

# **Update of the Guidelines for “Prohibition of Turns on Red” Recommended Practice**

## **HISTORY OF RIGHT TURNS ON RED**

The practice of permitting turns on red at signalized intersections is as old as the first traffic signals. When traffic control towers were installed in New York City, between 1918 and 1925, traffic regulators permitted right turns on red after drivers came to a full stop. By 1937, turns on red were generally banned in the City, except where permitted by signs (later referred to as the eastern rule).

In 1925, the City of Los Angeles approved a new traffic code that included a provision to allow right-turns-on-red at signalized intersections. This was the beginning of what has become known as the western rule, that allows right-turn-on-red (RTOR) unless prohibited by a sign.

The Arab Oil Embargo of 1973-74 increased national interest in RTOR as an energy conservation measure, and permissive RTOR became a national standard. The implementation of RTOR was initially resisted in some areas, particularly in the northeast, but is now commonly used throughout the United States (except New York City).

The ITE International Board of Direction approved the first guidelines for the prohibition of turns on red in 1986. This is an update of that document.

## **BENEFITS AND DETRIMENTS OF RTOR**

Following considerable research and operational studies, turns on red became a general practice in all states. A 1979 AASHTO study of “before and after accidents” of RTOR in 20 States and 3 Cities, found that right turn accidents increased from 0.7 to 0.9 per signalized intersection per year, however the total number of intersection accidents decreased from 12.6 to 11.9 per year.

A listing of some of the possible benefits and detriments if RTOR are as follows:

### **BENEFITS**

- Reduction in fuel consumption
- Reduction in motorist delay
- Reduction in vehicle air pollutants
- Possible reduction in total intersection accidents

## DETRIMENTS

- Possible increase in right turn accidents
- Possible increase in accidents involving fast moving pedestrians (joggers) and bicycles, on sidewalks traveling against the adjacent traffic stream
- Small children may have more difficulty with crossing
- The elderly and persons with disabilities may have increased confusion and difficulty when crossing the street
- Possible interference with vehicles making a U-Turn in direct conflict with the RTOR vehicle

Right Turn On Red has been a standard practice in the United States, and has been well accepted by motorists. As a result, at locations where RTOR is restricted, violations of the prohibition can be very high, thus negating safety or operational benefits that were intended.

## PART-TIME PROHIBITIONS

Part-time prohibitions are preferred over full time prohibitions. When part-time prohibitions are desired, particularly in downtown areas where heavy pedestrian traffic is predictable, specific time restrictions may be used, such as from “7 am to 6 pm”, or “7 am to 9 am” to fit the circumstances.

Part-time prohibitions may also be desired at school crossings where children cross two, or three times a day. It should be kept in mind, however, that whether a motorist turns right on red or right on green, they cross one active pedestrian crossing, and must yield to those pedestrians. Depending on the crossing location, the “right turn on green” may be more disruptive to the students than the “right turn on red”. Supplemental panels stating “When Pedestrians are Present” or “When Children are Present” may be preferred at these locations.

Engineering judgment should be used after a thorough review to determine whether a part-time prohibition is desirable, and which type of part-time prohibition is preferred.

When specific time prohibitions are desired, consideration should be given to blank-out “No Turn On Red” signs. Examples of these are when opposing left turns, or “U-turns”, interfere with the turns-on-red. These signs are very effective in informing motorists when the prohibition is in effect. Blank-out signs can also be tied to the pedestrian indications, and prohibit turns on red when the pedestrian button has been pushed for that crossing.

Part-time prohibitions may also be necessary at signalized intersections for streets near a parallel railroad track. Left and right turns toward the tracks should be prohibited (on red and on green indications) when trains are present on the tracks. Blank-out signs are highly desirable at these locations.

## **PROHIBITION ALTERNATIVES**

Right turns on red have been prohibited to eliminate movements considered unsafe. These may include dual right turns, making a right turn and then a quick left into a street continuation or a driveway, right turns at multiphase signals, or intersections with over four legs of entering traffic. However, in many sections of the country these movements are allowed with little or no difficulty.

