



UNION PACIFIC RAILWAY



FORT WORTH DIVISION.

EMPLOYEES' TIME TABLE NO. 11.

To take Effect Sunday, May 11th, 1890.

At 12.05 A. M. Mountain Time.

DESTROY ALL TIME TABLES OF PREVIOUS DATES.

Study Carefully the within Regulations and Rules. Important Changes have been made which must be understood alike by all.

ALL RULES INCONSISTENT WITH THOSE HEREIN ARE REVOKED.

THIS TIME TABLE is for the use and guidance of Employes only, and is not intended for the information of the public, or as an advertisement of time of any Train. The Company reserves the right to vary from it at pleasure.

JNO. McCORMIC,

Supt. Transportation and Telegraph,
DENVER, COLO.

C. F. MEEK,

General Manager,
DENVER, COLO.

F. E. BISSELL,

Superintendent,
DENVER, COLO.

Special Regulations Concerning the Carrying of Passengers on Freight Trains.

**Passengers taking Freight Trains, should be informed that Caboose will not pull up to platform to take or deliver Passengers or Baggage.
Subject to G. T. O. Circular No. 439, paragraph 6.**

The following Freight Trains will carry passengers between points named, subject to the conditions of Rules 91 and 124, and other regulations provided for this service, and such trains may be flagged for passengers:

SOUTH BOUND.

Train No. 13—Between Machine Shops and Gulf Junction.
Train No. 13—Between Trinidad and Texline.

NORTH BOUND.

Train No. 14—Between Gulf Junction and Machine Shops.
Train No. 14—Between Texline and Trinidad.

Registering Stations.

SIXTH DISTRICT.

DENVER,
MANITOU JUNCTION,
FRANCEVILLE JUNCTION,
GULF JUNCTION,
COLORADO SPRINGS.

FIFTH DISTRICT.

GULF JUNCTION,
BESSEMER JUNCTION,
TRINIDAD.

FOURTH DISTRICT.

TRINIDAD,
FOLSOM,
TEXLINE.

Train Master and Dispatchers.

J. A. MEYERS,
Train Master,
TRINIDAD, COLO.

U. S. REA,
Chief Dispatcher,
TRINIDAD, COLO.

W. DALEY,
FRED HART,
E. W. THOMPSON, } DISPATCHERS,
Ft. Worth Division, Trinidad, Colo.

At or near dividing line of districts, Local Surgeons may be summoned from either direction.

List of Surgeons.

Division Surgeons may be called as consulting Surgeons in serious cases, when necessary.

SURGEON	PLACE	OFFICE	RESIDENCE	DISTRICT	SURGEON	PLACE	OFFICE	RESIDENCE	DISTRICT
Dr. O. J. Pfeiffer, Chief Surgeon,	Denver	Room A, U. Depot,	1462 Washing- ton avenue,	All	Dr. R. R. Logan	Falcon			
" C. B. Lyman	"	{ Barth Block, Stout and 16th		Denver	" T. G. Horn	Colo. Springs,			
" M. M. Brown	Elizabeth				" Corwin & King,	Pueblo			
	Elbert				" Palmer & Olm- stead	Trinidad			
					" S. I. North	Clayton			

SPECIAL RULES.

Superseding General Regulations within the Limits named.

TRAIN WORK.

Trains must be made up systematically, according to station order, and conductors must preserve that order in taking or leaving cars. In loading freight it must, as far as practicable, be consolidated to make full car loads, and occupy the least number of cars actually required to be used, irrespective of other cars having to go empty in the same direction. Conductors must pay due attention to the above in loading way freight. Agents at way stations must hold small lots of freight to load on train instead of loading in cars at station. Agents at District terminals will transfer and consolidate the contents of lightly loaded cars arriving by way freight trains.

GOVERNING CROSSING OF D., L. & G. R. R.

D., L. & G. trains going westward have the right of way to cross ahead of U. P., D. & G. trains going in either direction. U. P., D. & G. trains, going in either direction, have the right to cross ahead of D. L. & G. trains going eastward.

GOVERNING CROSSINGS OF D. & R. G. R. R. AND A., T. & S. F. R'Y.

D. & R. G. and A., T. & S. F. trains going in either direction will have the right to cross ahead of U. P., D. & G. trains going north. U. P., D. & G. trains going south will have the right to cross ahead of D. & R. G. and A., T. & S. F. trains going in either direction.

GOVERNING CROSSING OF D. & S. F. R'Y.

U. P., D. & G. trains going south will have the right to cross ahead of D. & S. F. trains going in either direction. D. & S. F. trains going in either direction will have the right to cross ahead of U. P., D. & G. trains going north.

GOVERNING THE USE OF THE DOUBLE TRACK BETWEEN DEUEL AND TRINIDAD.

All trains going west or south will use the right hand track from Deuel to Trinidad. All trains going east or north will use the right hand track from Trinidad to Deuel.

SPEED.

Speed of all irregular trains must be specified in their running orders.

Maximum speed allowed freight trains on sixth district, 15 miles per hour, except Nos. 12 and 13, which will not exceed 20 miles per hour.

Maximum speed allowed freight trains on fourth district, 15 miles per hour, except train No. 12, which will not exceed 20 miles per hour.

All trains will approach yard limit boards at Manitou Junction, Franceville Junction and Gulf Junction under full control.

All trains must be kept under full control between Manitou Junction and Cable Junction.

Maximum speed of all trains over Long Creek, Griffin's Gulch, Oak Creek, Bell Creek and Twin Mountain Bridges, fourth district, six (6) miles per hour.

SIXTH DISTRICT—Denver to Gulf Junction.

Length of Sidings in feet, and Location of Scales, Water, Fuel, Turning Stations and Wyes.	SOUTH BOUND					Distances from Denver	Time Table No. 11. May 11, 1890.		Distances from Fort Worth	NORTH BOUND				
	Second Class				1st Class		STATIONS (Mountain Time)			1st Class	Second Class			
	17 Local Freight	15 Freight	13 Fast Freight	11 Through Freight	1 Mail and Express					2 Mail and Express	12 Through Freight	14 Local Freight	16 Freight	18 Freight
	Leave Daily Exc. Sunday	Leave Daily Exc. Sunday	Leave Daily Exc. Sunday	Leave Daily	Leave Daily					Arrive Daily	Arrive Daily	Arrive Daily Exc. Monday	Arrive Daily Exc. Monday	Arrive Daily Exc. Sunday
180,980 w.c.o.t					s-- 8.10am		N..... DENVER Ud	804.0	s-- 6.25 pm					
	5.45 am	11.00 am	6.30 pm	9.30 pm	s-- 8.15	0.8	N..... Machine Shops Ms	803.2	s-- 6.20	7.00 am	5.15 pm	5.15 am	1.40 pm	
						2.2	..... D., L. & G. Crossing	801.8						
						3.9	..... D. & R. G. Crossing	800.1						
						4.7	..... D. & S. F. Crossing	799.3						
780	6.25	11.40	6.55	10.13	f-- 8.30	7.3	..... Coronado	796.7	f-- 6.03	6.25	4.36	4.35	1.05	
					f--	12.4	..... Kenwood	791.6	f--					
1,720 w.	7.08	12.25	7.20	11.02	f-- 8.48	14.6	D..... Melvin Vn	789.4	f-- 5.47	5.50	3.53	3.55	12.25	
2,150 w.	8.00	1.25	7.55	11.59	s-- 9.10	23.2	N..... Parkers Ks	780.8	s-- 5.27	5.07	3.00	3.10	11.35	
2,250 y.	8.56	2.15	8.45	12.40	f-- 9.38	30.8	..... Hill Top	773.2	f-- 5.10	4.30	2.15	2.25	10.47	
1,950 w.c.	9.57	3.07	9.20	1.30	s-- 9.57	39.4	N..... Elizabeth Su	764.6	s-- 4.50	3.49	1.25	1.30	9.57	
875	10.43	3.55	9.53	2.18	f-- 10.18	47.7	..... Cameron	756.3	f-- 4.33	3.08	12.38	12.30	9.10	
1,950 w.	11.08	4.22	10.11	2.45	s-- 10.30	52.2	D..... Elbert Br	751.8	s-- 4.22	2.45	12.13	11.59	8.45	
1,350	11.40	4.57	10.35	3.20	f-- 10.42	58.2	..... Sidney	745.8	f-- 4.08	2.13	11.40	11.27	8.10	
1,475	12.17	5.30	10.58	3.53	s-- 10.55	64.0	N..... Easton On	740.0	s-- 3.54	1.40	10.55	10.58	7.35	
4,700 y.	1.27	6.29	11.40	4.57	s-- 11.15	74.2	N..... Falcon Fa	729.8	s-- 3.23	12.54	9.50	9.30	6.35	
1,000 w.	1.49	6.53	11.55	5.22	f-- 11.26	78.2	..... Bierstadt	725.8	f-- 3.13	12.35	9.26	9.00	6.10	
2,050 y.	2.12	7.13	12.14	5.45	s-- 11.35	81.7	N..... Manitou Jc Jn	722.3	s-- 3.02	12.14	9.05	8.30	5.45	
	2.16	7.17	12.17	5.50		82.3	..... Cable Jc	721.7		12.10	9.01	8.25	5.35	
3,910 c.w.y.	2.48	7.45	12.37	6.12	s-- 11.46	87.0	N..... Franceville Jc By	717.0	s-- 2.48	11.45	8.25	7.45	5.10	
900	3.38	8.20	1.10	6.50	f-- 12.02	94.6	..... Fountain	709.4	f-- 2.30	11.10	7.43	7.05	4.20	
1,750 w.	4.12	8.46	1.35	7.15	f-- 12.13	99.8	N..... Little Buttes Bu	704.2	f-- 2.17	10.45	7.15	6.35	3.50	
1,150	5.30	9.45	2.35	8.15	f-- 12.38	112.1	D..... Pinon Ny	691.9	f-- 1.48	9.45	6.05	5.30	2.35	
1,150	5.55	10.05	2.52	8.40	f-- 12.48	117.0	..... Overton	687.0	f-- 1.38	9.25	5.40	5.05	2.10	
11,100 o.y.t.c.w.	6.40 pm	10.35 pm	3.20 am	9.15 am	s-- 1.05	124.1	N..... Gulf Jc Df	679.9	s-- 1.25	9.00 pm	5.00 am	4.30 pm	1.30 am	
						124.3	..... A., T. & S. F. Crossing	679.7						
						124.6	..... Mo. Pac. Crossing	679.4						
W.C.T.Y.O.					¶-- 1.10 pm	125.0	N..... PUEBLO Bo	679.0	¶-- 1.20 pm					
	Arrive Daily Exc. Sunday	Arrive Daily Exc. Sunday	Arrive Daily Exc. Mo day	Arrive Daily	Arrive Daily				Leave Daily	Leave Daily	Leave Daily Exc. Monday	Leave Daily Exc. Sunday	Leave Daily Exc. Sunday	
	(12.55)	(11.35)	(8.50)	(11.45)	(5.00)		(125.0)		(5.05)	(10.00)	(12.15)	(12.45)	(12.10)	

North bound trains will have absolute right to the track over south bound trains of the same or inferior class. See Rule 84.

Section houses located on miles 693, 705, 718, 728, 741, 753, 765, 782, 790.
Freight Office, D. P. Yard Office, Y. D.

FIFTH DISTRICT—Gulf Junction to Trinidad.

