?
10. What signals are provided for extra trains?
11. What signal is used when cars are pushed by an engine, except when shifting?



## CHAPTER XV

### RELIEF DEPARTMENT

THE Relief Department is a department of a railroad in the nature of a mutual benefit association.

#### CERTIFICATE OF MEMBERSHIP

No. ....  
Office of the Superintendent ..... 19 ..  
This certifies that.....  
employed by the..... Railroad Company, is a member of  
the Relief Fund of the Relief Department of the.....  
Railroad Company, and is entitled to the benefit provided by the....  
class, with..... Additional Death Benefit of the first class.  
.....  
Superintendent of the Relief Department.

This fund is for the benefit of the employees of the road, but after resigning a position, the death benefit may be kept up with the company. It is a splendid institution of its kind.

Railroad hospitals are carried on by the same means, and any one in possession of one of these certificates has the benefit of certain hospitals included in his division, or section, as the company may determine.

#### QUESTIONS

1. What is meant by the Relief Department?
2. For what use was this department organized?
3. Who are entitled to benefits?
4. After an employee has resigned, has he still a right to the benefits of the department?
5. What is the death benefit?

## CHAPTER XVI

### TIME TABLES

**TIME** tables are employed for the movement of regular trains subject to rules. They contain the schedules of trains with special instructions relating to them.

Each time table from the time it takes effect supersedes the preceding time table. Time table schedules unless fulfilled are generally in effect twelve hours after they are issued.

## CHAPTER XVII

### DUTIES OF OFFICERS

#### TRAIN MASTER

It is the duty of the train master to examine and see that subordinates understand and observe the rules prescribed for them, and that they are furnished with the necessary signals, time tables, etc.

They must see that cars are properly distributed, loaded and unloaded, and in case of accident, they must take charge of clearing the road and must make sure that every precaution is taken to insure the safety of trains, and to protect property in charge of or belonging to the company.

They must report to and receive instructions from Superintendents, and must exercise a general supervision over all trainmen and other employees in the transportation service.

#### SUPERINTENDENT OF TELEGRAPH

The Superintendent of Telegraph has the charge and the management of the telegraph system, especially connections between the divisions at junctions, the transmission of standard time, and the Western Union Telegraph Company's business transacted over the line. He has the direction of employees in the telegraph service, as far as their duties are concerned.

## CHIEF TRAIN DISPATCHER

The Chief Train Dispatcher is in charge of the distribution of cars, examination of telegraph operators, and has supervision over train order books, seeing that train orders are properly recorded, and also that a correct register of trains is kept. He must see that bulletin orders and notices are posted in bulletin books for thirty days; after which those still in force must be reissued.

He must make reports to the Superintendent, and comply with the instructions of the Superintendent of Telegraph in regard to telegraphic service.

## TRAIN DISPATCHER

The Train Dispatcher must issue orders for the movement of trains in the name of the Superintendent of Transportation. He must sign office copies of outstanding train orders, and on being relieved by another dispatcher explain outstanding train orders to him.

He must also see that the test signal, "Wire," is given proper attention.

The Train Dispatcher reports to and receives instructions from the Chief Train Dispatcher.

## STATION MASTER

The Station Master must make reports to the Superintendent who will issue instructions to his office, and he must also obey orders of the train master.

He has charge of all passenger stations, and the force

employed, must attend to making up the trains, and must also see that they leave on time.

He must familiarize himself with the rules of the passenger service and with the duties of the employees connected with passenger trains, and he must see that conductors and trainmen are ready at the appointed time and provided with signals, current time tables, etc. He must also see that trains and cars leaving his station have been properly inspected and furnished with water, ice, fuel, etc.

#### PASSENGER CONDUCTOR

The Passenger Conductor must report to the Superintendent and will obey orders of the Superintendent and Train Master.

He must be familiar with the duties of the engineer, fireman, baggage master, flagmen, brakemen, parlor and sleeping car conductors, mail agent, express messengers, news agents, and baggage agents, and enforce the rules applicable to them upon their trains.

He must examine bulletin books before and after each trip, and sign his name to all orders.

He must collect the proper ticket from each passenger and send such ticket or tickets to the auditor of passenger receipts. Further instructions will be issued by the company.

