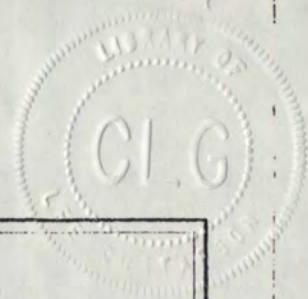


W. B. Ferriss



CALIFORNIA SOUTHERN R. R.

TIME SCHEDULE

No. 20

To take Effect Sunday, April 4, 1886,

AT 12.05 A. M.

FOR THE INFORMATION AND GOVERNMENT OF EMPLOYEES ONLY.

DESTROY ALL PREVIOUS TIME SCHEDULES.

Read Rules and Regulations Carefully.

Time in this Schedule is Pacific Standard Time of the New System.

S. M. ALLEN,

Sup't Tel. and Chief Train Dispatcher.

J. J. AUGUR,

Ass't Dispatcher.

J. N. VICTOR,

Superintendent.

TIMES-MIRROR PRINT, LOS ANGELES.

LOS ANGELES DIVISION.

TIME SCHEDULE No. 20.

FROM LOS ANGELES.

STATIONS.	Distance from Los Angeles.	Capacity of siding.	27	29	19	21	26	31
			Alhambra Express A	Fast Freight A	So. Pacific Express A	So. Pacific Freight A	So. Pacific Passenger A	So. Pacific Freight B
T W COLTON ^{15.2} Arrive.	57.5		9.15 am	4.30 am	4.15 pm	9.35 pm	6.30 pm	6.55 ^{pm} m28
W CUCAMONGA ^{18.2}	42.9		6.42 ^{m22}	3.25 ^{m22}	3.43	8.33	5.33 ^{pm}	5.55 ^{m25p}
ONTARIO ^{21.2}	38.8		8.34	3.05	3.35	8.17	6.47	5.35
T POMONA ^{24.2}	32.8		8.20	2.40	3.18	7.55 ^{m28}	5.37	5.05
T W SPADRA ^{27.2}	29.3		8.10 ^{m26}	2.25	3.09	7.35	5.30	4.40
T PUENTE ^{30.2}	19.3		7.45	1.45	2.47	6.50	5.10	3.55
T W MONTE ^{33.2}	19.1		7.30	1.17	2.34	6.25	4.58	3.25
T SAVANNA ^{36.2}	11.7		7.26	1.10 ^{m30}	2.90	6.20	4.55	3.20
T SAN GABRIEL ^{39.2}	9.2		7.21	12.55	2.23	6.10	4.50	3.10
* ALHAMBRA ^{42.2}	7.8		7.18	12.47	2.19	6.05	4.47	3.00
* SHORB ^{45.2}	6.4		7.15	12.40	2.15	6.00	4.45	2.55
T W LOS ANGELES ^{48.2} Leave.			7.00 am	12.05 am	2.00 pm	5.40 pm	4.30 pm	2.30 pm
			A	A	A	A	A	B

All trainmen of C. S. R. R. must not go on S. P. tracks without having in their possession a copy of the time table and Rules and Regulations (in effect) of the S. P. Company.

All trains on Los Angeles Division will be governed by the Rules and Regulations of the Southern Pacific Company.

A. Trains run daily. * Flag Stations for C. S. Trains. W. Water Stations. T. Telegraph Stations.

LOS ANGELES DIVISION.

TIME SCHEDULE No. 20.

TOWARD LOS ANGELES.

STATIONS.	Distance from Harbor.	Capacity of siding.	28	30	20	22	26	32
			Pacific Express A	Fast Freight A	So. Pacific Express A	So. Pacific Freight A	So. Pacific Passenger A	So. Pacific Freight B
T W COLTON ^{15.2} Leave.	84.5		6.55 ^{pm} m31	10.00 pm	10.00 am	2.10 am	7.10 am	7.30 am
W CUCAMONGA ^{18.2}	99.7		7.32	11.00	10.35	3.25 ^{m29}	7.40	8.42 ^{m27}
ONTARIO ^{21.2}	103.2		7.42	11.15	10.42	3.37	7.48	9.00
T POMONA ^{24.2}	109.2		7.55 ^{m21}	11.40	10.56	4.00	8.00	9.25
T W SPADRA ^{27.2}	112.7		8.05	11.55	11.05	4.15	8.10 ^{m27}	9.40
T PUENTE ^{30.2}	122.7		8.25	12.35	11.30	4.45	8.30	10.25
T W MONTE ^{33.2}	128.9		8.40	1.05	11.45	5.10	8.40	10.55
T SAVANNA ^{36.2}	130.3		8.43	1.10 ^{m29}	11.50	5.15	8.45	11.00
T SAN GABRIEL ^{39.2}	132.8		8.50	1.20	11.56	5.25	8.50	11.15
* ALHAMBRA ^{42.2}	134.2		8.53	1.25	12.01 pm	5.30	8.53	11.22
* SHORB ^{45.2}	135.6		8.56	1.30	12.05	5.35	8.55	11.30
T W LOS ANGELES ^{48.2} Arrive.	142.0		9.10 pm	2.00 am	12.20 pm	6.00 am	9.10 am	12.01 pm
			A	A	A	A	A	B

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All trains on Los Angeles Division will be governed by the Rules and Regulations of the Southern Pacific Company.

A. Trains run daily. * Flag Stations for C. S. Trains. W. Water Stations. T. Telegraph Stations.

SAN DIEGO DIVISION.

TIME SCHEDULE No. 20.

NORTHWARD.

STATIONS.	Distance from National City.	Capacity of siding.	1 Mail and Express A	3 Mixed B	5 Mixed A	7 Mixed A	27 Atlantic Express A	29 Fast Freight A
T W S ^{3.5} N BERNARDINO	130.2		8.25 am	6.05 pm			9.35 am	5.00 am
T W COLTON	126.7		8.10 7.50	5.50 5.35	9.00 m ⁴	6.30 pm	9.25 m ⁴	4.40 am
T CITRUS	123.1		7.38	5.21	8.45 am	6.15 pm		
BOX SPRINGS	116.0		7.10	4.46				
W PERRIS	105.0		6.15	4.10				
ELSINORE	93.0		5.30	3.10				
MURRIETA	84.0		5.00	2.35				
T W TEMECULA	78.2		4.45	2.05				
RANCHITA	70.7		4.05	1.21 m ⁴				
T W FALLBROOK	66.7		3.45 3.25	1.03 12.43				
DE LUZ	60.2		3.00	12.13 pm				
W YSIDORA	51.7		2.35	11.41				
T OCEANSIDE	47.0		2.15 m ²	11.25				
FRAZIER'S	43.9		1.55	11.10				
STEWART'S	41.5		1.45	11.00				
ENCINITAS	34.9		1.10	10.30				
DEL MAR	28.3		12.40	10.00				
W CORDERO	25.7		12.20 am	9.35				
SELWYN	18.7		11.45	8.54				
W OLDTOWN	9.0		11.05	8.19				
T SAN DIEGO	5.5		10.45	8.05				
22 ^d STREET	3.7			7.50				
T W NATIONAL CITY			10.00 pm	7.30 am				

SPECIAL RULES.