Length of Sidings in feet, and Location of Scales, Water, Fuel Turning Stations and Wyes.	SOUTH BOUND				Distances from Denver	Time Table No. 11. May 11, 1890.	Distances from Fort Worth	NORTH BOUND			
	Second Class			1st Class				1st Class	Second Class		
	15 Freight	13 Fast Freight	11 Through Freight	1 Mail and Express				2 Mail and Express	12 Through Freight	14 Freight	16 Freight
	Leave Daily Exc. Sunday	Leave Daily Exc. Monday	Leave Daily	Leave Daily				Arrive Daily	Arrive Daily	Arrive Daily Exc. Monday	Arrive Daily Exc. Sunday
11,100 Y.T.W.C.O.	11.30 pm	4.00 am	10.15 am		124.1 N GULF JUNCTION Df	679.9	8.15 pm	4.00 am	3.30 pm		
					124.4 A., T. & S. F. Crossing	679.6					
					124.7 Mo. Pac. Crossing	679.3					
				1.10 } 1.30 } pm	125.0 N Pueblo Bo	679.0	1.20 } 12.55 } pm				
2 200	11.50 pm	4.15 am	10.35 am		127.2 N Bessemer Jc. B	676.8	7.55 pm	3.40 am	3.10 pm		
2,100					129.8 Mesa	674.2					
4,350 w.	This train will be run on the schedule and subject to the rules of the Denver & Rio Grande Railroad between El Moro and Bessemer Junction.	This train will be run on the schedule and subject to the rules of the Denver & Rio Grande Railroad between El Moro and Bessemer Junction.	This train will be run on the schedule and subject to the rules of the Denver & Rio Grande Railroad between El Moro and Bessemer Junction.	This train will be run on the schedule and subject to the rules of the Denver & Rio Grande Railroad.	133.7 N San Carlos Ac	670.3	This train will be run on the schedule and subject to the rules of the Denver & Rio Grande Railroad.	This train will be run on the schedule and subject to the rules of the Denver & Rio Grande Railroad between El Moro and Bessemer Junction.	This train will be run on the schedule and subject to the rules of the Denver & Rio Grande Railroad between El Moro and Bessemer Junction.		
2,400					139.1 Verde	664.9					
1,940					146.0 D Salt Creek Ks	658.0					
2,100 Y.					151.7 N Graneros Rs	652.3					
2,100					155.8 Larimer	648.2					
3,100 w.					162.7 N Huerfano Uf	641.3					
1,360					169.8 Apache	634.2					
8,100 W.C.Y.					174.7 N Cuchara Jc. Cu	629.3					
2,000					179.7 Tuna	624.3					
7,600					183.6 N Rouse Jc. Rx	620.4					
1,350	185.6 Tioga	618.4									
2,000	191.1 Boaz	612.9									
4,150 w.	194.9 N Apishapa Sh	609.1									
2,770	200.4 Barnes	603.6									
1,800	204.1 D Chicosa Jc. Ci	599.9									
13,100 T.O.W.C.	211.7 N El Moro Mo	592.3									
	212.0 A., T. & S. F. Crossing	592.0									
	212.6 Deuel	591.4									
12,000 T.O.W.C.Y.	8.00 am	10.30 am	5.50 pm	4.50 pm	216.0 N TRINIDAD	588.0	9.30 am	1.15 pm	7.35 pm	7.00 am	
	Arrive Daily Exc. Monday	Arrive Daily Exc. Monday	Arrive Daily	Arrive Daily			Leave Daily	Leave Daily	Leave Daily Exc. Sunday	Leave Daily Exc. Sunday	
	(8.30)	(6.30)	(7.35)	(3.20)			(3.25)	(7.00)	(8.25)	(8.30)	

Between Gulf Junction and Bessemer Junction north bound trains will have absolute right of the track over south bound trains of the same or inferior class. See Rule 84.

Conductors and Engineers will provide themselves with Time Table and Book of Rules of the Denver and Rio Grande Railroad before going over this district.

FOURTH DISTRICT—Trinidad to Texline.

Length of Sidings in feet, and Location of Scales, Water, Fuel Turning Stations and Wyes.	SOUTH BOUND					Distances from Denver	Time Table No. 11.		Distances from Fort Worth	NORTH BOUND					
	Second Class			1st Class			May 11, 1890.			STATIONS.		1st Class		Second Class	
		13 Local Freight	11 Through Freight	1 Mail and Express			(Mountain Time)				2 Mail and Express	12 Through Freight	14 Local Freight		
		Leave Daily Exc. Sunday	Leave Daily	Leave Daily							Arrive Daily	Arrive Daily	Arrive Daily Exc. Sunday		
12,000 wcyot		12.30 pm	6.45 pm	s 5.00 pm	216.0	N	TRINIDAD	{ Di Da Xn	588.0	s 9.20 am	12.30 pm	5.35 pm			
		1.05	7.05	5.08	219.7		Deuel	0.1	584.3	9.11	12.13 pm	5.08			
					219.8		D. & R. G. Crossing	3.6	584.2						
1,100		1.30	7.25	f 5.17	223.4		Beshoar	13.6	580.6	f 9.02	11.57 am	4.45			
1,480 w.		3.20	8.45	f 5.45	237.0	D	Barela	12.2	567.0	f 8.33	10.57	3.20			
1,300		4.23	9.55	f 6.11	249.2		Adair	5.0	554.8	f 8.06	10.03	2.13			
1,675 y.w.		4.48	10.25	s 6.22	254.2	N	Trinchere	6.4	549.8	s 7.55	9.42	1.47			
1,300 w.		5.21	11.00	f 6.38	250.6	D	Watervale	8.9	543.4	f 7.38	9.13	1.13			
675		6.10	11.55	f 7.08	269.5		Emery Gap	5.6	534.5	f 7.16	8.32	12.22 pm			
815		6.40	12.25 am	f 7.15	275.1		Alps	10.1	528.9	f 7.02	8.07	11.52 am			
1,665 w.					285.2		Folsom Stock Yards	0.7	518.8						
3,100 w.c.t.		7.35 } 8.05 }	1.42	s 7.40 } 8.00 }	285.9	N	Folsom	10.5	518.1	s 6.35 } 6.15 }	7.18	10.55			
2,000		9.00	2.52	f 8.22	296.4		Des Moines	7.5	507.6	f 5.51	6.33	10.00			
2,000 w.		9.35	3.50	f 8.37	303.9	D	Grande	11.0	500.1	f 5.34	6.00	9.18			
2,000		10.27	5.10	f 9.00	314.9		Grenville	10.6	489.1	f 5.10	5.10	8.20			
2,300		11.17	6.03	f 9.21	325.5	D	Mt Dora	7.9	478.5	f 4.45	4.13	7.20			
750		11.55 pm	6.38	f 9.37	333.4		Royce	8.1	470.6	f 4.27	3.30	6.38			
4,250 w.		12.50 am	7.17	s 9.53	341.5	D	Clayton	10.7	462.5	s 4.10	2.49	5.52			
12,243 w.c.t.		1.50 am	8.10 am	s 10.15 pm	352.2	N	TEXLINE		451.8	s 3.45 am	1.50 am	4.50 am			
		Arrive Daily Exc. Monday	Arrive Daily	Arrive Daily						Leave Daily	Leave Daily	Leave Daily Exc. Sunday			
		(13.20)	(13.25)	(5.15)				(136.2)		(5.35)	(10.40)	(12.45)			

North bound trains will have absolute right to the track over south bound trains of the same or inferior class. See Rule 84.

Section houses located on miles 459, 470, 479, 490, 501, 511, 519, 527, 534, 544, 555, 567, 581, 589.

Train No. 13 will water section houses.

MANITOU BRANCH—Manitou Junction to Colorado Springs.

SOUTH BOUND				Distances from Manitou Junct.	Time Table No. 11. May 11, 1890.	Distances from Colorado Springs	NORTH BOUND			
Second Class		First Class					First Class		Second Class	
25 Freight	23 Freight	21 Passenger	19 Passenger				20 Passenger	22 Passenger	24 Freight	26 Freight
Leave Daily Exc. Sunday	Leave Daily	Leave Daily	Leave Daily		STATIONS. (Mountain Time.)		Arrive Daily	Arrive Daily	Arrive Daily	Arrive Daily Exc. Sunday
7.30 pm	7.00 am	3.10 pm	11.40 am	9.0	N-MANITOU JUNCTION-Jn 9.0	9.0	11.30 am	3.00 pm	6.30 am	7.00 pm
8.15 pm	7.30 am	3.35 pm	12.05 pm		D-COLORADO SPRING-Cs		11.05 am	2.30 pm	6.00 am	6.15 pm
Arrive Daily Ex. Sunday	Arrive Daily	Arrive Daily	Arrive Daily				Leave Daily	Leave Daily	Leave Daily	Leave Daily Exc. Sunday

FRANCEVILLE BRANCH.

				Distances from Manitou Junct.	Time Table No. 11. May 11, 1890.	Distances from Colorado Springs				
					STATIONS. (Mountain Time.)					
					N-FRANCEVILLE JC-By 4.0					
					D-FRANCEVILLE-Fn					

CHICOSA BRANCH.

				Distances from Manitou Junct.	Time Table No. 11. May 11, 1890.	Distances from Colorado Springs				
					STATIONS					
					CHICOSA-----Ci 1.0					
					Forbes Jc----- 2.5					
					D-FORBES-----Bs					

VICTOR BRANCH.

				Distances from Manitou Junct.	Time Table No. 11. May 11, 1890.	Distances from Colorado Springs				
					STATIONS					
					FORBES JC----- 6.5					
					D-HASTINGS-----Vi					

MAXWELL BRANCH.

				Distances from Manitou Junct.	Time Table No. 11. May 11, 1890.	Distances from Colorado Springs				
					STATIONS					
					N-TRINIDAD-----Da 3.7					
					D-Sopris-----So 3.3					
					Long's Junction----- 1.5					
					Thompsons----- 1.5					
					Longs' Junction----- 7.8					
					D-MARTINSEN-----Mf					

GREY'S CREEK BRANCH.

				Distances from Manitou Junct.	Time Table No. 11. May 11, 1890.	Distances from Colorado Springs				
					STATIONS					
					BESHOAR----- 6.5					
					CHAPPELL-----					

North bound trains will have the absolute right to the track over south bound trains of the same or inferior class. See Rule 84.

UNION PACIFIC RAILWAY.

GENERAL NOTICE.

It is of the utmost importance that proper rules for the government of the employes of a railroad company should be literally and absolutely enforced, in order to make such rules efficient. If they cannot or ought not to be enforced, they ought not to exist. Officers or employes whose duty it may be to make or enforce rules, however temporary or unimportant they may seem, should keep this clearly in mind. If, in the judgment of any one whose duty it is to enforce a rule, such rule cannot or ought not to be enforced, he should at once bring it to the attention of those in authority.

All employes should be required to be polite and considerate in their intercourse with the public. The reputation and prosperity of a company depend greatly upon the promptness with which its business is conducted and the manner in which its patrons are treated by its employes.

GENERAL RULES.

Super-
sedes all
previous
rules.

1. The Rules herein set forth apply to and govern all roads operated by the Union Pacific Railway Company.

They shall take effect March 1st, 1890, and supersede all prior rules and instructions, in whatsoever form issued, which are inconsistent therewith.

Special
instruc-
tions.

2. In addition to these rules, the Time-tables will contain special instructions, as the same may be found necessary. Special instructions, whether in conflict with these rules or not, which may be given by proper authority, whether upon the Time-tables or otherwise, shall be fully observed while in force.

Enforce-
ment of
obedi-
ence.

3. The head of each department must be conversant with the rules, supply copies of them to his subordinates, see that they are understood, enforce obedience to them, and report to the proper officer all violations and the action taken thereon.

Copy
rules at
hand.

4. Every employe of this company whose duties are in any way prescribed by these rules must always have a copy of them at hand when on duty, and must be conversant with every rule. He must render all the assistance in his power in carrying them out, and immediately report any infringement of them to the head of his department.

Violation.

5. The fact that any person enters, or remains in, the service of the company will be considered as an assurance of willingness to obey its rules. No one will be excused for the violation of any of them, even though not included in those applicable to his department.

Cases of
doubt.

6. If in doubt as to the meaning of any rule or special instructions, application must be made at once, to the proper authority, for an explanation. Ignorance is no excuse for neglect of duty.

Promo-
tion.

7. All employes will be regarded as in the line of promotion, advancement depending upon the faithful discharge of duty, and capacity for increased responsibility.

Lost time.

8. If an employe should be disabled by sickness or other cause, the right to claim compensation will not be recognized. An allowance, if made, will be a gratuity justified by the circumstances of the case, and the employe's previous good conduct.

Jurisdic-
tion.

9. Every employe, while on duty connected with the trains on any division of the road, is under the authority, and must conform to the orders, of the superintendent of that division.

Uniforms
and
badges.

10. Employes must wear the prescribed badges or uniforms while on duty.

Mail
agents
and
others.

11. Mail-agents, express messengers, parlor and sleeping car conductors and porters, news agents, and persons in charge of individual cars are subject, while on duty, to the rules governing employes of the company.

STANDARD TIME.

Standard
Time.

12. Observatory Standard Time is the only recognized standard, and will be transmitted from Washington Observatory at St. Louis, Mo., to the designated offices.

13. The Standard Time will be telegraphed to all points from the St. Louis Observatory at 10:00 a. m., Central Time, daily. The time used shall be the time of the 105th meridian, known as Mountain Time, which is one hour slower than Central Time.

Standard
Clocks.

14. The Standard Time for each district shall be that of the clock in the Train Dispatcher's office.

Station
Clocks.

15. Where station clocks are provided, station agents must see that they show correct time; but trainmen and enginemen must not take time from such clocks unless they are also designated as Standard Clocks.

Standard
Watches.

16. Each conductor and engineman must have a reliable watch, which has been examined and certified to on the form attached hereto, by a responsible watchmaker, and must file such certificate with the proper designated officer before he is allowed to take charge of a train or engine. Watches must be examined and certificates renewed every six months.

(Form of Certificate.)