#### BAGGAGE MASTER

He must receive and handle with care and properly deliver all packages, company's mail, and supplies,

which may be placed in his charge on his train, and must make reports to the train master, who will issue instructions to him. While on the train he is subject to the orders of the conductor. At stations, the station masters will direct him, and he will conform to the instructions issued by the traffic and accounting departments.

#### PASSENGER BRAKEMAN

He will receive instructions from the train master, and when on the train will be under the direction of the conductor. Reports will be made to the train master. He must also obey orders of the station master at stations.

It is the duty of the brakeman to attend to the brakes, assist the conductor in the proper distribution of passengers, and give special attention to heaters, ventilators, and lights within the cars. He must also announce the names of stations at stopping places, and at meal stations the time allowed for meals, and notify passengers in case it is necessary to change cars, etc.

#### YARD MASTER

The yard master reports to and receives instructions from the train master.

He has charge of the yard where trains are made up, of the men employed, the movement of the trains, and the distribution of the cars.

He must familiarize himself with the rules of the freight service and with the duties of every employee connected with trains, and require prompt and efficient discharge of their duties in the yard.

He must make requisition on round-house foremen for engines required, stating the hour wanted.

He must see that conductors are provided with way bills and card manifests for loading cars leaving his station, that doors of loaded cars are properly fastened, and that way bills or manifests are received for cars arriving at his station. He must see that a record is kept of the number and date of each car arriving at and departing from his station.

Trains should be made up as far as practicable in the following order: cars equipped with air brakes in forward portion, cars containing oil or explosives in middle portion, and empty cars in the rear, in the following order from the caboose, flat cars, coal oil tank cars, box cars, and stock cars, except that live stock in local freight trains must be placed directly ahead of the caboose.

#### FREIGHT CONDUCTOR

The freight conductor reports to the train master and is under his direct supervision. At stations he must obey the orders of the station master, and he is subject to the orders of the traffic department and accounting department.

He is responsible for the safety and the prompt movement of his train, the conduct of employees thereon, and for the signals, lamps, tools, and other equipment intrusted to their care.

He must familiarize himself with the duties of the engineman, fireman, flagmen, and brakemen.

He must examine the bulletin books before and after each trip, and sign his name to all orders. He

must run his train in accord with the current time table.

He must assist in shifting and making up his train, and inspect couplings and brakes of cars as often as possible.

He must get a way bill or card manifest from the agent or yard master for each loaded car attached to his train, and must deliver this way bill or card manifest to the agent or yard master where the car is left. Should there be no agent or yard master at that point, he will give the way bill or card manifest to the agent or yard master at the terminus of his run.

He must handle freight carefully, see that the cars are fastened and sealed, carefully check off on way bills all articles left at points where there is no agent, and in case freight is damaged in transit he must make note of this upon the face of the way bill and make a report to the freight claim agent. He must also enter upon his reports the number of cars taken from and left at each station; and when freight is transferred from one car to another, he must make note upon the way bill or card manifest the number of the car into which the freight is loaded, as well as the place where the transfer is made and the condition of the freight.

#### FLAGMAN

It is the duty of the flagman to protect the rear of his train, and he must never leave that post except to protect the train. After reading train orders he must bear them in mind, and should there be occasion to do so remind the conductor of them.



If a train parts, the flagman must immediately apply the brakes and stop the cars, and then send forward the first available person to make danger signals until the front portion comes back, but without losing any time in protecting the rear of the train.

He receives instructions from the train master and is under the direction of the conductor when on duty.

He must have on hand the proper signals for his run.

#### FREIGHT BRAKEMAN

The freight brakeman reports and receives instructions from the train master. While on trains he is subject to the rules of the conductor, and at stations must obey the orders of the yard master.

He must attend to brakes, must assist in loading and unloading freight, and aid the conductor in inspecting the cars when the train stops for water or for other trains.

It is his duty to protect the front part of the train whenever the fireman is unable to leave the engine.

#### STATION AGENT

He is under the direction of the Superintendent and makes his reports to him. He must obey the orders of the train master and chief train dispatcher and must comply with instructions issued from other departments.

He must familiarize himself with the geography of the system and with the routes of traffic between the different divisions.

He is responsible for cars left at his station, must

see that the proper brakes are applied, and must also see that the cars are not moved by unauthorized persons and are not left in a way to obstruct the street or public crossings. He must also attend to the prompt loading and unloading of cars and to forwarding them.

He must keep a freight tariff and such other regulations as govern the transportation of freight and passengers as may be required posted in a place provided for them.

