

Orange County Model Engineers Engineer/Conductor Certification Training

General Notice

***Safety is of the first importance.
Obedience to the rules is essential to safety.***

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Conductor's Training

The Purpose of the Conductor is to provide for the SAFETY of the General Public, Members, and the Equipment

1 Duties

The Conductor is one of the few members of our club that the general public gets to interface with. They are ambassadors of good will, and must treat the public with courtesy and respect. They are on the frontline, protecting the public as well as the club assets. *We thrive as a club only with the good will and support of the public.*

Duties of the Conductor:

- 1) Crowd control on the station platform
- 2) Limiting access to the equipment and facilities
- 3) Loading and Unloading of trains
 - a) Understanding of what type of cars are being loaded
 - b) How to balance load
 - c) How to deal with the public
- 4) Supervision of passengers while on the train
 - a) Hands and feet within the car
 - b) Every person stays seated
 - c) No photography, no video cameras, no mobile phones

2 Members

The Conductor is also an interface between the public and all the other club members. By being on the frontline, conductors will be answering questions on the railroad and sometimes trying to service special requests, birthday party information, tours, etc. To help in this service the conductor needs to know who to go to for answers.

The conductor needs to know:

- 1) Who is around?
 - a) Club Officers
 - b) Experienced members
 - c) New members
 - d) Special guests
- 2) What is going on?
 - a) How many trains are running?
 - b) What types of trains are running?

- c) Regular run weekend or special event, charity run, birthday party, etc.

3 Equipment and Facilities

The Mackerel Flats and Goat Hill Junction Railroad is located in Fairview Park, and is open to the general public. It is not encouraged, but anyone is allowed to walk anywhere in the park with a few restrictions.

Steaming Bays/Compound is off limits to the general public unless a badged member escorts them. Guided tours are freely given, but due to the hazards associated with our hobby a knowledgeable person must take responsibility to make sure no one gets hurt.

Most of the equipment is hazardous to some extent. Sharp metal, heavy locomotives, etc. are everywhere. If something looks unsafe let someone know. If you don't know how to do something, ask.

When a conductor is on duty, they need to know:

1) Their train:

a) What type of cars:

Bench – Club owns 18 orange and black bench cars, 2 to 6 passengers may ride depending on size

Gondola – Club owns 7 gondolas, 2 to 3 passengers

Passenger – Several members have regular passenger style cars where the passenger sit with their feet in the car, very top heavy

Prototypical – Box Cars, Refrigeration Cars, Tank Cars, etc. Generally not for riding, used to show the public examples of operational rolling stock.

b) What type of engine:

Steam – Takes all of the engineer's attention to operate

Gas/Diesel – Less work to operate, but noise makes communication with the engineer harder

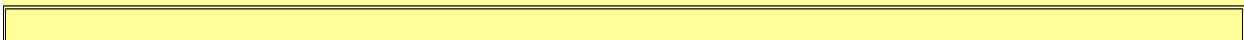
Electric – Smaller engines, usually in limited operation

2) The track:

a) Direction of the day

b) Run day or Work day

c) Ask if there are any known bad sections or switches



We are all here to have a good time, but:

Remember Safety is Number One at all Times

General Information

4 Communications

The Engineer is responsible for the train and the safety of everyone on board. It is the responsibility of the Conductor to be able to communicate with their engineer at all times and with all other engineers operating as required.

If there are more than 6 passenger cars, and a second conductor is needed, both conductors must stay in contact to provide for the safety of passengers. (General rule is 1 conductor for every 6 passenger cars.)

Three methods of communication:

- 1) **Radio** – All trains carrying passengers are required to carry a FRS radio tuned to the required channel of the day, used for communication between trains and the station to report breakdowns or hazards. (It is a good idea if everyone working around the railroad has a radio.)

It is hard for the engineer to hear what is being said on the radio, the conductor needs to be keeping track of what is being said and determine if it affects their train.

FRS Radio Channel: 9 Sub-channel: 25

- 2) **Whistle** – All Conductors are required to carry a whistle. This is the primary communication device between the Conductor and the Engineer when voice communication is ineffective.

This may be due to background noise, location of the conductor on the train, or in switching operations where the conductor is not on the train.

Whistle signals:	2 sharp notes	When stopped; proceed forward
	2 sharp notes	When running; STOP
	3 sharp notes	When stopped; proceed in reverse

Leaving the Station: When the train is loaded and the Station Master has given the Ok, the conductor is to verify that all passengers are safely loaded and the train is ready to leave the station. At this time the conductor will give 2 sharp notes to let the engineer know all is ready. The engineer will then respond with 2 horn signals acknowledging that the train is ready and then proceeds to move.

In the case that the engineer stops the train at a location other than the station: Once the engineer is ready to move, they will give 2 horn signals to

inform the conductor they are ready. The conductor will then verify that all passengers are safely loaded and the train is ready to move. At this time the conductor will give 2 sharp notes to let the engineer know all is ready.

- 3) **Flag/Lantern/Hand Signals** – Primarily used in emergency situations for communication with a following train. Every train is required to have a red flag, know where it is. At night all conductors are required to have some form of signal light, flashlight, lantern, etc.