WATCHMAKER'S CERTIFICATE.

Form of
certifi-
cate.

This is to certify that on..... 18...
the watch of.....
employed as.....
on the Union Pacific Railway, has been examined
and found to be a reliable and accurate time-
piece, and in such repair as will, in my judg-
ment, with proper usage, enable it to run within
a variation not to exceed thirty seconds per
week.

Name of Maker.....
Brand.....
Number of Movement.....
Gold or silver.....
Open or hunting case.....
Stem or key winding.....

Signed,

.....
Watchmaker.

Address.....

Regulating watches. 17. Each conductor and engineman must regulate his watch by the designated Standard Clock before starting on each trip, and register in the Train Register Book his name and the time at which he regulated his watch.

Comparing watches. 18. Conductors and enginemen whose duties prevent them from having access to a Standard Clock must compare daily with, and regulate their watches by, those of conductors and enginemen who have Standard Time, and have registered their names as above provided.

TIME-TABLES

Time table. 19. A Time-table is the general law governing the arriving and leaving time of all regular trains at all stations. Time-tables will be issued from time to time, as may be necessary. The times given for each train on the Time-table is the Schedule of such train.

Copies of Time-tables will be furnished to all concerned. Train Dispatchers must know that every conductor and engineman has a copy of same before allowing them to occupy main track after it has taken effect, and must ascertain from conductor or engineman if such Time-table has been received; such inquiry and answer to be in the following form and copied in train order book:

Have you received employes' Time-table No. to take effect at. M. (date).

I have received employes' Time-table No. to take effect at. M. (date).

Taking effect. 20. Each Time-table, from the moment it takes effect, supersedes the preceding Time-table, and all special instructions relating thereto; and trains shall be run as directed thereby, subject to the rules. All regular trains on the road running according to the preceding Time-table shall, unless otherwise directed, assume the times and rights of trains of corresponding numbers on the new Time-table.

Meeting and passing points. 21. Upon the Time-table not more than two sets of figures are shown for a train at any point. When two times are shown, the earlier is the arriving time and the later the leaving time. When one time is shown it is the leaving time, unless otherwise indicated.

Regular meeting or passing time is in full-faced type.

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

In all cases trains are required to clear and follow as per rules 85 to 90 inclusive.

Signs and characters. 22. On the employes' Time-table the words "daily," "daily, except Sunday," etc., printed at the head and foot in connection with a train, indicate how it shall be run. The figures given at intermediate stations shall not be taken as indi-

cating that a train will stop unless the rules require it. The following signs placed before the figures indicate:

- "s"—regular stop;
- "f"—stop on signal to receive or discharge passengers or freight;
- "M"—stop for meals;
- "D"—day telegraph stations;
- "N"—night telegraph stations;
- "O"—scales;
- "C"—coal;
- "W"—water;
- "T"—turn-tables;
- "Y"—wyes.

Trains are designated by numbers and their class indicated on the Time-tables.

SIGNAL RULES.

SIGNALS.

Supply 23. Conductors, enginemen, firemen, brakemen, station agents, telegraph operators, switchmen, switchtenders, track foremen, road and bridge watchmen, and all other employes whose duties may require them to give signals must provide themselves with the proper appliances, and keep them in good order and always ready for immediate use.

Flags and lamps. 24. Flags of the proper color must be used by day, and lamps of the proper color by night or whenever from fog or other causes the day signals cannot be clearly seen.

Colors. 25. Red signifies **danger**, and is a signal to stop.

26. Green signifies **caution** and is a signal to go slowly.

27. White signifies **safety**, and is a signal to go on.

28. Green is a signal to be used to stop trains at flag stations for passengers or freight.

29. Blue is a signal to be used by car inspectors.

Torpedoes. 30. An explosive cap or torpedo, placed on the top of the rail, is a signal to be used in addition to the regular signals.

The explosion of one torpedo is a signal to stop immediately; the explosion of two torpedoes is a signal to reduce speed immediately, and look out for a danger signal.

Fuses. 31. A fusee is an extra danger signal, to be lighted and placed on the track at night, in cases of accident or emergency.

A train finding a fusee burning upon the track must come to a stop and not proceed until it is burned out.

Danger. 32. A flag or lamp swung across the track, a hat or any object waved violently by any person on the track, signifies danger, and is a signal to stop.

TRAIN SIGNALS.

Markers. 33. Each train, while running, must display two green flags by day and two green lights by

night, one on each side of the rear of the train, as Markers, to indicate the rear of the train. Yard engines will not display Markers.

Head and tail lights. 34. Each train running after sunset, or when obscured by fog or other cause, must display the head-light in front, and two or more red lights in the rear. Yard engines must display two green lights instead of red, except when provided with a head-light on both front and rear.

Bell cord. 35. Each car on a passenger train while running must be in communication with the engine. In the absence of an equivalent appliance, a bell-cord must be attached to the signal-bell of the engine, passing through or over the entire length of the train, and secured to the rear end of it.

Green. 36. Two green flags by day and two green lights by night, displayed in the places provided for that purpose on the front of an engine, denote that the train is followed by another train, running on the same Schedule and entitled to the same Time-table rights as the train carrying the signals.

White. 37. Two white flags by day and two white lights by night, displayed in the places provided for that purpose on the front of an engine, denote that the train is an extra. These signals must be displayed by all extra trains, but not by yard engines.

Blue. 38. A blue flag by day and a blue light by night, placed at the end of a car or train denotes that car inspectors are at work under or about the car or train. The car or train thus protected must not be coupled to, or moved, until the blue signal is removed by the car inspectors.

When a car or train standing on a siding is protected by a blue signal, other cars must not be placed in front of it so that the blue signal will be obscured, without first notifying the car inspector, that he may protect himself, and not then until the signal is removed.

WHISTLE SIGNALS.

Whistle. 39. One long blast of the whistle is the signal for approaching stations, railroad crossings and junctions thus, (—).

40. One short blast of the whistle is the signal to apply the brakes—stop (thus,—).

41. Two long blasts of the whistle is the signal to throw off the brakes (thus,— —).

42. Two short blasts of the whistle is an answer to any signal, except "train parted" (thus— —).

43. Three long blasts of the whistle (to be repeated until answered as provided in Rule No. 62) is a signal that the train has parted (thus,— — —).

44. Three short blasts of the whistle, when the train is standing (to be repeated until answered, as provided in Rule No. 61) is a signal that the train will back (thus,— — —).

45. Four long blasts of the whistle) thus, —

— — — —) is the signal to call in a flagman from the south.

Four **long** followed by one **short** blast of the whistle (thus, — — — — — — — —) is a signal to call in a flagman from the north.

46. Four **short** blasts of the whistle is the engineman's call for signals from switch-tenders, watchmen, trainmen and others (thus, — — — —).

47. Five **short** blasts of the whistle is a signal to the flagman to go back and protect the rear of the train (thus, — — — — —).

48. One **long** followed by two **short** blasts of the whistle is a signal to be given by trains on single track, when displaying signals for a following train, to call the attention of trains of the same or inferior class to the signals displayed (thus, — — — —).

49. Two **long**, followed by two **short**, blasts of the whistle is the signal for approaching road crossings at grade (thus, — — — — —). This signal will also be used where the view is obstructed by curves in case of trains running ahead of time, night trains when behind time after daylight and extra trains, at least once every mile.

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

50-a. Two **short** blasts given three times is the signal for air brakes sticking. See air brake rules.

BELL-CORD SIGNALS.

Bell cord. **51.** One tap of the signal bell, when the train is **standing**, is the signal to start.

52. Two taps of the signal-bell, when the train is **running**, is the signal to stop at once.

53. Two taps of the signal-bell, when the train is **standing**, is the signal to call in the flagman.

54. Three taps of the signal-bell, when the train is **running**, is the signal to stop at the next station.

55. Three taps of the signal-bell, when the train is **standing**, is the signal to back the train.

56. Four taps of the signal-bell, when the train is **running**, is the signal to reduce speed.

57. When one tap of the signal-bell is heard while a train is **running**, the engineman must immediately ascertain if the train is parted, and, if so, be governed by Rule No. 103.

58. Signals of the same number of sounds shall have the same significance when given by other appliances than bell-cords and signal-bells.

LAMP SIGNALS.

Lamps. **59.** A lamp swung across the track is the signal to stop.

60. A lamp raised and lowered vertically is the signal to move ahead.

61. A lamp swung vertically in a circle across the track, when the train is **standing**, is the signal to move back.

62. A lamp swung vertically in a circle at arm's length across the track, when the train is **running**, is the signal that the train has parted.

63. A flag, or the hand, moved in any of the directions given above, will indicate the same signal as given by a lamp.

FIXED SIGNALS.

Fixed Signals.

64. Fixed signals are placed at junctions, railroad crossings, stations, and other points that require special protection. Special instructions will be issued indicating their position and use.

RULES GOVERNING USE OF SIGNALS.

Imperfect signals.

65. A signal imperfectly displayed, or the absence of a signal at a place where a signal is usually shown, must be regarded as a danger signal, and the fact reported to the Superintendent.

Whistle prohibited.

66. The unnecessary use of the whistle is prohibited; when necessary in shifting at stations and in yards, the engine bell should be rung, and the whistle used only when required by rule or law, or when necessary to prevent accident.

67. The whistle must not be sounded while passing a passenger train, except in cases of emergency or danger, or when required by the rules.

Acknowledge signals.

68. When a danger signal (except a fixed signal) is displayed to stop a train, it must be acknowledged as provided in rule No. 42.

Engine bell.

69. The engine-bell must be rung before starting a train, and when running through tunnels and the streets of towns or cities.

70. The engine-bell must be rung for a quarter of a mile before reaching every road crossing at grade, and until it is passed; and the whistle must be sounded at all whistling-posts.

Display signals.

71. When two or more engines are coupled to the head of a train, the leading engine only shall display the signals as provided in Rules No. 36 and 37.

Responsibility.

72. One flag or light displayed as a classification signal will be regarded the same as if two were displayed; but conductors and enginemen will be held responsible for the proper display of all train signals.

When pushing trains.

73. When a train is being pushed by an engine (except when shifting and making-up trains in yards) a white light must be displayed on the front of the leading car at night, or when the train is obscured by fog or other cause.

Changing tail lights.

74. When a train turns out to meet or pass another train, the red lights must be removed and green displayed as soon as the track is clear; but the red must again be displayed before returning to its own track.

Covering head lights.

Head-lights on engines when on side tracks or at the end of double tracks, waiting for trains, must be covered as soon as the track is clear and the train has stopped.

In case there is more than one train to take the siding, the engineman of the first train will not cover the headlight until all trains are on

the siding and the switch set for the main track. The main track will be considered obstructed while the headlight is shown, but this will not relieve conductors from protecting their trains by flag.

Signals at flag stations.

75. The green signal is to be used to stop a train only at the flag stations designated by the schedule of that train. When it is necessary to stop a train at a point that is not a flag station for that train, a red signal must be used.

Watchmen's signals.

76. White signals must be used by watchmen at public road and street crossings to prevent persons and teams from crossing when trains are approaching. Danger signals must be used only when necessary to stop trains.

Torpedoes.

77. Torpedoes must not be placed near stations or road crossings, where persons are liable to be injured by them.

Uniform signals.

78. All signals must be used strictly in accordance with the rules, and trainmen and enginemen must keep a constant lookout for signals.

TRAIN RULES.

CLASSIFICATION OF TRAINS.

Designation.

79. All trains are designated as regular or extra. Regular trains are those represented on the Time-table, and may consist of one or more sections. All sections of a train, except the last, must display signals as provided in Rule No. 36. Extra trains are those not represented on the Time-table. An engine without cars, in service on the road, shall be considered a train.

Classification.

80. All regular trains are classified on the Time-table with regard to their priority of right to the track; trains of the first-class being superior to those of the second, and all succeeding classes, and trains of the second class being superior to those of the third and all succeeding classes; and so on indefinitely. The terms passenger, freight or mixed are descriptive and do not refer to class.

Irregular trains.

81. Extra trains may be distinguished as:
Passenger Extra, or Special;
Freight Extra;
Work Train Extra.

Classification right.

82. All extra trains are of inferior class to all regular trains of whatever class.

MOVEMENT OF TRAINS.

Direction right.

83. A train of inferior class must in all cases keep out of the way of a train of superior class.

Direction right.

84. On single track, all trains in one direction, specified in Time-table, have the absolute right of track over trains of the same class running in the opposite direction.

Taking siding.

85. When trains of the same class meet on single track, the train not having right of track must take the siding and be clear of the main track before the leaving time of the opposing train; but such train must not pass the switch to

back in on a siding, until after the arrival of the opposing train, unless otherwise directed by special instructions. When necessary to back in on the siding, before passing the switch, a flagman must be sent out in the direction of the opposing train as per Rule No. 99.