A. Trains run daily. B. Trains run daily except Sundays.
 * Flag Stations. W. Water Stations. T. Telegraph Stations.

SAN DIEGO DIVISION.

TIME SCHEDULE No. 20.

SOUTHWARD.

STATIONS.	Distance from National City.	Capacity of siding.	2 Mail and Express A	4 Mixed B	6 Mixed A	8 Mixed A	28 Pacific Express A	30 Fast Freight A
T W S ^{3.5} N BERNARDINO	130.2		6.35 pm	8.45 am			6.15 pm	9.25 pm
T W COLTON	126.7		6.45 7.45	9.00 m ⁵ 9.30 m ²⁷	7.15 pm	10.00 am	6.25 pm	9.45 pm
T CITRUS	123.1		8.00	9.44	7.30 pm	10.15 am		
BOX SPRINGS	116.0		8.30	10.14				
W PERRIS	105.0		9.30	10.49				
ELSINORE	93.0		10.25	11.44				
MURRIETA	84.0		11.10	12.14 pm				
T W TEMECULA	78.2		11.35	12.39				
RANCHITA	70.7		12.10 am	1.11 1.21 m ³				
T W FALLBROOK	66.7		12.30 12.45	1.36 1.56				
DE LUZ	60.2		1.10	2.27				
W YSIDORA	51.7		1.50	2.59				
T OCEANSIDE	47.0		2.10 m ¹ 2.40	3.15				
FRAZIER'S	43.9		2.55	3.25				
STEWART'S	41.5		3.08	3.35				
ENCINITAS	34.9		3.40	4.00				
DEL MAR	28.3		4.10	4.25				
W CORDERO	25.7		4.35	4.40				
SELWYN	18.7		5.20	5.15				
W OLDTOWN	9.0		6.05	5.50				
T SAN DIEGO	5.5		6.30 6.40	6.05				
22 ^d STREET	3.7			6.20				
T W NATIONAL CITY			7.00 am	6.15 pm				

SPECIAL RULES.

A. Trains run daily. B. Trains run daily except Sundays. * Flag Stations. W. Water Stations. T. Telegraph Stations. Train 2 will leave San Bernardino on time and run to Colton ahead of train 28 when the latter is late.

SAN BERNARDINO DIVISION.

TIME SCHEDULE No. 20.

NORTHWARD.

	STATIONS.	Distance from National City.	Capacity of siding.	27 Atlantic Express A	29 Fast Freight A
T W	BARSTOW ^{Arrive}	211.2		1.30 pm	12.25 pm
	COTTONWOOD ^{11.6}	199.6		1.05	11.35
	POINT OF ROCKS ^{2.5}	190.1		12.45	10.55
W	VICTOR ^{15.6}	174.6		12.10 pm	9.50
T	SUMMIT ^{18.1}	155.5		11.22	8.30 8.10
T W	CAJON SIDING ^{4.6}	148.9		10.55	7.30
W	IVANHOE ^{5.0}	139.9		10.20	6.20
	IRVINGTON ^{1.9}	138.0		10.12	6.10
T W S'N	BERNARDINO ^{7.5}	130.2		9.40 am	5.35 am
	Leave			A	A

A. Trains run daily. * Flag Stations. W. Water Stations. T. Telegraph Stations. Trains 27 and 29 will reduce speed and run very carefully between Summit and a point six miles north of Summit, also around all sharp curves.

SAN BERNARDINO DIVISION.

TIME SCHEDULE No. 20.

SOUTHWARD.

	STATIONS.	Distance from Barstow.	Capacity of siding.	28 Pacific Express A	30 Fast Freight A	32 Helper Third Class A
T W	BARSTOW ^{Leave}			2.55 pm	1.30 pm	
	COTTONWOOD ^{11.6}	11.6		3.15	2.13	
	POINT OF ROCKS ^{9.5}	21.1		3.32	2.50	
W	VICTOR ^{15.6}	36.6		4.03 pm	3.53 pm	
T	SUMMIT ^{18.1}	55.7		4.44	5.50 6.10	11.35 am
T W	CAJON SIDING ^{4.6}	62.3		5.10	6.50	12.00 m
W	IVANHOE ^{5.0}	71.3		5.37	7.40	12.35 pm
	IRVINGTON ^{1.9}	73.2		5.45	7.50	12.44
T W S'N	BERNARDINO ^{7.5}	81.0		6.05 pm	8.35 pm	1.15 pm
	Arrive			A	A	A

A. Trains run daily. * Flag Stations. W. Water Stations. T. Telegraph Stations. Trains 28 and 30 will reduce speed and run very carefully between Summit and a point six miles north of Summit, also around all sharp curves. Work trains will work under Red Signals against train 32. All delayed Regular Trains will run very carefully between Summit and Ivanhoe, expecting to find main track occupied by Work Trains under Red Signals against them.

SPECIAL RULES.

Full face figures denote meeting and passing points. All trains must be under perfect control before passing switches at stations, and speed must be reduced to a rate consistent with entire safety. Trains must be under perfect control while running within the yard limits at Barstow, San Bernardino, San Diego and National City, and must not exceed speed of six miles per hour. Special attention is called to Rules 13, 16, 26, 27, 28, 29, 30, 31, 32, 35, 35 and 37 and Rule 68.

RIVERSIDE DIVISION.

TIME SCHEDULE No. 20.

NORTHWARD.

	STATIONS.	Distance from Arlington.	Capacity of Bldg.	5 Miles A	7 Miles A	9 Miles A			
T	CITRUS <small>Arrive.</small>	10.0		8.45 am.	6.15 pm.	5.15 pm.			
T	RIVERSIDE <small>lv ar</small>	6.7		8.30 7.30	6.00 pm	5.00 pm			
	CASA BLANCA	2.7		7.05					
T	ARLINGTON <small>Leave.</small>			6.50 am					
				A	A	A			

SPECIAL RULES.

A. Trains run daily. W. Water Stations. T. Telegraph Stations.

RIVERSIDE DIVISION.

TIME SCHEDULE No. 20.

SOUTHWARD.

	STATIONS.	Distance from Citron.	Capacity of Bldg.	6 Miles A	8 Miles A	10 Miles A			
T	CITRUS <small>Leave.</small>	3.6		7.30 pm	10.15 am	5.30 pm			
T	RIVERSIDE <small>ar lv</small>	6.9		7.45 8.00	10.30 am	5.45 pm			
	CASA BLANCA	10.9		8.25					
T	ARLINGTON <small>Arrive.</small>	13.6		8.40 pm					
				A	A	A			

SPECIAL RULES.

A. Trains run daily. W. Water Stations. T. Telegraph Stations.

RULES AND REGULATIONS.