If an engineering investigation indicates that any of these movements should be restricted, only those movements considered unsafe should be prohibited. The prohibition signs can be tailored to fit the circumstances. As an example, the through movement at an offset intersection could be prohibited with signs such as “Turns to Henry Street on Red Prohibited”.

## **ENFORCEMENT AND EDUCATION**

The major problem associated with turns on red is that many motorists do not come to a complete stop prior to turning right on red. Although this is also true at many stop sign locations, it can be particularly disturbing at signalized locations where the likelihood of pedestrian presence is greater.

Enforcement of “No Turn on Red” (and the “after stop” requirement) is desirable and should be encouraged through close association with enforcement agencies. These agencies can also be called upon to enforce illegal right-turn-on-red movements, such as at multi-legged intersections where motorists turn right on red across one or more legs of the intersection.

## **RECOMMENDED GUIDELINES**

The purpose of the recommended guidelines that follow is to provide guidance to the responsible person in deciding when to restrict or prohibit RTOR at a specific signalized intersection. These guidelines consider the safe movement of vehicular traffic, pedestrians, bicyclists, and other road users while providing for the efficient movement of traffic. Each intersection approach should be evaluated on an individual basis. Because very specific guidelines encourage local authorities to apply them universally, the following guidelines are qualitative and nonspecific:

1. Engineering judgment is the basis for each potential turn on red prohibition. Some conditions that might warrant prohibitions of turns on red, totally or part-time, include:
  - Limited sight distance of vehicles approaching from the left
  - A multiple-leg intersection, or otherwise complex situation (either phasing or geometrics) where potential conflicts are not easily seen
  - Heavy volume of pedestrian crossings

- Where an exclusive pedestrian phase exists (where all motorized traffic stops for all pedestrian movements), RTOR should be prohibited
  - Request from pedestrians with disabilities using the intersection
  - School Crossings
  - Railroad Crossings
  - Traffic signals with three or more phases
2. Part-time prohibitions should be discouraged; however, they are preferable to full time prohibitions when the actual need occurs for only short periods of time. The use of “blank-out” signs is encouraged for part-time prohibitions, and where high violation rates occur. Where it is necessary to prohibit turns on red (and sometimes green) at signals near a railroad crossing, during preemption, the use of “blank-out” signs are recommended.
  3. Less restrictive alternatives should be considered in lieu of prohibiting all turns on red. In particular, a supplemental panel reading “When Pedestrians are Present”, or time-of-day restrictions, may aid the pedestrian without unduly restricting efficient vehicular traffic flow. Another example of a less restrictive measure is a sign allowing RTOR from only the right lane at multiple turn lanes. Such devices can provide the intended prohibitions, or when a problem develops, without inconveniencing all right-turning traffic.
  4. Although many authorities do not perceive the need to prohibit turns on red at a multiphase traffic signal, others find there is a need. Where such prohibitions are considered necessary, consideration should be given to providing right-turn green arrows (when exclusive right-turn lanes are available) for each street during the cross street left-turn phases, and using “blank-out” NTOR signs when the conflict begins. A conflict may also occur on a divided roadway, during the left-turn phase, when U-turns can conflict with RTOR vehicles from the cross street.
  5. Restrictions should be sensitive to any special problems of pedestrian and/or bicycle conflict. This includes the unpredictable behavior and small stature of children, the problems of elderly persons and persons with disabilities, or consistent failure of motorists to yield to pedestrians and/or bicycles within a crosswalk. Pedestrian volumes should be considered, but should not be the only criteria for prohibiting turns on red. Requests for prohibitions of RTOR by persons with disabilities at specific locations should be considered.
  6. Blank-out signs, which illuminate the RTOR prohibition, are particularly effective and are encouraged where practical.
  7. Where state laws allow **left-turn-on-red** (generally onto one-way streets), prohibitions should be based upon similar criteria for restricting RTOR.
  8. Education plays a significant role in the benefits and safety of RTOR. The public needs to be educated concerning their responsibilities when making this

maneuver. State driver manuals need to reflect current RTOR practices and driver examinations should include questions on this topic.

9. Enforcement plays a significant role in reducing violations and educating the public on the proper execution of the RTOR maneuver (**after stopping and yielding to other road users**). Collaboration with law enforcement is recommended when investigating methods to reduce violations and improve safety.

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