Clearance. 86. When a train of inferior class meets a train of superior class on single track, the train of inferior class must take the siding and clear the train of superior class five minutes. A train of inferior class must keep five minutes off the time of a train of superior class following it.

Time between stations. 87. A train must not leave a station to follow a passenger train until five minutes after departure of such passenger train, unless some form of block signal is used.

88. Passenger trains running in the same direction must keep not less than five minutes apart, unless some form of block signal is used.

89. Freight trains following each other must keep not less than five minutes apart (except in closing up at stations or at meeting and passing points) unless some form of block signal is used.

Clear superior trains. 90. No train must leave a station expecting to meet or be passed at the next station by a train having the right of track, unless it has full schedule time to make the meeting or passing point, and clear the track by the time required by Rules Nos. 85 and 86.

Clear main track. 91. A train not having right of track must be entirely clear of the main track by the time it is required by rule to clear an opposing train or a train running in the same direction; failing to do so, it must be immediately protected, as provided in Rule No. 99.

Ahead of time. 92. Except at meeting or passing points, as provided in Rules Nos. 85 to 91, inclusive, no train must arrive at a station in advance of its schedule arriving time, when shown.

No train must leave a station in advance of its schedule leaving time.

Caution stop. 93. All trains must stop at schedule meeting or passing points on single track, if the train to be met or passed is of the same class, unless the switches are plainly seen to be right, and the track clear. The point at which a train should stop is the switch used by the train to be met or passed in going on the siding.

When the expected train of the same class is not found at the schedule meeting or passing point, the train having right of track must approach all sidings prepared to stop, until the expected train is met or passed.

Junctions, rail-road crossings and drawbridges. 94. All trains must approach the end of double track, junctions, railroad crossings at grade, and drawbridges, prepared to stop, and must not proceed until the switches or signals are seen to be right, or the track is plainly seen to be clear. Where required by law, all trains must stop.

Leaving terminals. 95. No train must leave a junction, a termi-

nal, or other starting point, or pass from double to single track, until it is ascertained that all trains due, which have the right of track against it, have arrived.

Protecting Passenger trains. 96. When a passenger train is detained at any of its usual stops more than five minutes, the flagman must go back with danger signals and protect his train, as provided in Rule No. 99; but if it stops at any unusual point, the flagman must immediately go back far enough to be seen from a train moving in the same direction when it is at least one-half mile (sixteen telegraph poles) from the rear of his own train, and if the stop is over five minutes, he must be governed by Rule No. 99.

When it is necessary to protect the front of the train, the same precautions must be observed by the fireman. If the fireman is unable to leave the engine, the front brakeman must be sent in his place.

Protecting freight trains. 97. When a freight train is detained at any of its usual stops more than five minutes, where the rear of the train can be plainly seen from a train moving in the same direction at a distance of at least two-thirds of a mile (twenty telegraph poles), the flagman must go back with danger signals not less than one-eighth of a mile (four telegraph poles), and as much farther as may be necessary to protect his train; but if the rear of his train cannot be plainly seen at a distance of at least two-thirds of a mile, or if it stops at any point that is not its usual stopping place, the flagman must go back not less than one-half mile, and if his train should be detained until within ten minutes of the time of a passenger train moving in the same direction, he must be governed by Rule No. 99.

When it is necessary to protect the front of the train, the same precautions must be observed by the fireman. If the fireman is unable to leave the engine, the front brakeman must be sent in his place.

Flagmen designated. 98. When it is necessary for the flagman to go back to protect the rear of his train, the next brakeman must immediately take the flagman's position on the train, and remain there until relieved by the flagman; and on passenger trains the baggage master must take the place of the front brakeman whenever necessary.

Flagging, torpedoes. 99. When a train is stopped by an accident or obstruction, the flagman must immediately go back with danger signals to stop any train moving in the same direction. At a point one-fourth of a mile from the rear of his train he must place one torpedo on the rail; he must then continue to go back at least one-half mile from the rear of his train and place two torpedoes on the rail, ten yards apart (one rail length), when he may return to a point one-fourth of a mile from the rear of his train, and he must remain there until recalled by the whistle of his engine; but if a passenger

train is due within ten minutes, he must remain until it arrives. When he comes in, he will remove the torpedo nearest to the train, but the two torpedoes must be left on the rail as a caution signal to any following train.

If the accident or obstruction occurs upon single track, and it becomes necessary to protect the front of the train, or if any other track is obstructed, the fireman must go forward and use the same precautions. If the fireman is unable to leave the engine, the front brakeman must be sent in his place.

99a. When a flagman is recalled and there is not a clear view for a quarter of a mile (eight telegraph poles) in rear of train, the train must start immediately on sounding of the whistle recalling flagman, and be moved ahead, at a speed of not less than six miles per hour, until it reaches a point where the track is straight for a quarter of a mile (eight telegraph poles) in its rear. A flagman must always bear in mind that the time of his return to his train is the time of greatest risk. He must be attentive, and should he see or hear a train approaching, he must remain and use every exertion to stop it in time to prevent accident. In foggy, stormy or snowy weather, or in vicinity of curves or descending grades, the number of torpedoes used should be increased.

When a train is flagged the engineman must obtain a thorough explanation of the cause before proceeding—coming to a full stop and picking up flagman if necessary.

Crossing double track.

100. Freight trains having work to do on any other track may cross over if no passenger train is due, provided no approaching freight train is in sight; and also provided that a flagman has been sent with danger signals, as provided in Rule No. 99, not less than one-half mile (sixteen poles), in the direction of the expected train.

Crossing on double track to pass trains.

101. When a freight train on double track turns out on to the opposite track to allow a passenger train running in the same direction to pass, and, while waiting, a passenger train from the opposite direction arrives, the freight train may cross back and allow it to pass, provided the other passenger train is not in sight; and also provided that a flagman has been sent with danger signals, as provided in Rule No. 99, not less than one-half mile in the direction of the expected train.

102. When it is necessary for a freight train on double track to turn out on to the opposite track to allow a passenger train running in the same direction to pass, and a passenger train running in the opposite direction is due, a flagman must be sent back with the danger signals, as provided in Rule No. 99, not less than one-half mile in the direction of the following train,

and the freight train must not cross over until one of the passenger trains arrives. Should the following passenger train arrive first, a flagman must be sent forward on the opposite track with danger signals, as provided in Rule No. 99, not less than one-half mile in the direction of the over-due passenger train before crossing over. Great caution must be used, and good judgment is required to prevent detention to either passenger train. The preference should always be given to the passenger train of superior class.

Trains parting.

103. If a train should part while in motion, trainmen must use great care to prevent the detached parts from coming into collision. Enginemen must give the signal as provided in Rule No. 43, and keep the front part of the train in motion until the detached portion is stopped.

The front portion will have the right to go back regardless of all trains, to recover the detached portion, first sending a flagman with danger signals one-half mile in the direction in which the train is to be backed, and running with great caution, at a speed not exceeding four miles per hour. On single track all the precautions required by the Rules must also be taken to protect the train against opposing trains. The detached portion must not be moved or passed around until the front portion comes back. This rule applies to trains of every class.

An exception will only be made to the above when it is known that the detached portion has been stopped and when the whole occurrence is in plain view, no curves or other obstructions intervening, so that signals can be seen from both portions of the train. In that event the conductor and enginemen may arrange for the re-coupling, using the greatest caution.

Pushing trains.

104. When a train is being pushed by an engine (except when shifting and making up trains in yards) a flagman must be stationed in a conspicuous position on the front of the leading car, so as to perceive the first sign of danger and immediately signal the engineman.

Overdue trains.

105. A train starting from a station or leaving a junction, when a train of the same class running in the same direction is overdue, will proceed on its own time and rights, and the overdue train will run as provided in Rule 88 or 89.

On other train's time.

106. A train which is delayed, and falls back on the time of another train of the same class, does not lose its rights.

Twelve hour rule.

107. Regular trains twelve hours or more behind their schedule time lose all their rights.

Running around.

108. A train overtaking another train of the same or superior class, disabled so that it cannot move, will run around it, assuming the rights and taking the orders of the disabled train to the next telegraph office which is open, where it will report to the Superintendent. The disabled train will assume the rights of the last

train passing it, till the next telegraph office is reached.

Orders in writing.

109. All messages or orders respecting the movement of trains or the condition of track or bridges must be in writing.

Orders for signal.

110. Trains must not display signals for a following train without an order from the Superintendent.

Extra trains.

111. Extra trains must not be run on single track without an order from the Superintendent.

Taking down signals.

112. When signals displayed for a following train on single track are taken down at any point before the following train arrives, the conductor must inform the Superintendent promptly by telegraph, and also the operator or switchtender; and the latter, unless there is some other provision for the purpose, must notify all opposing trains of the same or inferior class leaving that point before the train arrives for which signals were displayed.

If signals are taken down at a point where there is no operator, switchtender, or other provision for the purpose, the conductor must notify all opposing trains of the same or inferior class until he reaches the next telegraph office, when he must inform the Superintendent; and the operator, unless there is some other provision for the purpose, must notify all opposing trains of the same or inferior class until directed otherwise by the Superintendent.

If the train for which signals were displayed leaves the main line at a point where there is no operator, switchtender, or other provision for the purpose, a flagman must be left to notify opposing trains that it has arrived.

Work trains.

113. Work trains will be run as extras under special orders, and will be assigned working limits.

Approaching stations.

114. Great care must be exercised by the trainmen of a train approaching a station where any train is receiving or discharging passengers.

115. Enginemen must observe trains on the opposite track, and if they are running too closely together call attention to the fact.

Riding on engine, etc.

116. No person will be permitted to ride on engines, or in baggage, mail, or express cars, except employes, in the discharge of their duties, without a written order from the proper authority.

Responsibility for switches.

117. Conductors will be held responsible for the proper adjustment of the switches used by them and their trainmen, except where switch-tenders are stationed.

Whoever opens a switch shall remain at it until it is closed, unless relieved by some other competent employe.

When there is more than one train to use a switch it must not be left open unless one of the trainmen of the following train is at the switch and takes charge of it.

At meeting or passing points, the employe attending the switch, will, after locking it to

main track, take position on opposite side of track from the switch-stand, and remain there until the expected train has passed.

Except to prevent accident, switches must never be turned when an engine or car is on slide rail.

Reports.

118. Accidents, detention of trains, failure in the supply of water or fuel, or defects in the track or bridges must be promptly reported by telegraph to the Superintendent.

Leaving-signal.

119. No train shall leave a station without a signal from its conductor.

Responsibility.

120. When two or more trains are run in company, they must be kept five (5) minutes apart, except at meeting points, where they may close up to allow following sections to come in, but always with great care, and train under perfect control. At such points the responsibility for a collision rests with the following train. The following train must approach all Stations carefully expecting to find the leading train at the Station. When fog, darkness, dangerous places, or other circumstances, render it necessary, the forward train, as an extra precaution, will send out a flagman; but it must be distinctly understood that this does not relieve the following train from responsibility for a collision.

Conductors and enginemen will be held equally responsible for the violation of any of the rules governing the safety of their trains, and they must take every precaution for the protection of their trains, even if not provided for by the rules.

Taking safe side.

121. In all cases of doubt or uncertainty, take the safe course and run no risks.

SPECIAL RULES.

Exclusive service required.

200. Each person in the employ of the Company is to devote himself exclusively to its service, attending during the prescribed hours of the day or night, and residing wherever he may be required.

Not to use Company credit.

201. Unless appointed to do so, he is not to receive money on the Company's account. To use the credit of the Company is forbidden, unless special authority is given by the proper official.

202. Ties, timber, coal or other material (whether old or new), must not be taken for the use of employes or others.

Report theft, misconduct or negligence.

203. All employes, especially those in places of trust, are required to report any misconduct or negligence affecting the interest or safety of the Company, and withholding such information, will be considered a proof of negligence or indifference, and treated accordingly.

Company property.

204. Employes leaving the Company's service must deliver up the property entrusted to their care, or at any time when demanded by proper authority.

Gentle-
manly de-
portment
enjoined.

205. Persons having control of men must never curse or abuse them. Boisterous, profane or vulgar language is forbidden. Employees must not enter into altercation with any person, no matter what provocation may have been given, but will make note of the facts and report to their immediate superiors.

Testimo-
nials and
gratuities
forbidden.

206. Employees are forbidden to offer testimonials to their superiors either directly or indirectly, and those in authority will not accept such presents or testimonials. The acceptance of gratuities or rewards from passengers or other patrons of the Company is forbidden.

Drinking
and
smoking
prohibit-
ed.

207. The habitual use of Intoxicating Drink by employes will be considered good cause for dismissal from the service. Smoking is not allowed about the shops, station buildings and warehouses. Employees at stations and on passenger trains are prohibited from smoking when on duty.