1. All employees whose duties are to any extent prescribed by these rules, are required to keep themselves supplied with copies of the same, which they will carefully study. They will also make themselves familiar with all special instructions which may be issued from time to time, in connection with time schedules, or otherwise. If in doubt as to the meaning of any rule or special order, application must be made at once to the proper authority for an explanation. Ignorance cannot be accepted as an excuse for neglect or omission of duty. When an individual enters or remains in the service of the company it will be considered as an expression of willingness to render obedience to these rules and fully abide by all instructions issued by proper authority.

2. No employee of the Company is allowed to trade either directly or indirectly, either for himself or others, without special permission from the Superintendent.

3. He is strictly forbidden to receive any FEE or REWARD from the public under any pretense whatever.

4. He is not allowed to absent himself from his duties, or assume any other position than the one to which he has been assigned, without special permission from the Superintendent.

5. No employee when off duty is under pay.

6. He is especially required to be obliging in his conduct; to show civility to all passengers and others with whom he may have to communicate; to afford prompt information in answer to inquiries, and to afford every possible facility for the convenience of the public and the dispatch of business.

7. He must, when on duty, appear in a proper state of cleanliness.

8. In cases of resignation or dismissal from his situation, he shall deliver up every article which may have been supplied to him; and should such articles on examination be found to have been improperly used or damaged, sufficient deduction from wages then due will be made to cover the damages; if a tenant of the Company, he shall immediately remove from their premises.

9. He shall be liable to immediate dismissal for incompetency, disobedience of orders, negligence or misconduct.

10. The use of spirituous liquors while on duty is strictly prohibited.

11. No employee of this Company, discharged for cause from any division or department, shall be employed in any other division or department.

12. All persons entering into or remaining in the service of this Company are warned that the business is hazardous, and that in accepting or retaining employment they must assume the ordinary risks attending it. Each employee is expected and required to look after and be responsible for his own safety, as

well as to exercise the utmost caution to avoid injury to his fellows, especially in the switching of cars and in all movements of trains. Stepping upon the front of approaching engines, jumping on or off trains or engines moving at high speed, getting between cars in motion to uncouple them, coupling by hand instead of using a stick or pin for guiding the link, and all similar imprudences are dangerous, and in violation of duty, and are strictly prohibited. Employees are warned that if they commit them it will be at their own peril and risk. Employees of every rank and grade are warned to see for themselves, before using them, that the machinery or tools which they are expected to use, are in proper condition for the service required, and if not, put them in proper condition, or see that they are so put, before using. All will be held responsible accordingly. The Company does not wish or expect its employees to incur any risk whatsoever, from which, by the exercise of their judgment and by personal care, they can protect themselves, but enjoins upon them to take time in all cases to do their duty in safety, whether they may be at the time acting under the orders of their superiors or otherwise. The regular compensation of employees covers all risks or liability to accident. Should any employee be disabled by sickness or any other cause, the right to claim compensation is not recognized. Allowances, if granted in such cases, will be as a gift, justified by the circumstances of the case and the previous good conduct of the party.

13. Two red lanterns will be exhibited on the rear car of each train, and one on the rear of tender if engine is alone, when running after sunset.

ONE SHORT BLAST of the whistle is the signal to apply the brakes.

TWO SHORT BLASTS of the whistle is the signal to let off the brakes.

THREE SHORT BLASTS of the whistle is the signal that the train will back up.

FOUR SHORT BLASTS of the whistle is the signal to call in flagman or to call switchman.

FIVE SHORT BLASTS of the whistle is a warning to trainmen on top of freight cars that train is approaching a covered bridge.

ONE SHORT AND ONE LONG BLAST (thus — — — — —) is the signal that the train has parted.

ONE LONG AND TWO SHORT BLASTS (— — — — —) is the signal for road crossings and curves.

ONE LONG, ONE SHORT AND ONE LONG BLAST (— — — — —) is the signal to call attention to signals carried for a following train.

ONE LONG BLAST will be used in approaching stations. A succession of short rapid blasts, denotes cattle or some obstruction on the track.

TWO SHORT BLASTS of the whistle will also be engineers' answer to conductor's or flagman's signal to denote that he has understood the signal.

14. ONE STROKE of the engine gong is a signal to stop at once.

THREE STROKES of the engine gong, when the train is running, is a signal to STOP AT NEXT STATION.

FOUR STROKES of the gong is a signal to REDUCE SPEED.

15. A light swung over the head is a signal to go ahead; when swung across, or at right angles with the track, is a signal to back up; and when moved up and down is a signal to stop. If motion of lamp is quick, move quick (but with care); if slow, move slow.

In backing a train, or in moving cars when the engineer cannot see just how far he is to go, the brakeman must indicate distance—when within about four car lengths of destination—by bringing his hands together over his head as many times as there are car lengths to move, and when within one car length should extend one arm out straight, as a signal to move slow and wave the arm up and down as a signal to stop.

The arm extended horizontally at any time is a signal to move slow, and moved up and down to stop.

Those giving signals must locate themselves so as to be plainly seen, and make them in such a manner as to be readily understood.

16. In case of accident or stoppage of train on main track for any cause in the night, or in the daytime, when the view is obstructed by fog, or in any way, in addition to the usual signals two torpedoes must be fastened to the rail, on the engineer's side, one at not less than 600 yards distance, and one 300 yards beyond it.

The engineer of any train running on to them shall bring his train to a full stop and ascertain the cause of the signal.

If no following train has arrived when the flagman is recalled, he must leave on the rail another torpedo, 50 feet from the one last set, as a caution to any following train, and shall take up the torpedo first set.

The explosion of one or more torpedoes will be a signal to stop immediately. If there is a single explosion it will indicate that the train has passed brakeman with his red flag or light, without observing him, and it will wait for him to come back and give information of the obstruction. If the explosion is double it will indicate that the flagman has been recalled, and the train will move forward under flag until it shall be learned that the obstruction has been removed and track is safe for passage of train.

The use of torpedoes is to be in addition to the regular danger signals, which must in all cases be exhibited and used.

A red flag by day, a red light by night, the explosion of a torpedo, or any violent signal is a sign of danger, and trains must be brought to a full stop, and meaning of signal ascertained.

Engineers seeing a danger signal shall answer it by two short blasts of the whistle, and a flagman failing to receive such answer will use additional means to attract attention.

17. Engineers, when applying the air-brakes, must not use the full pressure of the air, EXCEPT IN CASES OF EMERGENCY. For ordinary stops the air must be applied slowly, and at a sufficient distance from the stopping place to enable them to stop without discomfort to passengers, sliding the wheels,

or injury to the machinery of the train. Conductors must report defect in the air-brakes, specifying the number of the car or engine on which it occurs. They will invariably require their air-brakes to be tested, cylinders and connections examined, and also engine signal bell to be rung from the rear coach of the train, before leaving each division station. Bell cords must not be disconnected until the train has come to a full stop.