For any reason that a train may be stopped on the mainline, it is the responsibility of the conductor to inform any following trains that the track is blocked so they may stop at a safe distance.

General Guidelines:

If the train is stopped on level open ground, the conductor needs to be **approximately 200 feet behind the last car with the red flag.**

If the train is stopped on a blind curve, the conductor needs to be **approximately 200 feet behind the last car or before the entrance of the blind curve which ever is greater.**

If the train is stopped on or at the base of a downhill section, the conductor needs to be **approximately 200 feet behind the last car or at the top of the downhill section which ever is greater.**

To inform the oncoming engineer to stop, the conductor is to wave the flag across the track until the engineer acknowledges the signal. Once the following train has acknowledged, the conductor can just hold the flag across the track.

Only after following trains have stopped and the respective conductor(s) is (are) protecting their train may the conductor return to assist the engineer. If necessary a passenger may be enlisted to aid the conductor by flagging the end of a train if the engineer needs assistance.

If the conductor is flagging the end of the train and the engineer is ready to proceed, they will give 4 horn signals to inform the conductor they are ready.

The conductor will then verify that there is no danger from following trains and return. At that time the conductor will verify that all passengers are safely loaded and the train is ready to move. At this time the conductor will give 2 sharp notes to let the engineer know all is ready. The engineer will then respond with 2 horn signals and proceed to move.

5 Passengers

It is the responsibility of the Conductor to know how to load their train

- 1) Check with the Engineer for instructions on how many passengers are to be loaded. Club trains load typically 6 bench cars with an average of 18 to 24 passengers. Private trains usually are much less.
- 2) Load the cars properly, (riding cars that are not balanced are subject to tipping over and of derailing):
 - a) **Bench** – 2 to 6 passengers, load with the weight to the front of the car.
Adult-Adult
Adult-Child-Adult
Child-Adult-Child-Adult
Child-Child-Adult-Child-Child
Child-Child-Child-Child-Child-Child
Etc.
 - b) **Gondola** – 2 to 3 passengers, load with the weight to the front of the car.
Adult-Adult
Adult-Child-Adult
Child-Adult-Child
Etc.
 - c) **Passenger** – Special seating required, consult the Engineer.
 - d) **Prototypical** – Special seating required, consult the Engineer.
- 3) ***Loading and unloading of passengers will normally only be done at a designated station.*** In emergency events the Conductor is responsible to get the passenger off the train until it is safe and then properly load as required.

It is the responsibility of the Conductor to maintain order and enforce safety rules on their train

- 1) **Passengers are to stay seated and facing forward.**

- 2) **All passengers must have a seat.** Children can not be held in parent's laps. If a derailment occurs, a child could be "launched" if the parent loses their balance.
- 3) **Hands and feet are to stay within the car at all times.** No dragging of feet, no reaching for weeds, no touching the bridge, etc. Switches may be kicked during movement causing a derailment, rocks may be kicked under the cars, feet can be drug under the cars causing injury, etc.
- 4) **No Photography or Video** while the train is in motion. People do not understand the fine balance that our cars require to stay on the track. Leaning to take a picture can put a car on the ground and could throw the passenger off balance and throw them on the ground also.
- 5) **No Mobile Phone use** while the train is in motion. Passengers who are talking on the phone tend to be distracted and may lose their balance and cause a derailment. They are also an annoyance to other riders who are trying to enjoy the ride.
- 6) **No Food or Drink** is allowed on the train.
- 7) **No Smoking** on the train.
- 8) **Do Not Pick Up Children** and place them on the car. It is the responsibility of the parent or guardian to listen to the conductor and to make sure their child is properly seated.
- 9) **Offer assistance** to passengers that may have trouble balancing when trying to board a car.
- 10) **Do not let passengers stand on the cars when boarding.** The proper procedure is to step across the car, sit down, and then place feet in or on the car. The cars will tip over and the passengers may be thrown from the car.
- 11) **In the case of an emergency**, i.e. a derailment, the conductor must make sure that all **passengers are safe and that they remain seated** until instructed to do otherwise. Then the conductor must **protect their train** by warning following trains that there is a problem and that they must stop. (Red Flag at 200 Ft.)
- 12) **Use common sense**, if something doesn't look safe or you are unable to solve the issue yourself, get assistance.

6 Operations

During the normal operation of the train the duties of a conductor expand:

In addition to keeping watch on the passengers, the conductor needs to be watching the surroundings for distractions and hazards, animals, bicycles, unauthorized people around the tracks, etc.

While riding the train the conductor needs to pay attention to the sounds and the feel of the train. Many times problems can be felt or heard before being seen. Watch the faces of the passengers. If a car derails they will definitely show signs of concern.

In general the engineer is responsible for the trackage in front of the train. In the case that switches need to be thrown, the conductor will throw the switch as directed by the engineer and remain by the switch until the train has cleared and return it to the original position. At all times the conductor is responsible for the protection of their train and during a switching operation must be aware of other trains that may be following.

Whenever a switch is thrown, the person operating the switch is responsible to verify that the points of the switch are aligned properly. Switch points must be aligned against the main rail, with no debris or damage keeping the points in a partially open state.

If placing a train in the yard, verify that the switches at both ends of the siding are aligned to allow other trains to pass.