Not to en-
gage in
other
business.

208. No employe will be permitted to engage in other business, without the consent of the Head of the Department under whom he may be employed, approved by the General Manager.

Absence
without
leave.

209. No employe will be allowed to absent himself from duty, without permission from proper authority.

Employes
discharg-
ed not to
be re-em-
ployed.

210. A person discharged from one Department or Division, shall not be employed in another without the written consent of the General Manager.

Exercise
care to
prevent
accidents.

211. Every person, accepting a position with this Company, does so with the full knowledge of the dangers, incident to the operation of railways and agrees to exercise due care in the performance of his duties, to prevent accident to himself or others, and before using them to see that the machinery or tools which he is to use are in a safe condition to perform the services required.

Not to
incur
undue
risk.

212. Employees are not expected to incur any risk of injury which they can avoid by the exercise of judgment and care.

Warning.

213. Employees are warned not to catch on to the front or rear end of the engine as it approaches them, or to jump on or off trains or engines moving at a high rate of speed, or to get between cars in motion to uncouple them, or to follow other dangerous practices.

Report
defects.

214. Employees are directed to report to the Superintendent any defects in tracks, machinery or appliances of the road, liable to cause accident.

Not to
remove
appli-
ances

215. Employees must not remove any of the appliances of the engine or cars, for the sake of convenience in switching, thereby endangering those who are required to make couplings. Drawheads, drawbars and coupling apparatus must be examined before coupling is made, and if there is anything dangerous, the coupling must not be made but the fact reported to er official.

Miller
hook
coupling.

216. Employees will not attempt to make a coupling if the car or engine is moving faster than a man ordinarily walks. In coupling the Miller hook with other styles of drawbars, first insert the link in the hook, using pin chained to the Miller platform.

Engineers
to handle
engines
carefully.

217. Enginemen must exercise great care in handling their engines while yardmen or others are making couplings, and give close attention to signals.

Passen-
gers car-
ried on
last sec-
tion only.

218. In case Freight trains, on which passengers are allowed to be carried, are run in sections, the last section of the train only will be permitted to carry passengers, except persons in charge of live stock and freight, and unless otherwise ordered, the last section will do the local work. When the last section is more than one hour behind the first, passengers may be carried on the first section upon special orders from the Superintendent.

Light en-
gine to
run as first
section.

219. When a light engine or special train is sent over the road on the time of a regular train, it shall be run as the first section.

Engine
men
handle
their own
engines.

220. Enginemen must not allow others to handle their engines, except their own firemen, the engineman remaining upon the engine and being responsible.

Striking
stock.

221. Enginemen must use great care to avoid striking stock. If necessary, bring the train to a full stop. Should any stock be killed or injured, the engineman must report same on the prescribed forms.

Full
trains.

222. Conductors and enginemen are required to fill up trains to the full capacity of their engines.

Meeting
under
danger
signals.

223. In case trains under danger signals should meet between stations, the train nearest to a siding should be backed.

By running under danger signals it is understood to run at a rate not exceeding four (4) miles per hour with a flagman one-half mile in advance at all points where there is not a clear view of the track for at least one mile.

Whenever it becomes necessary to back a train, it must be done with great care, under cover of danger signals, and keeping a man constantly on rear car.

Speed of
trains.

224. First-class trains when behind time must not exceed card time unless the condition of track, weather and all circumstances warrant their doing so with safety.

Other trains must not exceed the speed specified in special rules on any portion of the road without a special order from the Superintendent.

Conductors and enginemen are cautioned against reckless running. They must run steadily and uniformly, adhering as closely to time as due regard for safety permits.

Accounta-
bility for
delays

225. Conductors, enginemen and agents will be held to strict account for delays resulting from bad management of their own or on the part of those for whom they are responsible.

Promptness and dispatch are urgently enjoined in transacting business at stations, taking water, oiling, etc.

Station work should be done immediately on arrival.

Clear
public
crossings.

226. Conductors and switchmen must open their trains to clear all public crossings while standing at stations and in no case block a public crossing longer than five (5) minutes. When passenger trains are at stations, care must be taken by freight conductors and switchmen to open their trains to allow passage way for persons going to and from the passenger train.

In no case must a train be backed over a public crossing or highway unless there is a man on rear car to see that crossing is clear; nor must a car be cut loose and allowed to run over a public crossing or highway unless there is a man on car. At night the man referred to must display a light.

Storms.

227. In case of an extraordinary rain storm or high water, trains must be brought to a stop and a man sent out to examine bridges, trestles, culverts and other points liable to damage, before passing over.

Conductors will make careful inquiry at all stopping places, and when thought advisable make extra stops to ascertain the extent and severity of storms, taking no risk. In case of doubt as to safety of proceeding, they will place their train upon the siding and remain there until certain it is safe to proceed.

Must
leave flag-
man in
case of
anything
wrong
with
roadway.

228. When a conductor discovers anything wrong with the track, bridges or culverts, which would be likely to cause an accident to a following train, he must not rely wholly upon the telegraph to notify other trains, but must leave a flagman.

Reports.

229. In making reports of accidents and unusual occurrences, the situation must be fully, clearly and precisely stated, with all relative facts and particulars necessary to a clear understanding of them, as known to the person making the report, without necessity for inquiries to extract such information. Exaggerations must be avoided.

In emergencies, or obstruction of the road by accident or other cause, suggestions based on observation of the actual situation are useful and required, and frequent reports of progress must be made.

In such cases prompt action is required of all employes, and in the absence of designation, the employe on whom the responsibility most naturally falls, will assume authority to direct the work.

Cars must not be thrown down embankments or turned over to clear track.

Mark disabled cars "Bad order."

Authority to take freight engine.

Placing cars at stations.

Care of live stock.

Close doors.

Must not delay trains for meals.

Conductors to be on duty thirty minutes.

Rear brakeman and fireman to have danger signals ready for use.

230. When cars leave the track, they must not be turned over, thrown down embankments, broken up or otherwise damaged, merely to get them out of the way. Every effort must be made by trainmen to put them on the track with as little injury as possible, and take the damaged cars to a siding. The conductor will call on section men or any other convenient force, for assistance, which must be promptly rendered.

231. Conductors will see that the words "Bad Order" are written with chalk on both sides of bad order cars left at stations, and defective part marked with a cross, and report same to Superintendent by telegraph.

232. Should an engine on a Passenger train be disabled on the road, the Conductor may take any Freight engine available.

233. Conductors will comply with instructions of Agents in placing cars and doing other station work. If necessary to move cars for loading or unloading, they must be replaced. In case Agents' orders are unreasonable, the facts must be reported to the Superintendent; but the Agents' orders must be carried out if practicable without endangering or delaying passenger trains. Agents will report violations of this rule, and all cases where Conductors refuse to take cars that are ready to go.

234. Conductors of trains carrying Live Stock will consult the wishes of the stockmen in matters pertaining to the care and comfort of the stock. Especial attention must be given to stock unaccompanied by drovers. In warm weather trainmen will water hogs as often as may be necessary.

235. The doors of empty cars hauled in trains must be kept closed. Trainmen will be held responsible for the proper care and protection of goods and property while in transit in their trains, and they must see that the doors of loaded cars are properly secured and protected as required.

236. Conductors and Enginemen are prohibited from going to meals, or delaying their train for any cause, after receiving an order to proceed, without permission from the Superintendent. If permission is received, the Conductor must report for further orders when ready to go.

237. Conductors and brakemen are required to be on duty at least thirty minutes in advance of their leaving time. Passenger brakemen will remain by their trains to assist passengers, examine tickets and answer inquiries.

238. A Brakeman must always be stationed on the rear car of every train; and must have in his possession a red flag by day, and red and white lanterns (lighted) by night; also six torpedoes ready for immediate use. Every engine must carry a similar equipment of signals for use by the Fireman. Conductors and Enginemen must know that their Brakemen and

Firemen are conversant with and properly understand the application of rules relating to flagging of trains. Conductors of freight trains must see that their brakemen are on top of the train before reaching the whistling post approaching and passing stations. Brakemen must not apply brakes so tightly as to slide a wheel nor allow the brake to remain applied over three minutes while in motion, but in descending grades will use the brake of several cars to check and regulate the train and change brakes frequently. Sticks must not be used to turn the brake wheel in applying brakes.

239. Conductors must give particular attention to the safety and comfort of their passengers. Careful attention must be given to the Heating, Lighting and Ventilation of cars and the supply of water in the tanks. Brakemen and Train Porters will be required to assist ladies, children and infirm persons off and on the cars. Conductors will perform this duty themselves when necessary.

Shortly before reaching a station at which the train stops, the brakemen and porters will pass through the train, except the sleeping cars, and announce distinctly, twice in each car, (with the doors closed) the name of the station they are approaching. At junction stations and crossings where trains leave in different directions, the Conductor of each train must cause to be announced distinctly in each passenger car, before starting, the direction in which the train is to go and the principal stations on the route. Upon leaving a station Conductors will cause the name of the next station at which the train will stop to be called inside of each car. If there are no Brakemen or Porters on the cars, this duty will devolve upon the Conductors.

240. Conductors will prevent any unnecessary noise about passenger trains, particularly at night, and not allow employes to enter or pass through sleeping or dining cars except when necessary in the discharge of their duties. While meals are being served in the dining cars, conductors, trainmen and news agents must, as far as possible, avoid passing through those cars and must remove their hats while in the cars. Conductors will not collect tickets or fare from passengers while at meals, except when it is necessary to do so, and will not permit news agents to carry their wares through the dining cars at meal time except under special circumstances. Care must be taken in switching and handling passenger cars, to disturb the occupants as little as possible.

241. Conductors will see that passengers are seated, and not permit them to ride on the platform. Freight train Conductors must allow none but train crew to ride on freight cars.

242. Conductors will collect fare from all persons traveling without a ticket or pass, and will be allowed no discretion in the matter. Per-

Heating, lighting and ventilation of cars.

Calling stations and junctions.

Prevent unnecessary noise.

Passengers not allowed to ride on platform, &c.

Collect fare, Passes.

Freight trains not to carry passengers except as provided.

News Agents.

Confidence men, beggars etc.

Inspect bulletins.

Registering.

Identification of trains.

Arrangement of cars in train.

sons entitled to free transportation will be furnished with passes upon application to the proper officials. Fares wrongfully collected will be refunded.

243. Freight trains will not carry passengers except as designated in the Special Rules. Trains so designated will carry employes with passes and passengers when provided with proper transportation as required by the rules.

Employes with passes may be carried on all freight trains between stations at which trains stop.

Persons accompanying live stock (or other freight requiring man in charge), may be carried on the same train with the stock (or freight), when provided with proper transportation.

244. News Agents must not be allowed to discharge their duties unless equipped with the cap and badge designated for them to wear. Neatness in personal appearance is required.

Conductors will be held responsible for the good conduct of News Agents while on duty, and are authorized to prevent them acting in that capacity for insubordination, violation of rules, or any improper action, and will see that nothing improper is offered for sale, and should there be, they will suppress it and promptly report the facts to the Superintendent. News Agents must not be allowed to annoy passengers by urging their sales, leaving books and articles with them unsolicited, or in any other manner.

245. Conductors must look out for confidence men, monte players, prize package vendors, and other swindlers, and when known to be on the train must have them watched, and personally warn passengers and otherwise prevent their operating on the train, and report case by wire to the Superintendent. They must not permit beggars, gamblers, or unauthorized peddlers to practice their vocations on the train, or allow advertising matter to be distributed.

246. Conductors and Enginemen will carefully inspect Bulletin Boards before starting from Terminal Stations.

247. Conductors of all trains must enter in train register book at terminal stations, or wherever such books are kept, the time of arrival and departure of their trains and all information called for by same.

248. Conductors of trains when meeting each other by special order will fill up and exchange identification tickets, showing number of train and number of engine.

TRAIN IDENTIFICATION TICKET.

This train is Section, Train No. Engine No.
Carrying ... Signals. From to Station.
..... 18..... Conductor.

249. Trains must be made up in the following order. Freight cars, if any, next to the engine; then fruit, mail, express, baggage, smoking, Second-class coaches, First-class coaches,

Chair and Sleeping cars, except that cars equipped with Miller, Janey, or other similar Coupler and Air Brake, must be hauled in forward part of freight trains; cars not equipped with Air Brakes or Air Pipes and connections, must be placed in rear of Air Brake cars.

Passenger cars having Baker heaters must be run with heater to the front when practicable.

250. Switches, when not in actual use, must be set for the main track and locked. Agents are responsible for the proper position and security of switches at their stations, and must know personally, at least ten minutes before the regular trains are due, and before leaving their stations at night, that switches are secure and everything is right for safe passage of trains.

