

STANDARD OPERATING PROCEDURES

BRAKING SERIES 4000 CARS

IMPORTANT REMINDERS ABOUT BRAKING

- The best possible stop is made when the brakes are applied as hard, at the start, as conditions of speed and rail will permit and then graduated off as the speed of the train is reduced so that as the stop is completed little or no air remains in the brake cylinder.
- Because the retarding effect of any reduction is greater at low speed than at high speed, maintaining a heavy brake reduction at low speeds will result in an abrupt stop, causing discomfort to passengers, or it may cause sliding.
- Allow sufficient time for full release of brakes before starting train. Brakes should be fully released when the black hand (brake pipe) on the air gauge returns to 70 lbs. pressure. Starting with brakes not fully released may cause flat wheels and rough starts.

METROPOLITAN

TRANSIT



SERVICE BRAKING

To achieve the highest standards of safety and maximum train performance, Motormen must follow the braking procedures outlined below:

PROCEDURE FOR MAKING A SERVICE STOP ON DRY RAIL

1. Shut off power before reaching braking point.
2. At braking point, move brake valve handle to "service" braking position. Make a 20 lb. reduction of air (Do not reduce pressure more than 20 lbs., since further reduction will not cause any increase in brake cylinder pressure and it will delay response to subsequent brake handle movement).
3. Move brake valve handle to "lap" position.
4. As speed of train decreases, begin graduating release. (To graduate release, move brake valve handle momentarily to "release" position, then back to "lap" position.) Repeat graduation as necessary until train is brought to stop with only enough pressure retained in brake cylinders to prevent wheels from rolling.

At station stops, if it appears that the train would stop beyond the intended point, hold brake valve handle in "lap" position longer or, if necessary, repeat brake application, but make as light a reduction as your experience indicates will provide the needed braking effort. Just before train stops make several graduations to prevent abrupt ("stonewall") stop. If train stops beyond the limit marker, follow procedures in Rule 211c.

PROCEDURE FOR MAKING A SERVICE STOP ON SLIPPERY RAIL

When a slippery rail condition is anticipated, Motormen must begin braking substantially sooner than on normal, dry rail.

Braking procedure for slippery rail condition is outlined below:

1. Begin braking a great deal sooner than on normal, dry rail.

2. Make a light brake application (approximately 10 lb. reduction of air).
3. Begin graduated release when train is almost stopped.

If wheels begin to slide during braking, take the action below:

1. Move brake valve handle to "release" position so that wheels will roll.
2. Lightly apply and release brakes alternately until train stops.

EMERGENCY BRAKING

Whenever it is necessary to stop a train in the shortest possible distance, use the following procedure:

1. Shut off power and move the brake valve handle quickly to the emergency position (If train goes into emergency for any reason, you must immediately shut off power and place brake valve handle in emergency position).
2. Leave brake valve handle in emergency position until train stops.

When releasing brakes after an emergency stop, use the following procedure:

1. Hold brake valve handle in emergency position until brake pipe pressure (indicated by black hand on air gauge) reaches 0.
2. Then move the brake valve handle to release position and wait until brakes are fully released (brakes should be fully released when brake pipe pressure reaches 70 lbs.).

CAUTION: Do not apply power while an emergency brake application exists. Application of power before brakes are completely released may cause damage to motors, controls and wheels.

EMERGENCY BRAKING

Whenever it is necessary to stop a train in the shortest possible distance, the following procedure should be followed:

1. Shut off power and move the hand brake lever handle quickly to the emergency position. It will give the maximum braking power and give the train a safe stop.
2. Train crew must apply the emergency brake and hold it.
3. The following details must be observed when the emergency brake is applied:
4. The hand brake lever handle is in the emergency position, the train will stop.
5. The train crew must hold the hand brake lever handle in the emergency position until the train has stopped.
6. The train crew must hold the hand brake lever handle in the emergency position until the train has stopped.
7. The train crew must hold the hand brake lever handle in the emergency position until the train has stopped.
8. The train crew must hold the hand brake lever handle in the emergency position until the train has stopped.
9. The train crew must hold the hand brake lever handle in the emergency position until the train has stopped.
10. The train crew must hold the hand brake lever handle in the emergency position until the train has stopped.

**CHICAGO TRANSIT AUTHORITY
TRAINING & ACCIDENT PREVENTION DEPT.**

3/65