7 Emergency Procedures

Many of the problems that occur, derailments, running out of fuel, having to stop and talk to a passenger, etc. are basically normal in the operation of a train. Occasionally the problems become more severe:

If the engine derails it takes more than a crew of 2 and bare hands to get going
If a car breaks a truck or coupler and is inoperable
If the track or a switch is damaged

These are types of problems that require a conductor and engineer to **get extra help**.

Once again the conductor must make sure that all **passengers are safe and that they remain seated** until instructed to do otherwise and then **protect the train**.

When everything is secure, the conductor needs to get on the radio and request assistance or send someone to the station or steaming bays for help.

If the problem is severe or will take a large amount of time to remedy, the conductor

Emergency Procedures(Cont)

should call for an empty train to pick up the stranded passengers.

When requesting assistance note your location.

There are mileposts every 660 feet.

Every switch on the mainline has an identification number.

Use a landmark, the bridge, the water tank, etc.

This will speed up assistance and let the other trains know exactly where the problem is and can possible be routed around.

8 Club Rules

General Notice
Safety is of the first importance.
Obedience to the rules is essential to safety

Read the rule book

Every member should have a copy of the rulebook and have read and understand everything contained within. It covers all facets of our operation, definitions, general safety information, operations, roles and responsibilities, communications, etc. The book is only 20 pages in length, of which 5 pages are on automated signals that are not available at the present, total time to read, about 10 minutes.

In many clubs, conductors are to have a copy of the rulebook on their persons when operating a train with public.

The following are excerpts from the rule book that are directly applicable to passenger operations and basic safety.

8.1 General Rules

- A. *Members whose activities are prescribed by these rules must be provided with a copy.*
- B. *Members, and others who utilize Orange County Model Engineers, Inc, (O.C.M.E.) facilities, must be conversant with and obey the rules and any special instructions. If in doubt as to their meaning, they must apply to proper authority of the Corporation for an explanation.*
- C. *Members who utilize O.C.M.E. facilities must pass the required examinations.*

- E. Members should render every assistance in carrying out the rules and special instructions, and should report any violation thereof to the proper officer.*
- F. Accidents, defects in track, bridges, or signals or any unusual condition, which may affect the safe operation of the railroad, must be reported to the proper authority.*
- G. The use of alcoholic beverages or narcotics by members while on railroad property is prohibited. Being under the influence of alcoholic beverages or narcotics while on railroad property is prohibited.*

8.2 General Regulations

- 700 Members and guests must never be careless of the safety of themselves or of others. Individual conduct should never subject the railroad or O.C.M.E. to criticism or cause good will to be lost.*
- 701 Courteous, considerate conduct is required of all members at all times.*
- 701(A) Members must not enter into altercation with any person, regardless of the provocation.*
- 705 Members should exercise care and consideration in the use of O.C.M.E., or other members' property.*
- 707 Railroad and O.C.M.E. premises must be kept in a clean, orderly, and safe condition.*
- 709 Members must not discriminate between individuals who ride the railroad. Acceptance of tips or gratuities by individual members is not permitted, however, these may be received in behalf of O.C.M.E.*
- 714 Every precaution must be taken to prevent loss and damage by fire. The rules and instructions governing fire prevention and fire protection must be fully complied with.*
- 715 Members must observe trains to detect anything unusual, defective, or dangerous and make the crew aware of any problem.*
- 716(A) In the event passengers, guests, or members are injured, everything possible must be done to care for them properly. If warranted, 911 should be called immediately.*

- 716(H) *All cases of personal injury to any member, guest, or passenger must be reported to a member of the board of directors.*
- 719 *When persons who are evidently intoxicated or otherwise impaired are on railroad property, every effort must be made to protect them from injury. If they can not be peacefully removed from the property, proper authority must be notified.*
- 740 *Non-members of O.C.M.E. are welcome to tour the facilities, but all visitors should be accompanied by a member, especially young children.*
- 741 *Members should not use any equipment that belongs to another member without first receiving permission. No member is under any obligation to allow anyone else to use railroad equipment, tools, or any other personal property.*
- 742 *When members are conducting visitors on tours of the facility, great care should be exercised to see that no damage is done to any equipment that is stored or is otherwise on the property.*

8.3 Passenger Service

- 831 *All crewmembers on a passenger train are responsible to the engineer. The engineer must know that they are qualified to perform their duties. Courtesy to passengers and to each other is of utmost importance.*
- 832 *Passengers must not be allowed to use photo or video equipment while on board the train. Food and drink are not permitted aboard the trains.*
- 832(A) *Passengers loading and unloading will normally be done at a designated station area only.*
- 833 *Station agents or crewmen must not allow persons who are intoxicated or otherwise disorderly to board any train. Mentally or physically handicapped persons are to be boarded only when accompanied by an attendant. They must not permit obscene, profane, or offensive language, or other misconduct. Interference with or annoyance of other passenger, or damage to equipment must not be permitted.*
- 833(A) *Young children are not permitted to ride trains until they are able to stand and walk. Pregnant females should not be allowed to board trains.*
- 837 *Passengers will be seated on a seat facing forward. Small children may be seated on the car floor if practicable. Each car must be loaded so as to distribute the weight evenly between the trucks.*

- 841 *Before departure from the station, the station agent must instruct passengers:*
- 1) *to keep hands and feet inside the car at all times,*
 - 2) *to not lean to one side or the other,*
 - 3) *to not try to touch anything along the way,*
 - 4) *to follow the instruction of the crew at all times,*
 - 5) *and to not attempt to get off the train until it has come to a complete stop at the station.*

When the conductor has determined the train is ready to depart he will give the engineer a proceed signal, (2 whistles). Before starting, the engineer will sound two long sounds of the locomotive whistle.