251. Agents must not allow cars to stand on main track for loading or any other purpose without special permission from the Superintendent in each case. He must know that cars on siding properly clear main track, that brakes are applied, and wheels blocked when necessary.

252. Agents will see that the doors and other openings of loaded cars are closed and securely fastened before being placed in trains, and that the doors of cars loaded with powder, oil, hay, straw, or other inflammable material, are battened, and placed in train near the caboose or at least ten cars distant from the engine, as a protection against fire. Conductors and Agents must examine the fastenings of cars, and keep such a record of their condition as will enable them to answer all inquiries. All doors of loaded cars must be sealed, and those not provided with locks or other secure fastenings, must be cleated so that the door of every loaded car will be properly secured.

253. Sending personal packages or letters on private business by trains, is strictly prohibited. Communications by trains must be exclusively on official business.

254. Agents are required to make daily inspections of yards, platforms, offices, buildings and surroundings, and will co-operate with Supervisors and Roadmasters in maintaining the neat and tidy appearance of same.

255. Cars containing time freight will (in addition to notation on way-bills) be designated by cards in the following form, tacked on doors on each side of car:

TIME FREIGHT.

Car Initial.....No....For.....Station.
FromStation.....188..

This car must have quick dispatch and preference over other cars not likewise carded.

If for any cause the car has to be set out, conductors will telegraph Superintendent and state reason for same.

N. B.—This card must be detached by receiving agent, endorsed on back with required information, and sent by first passenger train to the General Freight Agent.

ENDORSEMENT ON BACK.

Car received at.....Station, in Train No.
.....on the...day of.....188.

.....Agent.

These cards must be removed by receiving agents properly filled out and forwarded as directed.

256. Agents, operators, bridge and section men will advise the Superintendent promptly as to severity of storms and extent of damage, and also notify trainmen.

257. No person will be permitted to engage in train service without first passing the prescribed examination on these rules.

**TRACKMEN, BRIDGEMEN, WORK-
TRAINMEN, AND WATCHMEN.**

258. All persons engaged in track or bridge work shall keep sharp look out for trains from either direction, and shall not assume that a train may not come for any certain time; nor act on the assurance of any person to that effect; and will protect themselves at all times with proper signals, as per Rule 99.

They must bear in mind that under the telegraph system a train may be expected at any moment.

259. Roadmasters are responsible for the safety of track, good condition of road bed, fences, right of way, and grounds, and neat and tidy appearance of stations, buildings and surroundings. They will frequently examine bridges, culverts, water stations and other structures, and promptly report any defects or failure to Superintendent and Supervisor.

260. Supervisors are responsible for the safety and good condition of bridges, culverts, buildings and other structures. They will co-operate with Roadmasters in protecting the interests of the Company in all respects.

261. Supervisors, Roadmasters, and others employing Foremen, will be held responsible for the proper understanding of these rules by their foremen.

262. Foremen must know that their gangs are always supplied with the proper signals and thoroughly instructed as to their use, and they will be held responsible for the strict observance of these rules by their men.

263. At all times when work is going on which renders the track unsafe for trains to pass at their usual rate of speed, proper signals must be sent out at least one quarter a mile from the spot, in each direction, as a caution to approaching trains. After or during severe storms, or a thaw, a man must be sent over the road before the passage of regular trains for the purpose of ascertaining if track is safe.

Danger signals.

264. Before a rail or frog is taken out, or any obstruction caused to the main track, or when any break or obstruction is discovered, the signal of danger must be sent out in both directions at least one-half mile from the point of danger, and a faithful man must remain and keep it displayed until he is recalled by the foreman, which must not be done until the track is known to be safe.

Danger signals.

265. A red light or flag, when used as a danger signal, must be in the hands of a reliable man.

Aid in passage of trains.

266. Foremen and men in their employ, must at all times hold themselves in readiness to aid the passage of trains; and in case of accident or delay, will obey the orders of the conductors.

Examine sections daily.

267. Section foremen must pass over and examine their sections daily, and ascertain that the track, slopes, cuts, bridges, switches, etc., are safe, and make necessary repairs. This should be done in the morning.

To be out in stormy weather.

268. In case of extraordinary storms or high water, foremen must be out with their men (day and night) with proper signals, and watch those places most liable to damage, and take every precaution to prevent accident.

Track clearance.

269. No wood, timber, freight, or material of any kind will be allowed within six feet of the main track. The exact location of elevators, ware-houses, coal yards, lumber yards or wood yards, for outside parties, will be fixed by the Division Engineer, but shall not in any case be less than *fifty feet* from the center line of a main track, nor at a less distance than *five and one-half feet* from nearest rail in side track to nearest part of building, nor less than *one hundred and fifty feet* from any of the Company's buildings. In no event will any such structure be located on any main or passing track or on the lead of any track. Rocks, trees, or other obstructions liable to fall on the track, must be immediately removed.

Put out fires.

270. It is the duty of all employes to put out fires set by engines, or otherwise, and to guard the property of others as well as that of the Company, exposed to such fires, whether responsibility attaches to the Company or not.

Repair telegraph lines.

271. Track and bridgemen will pay particular attention to the telegraph line. In case the wires are found broken or on the ground, crossed or in any way obstructed, they must be repaired in a temporary manner *immediately*, and where such repairs are impracticable, notice must be given by telegraph, messenger or the earliest means practicable.

Look after water supply and keep fences in repair.

272. Foremen must look after water stations, and will see that the water supply is kept up, and promptly report any failure or defect, and also see that fences and cattle guards are in good repair. A break in a fence should not be overlooked, and when it cannot be repaired for want of materials, the foreman will give the roadmaster

Switch to be set to main track and locked.

Cars not to stand on main track.

Doors and other openings of cars to be fastened.

Personal letters and packages on trains prohibited

Agents to make daily inspection of buildings and yards.

Time freight.

Reporting storms.

Examination on rules.

Look out for trains.

Responsibility of Roadmasters.

Bridge Supervisors.

Examination on rules.

Keep supplied with proper signals.

Display signals when track is unsafe.

immediate notice of it, stating what material is required. When fences are taken down for any purpose, they must be immediately replaced.

Hand cars.

273. Hand cars or other property of the Company must not be used except on the business of the Company.

See that watchmen are attentive.

274. Foremen and others employing watchmen, must see that they understand and attend to their duties.

Report violation of rules.

275. Watchmen will be required to report promptly any accident or risk of accident, or occurrences not consistent with safety or good order.

Watchman always on duty.

276. When day and night watchmen are employed, they must not leave their posts until relieved.

Perform other duties when not engaged watching.

277. When the time of watchmen is not wholly occupied with watching, they will perform such other duties as may be required of them.

Go over sections in advance of passenger train.

278. The rounds of road watchmen or track walkers must be so arranged as to pass over their section in advance of passenger trains when practicable. They will carefully examine the roadway, keeping a sharp lookout for broken rails; observe switches, try locks, and see that they are in proper order; see that cars clear the main track; examine buildings and other property, and protect same from theft, fire, or other damage. Should an obstruction or anything occur that would be liable to endanger trains, they will at once display danger signals, as directed in the Rules, and send word to their foreman and to the nearest telegraph office.

279. Bridge and snow-shed watchmen must pass over their beats immediately after the passage of trains, keeping sharp lookout for fire. They are responsible for the cleanliness about structures, and must remove combustible matter from their vicinity, make frequent examinations and report any decay or failure; they will allow no one but employes upon bridges or structures.

RULES FOR THE MOVEMENT OF TRAINS BY TELEGRAPHIC ORDERS.

Special orders.

500. Special orders, directing movements varying from or additional to the Time-table, will be issued by the authority and over the signature of the Superintendent. They are not to be used for movements that can be provided for by rule or time-table. They must not contain information or instructions not essentially a part of them.

They must be brief and clear, and the prescribed forms must be used when applicable; and there must be no erasures, alterations or interlineations.

Transfers of orders from one Dispatcher to another shall be in writing in the train order book,

dated and timed, with complete list of unexpired orders; or if done by telegraph the above shall be transmitted; an understanding returned and complete given, before the authority is exercised by another person.

Duplicate orders.

501. Each order must be given in the same words to all persons or trains directly affected by it, so that each shall have a duplicate of what is given to the others. Preferably an order should include but one specified movement.

How numbered.

502. Orders will be numbered consecutively for each day as issued, beginning with No. 1 at midnight.

To whom addressed

503. Orders must be addressed to those who are to execute them, naming the place at which each is to receive his copy. Those for a train must be addressed to the Conductor and Engineer, and also to a person acting as pilot. A copy for each person addressed must be supplied by the operator.

Dispatchers record

504. Each order must be written in full in a book provided for the purpose at the Chief Dispatcher's office; and with it must be recorded the names of train men and others who have signed for the order; the time and signals, showing when and from what offices the order and responses were transmitted; and the train Dispatcher's initials. These records must be made at once on the original copy, and not afterward, from memory or memoranda.

Definition of rights.

505. The terms "superior right" and "inferior right" in these rules, refer to the rights of trains under the Time-table and Train Rules and not to rights under Special Orders.

Use of signal 31.

506. When an order is to be transmitted, the signal "31," (as provided in Rule 509) or the signal "19," (as provided in Rule 511) meaning "Train Order," will be given to each office addressed, followed by the word "copy," and a figure indicating the number of copies to be made, if more or less than three—thus, "31 copy 5," or "19 copy 5."

Simultaneous transmission.

507. An order to be sent to two or more offices must be transmitted simultaneously to as many as practicable. The several addresses must be in the order of superiority of rights of trains, and each office will take only its proper address. When not sent simultaneously to all, the order must be sent first for the train having the superior right of track.

Manifold copies.

508. Operators receiving orders must write them out in manifold during the transmission, and make the requisite number of copies at one writing, or trace others from one of the copies first made.

Repeating.

509. When an order has been transmitted, preceded by the signal "31," operators receiving it must (unless otherwise directed) repeat it back at once from the manifold copy, and in the succession in which their several offices have been addressed. Each operator repeating must ob-

serve whether the others repeat correctly. After the order has been repeated correctly by the operators required at the time to repeat it, the response "OK," authorized by the train dispatcher, will be sent, simultaneously to as many as practicable, naming each office. Each operator must write this on the order with the time, and then reply "i i O K," with his office signal.

Those to whom the order is addressed, *except engineers*, must then sign their names to the copy of the order to be retained by the operator, and he will send their signatures to the Superintendent. The response "complete," with the Superintendent's initials, will then be given, when authorized by the train dispatcher. Each operator receiving this response will then write on each copy the word "complete," the time, and his last name in full; and will then deliver a copy to each person included in the address, *except engineers* and each must read his copy aloud to the operator. The copy for each *engineer* must be delivered to him personally by the conductor, and the *engineer* must read it aloud in the presence of the conductor, and understand it before acting upon it.

Correct to superior train.

510. For an order preceded by the signal "31," "complete" must not be given to the order for delivery to a train of inferior right until "OK" has been given to and acknowledged by the operator who receives the order for the train of superior right. Whenever practicable, the signature of the conductor of the train of superior right must be taken to the order and "complete" given before the train of inferior right is allowed to act on it.

Treated as holding order.

After "OK" has been given and acknowledged and before "complete" has been given, the order must be treated as a holding order for the train addressed, but must not be otherwise acted on until "complete" has been given.

Void if line fails.

If the line fails before an office has received and acknowledged "OK" to an order preceded by the signal "31" the order at that office is of no effect, and must be there treated as if it had not been sent.

511. When an order has been transmitted preceded by the signal "19," operators receiving it must (unless otherwise directed) repeat it back at once from the manifold copy, and in the succession in which the several offices have been addressed. Each operator repeating must observe whether the others repeat correctly. After the order has been repeated correctly, the response "complete," with the Superintendent's initials, will be given, when authorized by the train dispatcher. Each operator receiving this response must write on each copy the word "complete," the time, and his last name in full, and reply "i i complete" with his office signal, and will personally deliver the order to the persons addressed without taking their signatures.

512. For an order preceded by the signal "19," "complete" must be given and acknowledged for the train of superior right before it is given for the train of inferior right.

If the line fails before an office has received and acknowledged the "complete" to an order, preceded by the signal "19," the order at that office is of no effect, and must be treated as if it had not been sent.

513. The order, the "O.K." and the "complete" must each, in transmitting, be preceded by "31," or "19," as the case may be, and the number of the order, thus, "31" No. 10," or "19, No. 10." In transmitting the signature of a conductor it must be preceded by "31," the number of the order, and the train number, thus, "31, No. 10, Train No. 5." After each transmission and response the sending operator must give his office signal.

514. The operator who receives and delivers an order must preserve the lowest copy. On this must appear the signatures of those who sign for the order, and on it he must record the time when he receives it; the responses; the time when they are received; his own name; the date; and the train number, for which places are provided in the blanks. These copies must be sent to the Superintendent daily.

