CHAPTER 15

FREEWAY CONGESTION

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FREEWAY CONGESTION

1. INTRODUCTION.

a. Congestion. Congestion on California freeways, particularly in metropolitan areas, has no singular cause which can be dealt with in a rigid, specific manner. Imagination, ingenuity, and versatility should be utilized in order to deal effectively with this complex problem.

b. Patrol Officer Responsibility.

(1) Patrol officers, through their experience and training, have the primary responsibility for recognizing the causes of congestion, including their own actions which may add to the problem.

(2) The patrol officer should adopt an effective course of action to restore traffic to its normal flow. Failure of the officer to fully accept this responsibility will result in a decrease in the efficient flow of traffic, causing monetary loss due to vehicle delay, and an increase in traffic crash potential.

(3) In view of the foregoing, it is each officer's responsibility, as a member of the CHP, to seek out the causes of congestion and remove them so the freeway system functions to the best of its capabilities.

c. Types of Congestion.

(1) Congestion Defined.

(a) Congestion is the slowing or stopping of vehicular movement resulting in the inability of available lanes to accommodate the volume of traffic at maximum efficiency.

(2) There are two basic types of congestion.

(a) Recurrent Congestion.

1 This type of congestion is predictable. It occurs at the same location, at approximately the same time, for the same cause–heavy traffic.

2 Examples of areas where recurrent congestion may occur:

a Freeway interchanges.

b On- and off-ramps.

c Grades and curves.

d Lane reductions.

e Construction projects.

(b) Nonrecurrent Congestion.

1 Nonrecurrent congestion is unpredictable. It generally occurs as a result of an unusual incident.

2 Examples of causes of nonrecurrent congestion:

a Traffic crashes.

b Disabled vehicles.

c Spilled loads.

d Officer(s) assisting motorists; enforcement stops.

e Vehicle fires; fires adjacent to freeways.

f Visual impediments (any unusual incident or object within sight of drivers).

2. REDUCTION OF CONGESTION.

a. Traffic Crashes.

(1) Traffic crashes are a major cause of congestion. Crashes range in severity from the blocking of traffic lanes to the creation of a visual impediment causing motorists to rubberneck and unnecessarily slow the flow of traffic. The patrol officer should safely remove physical obstructions and visual impediments to restore traffic flow to normal, as soon as possible.

(2) When possible, the investigation should be completed off the freeway and out of view of freeway traffic. The rapid removal of people, vehicles, and equipment involved is of great importance in minimizing traffic delay.

(3) In order of priority, traffic lanes should be cleared of wrecked vehicles to begin the restoration of the traffic flow.

(4) Sig-Alerts should be initiated and cancelled as necessary.

(5) Officers shall actively direct traffic at freeway crashes/incidents as needed to reduce congestion.

(a) All shoulders and center dividers should be used as lanes to relieve congestion when possible, without endangering persons or property at the scene.

(b) Initiate an escort for both sides of the freeway as deemed necessary.

(6) All officers should be thoroughly trained in the freeway escort technique. This procedure should be used when there is a possibility it will reduce crashes and congestion by gradually slowing the traffic flow as vehicles approach a hazardous location (refer to Chapter 13, Patrol and Enforcement on the Freeway, of this manual, for escorting techniques).

(7) Only those officers necessary to complete the investigation and handle traffic control should remain at the scene. Normal flow of freeway traffic should be restored with the least possible delay.

(8) Except in the most serious cases, restoration of the traffic flow will take precedence to allow minimum discomfort and time loss to the motoring public.

(a) Use the patrol vehicle push bumpers or other available means to remove vehicles from the roadway whenever practical.

(b) State and commercial tows at the scene should be used for clearing the traffic lane. Do not leave a lane blocked merely because the summoned tow has not yet arrived. Use what is available to clear the traffic lanes.

(c) Debris and hazardous materials should be removed safely and as quickly as possible, under supervision of the officer.

(d) Once the roadway is cleared, all vehicles and individuals involved, including the officer(s), should leave the scene. Only when all evidence of

the crash is removed from the scene, will traffic be restored to normal.

(e) Vehicles over embankments need not be removed during peak traffic hours, provided they are not otherwise creating a problem or visual hazard.

(f) Vehicles entangled in the center divider fence should be removed as soon as possible. Approval and assistance from the California Department of Transportation (Caltrans) should be requested when it is practicable and necessary to cut the cable. In any case, where a cable is cut, Caltrans notification shall be made as soon as possible.

b. Disabled Vehicles.

(1) Disabled vehicles are a major cause of freeway congestion. Immediate action should be taken to aid the disabled motorist.

(2) Vehicle disablements may take place in one or more of the following locations:

(a) Traffic lanes.

(b) Shoulders.

(c) Center dividers.

(d) On- and off-ramps.

(e) Collector lanes.

(f) Transition lanes.

(3) Techniques the patrol officer can use in the removal of disabled vehicles are:

(a) Use of the patrol vehicle's push bumpers.

(b) State-owned and commercial tow trucks.

(c) Requesting assistance of passing trucks (many carry chains and other towing devices).

(d) Use of a traffic break whereby a vehicle with a flat tire, crushed fender, or broken radiator may be driven for a short distance to clear the traffic

lane. Care should be taken to prevent any additional damage to a vehicle.

(4) Vehicles abandoned upon on- or off-ramps, which are not in traffic and do not present an obstruction to traffic, should be tagged with a CHP 422, Vehicle Check/Parking Warning/Highway Damage Report. Vehicles disabled in hazardous locations (e.g., where ramp and freeway lanes merge, vehicles in roll gutters, gore points) should be removed to a place of safety if practicable or should be stored under authority of Section 22651(b) of the California Vehicle Code.