- 841(A) *At no time are members obligated to provide transportation for the public. This service is entirely voluntary.*

9 Conductor's Checklist:

Prior to loading passengers:

Personal Equipment:

Whistle – Have a good survival/sports whistle, example FOX 40.

Radio – Standard FRS type radio with 14 channels and 38 sub-channels.

Switch Key – Every conductor should have a key. The lanyard with whistle is an excellent place to keep the key.

Red Flag – Know where it is, usually in the control car or caboose.

Lantern or Flashlight – Required for night operation.

Engine Type: Any special requirements from the engine/engineer

Riding Car Type(s): If unsure of how to load, check with the engineer.

Track Condition: Any concerns, or work being performed

Verify all cars have **safety chains**. *It is a requirement for all club equipment*, but is a good idea for everyone.

Check the fuel level

Proper attire: Jacket, sunscreen, hat, sunglasses...

Proper Attitude: You are representing the Club to the general public.

***The Responsibility of the Engineer is to
provide for the SAFETY of the
General Public, Members, and the Equipment***

10 Introduction

The purpose of this training is to familiarize all members with the operation and rules that govern the Orange County Model Engineers. This course will be targeting the operations of our railroad as it involves actual working with the trains. It will only briefly touch on operations involving the general public. These are covered as part of the Conductors training.

This course is not intended to cover operations of specific locomotives. Each locomotive is unique, and requires an engineer to be qualified and certified on the safe operation of locomotives on an individual case by case basis.

For the purpose of this course Trainman will be considered as a Conductor, Brakeman, Flagman, Fireman, Yardman, etc. Also the differentiation between Engineer and Trainman will be considered minimal and will be interchangeable for the most part, since most members switch between both tasks as required.

Why is this class being held? There are contractual and legal considerations in being involved with the club. To be covered by insurance, the club has to have specific operational rules. The club has a requirement to make sure every member is aware of the rules.

Gen. Rule B. ***Members, and others who utilize Orange County Model Engineers, Inc, (O.C.M.E.) facilities, must be conversant with and obey the rules and any special instructions. If in doubt as to their meaning, they must apply to proper authority of the Corporation for an explanation.***

Gen. Rule C. ***Members who utilize O.C.M.E. facilities must pass the required examinations.***

Note: Text in *Italics* bold or normal, are direct quote from the O.C.M.E Operating Rulebook, July 1, 1997.

11 Safety

General Notice:
***Safety is of the first importance,
Obedience to the rules is essential to safety.***

Page 1, Rule 1 is that safety is the prime focus of our operation, at all times, during everything we do.

From the time of arrival at the railroad, an engineer/trainman is working in an area that has many hazards.

Vehicles in the parking lot and moving in and out of the compound
The transfer table moving back and forth
Lifting equipment
The machine shop, power tools
Landscaping equipment
Etc.

Because of the need for safety all members need to be as alert and coherent as possible. Therefore anything that causes a lapse in attention or impairs their judgement, (alcohol, medications, narcotics, etc.) does not belong at the club.

Gen. Rule G. ***The use of alcoholic beverages or narcotics by members while on railroad property is prohibited. Being under the influence of alcoholic beverages or narcotics while on railroad property is prohibited.***

Gen. Reg. 719 ***When persons who are evidently intoxicated or otherwise impaired are on railroad property, every effort must be made to protect them from injury. If they can not be peacefully removed from the property, proper authority must be notified.***

**The prime responsibility for safety on a train is the engineer.
But, every member is responsible for the safe operation of our hobby.**

Gen. Reg. 800 ***The general direction and government of a train is vested in the engineer. All other crew members must obey his instructions.***

Safety(Cont.)

- Gen. Reg. 802** *Engineers must know that all crew members are familiar with and do comply with all rules and are qualified to perform their duties.*
- Gen. Reg. 810** *Members of the crew must watch their train closely for any condition that would affect the safe operation of that train. If a problem is noted a signal to stop must be given and the problem corrected.*
- Gen. Reg. 868** *The engineer is responsible for the safe operation of the engine in his charge. Any persons assisting him must obey his instructions.*
- Gen. Reg. 876** *Engineers must not permit any unauthorized person to handle the locomotive when engaged in passenger operation.*
- Gen. Rule E.** *Members should render every assistance in carrying out the rules and special instructions, and should report any violation thereof to the proper officer.*
- Gen. Rule F.** *Accidents, defects in track, bridges, or signals or any unusual condition, which may affect the safe operation of the railroad, must be reported to the proper authority.*

12 Engineer Certification Training

The class will be structured in a sequential format, moving from the setting up of the train in the steaming bay/compound to operation on the railroad.