He can neither sell tickets on credit nor deliver freight without collecting charges, except upon special authority of the proper officer.

He must not receive freight for transportation which is not in a safe condition for handling.

The agents will keep in their offices exact duplicates of the bills of lading issued for freight received to be shipped. Copying presses are generally used for this purpose.

The agent must record all way bills received promptly on arrival at his station and in a manner prescribed by the accounting department. Upon receiving way bills for freight delivered at stations where there is no agent, the conductor is required to certify to its correct delivery on the face of the way bill.

He must require consignees to receipt for freight and make payment in full before any portion of a consignment is delivered, but in the event that two or more consignments are made at their station for the same consignee, in case payment has been received for one consignment, such consignment may be turned over to the consignee.

He must not allow freight billed "to order notify" to leave his possession until the bill of lading, properly endorsed by the shipper, has been surrendered to him, unless authorized to do so by the traffic department, and in such instances he will carefully file his authority for his own protection.

Relief agents will sign the agent's name upon bills of lading, receipts, etc., using his own signature also, as John Berton, Agent, by M. L. Taylor, and he is responsible for all business transacted during the time he is in charge.

Agents will see that the United States mail pouches are not left upon the platforms unprotected, and when not otherwise provided for, he must carry the mail between cars and the post office, and also transfer mails from trains to connecting trains at junctions, when the distance does not exceed eighty rods.

Agents must furnish conductors on arrival with a list of all station switching to be done and report failure to perform the work properly.

#### STATION BAGGAGE AGENT

He is under the direct supervision of the Superintendent and makes his reports to him. At stations he is subject to the orders of the station master, but must also conform to instructions issued by the traffic and accounting departments.

He receives all baggage to be forwarded and must check it in accord with the rules regulating such checking. He must take charge of all baggage and mail left at his stations.

He must require passengers to show their tickets

before checking their baggage in order to avoid errors in routing or destination, and charge the excess in weight over the amount allowed each passenger as extra baggage rates, remitting the money as directed.

Corpses are accepted for transportation, but the utmost precaution is taken in regard to cause of death, etc. They will be charged at first class passenger rates. The agent must hand the ticket collected for the transportation of corpses to the train baggage master, and forward all claims for such baggage to the general passenger agent, giving full information concerning it.

#### ROAD FOREMAN OF ENGINES

It is the duty of the road foreman of engines to test the efficiency of engines, and report to the master mechanic respecting the condition of engines, the requirements necessary for repairs, etc.

He must confer with the Superintendent or train master with reference to the tonnage rating and the performance of engines.

He is under the supervision of the Superintendent of motive power and reports to him. He must also work in conjunction with the master mechanic.

#### ENGINEMAN

He reports and receives instructions from the Superintendent in all matters pertaining to the movement of trains, and must obey the orders of the train master. At stations he must obey the orders of

the yard master or station master in shifting or making up trains.

Before starting on a trip he is required to compare the time with the conductor of his train and must have a copy of the current time table. He must also examine the bulletin book before and after each trip and he is required to sign his name to all orders.

He must place train orders in full view before him until they have been executed.

He must promptly obey the signals given him, even if he feels that such signals are unnecessary. When in doubt as to the significance of a signal, he must stop and ascertain the cause or meaning, and if a wrong signal is shown, he must report the fact to the train master.

Special care should be taken in coupling and shifting cars to avoid damage to the equipment or trainmen, or annoying passengers.

In the event that stock is killed or injured he must make a report of it to the Superintendent on the prescribed form.

He must exercise care in passing over long bridges, trestles, etc., to see that the grates are not shaken or ash pans left open, in order to prevent cinders or fire from falling. Ash pans are to be cleaned at points designated by the Superintendent.

He must report the condition of his engine at the end of each trip in a book provided for the purpose.

The engineer and fireman are equally responsible for the protection of the front of their train and for the proper position of the switches.

He must observe markers frequently and see

that his train is complete, and as far as possible in good order.

He must provide himself with a red lamp and have it lighted and in good burning order with torpedoes attached, to be used in signaling approaching trains in case of danger.

When standing or moving about the yards at night he is required to display a red light in the rear of the engine.

#### MASTER MECHANIC

He is held responsible for sending out cars in a proper condition for service. He must also see that cars are supplied with signals, lamps, tools, and all necessary equipment.