18. The signal for starting an engine or train will be given by ARMING THE AXLE, which must ALWAYS be done before starting the engine.

19. When a red flag or the word SLOW is placed on the side of the track, the speed of the train must be reduced to SIX MILES per hour until the obstruction is passed. If the red flag or light is placed between the rails it indicates that the track is IMPASSABLE, and all trains must come to a full stop and ascertain the cause before proceeding.

20. A red flag by day or a red lantern by night, carried on the front of an engine, indicates that another train or engine is following, which has the same rights as the train which bears the signal. One section following another under signal as above prescribed, must always be taken and considered to be a part of and have ALL THE TIME SCHEDULE RIGHTS of the leading train AND NO MORE, and conductors of all other trains must so regard it. In moving trains of two or more sections, by special orders, EACH SECTION OR ENGINE shall be taken and considered as a separate and distinct train, and shall receive and run only under special orders addressed to ITS OWN CONDUCTOR AND ENGINEER.

21. When one or more engines or trains follow another under a red flag, all but the last one must carry a red flag or red lantern on the front of the engine; they will keep at least ten (10) minutes apart, except at meeting points, when they will carefully close up. When trains are run in sections, conductors will exercise the greatest watchfulness, being particular to see that they are flagged by the leading section. A train or engine carrying red signals for a following train or engine to a station at which there is no agent or operator, the train or engine carrying such signals must notify trains met that red signals were carried, naming the station, name of conductor and engineer of the flagged train.

22. Red signals will be used at telegraph offices to stop trains for orders, the most conspicuous place being selected for this purpose.

23. Every conductor, engineer, train hand, station agent, telegraph operator, section foreman and watchman, or other employee of this Company, having to make signals, is required to provide himself with them, and keep them on hand in good order and in readiness for immediate use.

24. The standard of time for the road is the clock in the Train Dispatcher's office. The watches of all conductors, engineers and other employees of the company must be regulated by this standard. No excuse will be taken for any variation of watches. The time will be telegraphed to all telegraph stations at twelve (12) o'clock every noon, AND ALL OPERATORS MUST BE ON HAND AT THAT HOUR TO RECEIVE IT.

25. THE STRICTEST CARE IS ENJOINED. IN CASE OF DOUBT TAKE THE SAFE SIDE.

26. The regular trains are entitled to the track as per time table, and in accordance with the two following rules:

27. Trains leaving and arriving at terminal stations will be governed by rules 30 and 31. National City, Colton, San Bernardino, Citrus, Arlington, Riverside and Barstow will be considered terminal stations whenever they are initial or terminal points of any train. All trains will register at terminal stations.

28. No train will, on any account, leave a station before the time specified in this schedule, nor be run faster than is necessary to reach a station and start from it again at the proper time.

29. No train having the right to the road must leave any station or meeting place where, by the time table, it should meet trains of SAME CLASS till five minutes after its time, per time schedule, and this five minutes, allowed for variation of watches, must be observed at every succeeding station till it shall have met the expected train; and this five minutes should also be allowed when instructed by telegraph to leave a station at a specified time against an expected train.

30. Trains of an inferior class must wait indefinitely for trains of a superior class, and must be kept AT LEAST ten minutes out of their way. Wild trains must wait indefinitely for regular trains, and must be kept AT LEAST ten minutes out of their way.

31. North-bound trains have absolute right of track over south-bound trains of the same class, and will wait only five minutes at appointed place of meeting for an expected train, and then proceed, keeping the five minutes behind leaving time at each succeeding station, until the delayed train is met and passed. Trains not having the right to the track will keep entirely out of the way of trains of the same or superior class moving in the opposite direction, unless moved by Train Dispatcher. The five minutes allowed for variation of watches must not be used for running by any train. When a regular train is more than twenty-four hours late it thereby loses all rights to the track, and can only afterwards move as an irregular train, under signals or upon telegraphic orders from the dispatcher of the division.

32. No train will assume the rights of any other train, unless by a special order; but should a train be held by another between telegraph stations, the conductor may send a man by and require the first train passing him, bound in the same direction, to flag him to the next telegraph station. The man must be left off at the entrance switch, to hold any trains that may be at such station, and the conductor carrying such flag shall at once report to the Train Dispatcher, stating from what station he flagged the train.

33. No extra engine, with or without train, will pass over any portion of the road except in company with a regular train, or on special order from Dispatcher. No train will be allowed to leave a station before the time specified in the time table, without special orders from Dispatcher to do so. GREAT

CARE AT ALL TIMES IS EARNESTLY ENJOINED. IN ALL CASES OF DOUBT TAKE THE SAFE SIDE, HOLDING AND PROTECTING YOUR TRAIN UNTIL ALL DOUBT IS REMOVED.

34. When it becomes necessary to send an extra engine over the road on the time of a passenger train, the extra engine must be run as FIRST section of such train.

35. REGULAR TRAINS are trains shown on the time schedule. Trains are classed as to PRIORITY OF RIGHTS as follows:

PASSENGER TRAINS will be known as FIRST-CLASS trains.

MIXED TRAINS will be known as SECOND-CLASS trains.

FREIGHT TRAINS will be known as THIRD-CLASS trains.

36. TWO (2) WHITE flags by day or **TWO (2) WHITE lights** by night, carried on the front of an engine, indicate that an EXTRA train is following, which will keep out of the way of all regular trains, but WILL HAVE RIGHT OF TRACK OVER all WORK and SPECIAL trains. When two trains meet, each carrying WHITE signals, the NORTH-BOUND EXTRA will have the right to the track, and the SOUTH-BOUND EXTRA will keep entirely out of the way until the NORTH-BOUND EXTRA has passed, or only proceed under telegraphic orders from the Dispatcher.

Running extras in opposite directions at the same time will be avoided if possible.

37. All WILD PASSENGER and FREIGHT trains and PRIVATE and PAY trains, and LIGHT ENGINES running under special orders, and NOT following signals, will be designated as SPECIAL trains, and will invariably carry two (2) GREEN flags by day or two (2) GREEN lights by night on the front of the engine.

Specials will keep entirely out of the way of all REGULAR and flagged trains, and will only proceed through WORK train territory under protection of a flag, unless exempt by special orders from the Dispatcher.

They must approach all cuts and CURVES with the utmost caution, SOUNDING THE WHISTLE frequently in all obscure places or in a fog, to warn section or bridge men.

38. All conductors will be at their trains at terminal stations thirty minutes in advance of their leaving time, per schedule, and by their personal attention insure leaving on time. Before leaving the end of their division they will report at the telegraph office and inquire if there are any orders for them.

39. Conductors will have the general direction and government of their trains from the time of receiving passengers or freight until their arrival at destination. They will be held responsible for their safety, and for the proper conduct of all men employed thereon. Train men are required to yield willing obedience to their orders, except when such orders conflict with these rules or involve any risk or hazard, in which case all persons participating will be held responsible. Conductors, Baggage men and Brakemen of all passenger trains are required to

wear badges, and must never appear on duty without them.