515. Orders used by conductors must be sent by them daily to the Superintendent.

516. Enginemen will place their orders in the clip before them until executed.

517. For orders delivered at the Dispatcher's office the requirements as to record and delivery will be the same as at other points.

518. Orders to persons in charge of work requiring the use of track in yards or at other points, authorizing such use when trains are late, must be delivered in the same way as to conductors of trains.

519. An order to be delivered to a train at a point not a telegraph station, or while the office is closed, must be addressed to

"C. and E., No.——at—, care of—,—" and forwarded and delivered by the conductor or other person in whose care it is addressed. "Complete" will be given upon the signature of the person by whom the order is to be delivered, who must be supplied with copies for the conductor and engineman addressed, and a copy upon which he shall take their signatures. This copy he must deliver to the first operator accessible, who must preserve it, and at once advise the train dispatcher of its having been received.

Orders so delivered to a train must be compared by those receiving them with the copy held by the person delivering and acted on as if "complete" had been given in the ordinary way.

Orders must not be sent in the manner herein provided, to trains the rights of which are thereby restricted.

Each section considered separate.

520. In moving trains by Special Order, each section shall be considered as a separate and distinct train, and designated by its proper section and train number, and shall receive and run only under Special Orders addressed to its own Conductor and Engineman.

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

There should be, if possible, at least one telegraph office between those at which opposing trains receive meeting orders.

Orders should not be sent an unnecessarily long time before delivery, or to points unnecessarily distant from where they are to be executed. No orders (except those affecting the train at that point), should be delivered to a freight train at a station where it has much work, until after the work is done.

522. A train, or any section of a train, must be governed strictly by the terms of orders addressed to it and must not assume rights not conferred by such orders. In all other respects it must be governed by the Train Rules and Timetable.

523. Orders once in effect continue so until fulfilled, superseded or annulled. Orders held by or issued for a regular train which has lost its rights, as provided by Rule 107, are annulled and other trains will be governed accordingly.

524. A fixed signal must be used at each train order office which shall display red when trains are to be stopped for orders. When there are no orders the signal must display white.

When an operator receives the signal "31," or "19," he must immediately display red, and then reply "red displayed." The signal must not be changed to white until the object for which red is displayed is accomplished.

While red is displayed all trains must come to a full stop, and any train thus stopped must not proceed without receiving an order addressed to such train, or a clearance card on form specified below, stating over the operator's signature that he has no orders for it. The issue of clearance cards must be authorized by Dispatchers in all cases, except, that when lines are not working, they may be issued without such authority.

CLEARANCE CARD.

Dover, 9:15 A. M., March 25, 1887.

Conductor and Engineman No. 12

I have no orders for your train. Signal is out for No. 16.

John Jones,
Operator.

This does not interfere with or countermand any orders you may have received.

Conductor MUST SEE that the number of HIS TRAIN is entered in the above form correctly.

Conductor and Engineman must each have a copy.

Operators must be prepared with other signals

to use promptly if the fixed signal should fail to work properly.

When a semaphore is used, the arm means red when horizontal and white when in an inclined position.

Conductors and Enginemen of all trains shall look for the Signal at each office, know positively what it indicates, and be governed accordingly. In case of neither signal being displayed, or at night a signal lamp or lantern in position but not burning, they shall consider the same as a signal for orders and not pass the station without orders or a Clearance. Such cases of absence of signal must be at once reported to the Superintendent.

If a train is held at night at a station where there is no night Operator, the Conductor will call the day Operator to get orders for him.

Every case of running by or non-observance of signal, must be at once reported to the Superintendent with number of train and engine, and other information necessary to place the responsibility.

The train Order Signal Lamps must be lighted just before dark and kept burning until clear day-light in readiness for instant use.

On sight of a Signal for Orders, Conductors must go at once to the office to receive and respond to them.

525. Operators will promptly record and report to the dispatcher the time of departure of all trains and the direction in which extra trains are moving. They will record the time of arrival of trains and report it when so directed.

Freight Conductors will fill out Registering Tickets in the following form, leaving one at every telegraph station where there is no train register, being particular to state if carrying signals or not.

TRAIN REGISTERING TICKET.

.....Section, Train No..... Engine No.....
Arrived at..... Station at..... M. Left at..... M.
Has..... Loads..... Empties. Carrying..... Signals,
From..... To.....
.....Conductor.
.....18

NOTE.—Freight Conductors will fill out and leave one of these tickets at each telegraph station, as required by Rule 525. Operators will forward such tickets to Superintendent daily.

526. Regular trains will be designated in orders by their schedule numbers, as "No. 10," or "2d No. 10;" extra trains by engine numbers, as "Extra 798;" and all other numbers by figures. The direction of the movement of extras will be added when necessary, as "East" or "West." Time will be stated in figures only.

527. The following signs and abbreviations may be used:

- Initials for Superintendent's signature.
- Such office and other signals as are arranged by the Superintendent.
- C & E—for Conductor and Engineman.

Preceded by signal 31.

Operators' copy.

Conductors' copy.

Enginemen's copy.

Delivered at Dispatcher's office.

Others.

Non-telegraph offices.

Sema-phore.

Report signal lamps not burning.

Call day operator.

Running by signals.

Report trains.

Registering.

Designation of trains.

Signs and Abbreviations.

O K—as provided in these rules.
 Min—for Minutes.
 Junc—for Junction.
 Frt—for Freight.
 No—for Number.
 Eng—for Engine.
 Sec—for Section.
 Opr—for Operator.
 9—to clear the line for Train Orders, and for Operators to ask for train orders.
 31 or 19—for Train Order as provided in the rules.
 The usual abbreviations for the name of the months and stations.

FORMS OF TRAIN ORDERS.

Form A.—Fixing Meeting Points for Opposing Trains.

— and — will meet at —

EXAMPLES.

*No. 1 and No. 2 will meet at Bombay,
 No. 3 and 2nd No. 4 will meet at Siam.
 No. 5 and extra 95 will meet at Hong Kong.
 Extra 652 East and Extra 231 West will meet at Yokohama.*

Trains receiving this order will, with respect to each other, run to the designated point, and having arrived there will pass in the manner provided by the rules.

Form B.—Authorizing a train to Run Ahead of or Pass Another Train Running in the Same Direction.

(1) — will pass — at —

(2) — will run ahead of —, from — to —.

EXAMPLES.

(1)—*No. 1 will pass No. 3 at Khartoum.*
 (2)—*No. 4 will run ahead of No. 6 from Bengal to Madras.*

When under this order a train is to pass another, both trains will run according to rule to the designated point and there arrange for the rear train to pass promptly.

Form C.—Giving a Train of Inferior Right the Right of Track Against an Opposing Train of Superior Right.

[NOTE.—This form of order must not be used when Form A can be used.]

— has the right of track against — to —.

EXAMPLES.

(1)—*No. 2. has right of track against No. 1 Mecca to Mirbat.*
 (2)—*Extra 37 has right of track against No. 3 Natal to Rattam.*

[NOTE.—The terms "superior right" and "inferior right," here and elsewhere in these rules, refer to the rights of trains under the time-table and train rules, and not to rights under special orders.]

This order gives a train of inferior right the right of track against one of superior right, to a designated point.

If the trains meet at the designated point, the

train of inferior right must take the siding, unless the rules or orders otherwise indicate.

Under this order, as illustrated by example (1) if the train of superior right reaches the designated point before the other arrives, it may proceed, provided it keeps clear of the schedule time of the train of inferior right as many minutes as the inferior train was before required by the train rules to keep clear of the superior train.

If the train of superior right, before meeting, reaches a point beyond that named in the order, the conductor must stop the other train where it is met and inform it of his arrival.

Under example (2) the train of superior right cannot go beyond the designated point until the extra train arrives.

When the train of inferior right has reached the designated point, the order is fulfilled, and the train must then be governed by time-table and train rules or further orders.

The following modification of this form of order will be applicable for giving a work train the right of track over all other trains, in case of a wreck or break in the track.

EXAMPLE.

Work Train extra 275 has right of track over all trains between Stockholm and Edinburgh (from 7 p. m.) (———.)

This gives the work train the exclusive right of the track between the points designated.

Form D.—Giving all Regular Trains the Right of Track Over a Given Train.

All regular trains have right of track against — between — and —.

EXAMPLE.

All regular trains have right of track against No. 1 between Moscow and Berlin.

This order gives to any regular train of inferior right receiving it the right of track over the train named in the order, and the latter must clear the schedule times of all regular trains, the same as if it were an extra.

Form E.—Time Orders.

[NOTE.—This form of order must not be used when Form A can be used.]

(1) — will run — late from — to —.

(2) — will wait at — until — for —.

EXAMPLES.

(1) *No. 1 will run 20 min. late from Joppa to Mainz.*
 (2) *No. 1 will wait at Muscat until 10 a. m. for No. 2.*

Form (1) makes the schedule time of the train named, between the points mentioned, as much later as the time stated in the order, and any other train receiving the order is required to run

with respect to this latter time, the same as before required to run with respect to the regular schedule time. The time in the order should be such as can be easily added to the schedule time.

Under Form (2) the train of superior right must not pass the designated point before the time given, unless the other train has arrived. The train of inferior right is required to run with respect to the time specified, the same as before required to run with respect to the regular schedule time of the train of superior right.

Form F.—For Sections of Regular Trains.

— will carry signals — to — for —

EXAMPLES.

No. 1 will carry signals Astrakhan to Cabul, for Eng. 85.

2nd No. 1 will carry signals London to Dover for Eng. 90.

This may be modified as follows:

Engines 70, 85 and 90 will run as 1st, 2d and 3d sections of No. 1 London to Dover.

For annulling a section:

Eng. 85 is annulled as second section of No. 1 from Dover.

If there are other sections following add:

Following sections will change numbers accordingly.

The character of train for which signals are carried may be stated. Each section affected by the order must have copies, and must arrange signals accordingly.

Form G.—For arranging a Schedule for a Special train.

Eng. — will run as special — train, leaving — on — on the following schedule, and will have the right of track over all trains.

Leave —.

—.

Arrive —.

EXAMPLE.

1. Eng. 77 will run as special passenger train leaving Turin on Thursday, Feb. 17th, on the following schedule, and will have the right of track over all trains.

Leave Turin 11.30 p.m.

Pekin 12.25 a.m.

Canton 1.47 a.m.

Arrive Rome 2.22 a.m.

Example 1 may be varied by specifying particular trains over which the special shall or shall not have right of track, and any train over which the special train is thus given the right of track must clear its time as many minutes as such train is required to clear the schedule time of a first-class train.

EXAMPLE.

2. Eng. 75 will run as special passenger train, leaving Geneva Thursday, Feb. 17th, with the rights of a first class train east on the following schedule, which is a supplement to Time-table No. 10.

Leave Geneva 10 a. m.
Pekin 10:30 a. m., passing No. 12.
Canton 11 a. m., meeting No. 7.
Arrive Athens 11:30 a. m.

Example 2 will be in each case a temporary supplement to the current Time-table, and the designation of meeting and passing points is to be taken as the same as such designation by full faced type on the Time-table, and the rules are to govern in the same way.

Form H—Extra Trains.

— will run extra from — to —

EXAMPLE.

(a.) *Eng. 99 will run extra from Berber to Gaza.*

A train receiving an order to run extra is not required to guard against opposing extras, unless directed by order to do so, but must keep clear of all regular trains as required by rule.

A "work train" is an extra, for which the above form will be used for a direct run in one direction. The authority to occupy a specified portion of the track, as an extra while working, will be given in the following form :

(b.) *Eng. 292 will work as an extra from 7 a. m. until 6 p. m. between Berne and Turin.*

The working limits should be as short as practicable, to be changed as the progress of the work may require. The above may be combined, thus :

(c.) *Eng. 292 will run extra from Berne to Turin and work as an extra from 7 a. m. until 6 p. m. between Turin and Rome.*

When an order has been given to "work" between designated points, no other extra must be authorized to run over that part of the track without provision for passing the work train.

When it is anticipated that a work train may be where it cannot be reached for meeting or passing orders, it may be directed to report for orders at a given time and place, or an order may be given that it shall clear the track for a designated extra, in the following form :

(d.) *Work Train 292 will keep clear of Extra 223, East, between Antwerp and Brussels after 2 10 p. m.*

In this case, extra 223 must not pass either of the points named before 2 10 p. m., at which time the work train must be out of the way between those points.

When the movement of an extra train over the working limits cannot be anticipated by these or other orders to the work train, an order must be given to such extra, to protect itself against the work train, in the following form :

(e.) *Extra 76 will protect itself against work train extra 95 between Lyons and Paris.*

This may be added to the order to run extra.

