CAB CONTROL SIGNALLING

LAKE BRANCH

Chicago Transit Authority
Training & Accident Prevention Dept.
67-6-T 9/67

The cab control signal system on the Lake Route is operating on a test basis. When completed, the cab control signal area will extend from Harlem Yard to the west bank of the river, in both directions. Installation of the system will be in sections, and Operating Employes must consult bulletins to determine what sections are operative.

Signalling equipment has been installed on all cars but only fourteen cars have their equipment operating for the test. On the signal aspect panel of these cars is a decal with the word "WORKING." All other cars have a decal with the words "NOT WORKING."

The test is being conducted to ensure proper performance of all parts of the signal system before making the equipment operable on all cars.

Operating employes can help in the test by strictly adhering to all operating instructions they receive and by conscientiously reporting any and all problems which may occur with the system.

WHAT IS A CAB CONTROL SIGNAL SYSTEM?

Basically, the cab control signal system is an automatic block system which (1) brings the signal into the cab of each train rather than having it at trackside, and (2) continuously informs the Motorman of the speed to which he is restricted by trains operating ahead.

Cab control signalling operates by use of audio frequency signals transmitted from equipment at trackside and picked up by equipment on the train. These signals are translated into audible and visual signals seen and heard by the Motorman in his cab.

TRAIN OPERATION WITH CAB CONTROL SIGNALLING

ASPECT PANEL

Each motor cab is equipped with an aspect panel containing the following:

1. SPEEDOMETER - has a range of speeds from 0 to 70 M.P.H. The outer edge of the speedometer lights up to indicate the maximum speed allowed at any given time.

2. SIGNAL ASPECTS (RED, YELLOW AND GREEN) - indicate the following:

SIGNAL ASPECT	SIGNAL INDICATION	SPEED INDICATION (illuminated on speedometer)
Green	Proceed	0-65 (Note: Top speed of cars is 58 MPH)
Yellow	Proceed with caution	0-35 or 0-15
Red	Stop (after stop, aspect will change to Flashing Red)	0
Flashing Red (and flashing 0-15 segment light in speedometer)	Proceed with caution prepared to stop within vision	0-15

NOTE: Flashing red is given where low speeds are required, such as in yards or when closing in on trains ahead. Motormen must exercise extreme caution under this aspect.

Motormen must operate within the range of speeds indicated by the signal aspect and speedometer.

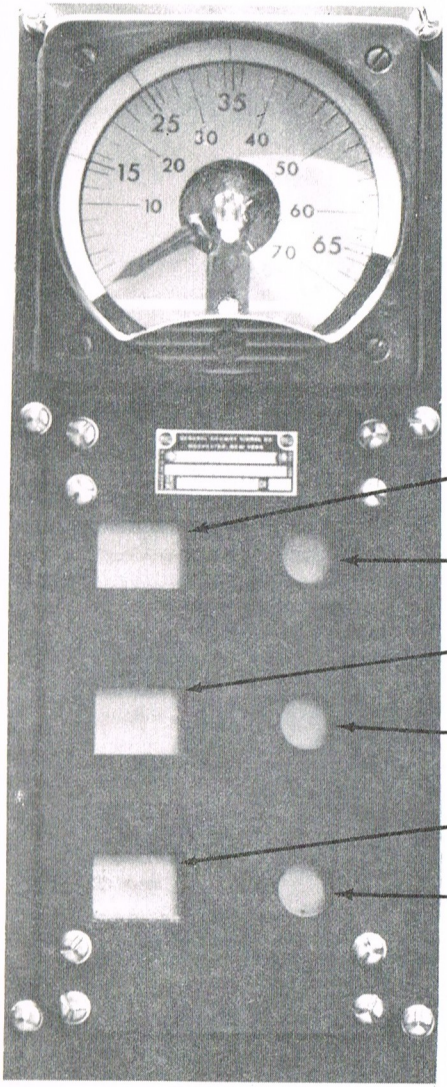
3. CAB SIGNAL CUTOUT LIGHT - Light "out" indicates that train is protected by cab control signalling; light "on" indicates that operation is on sight.

4. PARKING BRAKE SIGNAL LIGHT (Yellow) AND DOOR SIGNAL LIGHT (Green) - lights operate the same as at present.

5. WARNING BELL - sounds to alert the Motorman whenever a signal aspect changes to a more restrictive aspect or whenever the speed of the train exceeds the maximum allowed speed. Whenever bell sounds, Motorman must move Cineston handle to either second or third point of brake WITHIN 2½ SECONDS or train will stop automatically. Bell continues to sound until Motorman brakes train or if Motorman fails to brake train it sounds until automatic braking stops train.

SIGNAL ASPECT PANEL

(IN MOTOR CAB)



OPERATING PROCEDURES

NOTE: The operation of cab control signals does not relieve the Motorman of responsibility for determining safe operating speeds under various operating conditions.

IN HARLEM YARD

1. Aspect panel shows only flashing red aspect in yard.
2. Operation is "on sight" at restricted speed (as per rule 227).

BETWEEN HARLEM PLATFORM AND WEST BANK OF RIVER, BOTH DIRECTIONS

● WHERE CAB SIGNALLING IS OPERATIVE -
(Cab signal cutout light "off", signal aspect lights operating).

Motorman must frequently observe aspect panel and operate within range of speeds indicated on aspect panel.

- If signal changes to a more favorable aspect, for example, from flashing red to yellow, Motorman may increase speed if in his judgment conditions warrant an increase.
- If signal changes to a more restrictive aspect, for example, from green to yellow,
  a. Warning bell begins to sound.
  b. MOTORMAN MUST BEGIN BRAKING WITHIN 2½ SECONDS, USING EITHER B2 OR B3 RATE AS TRACK CONDITIONS INDICATE.
  c. Motorman must continue braking until speed of train is reduced to at least the maximum speed indicated on the panel.
  d. Motorman must operate at or below indicated speed until aspect again changes. (If allowed speed is exceeded, bell will ring and train must be braked.)

● WHERE CAB SIGNALLING IS NOT OPERATIVE -
(Cab signal cutout light "on", no signal aspects).
Operation is on sight or governed by wayside signals.

FROM WEST BANK OF RIVER AROUND LOOP

1. Cab signalling is cut out and operation is "on sight" or governed by wayside signals.
2. Cab signal cutout light should be "on."

DEFECTIVE EQUIPMENT

In the event cab control equipment becomes defective, the Line Supervisor must be notified. Instructions as to corrective action will be given by the Line Supervisor. In cases where train will not move or will move only at reduced speed, operation of the Emergency Circuit By-pass Button will remedy the situation. (NOTE: OPERATION ON BY-PASS MUST BE AUTHORIZED BY THE LINE SUPERVISOR.)

Following are some of the defective equipment conditions which could occur and which must be reported.

1. Cab Signal Cutout Light not working properly.
2. Speedometer not working.
3. Speedometer lights not working.
4. Permanent red signal indication.
5. Flashing red signal or yellow signal remaining "on" for great distance (call if condition lasts for more than 5 city blocks of travel and you do not see a train ahead).
6. Follower must couple or train must be operated from any cab other than head cab.
7. Any other condition about which Motorman is doubtful.