(5) On collector lanes, disabled vehicles should be removed immediately. Vehicles may be moved to available shoulders. The techniques used to move disabled vehicles in traffic lanes may also be employed. Care should be taken to avoid traffic backup onto the main freeway traffic lanes.

(6) On transition lanes, disabled vehicles should be moved to a place of safety or removed immediately. There is usually limited visibility, thus a potential cause for crashes and traffic congestion backing onto adjacent freeways.

c. On-Ramp Congestion.

(1) On-ramp congestion is particularly hazardous to free-flowing traffic because of the increased crash potential. Early detection and relief of the problem is very important.

(2) Possible engineering solutions are:

(a) Metering the flow of freeway on-ramp traffic by hand or traffic signal.

1 When hand metering is determined to be a solution, coordination shall be affected with Caltrans before implementation.

2 Coordination with Caltrans is not necessary when hand metering is done on a random basis.

3 Coordination may be required with a local police department prior to initiating either of the above if surface street traffic may be adversely affected.

(b) Removal of vision obstructions (e.g., shrubs, signs).

(c) Extension of merging/acceleration lanes.

d. Off-Ramp Congestion.

(1) While normal off-ramp congestion is of the recurring type, it may also be nonrecurring due to an unexpected event. Off-ramp congestion not only causes vehicle delay, but because of stoppage on the freeway traffic lanes, it also creates a traffic crash potential.

(2) Generally, the primary cause of congestion on off-ramps is the inability of ramp traffic to merge onto surface streets. The solution to this problem lies with control of this traffic and/or highway design. Engineering recommendations from patrol officers are encouraged.

(3) Some traffic control techniques that may be put to use by the patrol officer are:

(a) Phase signals to favor off-ramp traffic.

(b) Manual operation of signals for a limited time until the problem is overcome.

(c) Recommendations for the installation of traffic signals where exit traffic is controlled by a stop sign.

(d) Traffic direction by the patrol officer to clear the ramp.

e. Enforcement Activities.

(1) During peak traffic periods, most metropolitan freeways operate in excess of capacity levels. Each minute of congestion buildup is related to three or more minutes of clearing time. During these periods, crash potential is greater than during normal traffic flow. The presence of an officer making an enforcement stop during or immediately prior to these periods, causes a visual distraction which may cause traffic congestion and lengthen its duration. Officers should exercise judgment and caution before taking enforcement action during peak traffic periods, taking the conditions of the freeway, the enforcement action planned, and what effect the enforcement action will have regarding congestion, into account.

(2) Enforcement action should only be directed to primary crash-causing violations during peak traffic periods. Enforcement stops should be conducted off the freeway whenever possible.

f. Other Traffic Impediments.

(1) Animals are a major problem confronting the patrol officer on metropolitan freeways. The most common animal encountered is a stray dog, although larger animals are occasionally encountered.

(a) Officers should use caution when attempting to remove animals from the freeway.

(b) Gloves or other means available should be used to remove an animal.

(c) Traffic breaks should be used to safely remove livestock from the freeway.

(d) The local humane society or animal control shelter, many times, can offer assistance.

(e) The shooting of an injured or loose animal should be accomplished only as a last resort (refer to Chapter 2, Discharge of Firearms at Animals, of this manual).

(2) Dead animals within traffic lanes should be removed immediately. Dead animals within the center divider or on the shoulder may create a visual distraction and should be removed as soon as possible.

(a) In a nonemergency situation, Caltrans should be notified to pick up the animal(s) as soon as practicable.

(b) Local animal control agencies may also be contacted for assistance.

(3) Debris and vehicle parts within traffic lanes should be removed immediately.

(a) The use of gloves is recommended in removing hot mufflers and other materials which may cause injury to the officer.

(b) The primary concern of the officer prior to removing the hazard should be safety for themselves and the motoring public.

(4) Spilled loads are another source of congestion and usually need to be dealt with on a large scale.

(a) The number one priority when dealing with spilled loads is to determine if hazardous materials are involved. Procedures for scene management

and the handling of these incidents may be found in Highway Patrol Manual 84.2, Hazardous Materials Transportation and Incident Management, and respective Area Standard Operating Procedures.

(b) Determine what type of load has been spilled, the exact location, and the number of lanes blocked, etc. A complete description of the quantity and material involved will expedite assistance and equipment needed.

(c) Advise the CHP communications center so requests for assistance may be coordinated with other CHP units, Caltrans, fire units, etc.

(d) Advise the CHP communications center if Sig-Alerts or traffic advisories are required. The communications center will need to know the approximate duration of the condition and if traffic will need to be rerouted to alternate routes.

g. Visual Impediments (Distractions).

(1) A visual impediment is anything which distracts a motorist's attention from their driving. This will usually cause the motorist to slow, creating congestion. Examples of situations that might cause visual distraction are:

(a) Motorcycle riders stopped on the shoulder or within the center median.

(b) Unusual-appearing vehicles stopped on the shoulder or within the center median.

(c) Officer(s) stopped on the shoulder or within the center median.

(d) Objects scattered upon the shoulder, within the lanes of traffic, or within the center median.

(e) Fires adjacent to the freeway.

(2) The patrol officer should be aware that visual impediments account for much of the congestion. The officer's prompt removal of distractions is necessary if a smooth flow of traffic is to be maintained.

3. USE OF CHP AIRCRAFT.

a. Traffic Congestion. The CHP aircraft, when available, offers the patrol officer a valuable tool in alleviating traffic congestion.

b. Traffic Conditions. Aircraft can provide excellent information on traffic conditions. Direct communications between the aircraft and ground units can provide the location of disabled vehicles and valuable suggestions to expedite the clearing of problem areas.

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