40. Conductors and Engineers will compare time with each other. They will also compare time with other Conductors and Engineers, when meeting on the road, if practicable to do so.

Conductors and Engineers are prohibited from running trains without having in their possession one of the time tables in effect.

41. Conductors and Engineers of all trains will ascertain to a certainty what trains are met or passed at any stations before proceeding from those stations.

42. Conductors will be held responsible for the proper position of switches after having used them. Flying switches will not be allowed.

43. Freight trains shall, when practicable, take side track for passenger trains. A train at a meeting point will enter the side track at the end nearest to it, if side track is connected at both ends. In no case pass by switch and back in the direction of an approaching train, or occupy main track on time of a train which has the right to the track, without sending out danger signals to the proper distance, to warn the approaching train. Whenever two trains meet, the speed of the passing train, if a passenger train, must be reduced to twelve miles per hour, and if a freight train, to six miles per hour.

44. South bound trains should arrive first at meeting points and take side track, unless otherwise ordered.

45. Conductors and Engineers of all trains and engines are specially directed to move at all times cautiously when approaching stations and water tanks. When stopping at stations and water tanks, Conductors must see that their trains are fully protected by flags, lanterns or torpedoes, as may be required.

46. Conductors, Engineers and Brakemen must be watchful to notice any indications that their train has parted. When this occurs the forward portion of the train must be kept moving until the Engineer is satisfied that the rear portion is stopped. Before halting the forward portion of the train he must fully consider the grades and all circumstances; and act with great caution. As soon as he finds the train has broken, the Engineer will sound the alarm by whistle, as provided in Rule No. 13. Should the forward Brakeman discover the parting of the train, it is his duty to notify the Engineer. The Conductor and Brakemen, as well as the Enginemen, must be exceedingly careful to notice anything that may indicate that the train has parted. As soon as the men on the rear portion of the train discover that the train is broken, they will IMMEDIATELY stop their portion thereof without waiting for any signal from the engine. When both portions of the train are brought to a stop neither portion must be moved in the direction of the other without being fully protected by a flag at least ONE THOUSAND YARDS in advance of the moving portion, and at a rate of speed not exceeding four miles per hour. Before coming to a stop the Engineer will, if possible, divide upon the course to be adopted by him, and will instruct the forward Brakeman accordingly. If he decides to back up, he will first give his flagman

ample time to get back, post his fireman on rear car to act as signalman and brakeman, and never start until he is sure that the rear portion is not following, in ignorance of parting. Should he decide to stand still, his flagman must be immediately sent back, with proper signals, to protect and show position; in any case, if at night, a red or white light must be shown by the Engineer from the hind end of rear car of his portion of train. An exception to the above rule shall be where the whole occurrence is in plain sight, no curves or other obstructions intervening, and where signals can be plainly seen from both portions of train; in which case the recoupling may be made in such manner as may appear safe to the Conductor and Engineer, who are required to use the greatest caution. Where a train breaks in three or more pieces, or in any case not provided for above, the utmost care and good judgment must be used to prevent accident. No train, whether passenger, freight or extra, shall come between the two portions of a broken train, but a train coming up to rear portion may, (should it be judicious) shove it forward, under protection of a flagman, as required herein, at the rate of speed prescribed in this rule, using special caution to guard against the possibility of floding a middle portion of train unprotected. When rear part moves forward a competent man must always be stationed at extreme forward end to watch signals, and to stop the train when necessary.

47. Yardmasters will have control and direct the movement of trains while at their stations. They will also see that all trains are made up in time to be ready to leave as per time schedule.

48. A Brakeman must be stationed on the rear car of every passenger train in motion, and the brakes of that car ascertained to be in good order. Bell cord and signal lights must not be taken in until the train has come to a full stop at the end of the run.

49. Conductors of freight trains will report promptly to the superintendent any lack of attention on the part of agents or other persons, whose duty it is to aid in the passage of trains. Promptness in doing work at stations is enjoined upon all, in order to let freight trains use as much of their time as possible running between stations. While freight trains are in motion, one Brakeman must be kept on the front end, three or four cars from the engine; the other upon the rear of the train, where he may see the signals of the one forward. Conductors must see that the doors of all freight cars, both loaded and empty, are closed and securely fastened before leaving any station with their train. Puffer bumper drawheads must be connected with the two outside links; or one center link; but the outside links must never be used to couple with a single drawhead. Conductors and yardmen will be held responsible for proper couplings being made. The use of clubs in setting brakes is positively forbidden. Any violation of this rule will subject the offender to suspension or discharge. Conductors must see that brakemen do not lock the wheels in applying brakes.

50. All Conductors of working and construction trains must make a written statement each morning of where they intend working, and their probable

movements during the day, which must be sent to Train Dispatcher of the division, who will give them their working orders. No work trains will be allowed to occupy the main track between 7 P. M. and 6 A. M., unless under special order of Train Dispatcher of division. The daily order given working and construction trains will, unless some stated time be mentioned in the order, be considered as good from 6 A. M. until 7 P. M. of that day only, but if a subsequent order to go to other parts of the road is received, the original order expires and must not be used again. **WORKING TRAINS OCCUPYING MAIN TRACK, AT OBSCURE PLACES, MUST KEEP UP SIGNALS, TO WARN ALL IRREGULAR TRAINS.**

51. The maximum speed of trains allowed on straight track will be as follows:

PASSENGER TRAINS BETWEEN NATIONAL CITY AND SUMMIT, THIRTY-FIVE (35) miles an hour; BETWEEN SUMMIT AND BARSTOW FORTY (40) miles an hour.
MIXED TRAINS, TWENTY-TWO (22) miles an hour. Freight trains, FIFTEEN (15) miles an hour.

52. **MAXIMUM SPEED OF TRAINS ALLOWED THROUGH CANYONS, or AROUND CURVES, as follows:**

PASSENGER TRAINS BETWEEN NATIONAL CITY AND SUMMIT, TWENTY (20) miles an hour; between SUMMIT and BARSTOW, thirty-five (35) miles an hour.

MIXED TRAINS BETWEEN NATIONAL CITY AND BARSTOW, FIFTEEN (15) miles an hour. FREIGHT TRAINS BETWEEN NATIONAL CITY AND BARSTOW, TWELVE (12) miles an hour.

It must be understood that speed must be reduced when condition of track requires it, without special orders to do so.

53. The speed of **WORK** trains must not exceed **FIFTEEN (15) miles an hour on straight track, nor ten (10) miles an hour through canyons and around curves, unless otherwise ordered by the Dispatcher.**

54. The speed of **SPECIAL** and **EXTRA** trains will be regulated by special order from the Dispatcher.

55. Trains and engines must be brought to a full stop not less than four hundred (400) feet before crossing the Southern Pacific track at Colton, and it must be seen that all is clear before starting to cross.