12.1 Moving Equipment

Part of the responsibility of a member is the moving of equipment from either a vehicle or container to a steaming bay or the yard. The two main pieces of equipment that are used are the transfer tables and the hoist.

The transfer tables are used to move locomotives and cars from the storage containers to either the steaming bays, hoist, or the turntable. Removable bridges are used to move the equipment from the container to the transfer table.

There are 4 types of bridges:

- 1) Dedicated bridges that are unique to individual tracks in the container.
- 2) Long heavy duty bridges used with the hoist to assist loading and unloading from vehicles or trailers.
- 3) A long light duty bridge used only for moving light cars from the third level to the tall transfer table.
- 4) A short light duty bridge for moving cars from the tall transfer table to the hoist.

In addition to club bridges, visitors occasionally bring personal equipment for loading and unloading their equipment. As the host club we are still responsible for their safe usage.

Proper use of the transfer tables and bridges is mandatory. Make sure the table is aligned with the respective track, use the lock pins to maintain bridge alignment. Watch the placement of hands and fingers, there is an extreme pinch hazard associated with installing bridges. Move the locomotive/car slowly and verify that the wheels transition from the track to the bridge to the table smoothly.

When the locomotive/cars are on the table verify the safety chains or other mechanical device is in place to keep equipment from rolling.

Prior to moving the transfer table, verify that there is no overhanging equipment.

When moving equipment to a steaming bay, make sure the table is aligned with the respective track, use the lock mechanism to maintain table alignment. Again, move the locomotive/car slowly and verify that the wheels transition from the table to the steaming bay smoothly.

When moving equipment to the track, there are two options, the hoist or the turntable.

The turntable is used primarily with locomotives that are stored on the second level in a container. The transfer table is positioned at the turntable, care taken to align the transfer table on the marks by the wheels. This keeps the turntable and transfer table in alignment. Lock the turntable to the transfer table. Again, move the locomotive/car slowly and verify that the wheels transition from the transfer table to the turntable smoothly.

Moving Equipment (cont.)

The hoist can be used for all positions on the transfer tables. The transfer table is positioned at the hoist, care taken to align the transfer table on the marks by the wheels. This keeps the hoist and transfer table in alignment. Lock the hoist to the transfer table, use the slide plate from the hoist. Again, move the locomotive/car slowly and verify that the wheels transition from the transfer table to the hoist smoothly.

When the locomotive/cars are on the turntable or hoist, verify the safety chains or other mechanical device is in place to keep equipment from rolling.

As required, raise/lower and rotate the hoist to align with the turntable. Lock the turntable and hoist, move the locomotive/car slowly across the joint. Verify that the wheels transition smoothly.

As required, rotate the turntable to align with the required track. Lock the turntable to the track and move equipment across the joint.

Note: To align the hoist with the turntable, the green end of the turntable must be at the track. (The track end is also painted green.) The wheel-blocking chains on the turntable and hoist are to be on the side away from the steaming bays, towards the vehicle gate.

The process is reversed when moving equipment from the track to the storage containers.

When building a train, courtesy and consideration is requested. There are only 3 tracks out of the steaming bays. Don't tie up the tracks any longer than necessary. Move to the Skinner Yard tracks or out on the main line as soon as possible.

The same can be said about the transfer tables. Use and then turn them loose.

Gen. Reg. 867 ***Engines or other equipment being moved in the storage area, on or off lifts or the turntable must never be ridden. When practicable, all equipment is to be moved by hand in these areas. Wheel blocking chains are to be used.***

Gen. Reg. 871 ***Locomotives must not be left unattended, unless, other than steam engines, the unit is completely shut down and the wheels blocked, chained, or otherwise secured from rolling. Steam engines will be left in the center position, and the drivers secured against movement.***

12.2 Before Operation

Once the train has been built, inspection of all equipment is required. Part of the inspections can take place while the equipment is being moved on the transfer table, turntable, and hoist. Look and listen as the locomotive and cars are being pushed.

Engine: Check the fuel, oil, water, etc.
If running in low light verify operation of the headlight.
Verify that control car, tender, or extended fuel cars are secured with safety chains or solid drawbar to the locomotive.

Cars: Verify all cars roll smoothly
Verify that all couplers are in good shape and are aligned between cars.
All club cars are to have safety chains
If running in low light verify operation of a red light on the last car.

Personal: Whistle – Get a good survival/sports whistle, FOX 40 or similar type.
Switch Key – Should have a key on the lanyard with whistle.
Red Flag – Know where it is.
Lantern – As required for night operation.
Radio – Family Radio Service, (FRS), 14 Channels, 38, (or more), Sub-channels

Gen. Reg. 867(E) *The following pieces of equipment, that are ridden by the engineer, must be secured with safety chains in addition to couplers and/or draw bars: locomotive tenders, second units in a diesel consist, (operating or dummy), riding cars, etc.*

12.3 Communication

Now that the train is ready, the engineer/trainman needs to know how to communicate with other members on the train, other trains, and members supporting other operations. Courtesy and respect are also needed in communications.