A work train when met or overtaken by an extra must allow it to pass without unnecessary detention.

When the conditions are such that it may be considered desirable to require that work trains shall at all times protect themselves while on working limits, this may be done under the following arrangements. To example (b) add the following words

(f.) *protecting itself against all trains.*

A train receiving this order must, whether standing or moving, protect itself within the working limits (and in both directions on single track) against all trains, in the manner provided in Rule 99.

When an extra receives orders to run over working limits it must be advised that the work train is within those limits by adding to example (a) the words

(g.) *Eng. 292 is working as an extra between Berne and Turin.*

A train receiving this order must run expecting to find the work train within the limits named.

Form J.— Holding Order.

Hold —.

EXAMPLES.

(1.) *Hold No. 2.*

(2.) *Hold all trains east.*

As any order for which "O. K." has been given and acknowledged operates as a holding order for the train to which it is addressed, this form will only be used in special cases, to hold trains until orders can be given or for some other emergency. The reason for holding may be added, as "for orders."

This order is not to be used for holding a train, while orders are given to other trains against it, which are not at the same time given to it in duplicate. It must be respected by conductors and enginemen of trains thereby directed to be held as if addressed to them. Conductors when informed of the order must sign for it, and their signatures must be sent and "complete" obtained.

When a train has been so held it must not go until the order to hold is annulled, or an order is given in the form :

"— may go."

This must be addressed to the person or persons to whom the order to hold was addressed and must be delivered in the same manner.

Form K.—Annulling a Schedule Train.

— of — is annulled.

EXAMPLES.

(1.) *No. 1 of Feb. 29th is annulled.*

(2.) *No. 3 due to leave Naples Saturday, Feb. 23th, is annulled.*

Adding "from Alaska" or "between Alaska and Halifax," when appropriate.

This order takes away all rights of the train annulled and authorizes any train or person receiving it to use the track as if the train annulled were not on the time-table.

If a train is annulled to a point named, its rights beyond that point remain unaffected.

The train dispatcher may direct any operator to omit repeating back an order annulling a train until he has occasion to deliver it.

When a train has been annulled it must not be again restored under its original number by special order.

Form L.—Annulling or Superseding an Order.

"Order No. — is annulled."

This will be numbered, transmitted and signed for as other orders.

If an order which is to be annulled has not been delivered to a train, the annulling order will be addressed to the operator, who will destroy all copies of the order annulled but his own, and write on that:

Annulled by Order No. —.

An order superseding another may be given, adding "this supersedes order No. —," or adding "instead of —."

EXAMPLE.

No. 1 and No. 2 will meet at Sparta, instead of at Thebes.

An order which includes more than one specified movement must not be superseded.

An order that has been annulled or superseded must not be again restored by special order under its original number.

In the address of an order annulling or superseding another order, the train first named must be that to which rights were given by the order annulled or superseded, and when the order is not transmitted simultaneously to all concerned, it must be sent to the point at which that train is to receive it and the required response first given, before the order is sent for other trains.

CONCERNING AIR-BRAKES.

1. In making up trains, all couplings must be united so that the brakes will apply throughout the whole train. The cocks in the brake-pipe must all be opened (handles pointed down), except that on the rear of the last car, where hose coupling must be coupled to dummy coupling and cock closed (handle up).

In detaching engines or cars, the couplings must invariably be parted by hand (and not pulled apart); the cocks in the main brake-pipes must always be closed before separating the couplings, to prevent application of the brakes. Before detaching the engine or any cars, the brakes must be fully released on the whole train.

In moving cars when air brakes are not being used, hose couplings must be coupled to dummy couplings.

2. For the automatic brake the handle of the four-way-cock must be turned horizontally; if turned down, it will be changed to the simple air-brake; if turned midway between these two positions, it will cut the brake out, and should be so turned when desirable to have the brakes out of use on any particular car.

3. Car inspectors will, in cold weather, frequently drain triple valve, and see that brake cylinders are cleaned and oiled at least once in three months, and oftener if necessary, and date of same marked on cylinder with chalk. Conductor's valve must be kept tight and must be examined by car inspectors.

4. If the brakes are applied, when the engine is not attached to the train, or car, they can be released by opening the release cock.

5. All trainmen are required to familiarize themselves with the method of operating the air-brake, particularly as to releasing them when brakes stick, or are applied by bursting of pipe, hose, or otherwise, causing accidental stoppage of train.

Enginemen upon finding that the brakes have been applied, must at once aid in stopping the train by turning the handle of the brake valve toward the right so as to maintain the pressure in main reservoir; if the gauge shows that all the air has escaped, they will know that the pipe or hose has burst or that the Conductor's valve has been opened and held open. If pressure is only reduced sufficiently to apply brakes, and reduction then ceases, he will know that Conductor's valve has been opened long enough to cause stoppage of train and then closed. In this case he can easily release the brake in the usual way, on receiving signal from the Conductor.

6. The conductor's valve **must only** be used in cases of emergency, when it should be held open to allow air to escape, until train is brought to a stand.

7. When brakes have been applied in such a manner that they can not be released from the engine, the Engineman should warn the trainmen by two short blasts of whistle, given three times (see Rule 50 a) and upon stoppage of train the rear brakeman will immediately go back the proper distance to protect the rear of the train, **without attempting to release any brakes.**

The Conductor, after seeing that the rear of train has been protected, will release as many brakes as he can, beginning at the rear. The Fireman will release as many as he can, beginning at the tender. The Head Brakeman will begin about one-third the distance from the engine and release brakes toward the rear of the train until he meets the Conductor. As soon as the brakes are released the train may proceed, depending upon hand brakes in case of failure of air. All the brakes on an average train can be released in about one minute if each employe attends to his duties as designated herein.

8. When the train is brought to a full stop, it is the duty of brakemen to examine each car to see that every brake is released. If a brake is found applied which the Engineman cannot release from the engine, it may be cut out, as per Rule 2. Brake on rear car in train should not be cut out when possible to avoid it.

9. In setting out cars, the air should be fully released and hand-brakes used.

10. Enginemen will be held responsible for the proper workings of the air-brake, and must report on arrival at terminal stations any failure or defect, and must know that they are in perfect working order before starting out on their runs.

The Air-Brake must be tested by applying and releasing the brake from the engine before starting from terminal stations, and at all other places where engine or cars have been detached or hose Couplings separated. Brakemen will carefully watch such tests and report any failure.

11. Brakemen will carefully watch the action of brakes at all stops, and report sliding of wheels (if any) to Engineman who must govern himself accordingly.

12. The pump must be constantly run, but not faster than is necessary to maintain 70 pounds pressure for passenger, and 60 to 65 pounds for freight trains. Enginemen will be held responsible for the sliding of wheels, and must in no case carry excessive pressure.

13. Enginemen when applying the brakes must not use the full pressure of air except in cases of emergency.

For ordinary stops, air must be applied lightly by opening the valve and closing it gently when the pressure has been reduced from four to eight pounds on the gauge, and at a sufficient distance to enable them to stop the train without discomfort to passengers, sliding the wheels or injury to the machinery of the train. The brakes are fully applied when the pressure shown on the gauge has been reduced twenty pounds; any further reduction is a waste of air.

14. In making a stop, it is important to make as few applications of the brake as possible. If more than two are made, some of the brakes are likely to stick.

15. If Engineman feels that some of the brakes are not released, he should put his brake valve at lap and pump up ten or fifteen pounds more air in the main reservoir and throw it on the train, which will release all brakes.

16. In releasing brakes the handle of the brake valve must be moved quite against the stop and be kept there for ten or fifteen seconds, and then moved back against the intermediate stop, which is the feed position, and where it must remain while the train is running, excepting on down grades, when after using the brakes some distance, the pressure has been reduced; in order to restore the pressure quickly, the handle of the brake valve must be left in the releasing position; this gives a full opening from the main reservoir to the train.

If greater time for re-charging is necessary, reduce the speed of the train.

17. When the grades will permit, the brakes on passenger trains should always be released before coming to a full stop thereby avoiding the sudden action of the cars, which is extremely annoying to passengers and injurious to cars. ●

18. The handles of the "pressure retaining valve," at the end of each car, must be turned horizontally before descending continuous, heavy grades. The valve in this position retains a pressure of ten pounds in brake cylinder, which partly controls train while brake is being released and re-charged; on reaching the foot of the grade the handles must be turned down, allowing the pressure to escape freely. And they should always be kept in this position on short or slight grades and level track. Particular attention must be given to see that the handles of these valves are in proper position at all times.

19. When double headers are run, air brakes should be used by head engineman alone; second engineman should close stop cock in train pipe under his valve, or the absence of this stop cock, he should place engineman's valve in the "lap" position in order to give forward engineman complete control of the brakes.

Second engineman will also keep his air pump working, and thus have pressure ready for any emergency, such as failure of pump on forward engine; in which case, forward engineman proceeds as second engineman would in above. The second engineman having assumed control of the brakes, should retain charge of same until the end of the trip, except in case of necessity which may again reverse the operation.

Where helpers are used only for a short distance, regular engineman of train will keep charge of and be responsible for proper handling of brakes.

20. When on mountain grades it should always be borne in mind that train must be kept well under control: descending at high speed should not be practiced with any train, as some part of the machinery may fail, and while practicable to control speed with hand brakes at eight to ten miles per hour, it may be impossible at twenty to thirty miles per hour to regain its control. No experiments should be made with the brakes when on mountain grades. The following essential points should be observed in holding a train of air brake cars while descending heavy grades.

1st. Train should be charged with maximum pressure before bringing brakes into use.

2nd. Force of brakes should be regulated so as to maintain a regular and steady speed of train, also make as long a distance as possible to each application of the brakes; by doing this the pressure is used economically and the pump is given more time to accumulate the necessary pressure for re-charging.

3rd. Brake valve should be kept in releasing position while recharging, thereby giving the brakes the greatest advantage in recharging quickly.

4th. Use every effort to restore full amount of pressure consumed in previous application before making new application of brakes.

5th. Reduce pressure, as shown on gauge, not more than 15 to 20 pounds from one recharging to another, otherwise it will be difficult to replenish the full amount in so short a time.

21. Driver brakes should be applied gradually in order not to bring a too sudden strain on the brake rods and lever. Engine should not be reversed when driver brakes are set, as the effects would be to lock and slide the wheels.

22. When the number of air brakes in train are insufficient, hand brakes next to and back of air brakes should be used. If hand brakes at rear end of train and air brakes at forward end are used, and air brakes are released before first releasing hand brakes, the slack will run out, and train would probably break apart. By using all brakes at forward end slack will always remain together back of hand brakes, even if air brakes are released first.

23. Engineman should always have on engine, one extra hose for connection between engine and tender, and one for connection between tender and car. Defects in air brakes should be reported to Superintendent, by telegraph, giving

number and initial of car and nature of defect.

Trainmen must watch train closely while in motion, and pay special attention to wheels sliding and brakes sticking, and report such cases to engineman at once; they should also see that when pressure retaining valves are used, the handles are all turned down as soon as bottom of grade is reached. They should be on the alert at all times, and ready to respond quickly in case of any emergency which might arise that would necessitate prompt use of the hand brake.

CONCERNING BAKER HEATERS.

To insure satisfactory results in the use of the heater, the following instructions must be strictly observed:

1. The heater should be kept half full of coal at all times. The coal should never be allowed to get below top of worm. This will give about fifteen inches of fire.

2. The inside safety lid should never be opened except to build the fire or put in coal. (Never force the fire by opening inside safety lid.)

3. To increase the heat, open inside lower damper, and close upper damper.

4. To reduce the heat, close the lower damper and open the upper damper about two inches, or according to amount of heat required. With both dampers closed the car will not be too warm at any time, and by proper working of the lower and the upper dampers, and watching the

indicator, the car can be kept at any temperature desired.

5. Failure of the heater arises from neglect or mismanagement, generally from allowing fires to run too long without putting in coal, then filling them full and operating the drafts, producing a rapid fire, which instead of warming the car, stops the circulation, and creates gases, which are liable to explode.

6. It will be readily understood that with the large amount of piping in the cars, the circulation (which is principally caused by the weight of the column of water falling from the drum into the pipes, and the difference in the weight of a column of cold and hot water), must be necessarily slow, and that a forced fire will do no good, but will only cause the effect mentioned above.

7. In filling the heater pipes, be sure that the water contains all the salt it will hold in solution, and that no undissolved salt enters the drum. Open the combination cock on end of drum and pour in water until it runs freely from same. The water should always stand at the height of combination cock, which may be tried by opening the cock, but only when the fire is very low and no pressure on. Pipes should be warm all round before passengers enter the car.

8. Passenger cars having Baker heaters must be turned so that heater will be in forward end of car when practicable.





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