He must also make sure that engines are inspected at the end of each trip and that proper repairs are made.

The master mechanic reports to and receives instructions from the Superintendent of motive power.

#### ENGINE HOUSE FOREMAN

He must report to the master mechanic, who will issue instructions.

He must see that engines are supplied with stores, tools, signals, lights, water, and fuel, and that they are in good working order. He must also see that engines are properly cleaned at the end of every trip and that repairs are made.

## TELEGRAPHY

## CAR INSPECTOR

The car inspector receives instructions from the master mechanic and works under the direction of the yard or station master.

He is required to inspect all cars passing his station, examine the running gear, brake fixtures, and safety appliances, and make such needed repairs as he can, and he must send to the shop all cars unfit for service. Special attention is required on cars running in passenger trains, and he must permit none to leave his station unless in good running order. He must see that cars running in passenger trains are properly washed and that all interior fixtures are kept clean and in good repair, that such cars are supplied with fresh water, ice, and steam heat when necessary, and that lamps are properly trimmed and filled.

## SUPERVISOR OF BUILDINGS

It will be the duty of the supervisor of buildings to construct and repair all buildings, platforms, or water tanks, and all other structures, except bridges and trestles.

He reports to the engineer of roadway, who will issue instructions and arrange with the road masters for the distribution of material.

## ROAD MASTER

He is required to keep the track, road bed, bridges, trestles, and culverts in repair at all times, and is often obliged to make emergency repairs to telegraph lines, water station buildings, and platforms.

He must make inquiry into the cause of all accidents and report fully on the form furnished.

He must also familiarize himself with the instructions issued for the government of trains and trainmen.

#### WORK TRAINS

Conductors and enginemen of work trains receive instructions from the road master.

Work trains must always lie over at telegraph stations at night and report immediately to the Superintendent when they take a side track for the night, and also the limits they want the next day.

#### TRESTLE FOREMAN

He reports to and receives instructions from the road master. He is required to have a copy of the current time table.

A trestle foreman has charge of repairs of bridges, trestles, water tanks, mail cranes, and fixed signal stands, and he must promptly report any defects that may come under his observation.

He must familiarize himself with the use and the meanings of signals, and must see that they are properly used and understood by persons employed under him.

When making repairs of track care must be taken to protect the track in either direction from trains.

#### SECTION FOREMAN

A section foreman reports to and receives instructions from the road master, and is required to have a copy of the current time table.



## TELEGRAPHY

He has charge of repairs on his own section, and is responsible for the proper inspection and the safety of tracks, bridges, trestles, and culverts.

He must observe carefully the signals carried by trains, and must never obstruct the track without first displaying conspicuously the stop signals.

He must watch the telegraph lines, reset poles when necessary, unite wires when broken, and must notify the Superintendent promptly of any derangement of the wires.

He must make a report of accidents upon prescribed forms to the Superintendent's office.

He must examine the track scales frequently to see that they are free from dirt or trash, see that the rails do not bind, and that pits are kept free from water.

He is also required to attend personally to the opening and closing of switches.

### ROAD AND BRIDGE WATCHMEN

They report and receive instructions from the section foreman.

They must carefully observe the rails, and see that switches are set and locked for the main track, that cars left on a siding fully clear the main track, and that the doors of loaded cars are securely fastened.

They must also examine the buildings and other property of the company and protect them from theft or fire.

### GENERAL RULES

At points where there are no inspectors, conductors will act as such and observe the rules of inspectors.

It is the duty of the inspector to see that all parts of the brake and signal apparatus are in good order, and he must not allow a car with a brake in a defective condition in a passenger train without instructions from the proper officer.

Brake cylinder valves must be examined and cleaned every six months and the cylinders oiled every three months. A record must be kept of the last cleaning and oiling for each engine.

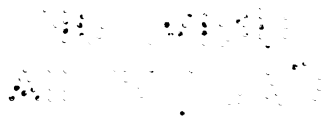
The main reservoir and drain cup in the train pipe under the tender must be drained after each trip. The auxiliary reservoirs and triple valves must be drained frequently (daily in cold weather) and the train pipe under the tender blown out.

#### CAUTION

All employees are cautioned to be courteous to passengers but to avoid long or unnecessary conversations.

In order to become a successful agent or operator, it is necessary to familiarize oneself with the duties of the different departments.

THE END











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