Gen. Reg. 701 ***Courteous, considerate conduct is required of all members at all times.***

The Engineer is responsible for the train and the safety of everyone on board. It is the responsibility of the Engineer to be able to communicate with their Conductor(s) at all times and with all other engineers operating as required.

If there are more than 6 passenger cars, and a second conductor is needed, both conductors must stay in contact to provide for the safety of passengers. (General rule is 1 conductor for every 6 passenger cars.)

There are basically three methods of communication used on the railroad:

- 1) **Radio** – All trains carrying or intended to carry the public are required to carry a FRS radio tuned to the primary channel for communication between trains and station to report breakdowns or hazards. In general all trains operating should have a radio.

FRS Radio Channel: 9 Sub-channel: 25

Radio Rule 654 ***Before transmitting, any member operating a radio transmitting set shall listen a sufficient interval to be sure that the circuit is not already in use.***

Radio Rule 655 ***A distress call will be preceded by the word “Emergency”, repeated three times. Such calls shall be used only to cover initial reports of serious accidents and/or injuries.***

Radio Rule 658 ***Members must clearly identify the station, train, or engine and individual transmitting or responding to a radio call.***

- 2) **Whistle** – All engines should have a horn or whistle capable of being used during operation for signaling purposes.

Engine Whistle Signals

(a)	Succession of short signals: ••••••••	Apply brakes, Emergency STOP
(b)	2 Long signals: — —	Release brakes, Proceed
(g)	2 Short signals: ••	Answer to a signal not otherwise provided for.
(h)	3 Short signals: •••	When standing, Back-up Answer to a back-up signal from the ground
(j)	4 Short signals: ••••	Call for signals Call in for Flagman
(l)	Long Long Short Long signals: — — • —	Approaching any of the following: Grade crossings Tunnels Obscure curves A train standing on an adjacent track As an alarm for persons near the track.

Op. Rule 14 *The whistle must be sounded where required by rule or law. In case of whistle failure, speed of train must be reduced and the bell rung when approaching and passing through stations and yards, over public crossings and around curves.*

Communicating Signals - Conductors are to carry a whistle

(a)	2 sharp notes: ••	When stopped; proceed forward
(b)	2 sharp notes: ••	When running; STOP
(c)	3 sharp notes: •••	When stopped; proceed in reverse

Op. Rule 16 *All conductors must have in their possession a whistle that is suitable for communicating signals to the engineer.*

Communication (cont.)

- 3) **Flag/Lantern/Hand Signals** – Primarily used in emergency situations for communication with a following train. Every train is required to have a red flag, know where it is. At night all conductors are required to have some form of signal light, flashlight, lantern, etc.

Op. Rule 7(A) *All members must keep a constant lookout for signals. All members of the crew must be alert to receive signals from members of the crews of other trains.*

Op. Rule 7(D) *Members giving hand signals must locate themselves where they can be plainly seen and must give signals in such a way that they can be clearly understood.*

Op. Rule 7(G) *Yellow flags by day and white lights by night will be used by switch tenders in giving hand signals.*

Hand Signals with Lantern or Flag

Op. Rule 8(a) *Lantern or flag, (L/F), swung at right angle to the track. Stop*

Op. Rule 8(b) *L/F moved slowly with arm extended horizontally* **Reduce Speed**
(Arm extended from the body, moved with short up and down motions)

Op. Rule 8(c) *L/F raised and lowered vertically* **Proceed**
(Arm extended from the body, moved with large up and down motions)

Op. Rule 8(d) *L/F swung in a circle at right angle to the track. Back Up*

Communication (cont.)

Hand Signals without Lantern or Flag

<i>Op. Rule 8(h)</i>	<i>Any object waved violently by any person on or near the track must be respected as a signal to stop.</i>	Stop
<i>Op. Rule 8(j)</i>	<i>Radio or other means of oral communication as well as signals given with a referee-type whistle may be used instead of hand signals to convey information.</i>	
<i>Op. Rule 8(k)</i>	<i>Arm swung in downward arc from the horizontal</i>	Stop
<i>Op. Rule 8(l)</i>	<i>A beckoning motion with the hand</i>	Come toward me
<i>Op. Rule 8(m)</i>	<i>Movement of the hand away from the body</i>	Go away from me

For any reason that a train may be stopped on the mainline, it is the responsibility of the conductor to inform any following trains that the track is blocked so they may stop at a safe distance.

If the train is stopped on level open ground, the conductor needs to be approximately **200 feet behind the last car with the red flag.**

If the train is stopped on a blind curve, the conductor needs to be at approximately **200 feet behind the last car or before the entrance of the blind curve which ever is greater.**

If the train is stopped on or at the base of a downhill section, the conductor needs to be at approximately **200 feet behind the last car or at the top of the downhill section which ever is greater.**

If the conductor is flagging the end of the train and the engineer is ready to proceed, the engineer will give 4 horn signals to inform the conductor they are ready.

12.4 Running Operations - Movement of Trains

Now that the locomotive is ready, cars have been inspected, and every member knows how to communicate with every other member, it is time to begin operation of the train.

When the engineer is ready and the crew has determined that the train is indeed ready to operate, the conductor will give 2 sharp notes to let the engineer know all is ready. The engineer will then respond with 2 horn signals acknowledging that the train is ready and then proceeds to move. Not until this exchange has taken place may a train move.