No train or engine must be stopped on the crossing, except in case of actual necessity, when the train or engine must be well protected in both directions.

When trains of both roads arrive at the crossing at the same time, Southern Pacific trains of equal class will have precedence.

56. Trains **MUST** be under complete control before entering the **YARD** limits, when running **IN EITHER DIRECTION**, in approaching San Bernardino and in approaching **BARSTOW**, expecting to **FIND THE MAIN LINE OCCUPIED AT ANY TIME.**

57. Brakemen on the passenger trains will assist the Conductor in seating the passengers, and report any disorderly conduct in the cars. They will be expected to be courteous in their speech and bearing, and must render prompt assistance to the Baggage men when called upon. It will be their duty to

see that the lights and stoves are in good order, and that they are kept clean. They must give their attention to the ventilators, and see that they are properly turned. They must be outside the platform when the train stops, and see that there is no crowding on the platform.

58. Baggage men will handle baggage carefully, and keep all records required by the General Baggage Agent, and will assist at the brakes when necessary. They will allow no person to ride in their car (except Mail Agent and Express Messenger in their respective departments) without permission from the Superintendent.

59. Conductors of all trains must make daily train reports to the Superintendent.

60. No train or engine will be allowed to carry a flag for any other train or engine, unless ordered to do so by the Superintendent or Train Dispatcher, except in case of a train losing its rights to the road, in which case the Conductor of such train may require the first passing train to carry a flag for him to the nearest telegraph station, but no further, as per rule 32.

61. In approaching a station the engine whistle shall be sounded a half mile (or as indicated by whistling posts) before reaching a station, and the train shall be brought under control before passing the first switch. When moving about the stations or in the yards the bell must be rung.

62. Engineers will not allow any one not connected with their train to ride upon their engines, except by permission of the officers of the road. Engineers carrying flags must call the attention of all Engineers they meet or pass by one long, one short, and one long blast of the whistle.

This does not relieve the conductors from the responsibility of calling attention of conductors of all trains met or passed that he is carrying such signals; at terminal stations **THEY** must notify Yard Master.

63. Engineers, when on the road, will be subject to the orders of the Conductor. In the absence of the Conductor they will be held responsible for the safety of the train. They must cause the bell to be rung at least 50 rods before arriving at any road crossing and to be kept ringing until the road shall have been passed. They must use care in approaching all stations, expecting to find a train out of place, and must pass all switches at reduced speed. They must know, personally, that their locomotives are supplied with the required tools, and the necessary implements for use in case of accident. Frequent occurrences of killing **STOCK** by the same engineer will be considered evidence of carelessness. All animals killed must be reported by the Engineer to the Conductor of the train. A report of these cases must also be made in triplicate, on blanks which will be furnished; one copy being sent to the Claim Agent, one to the Round House Foreman at the end of the division and one to the Superintendent. Engineers of irregular trains will run carefully around curves where the view is obstructed, and sound the whistle for section men and bridge men.

64. Headlights of engines must be kept in good order, and always lighted when running after sunset.

65. Headlights will in all cases be darkened when

engines are on side track. This rule will not be understood to apply until all parts of the train to which the engine is attached are clear of main track. Headlights of engines on main track will in **NO** case be darkened.

66. Station Agents will be held responsible for proper position and security of switches; also for proper care and safety of all property in and about their stations. They will see that all cars are secured against the possibility of being blown out; that the main track is clear for passage of trains, and allow no cars to be loaded or unloaded on the main track without authority of the Superintendent, and in no case allow a car to stand on side track without brake being properly applied. They will not check or mark any baggage unless passenger presents ticket or pass. It is expected they will see that passengers are all supplied with tickets. They will not sell tickets to stations where trains do not stop. All baggage checks must be kept under lock and key with same care as passenger tickets. In all cases where freight Conductors fail to take cars offered by Agents, he will state to Agent his reason for leaving such cars, who must report the same on his car report for the day, giving name of Conductor, number of engine and number of cars in train.

67. All accidents involving loss of life or damage to person or property, whether employees or others, must be reported by telegraph, and as soon as possible afterwards, again in writing, to the Superintendent, by the person having in charge the train or gang in connection with which they occur, everything being noted which may be required as reference or evidence.

68. Conductors on each division will report to the Superintendent's office by telegraph, at first opportunity, all casualties occurring to their trains, such as getting off the track, uncoupling of trains, killing of stock, failure in any way of engines, etc., etc., giving in each case number of engine and name of Engineer. In case of accident or detention the first car must be to send a man each way at least one hundred rods with a red flag by day, or a red lantern by night, to warn all trains that may be approaching. On grades or curves the men should be sent out at least 200 rods.

69. In case of accident conductors may command the services of any train, and every person in the vicinity in the employ of the Company required to assist if called upon. When cars leave the track every effort must be made to replace them without injury; they must then be taken to the nearest side track and the line cleared as speedily as possible.

TRACKMEN.

70. Section foremen must pass over and examine their sections daily, and ascertain that the track, slopes, cuts and bridges are safe. This should be done in the morning, if possible, before the passage of any train.

71. They must see that no lumber, wood, stone, materials or tools are placed at any time within six feet of the rail.

72. Before a rail or frog is taken out, or any obstruction is 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 half a mile from the point of danger, and a faithful man must remain and keep it displayed until he is called by the foreman, which must not be done until the track is known to be safe.

73. In stormy weather they must be out with their men (day and night), with proper signals, and watch those places most liable to wash or to be disturbed.

74. It is also the duty of trackmen to put out fires set by engines, and to guard the property of others as well as that of the Railroad Company, exposed to such fires, whether responsibility attaches to the Company or not.

75. Trackmen 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 to the nearest telegraph office by messenger or the earliest means practicable. When called upon to assist Linemen in repairing the line, they **MUST RESPOND PROMPTLY** and render all the assistance in their power. They will also look up breaks and obstructions and repair the line, when called upon by any operator, without delay.

76. At all times when work is going on which renders the track unsafe for trains to pass at their usual rate of speed, a red flag must be set at least six hundred yards from the spot, in each direction, as a caution to approaching trains to run slowly. After severe rains or a thaw, a hand car must be sent over the road before the passage of regular trains.

77. A red light, when used as a danger signal, must never be out of the hands of a reliable man.

78. Hand cars or any other property belonging to the Company, must not be used except for the business of the Company.

79. Care must be taken that the fences on each side of the road and at crossings are in good order, and that cattle guards are kept in repair.

80. Trackmen must, at all times, hold themselves in readiness to aid the passage of trains, and in case of accident, must obey the orders of the Conductor of the delayed train.

81. Foremen of repair gangs will be held responsible for the strict observance of the above rules. It is their duty to see that their gangs are always supplied with the proper signal flags and lanterns.

82. Every man at work on the track must bear in mind that in operating the road under telegraph orders, a train may pass at any moment.

Special Rules for the Movement of Trains by Telegraph.

83. THE GREATEST CARE AND WATCHFULNESS MUST BE EXERCISED IN SENDING AND RECEIVING ORDERS IN REGARD TO RUNNING TRAINS.

84. A red flag by day and a red light by night are the signals used at telegraph stations, and when displayed, trains will stop for orders.

85. Engineers and Conductors ON ALL trains will keep a sharp lookout for signals at ALL telegraph stations, and when red signals are displayed, must not pass until ordered to do so by the Train Dispatcher; or, if signal is not for their train, will not proceed until released by operator giving Conductor and Engineer copy of order for which signal is displayed.

86. Operators must, at all times, have the red signal ready to stop trains, and must place them in a conspicuous place, where they may be readily seen by approaching trains. Operators must not trust the delivery of train orders to other persons, but must deliver them in person. When an operator receives an order to hold a train, he must FIRST put out the red signal and THEN reply that such train is held. He will be careful to observe that the signal is not disturbed or hidden, and will notify promptly all other trains that the signal is not for them. THE RED SIGNAL MUST NOT BE RELIED UPON EXCLUSIVELY TO HOLD TRAINS. OPERATORS ARE EXPECTED TO WATCH CLOSELY FOR THE EXPECTED TRAIN, USING ALL NECESSARY MEANS TO STOP IT. In case the train, or any part of it, has already passed the telegraph office, although still at the station, operator's IS MUST NOT be sent back until the Engineer or Conductor HAS BEEN SHOWN the order, and understands that he is held. The Conductor and Engineer must in all cases read the order, and so avoid danger of misunderstanding it.

87. When an agent or operator receives an order to hold any train for any purpose, they must carry out the order strictly. Conductors and Enginemen will respect such orders, and comply with the same in all cases.

88. All special orders by telegraph for the movement of trains will be numbered, commencing at No. 1 at first of each month, and will be given in writing, addressed to Conductor and Engineer. The Conductor and Engineer each will sign his name to the original order, as written by operator receiving it, who will repeat it back to the office sending the order, commencing with number of order, then "wa 13," always following signature of Conductor and Engineer with number of train they are running. When order is corrected by Train Dispatcher the correct time will be given, which time will be entered upon order. The operator will make three or more

manifold copies of the order, adding to them the reply "O K," which will be delivered to the Conductor, and Engineer, who will see that they are exact copies of the order they have signed. Both copies will be signed by the operator. In case there is more than one engine on a train, each Engineer must have a copy of such orders. All orders relative to the MOVEMENT OF TRAINS must be written in FULL and no abbreviations used except telegraph abbreviations. 12—How do you understand? 13—L or we understand. ALTERATIONS, INTERLINEATIONS and ERRORS MUST NOT APPEAR ON ORDERS DELIVERED TO TRAIN MEN. Should it be necessary to make any change in first copy, the Dispatcher must repeat the entire order, and new copy be made by receiving operator. Conductors and Engineers are strictly prohibited from signing orders for each other.

89. Should the line, from any cause, fail to work before the operator has received the "O K," he will not deliver the order.

90. After an agent or operator has received an order and it has been repeated to the Train Dispatcher and his "O K" given, such order must only be filed by a regular order to agent or operator making it void, his IS received and Dispatcher's "O K" given.

91. Conductors and Engineers must not leave a station, when directed to run by special order, without having the order in their possession, properly signed and endorsed "O K."

92. Special orders are to be used by the train to which they are addressed, and no other train will be allowed to use them. They are to be used AGAINST SUCH TRAINS ONLY AS ARE EXPRESSLY NAMED THEREIN, AND ALL OTHER TRAINS MUST BE RUN AGAINST STRICTLY AS PER TIME TABLE.

93. In giving an order for two trains to meet at a station the Train Dispatcher must not depend entirely upon the red signal displayed at meeting point but will send the order to both trains before arriving there. When it becomes necessary to change such a meeting point both trains interested will be notified, when practicable, in same manner. In case the telegraph line is not in working order, or Dispatcher is unable to reach one of the trains, the meeting arrangement may be made by sending the order to the meeting point for the train that cannot be reached, but the other train must receive the order before arriving there. In giving orders against passenger trains, Dispatcher will get the understanding from Conductor of train having the right to the road, according to Rule 88, before moving any train against them.

94. When a work train receives an order to work under signals against any trains, the Dispatcher must send the order to all the trains affected by it before allowing them to run upon the limits of the work train, and the Conductor of work train must have his flagman out the proper distance, according to Rule 68.

95. An order making a definite "meeting point" is of the following form: "Train No. —, Conductor —, and Train No. —, Conductor —, will meet at —." Upon an order of this form, the train arriving first at the point named therein, will WAIT UNTIL THE OTHER TRAIN ARRIVES, unless the Conductor receives another order changing the meeting point.

96. An order giving one train the right to the road against another to a certain point, until a certain time, is of the following form: "Train No. —, Conductor —, has until — to run to — against Train No. —, Conductor —." Upon this order the train first named runs to the station designated before the given time, if it can, and from there it will RUN AS PER TIME CARD against the expected train, if the latter has not arrived. Should the former train fail to reach the station designated, within the time allowed it, it will run as per time card against the other train. The train last named in the order will not leave the station designated until five minutes after the time allowed for the other train to come in, after which time it will run as per time card. Train Dispatcher must send the order to the last named train, when practicable, before arriving at station designated therein.

97. An order giving one train the right to the road against another train INDEFINITELY, is of the following form: "Train No. —, Conductor —, will run to — regardless of Train No. —, Conductor —." Upon this order the train first named will run upon or near as possible (but not ahead of) its schedule time, until the station named therein is reached. The train last named in the order must keep entirely clear of the main track, after five minutes previous to the schedule time of the former train, until it arrives. The last named train will always take the siding, when practicable, and when not so must be fully protected by a flagman in the direction of the approaching train. Train Dispatcher must give the last named train the order before arriving at the station named therein.

NOTE.—By the direction in Rule Nos. 96 and 97, and in telegraph orders to "Run as per card," it is to be understood that the train will run in accordance with Rules 27, 28, 29, 30 and 31 governing the rights of trains.

98. A running order for a special train is of the following form: "Engine No. —, will run special to —." Upon this order the train will run to the

point designated, keeping out of the way of all schedule and signaled trains, according to rules 20 and 37.

99. An order giving a train a working order within certain limits, is of the following form: "Engine —, Conductor —, will work to-day between — and —." Upon this order the train named may work, according to Rule 51, between the points designated, keeping out of the way of all schedule and signaled trains, according to rule 30.

100. An order giving a schedule train the right to run ahead of time from one station to another, is of the following form: "Train No. —, Conductor —, may run from — to — ahead of time." Upon this form of order the train named therein may leave the first named station and run to the last named station ahead of its schedule time, keeping out of the way of all schedule and signaled trains, according to Rule 30, and not exceeding the speed regulated by Rule 54.