In proceeding out of the yard and onto the main line, it is the responsibility of the engineer to make sure that the track is clear and it is safe to proceed.

As the train moves out, the position of the switches needs to be noted. Most switches on the Mackerel Flats and Goat Hill Junction Railroad are spring-loaded and a train may pass through “**with the points**” when the switch is set in either position. If the train is going “**against the points**”, the engineer is required to verify the position and condition of the switch as it is approached. Most of the switches have red and green reflective tape on the arms and stops of the switch. In normal operation the engineer will see 2 green or 2 red indicators, 1 on the arm and 1 on the stop. If this is the case the engineer may proceed through the switch.

NOTE: It is not a guarantee that the switch is set safely just because the same color tape is seen on the arm and stop. Rocks or damage may not allow the points to move freely leaving the switch in an indeterminate position. Visual confirmation of the point position should also be made.

If 1 red and 1 green indicator is seen, the engineer must stop immediately and have the switch position corrected.

When a change in track is made it is the responsibility of the engineer and/or the crew to re-align the switch to its **normal** position, typically for main line operation. If the switches changed are a crossover, re-align both switches to their normal positions.

Most of the critical switches are locked to prevent accidental or inadvertent changes that can cause a change in the normal direction of travel for the mainline. Many other switches are locked also, and it is necessary for crewmembers to have a switch key for special routing of trains. Typically when working on trackage or if a train or car has to be removed from service.

Running Operations - Movement of Trains (cont.)

If a train has to be shutdown, it should be done at a point where other trains can easily pass.

Most likely there will be other trains on the track at the same time. Rules concerning following distance must be followed. When following another train, an engineer must not be closer than 200 ft. If the other train is stopped, the following train may move up closer, but this must be done at a reduced speed. If a train has to be stopped for any reason on the mainline, the conductor must protect the train by moving to a location behind the train such that following engineers can see signals and have time (and distance) to stop their train.

- Op. Rule 84*** ***A train must not start until proper signal is given.***
- Op. Rule 85*** ***When a train is delayed, other trains must be allowed to pass promptly.***
- Op. Rule 91*** ***Unless block signals are in use, trains in the same direction are to keep at least 200 feet apart, except when closing up at stations.***
- Op. Rule 99*** ***When a train stops, except when clear of the main line, a member of the crew must go back immediately with flagman's signals a sufficient distance to insure full protection.***
- Op. Rule 99(A)*** ***Conductors and engineers are responsible for the protection of their train, and when protection is necessary, they must see that it is provided with utmost promptness and in strict accordance with the rules.***
- Op. Rule 99(C)*** ***When a train is flagged, the flagman must give the engineer a thorough explanation of the cause, and the engineer must be governed by conditions.***
- Op. Rule 99(E)*** ***When track is obstructed or unsafe, or before making track impassable or unsafe, full flag protection must be provided in both directions on all tracks affected.***
- Op. Rule 102(A)*** ***When there has been a derailment, after equipment has been re-railed it must be shown by inspection of track and equipment that it is safe for the train to proceed.***

Running Operations - Movement of Trains (cont.)

- Op. Rule 104*** ***Unless otherwise provided, the normal position of a main track switch is for the main track movement and it must be lined in that position except when changed for immediate movement.***
- Op. Rule 104(C)*** ***Both switches of a cross-over must be left in normal position after having been used.***
- Op. Rule 104(G)*** ***A rigid switch must not be run through. When a switch is damaged or defective, it must be spiked.***
- Op. Rule 107*** ***When a passenger train is standing at a station, no part of that train may be passed by a train or engine on the side where passengers are being received or discharged.***

13 Club Rules

Remember Safety is Number One

General Notice

***Safety is of the first importance
Obedience to the rules is essential to safety***

Read the rule book

Every member should have a copy of the rulebook and have read and understand everything contained within. It covers all facets of our operation, definitions, general safety information, operations, roles and responsibilities, communications, etc. The book is only 20 pages in length, of which 5 pages are on automated signals that are not available at the present, total time to read, about 10 minutes.

13.1 General Rules

- A. *Members whose activities are prescribed by these rules must be provided with a copy.*
- B. *Members, and others who utilize Orange County Model Engineers, Inc, (O.C.M.E.) facilities, must be conversant with and obey the rules and any special instructions. If in doubt as to their meaning, they must apply to proper authority of the Corporation for an explanation.*
- C. *Members who utilize O.C.M.E. facilities must pass the required examinations.*
- E. *Members should render every assistance in carrying out the rules and special instructions, and should report any violation thereof to the proper officer.*
- F. *Accidents, defects in track, bridges, or signals or any unusual condition, which may affect the safe operation of the railroad, must be reported to the proper authority.*
- G. *The use of alcoholic beverages or narcotics by members while on railroad property is prohibited. Being under the influence of alcoholic beverages or narcotics while on railroad property is prohibited.*