101. A time order giving a freight train the right to run ahead of and on a passenger train's time, is of the following form: "Train No. —, Conductor —, can use — minutes on the time of Train No. —, Conductor —, to run from — to —." Upon this form of order the first named train can use the time of the second named train as indicated, in order to make the designated or any intermediate station, ahead of the second named train, but not ahead of its own schedule time. The second named train will run not less than FIVE MINUTES MORE behind its schedule time than specified in the order.

102. The above rules are not calculated to interfere with any rules on the time table, but are special rules for moving trains by telegraph.

103. The Train Dispatcher's office call will be D. S., which must be used only for Conductors and Engineers asking for or responding to orders and by Dispatchers. The operator using the signal D. S., will be entitled to circuit at any moment, excepting against the signals 3, 19 and 33. Conductors and Engineers of all trains, before leaving terminal stations, must go in person to the telegraph office and enquire if any special orders are there for them, and Conductor leave a written report, giving the number of cars in train, name of Engineer, engine, etc.

104. All trains will be considered as held for orders at Colton, and will not leave without an order or a clearance from the Dispatcher.

105. The BULLETIN BOARD in Dispatcher's office and at all terminal stations MUST BE CONSULTED DAILY BY TRAIN MEN. Ignorance will not be accepted as an excuse for disobeying a bulletin order.

106. The Superintendent or Train Dispatchers are the only persons authorized to move trains by special orders, and but one person on the same circuit shall be permitted to move trains by special orders at the same time.

Instructions for Use of Automatic Brakes.

CONDUCTORS, BRAKEMEN AND CAR INSPECTORS.

When a train is in order, all the hose are coupled and stop-cocks opened, (handle down), except at rear

end of train, there the hose is hung up and the stop-cock closed, (handle up).

All the handles on stop-cocks of triple valves are

set ALIKE horizontal for Automatic brake, vertical for Straight Air, and oblique to cut out or stop the action of the brake on a single car, when its brake is out of order.

The release-cock on brake cylinder or on car reservoir is closed, but may be opened to release brakes, and then closed again.

Always shut the stop-cock BEFORE uncoupling hose and open it AFTER coupling hose.

Car examiners will unscrew the cap at bottom of tripple one-half a turn to drain water out in mild winter weather, and oil the cylinders often enough to ensure them releasing promptly.

ENGINEERS.

When using the Automatic brake remember, that it is quicker both in applying and also in releasing, and therefore USE LESS AIR, also as the car reservoir is three times the capacity of the brake cylinder under the car, one pound out of the train pipe is three pounds in the brake cylinder, twenty pounds reduction in the brake or train pipe would be sixty pounds in the cylinder, so that since twenty pounds sets the brake with sixty pounds or equalizes pressure in cylinder and reservoir, it is a waste of air to empty the pipe under any circumstances, and also a loss of time in refilling when you want to release the brakes.

Five pounds reduction is about right TO CHECK speed of train when approaching a station and then when near where you want to stop, reduce a little more as required.

The best stop is always made with the least air, and (where the grade will allow), throw the brake off the last turn of the wheels, this prevents jerking the coaches when the train is coming to a stop.

If using the old three-way cock, when you throw the brake off, KEEP IT OFF AT LEAST FIVE SECONDS, before applying the brake again, this will allow the car reservoirs to refill from the engine reservoir; when running be sure your three-way is not at lap, because all the ports in it being then closed, no air can pass from engine to cars.

If you suspect a brake sticking while running, bring your three-way to lap and run up your pressure five or ten pounds, this will be sufficient to throw the brake off, because you then have that much more pressure in pipe than in car reservoir.

Should you wish to take on cars in the middle of your train, the rear is left (say with seventy pounds), while the pressure in front end is increasing, (say to eighty pounds), and when the train is coupled all the brakes will go on, because the empty cars will bleed the full ones, AND ALSO THE ENGINE RESERVOIR; and you may not have enough pressure left to take the front brakes (with eighty pounds) off, BUT but by carrying your three-way at a lap after cutting the train, the pressure in the front cars cannot increase, while it will in your engine reservoir, and therefore, you will probably have enough to charge the empty cars.

Should, however, in such a case some of the brakes stick, reduce the pressure in the main pipe twenty pounds, this will set the brakes full and bleed the car reservoirs; you may then throw all brakes off from the engine.

Seventy pounds is the proper amount of pressure on the engine, and all Engineers should carry alike,

for if one leaves his train charged with eighty or ninety pounds, and another engine takes it with seventy pounds, as soon as the hose is coupled the train brakes will all set, because the air in train pipe will empty back into the engine reservoir, and the pressure in it will have to be pumped up, or else, ALL THE CAR-RESERVOIRS bleed before the brakes will come off.

IF USING THE NEW BRAKE VALVE, throw it to the EXTREME LEFT TO RELEASE BRAKES, AND THEN back to the notch to feed reservoirs, while running; this will insure you more pressure in main reservoir than in the train pipe and car reservoirs, and probably enough to release brakes in all cases. When applying brakes, after reducing pressure in main pipe, come back to lap (position of three-way when all its ports are closed), AS SLOW AS POSSIBLE, this allows time for air in the main pipe to equalize, and all the brakes will apply together.

All trainmen are directed to make themselves familiar with the method of releasing the Automatic brake by the opening cocks under the vehicles, to avoid unnecessary delay from the unexpected stoppage of the train by the bursting of a hose or pipe. It is important that the following rules should be observed:

THE ENGINEER should immediately, on feeling the brakes applied, turn the handle of the Engineer's brake valve, so as to maintain the pressure in the main reservoir, which is all important. He should observe his gauge, and if he sees that all of the air has escaped, he will know that a pipe has burst, or that the Conductor's Valve has been opened and held open. If the pressure is only reduced sufficiently to apply the brakes, and the reduction then ceases, he will know that the Conductor's Valve has been opened long enough to cause the stoppage of the train, and has then been closed. In this case he can easily release the brakes in the usual way upon receiving the proper signal from the Conductor.

The Engineer should warn the trainmen, when the brakes have been applied in such a manner that they cannot be released from the engine, by giving a succession of short double whistles.

THE REAR BRAKEMAN must, upon the stoppage of the train, immediately proceed back the proper distance to protect the rear of the train, WITHOUT ATTEMPTING TO RELEASE ANY BRAKES.

THE CONDUCTOR shall proceed to the rear of the train to see that the rear Brakeman has protected the train, and shall release as many brakes, beginning with the rear, as he can.

THE FIREMAN shall release as many as he can, beginning at the tender.

THE MIDDLE BRAKEMAN will begin about one-third of the distance from the engine, and release the brakes toward the rear, until he meets the Conductor.

As soon as the brakes are released the train should proceed, depending upon the hand brakes, until a station is reached where the damage can be ascertained, and repaired without danger to the train.

All of the brakes on a long train can be released in about one minute, if each of the employees attends to the duties designated above.

J. N. VICTOR, Superintendent.