13.2 General Regulations

- 700 *Members and guests must never be careless of the safety of themselves or of others. Individual conduct should never subject the railroad or O.C.M.E. to criticism or cause good will to be lost.*
- 701 *Courteous, considerate conduct is required of all members at all times.*
- 701(A) *Members must not enter into altercation with any person, regardless of the provocation.*
- 705 *Members should exercise care and consideration in the use of O.C.M.E., or other members' property.*
- 707 *Railroad and O.C.M.E. premises must be kept in a clean, orderly, and safe condition.*
- 709 *Members must not discriminate between individuals who ride the railroad. Acceptance of tips or gratuities by individual members is not permitted, however, these may be received in behalf of O.C.M.E.*
- 714 *Every precaution must be taken to prevent loss and damage by fire. The rules and instructions governing fire prevention and fire protection must be fully complied with.*
- 715 *Members must observe trains to detect anything unusual, defective, or dangerous and make the crew aware of any problem.*
- 716(A) *In the event passengers, guests, or members are injured, everything possible must be done to care for them properly. If warranted, 911 should be called immediately.*
- 716(H) *All cases of personal injury to any member, guest, or passenger must be reported to a member of the board of directors.*
- 719 *When persons who are evidently intoxicated or otherwise impaired are on railroad property, every effort must be made to protect them from injury. If they can not be peacefully removed from the property, proper authority must be notified.*
- 740 *Non-members of O.C.M.E. are welcome to tour the facilities, but all visitors should be accompanied by a member, especially young children.*

General Regulations (cont.)

741 *Members should not use any equipment that belongs to another member without first receiving permission. No member is under any obligation to allow anyone else to use railroad equipment, tools, or any other personal property.*

742 *When members are conducting visitors on tours of the facility, great care should be exercised to see that no damage is done to any equipment that is stored or is otherwise on the property.*

13.3 Passenger Service

831 *All crewmembers on a passenger train are responsible to the engineer. The engineer must know that they are qualified to perform their duties. Courtesy to passengers and to each other is of utmost importance.*

832 *Passengers must not be allowed to use photo or video equipment while on board the train. Food and drink are not permitted aboard the trains.*

832(A) *Passengers loading and unloading will normally be done at a designated station area only.*

833 *Station agents or crewmen must not allow persons who are intoxicated or otherwise disorderly to board any train. Mentally or physically handicapped persons are to be boarded only when accompanied by an attendant. They must not permit obscene, profane, or offensive language, or other misconduct. Interference with or annoyance of other passenger, or damage to equipment must not be permitted.*

833(A) *Young children are not permitted to ride trains until they are able to stand and walk. Pregnant females should not be allowed to board trains.*

837 *Passengers will be seated on a seat facing forward. Small children may be seated on the car floor if practicable. Each car must be loaded so as to distribute the weight evenly between the trucks.*

841 *Before departure from the station, the station agent must instruct passengers:*
1) *to keep hands and feet inside the car at all times,*
2) *to not lean to one side or the other,*
3) *to not try to touch anything along the way,*
4) *to follow the instruction of the crew at all times,*
5) *and to not attempt to get off the train until it has come to a complete stop at the station.*

Passenger Service (cont.)

When the conductor has determined the train is ready to depart he will give the engineer a proceed signal, (2 whistles). Before starting, the engineer will sound two long sounds of the locomotive whistle.

841(A) At no time are members obligated to provide transportation for the public. This service is entirely voluntary.

15 OCME Trivia

Club was founded in 1977 – Incorporated in 1985 – Moved to Fairview Park in 1989

We have approximately 20,000 ft of track, approximately 2 miles for mainline and the remaining in yard track and sidings.

The typical loop for a run day is approximately 1.25 miles.

The club owned locomotives: 5 diesel, (gas/hydraulic drive)

Privately owned locomotives on site:

Miniature steam locomotives, (Coal, fuel oil, natural gas fired)

Diesel models, (gas/hydraulic, gas/hydrostatic, and gas/mechanical drives)

Electrically powered locomotives, (12V and 24V battery systems)

Many more privately owned locomotives are brought in at different times.

There are enough cars to make up a train for each locomotive. (Over 100 cars stored onsite)

3 “SCALES” of train run on our 7.5 inch “GAUGE” track:	1/8 scale 1 ½ inches to the foot
	1/5 scale 2 ½ inches to the foot
	1/3 scale 3 ¾ inches to the foot

Steam locomotives weight upward to 2000 lbs.

Diesel locomotives weight upward to 900 lbs.

Electrics are usually less than 500 lbs for a switcher, but upwards to 900 lbs for a road engine.

Prices: Steam locomotives typically \$5,000 to \$40,000, some exceed \$100,000
Diesel locomotives \$4,000 to \$25,000
Electric locomotives \$1,000 to \$25,000

Bench Car/Riding Car: \$700
Prototypical Freight car \$500 to \$2,000
Streamline Passenger car \$1,000 to \$5,000

Track Aluminum rail approximately \$1 per foot
Recycled plastic ties approximately \$1.50 each.
1 ft of finished track, approximately \$8 per foot

Capacity: A bench-type riding car can weigh up to 1000 lbs loaded.
A typical club train has 6 bench-type cars
Our little engines pull an average of 3 tons around the track

Almost everything at the club has been donated or paid for by donations.

Over 300 man-hours are required for a run weekend to be successful

In a years time we typically volunteer over 10,000 man-hours to keep the club running