

## Mailbox Safety

There are 30 to 35 million rural and suburban mailboxes in this country. These mailboxes must accommodate both the owner and the mail carrier. However, safety considerations are often overlooked. This bulletin describes improper and unsafe mailbox installation and discusses proper installation and siting. At the end is a list of points to be covered in a local mailbox ordinance.

Although crash reports related to mailboxes are sketchy, the limited data available suggests that 70 to 100 highway deaths in the U.S. each year could be attributed to mailboxes. This data relates the construction of the mailbox system, and especially its support, to the severity of the accident.

The Department of Transportation Division of Highways surveyed mailbox-related crashes in Wisconsin. In 1987 alone, there were over 1700 crashes involving mailboxes that resulted in 144 injuries and two deaths. Improper support systems, such as milk canisters or barrels filled with concrete, were most significant in crashes where there were injuries. Improper placement was most significant in non-injury crashes.

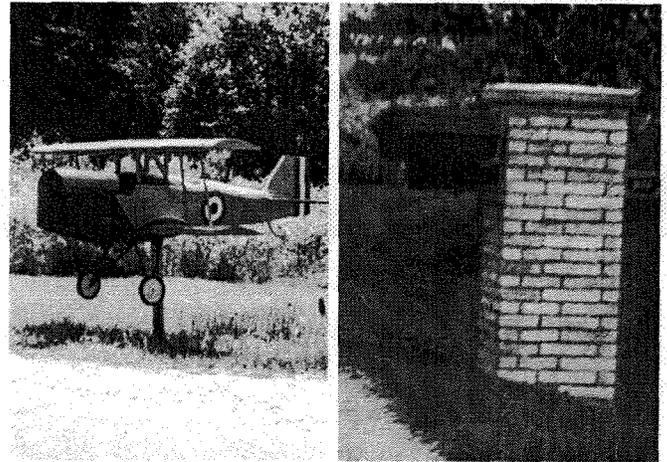
Weak attachments between box and post are another hazard. These may permit the box to penetrate the car's passenger compartment. Multiple mailboxes on a single support, or placed too close together, can also be hazards.

### Hazardous mailbox installations

Most curb or roadside mailboxes are relatively simple and unlikely to pose a serious crash threat to vehicles. These are relatively lightly constructed on supports which will easily break off, posing little harm to the vehicle. What threat they may pose is from the box parting from the post and entering the passenger compartment.

The U.S. Postal Service has some requirements for the mailbox and its height, but does not regulate installa-

tion. It approves only certain types of boxes and requires that they be installed with the box bottom 42 inches to 48 inches above the ground. Local postal representatives will review the box location for carrier access and safety and will make verbal recommendations. They have not become involved in structure and installation of the box. Thus the nation's highways are lined with multitudes of installations, some of which are highly hazardous obstacles.



*Heavy ornamental mailbox installations may be roadside hazards.*

It is the heavy, ornamental or multiple installations that can be lethal roadside obstacles. Masonry installations, large receptacles filled with sand or concrete, metal posts larger than 1 1/2 inches inside diameter, and wood posts larger than a nominal 4 inches square or 4 inches diameter, are a hazard.

Such ornamental mailboxes as old plows, wagon wheels, and comic installations such as "air mail delivery" (a non-functional box on an extra high post) are hazards or obstacles. More than two boxes mounted on a single support, or installed too close together, can be hazardous even if supports are light-weight. Crash

tests show that when more than two mailboxes are mounted together, some of the boxes can penetrate the passenger compartment. The use of a plank to mount several mailboxes is especially hazardous.

### Guidelines for safe installation

It is best to keep the entire mailbox installation as light weight as possible. This permits a vehicle crashing into it to break off the mailbox with less damage to the vehicle. The heavier the installation, the less likely it will move instantaneously, causing more damage to the vehicle and injury to its occupants.

For safer mailboxes, follow four basic guidelines:

- Use support posts which will easily break off or move out of the way.
- Mount no more than two mailboxes on one support post.
- Attach the mailbox firmly to the support post using adequately strong bolts and plates.
- Consider roadside conditions in selecting a site.

### Supports

The Postal Service requires that the bottom of the box be 42 to 48 inches above ground level. The following are recommended standards for supports which ensure that they will break away on impact:

- Pipes should be 1½ inch inside diameter or less.
- Square wood supports should not be larger than 4 inches by 4 inches nominal. Round wood posts should not be larger than 4 inches in diameter.
- Metal channel posts should not weigh more than 2 pounds per foot.
- Imbed supports no more than 24 inches into the ground and do not imbed them in concrete.
- Do not use anchor plates with metal posts. Anti-twist flanges are acceptable as long as they do not project more than 10 inches into the ground. These should be attached to the metal post or pipe with 2¾ inch (nominal) muffler clamps. The Federal Highway Administration has published *Accepted Safety Hardware*. For more information contact the State Division Office of the Federal Highway Administration.

### Multiple installations

Mount no more than two mailboxes on a single support. Separate the supports a distance apart which equals three-quarters of the height of the post above ground (Figure 1). Thus boxes mounted four feet above ground should be at least three feet apart (post center to post

center). Figure 2 shows an alternate type multiple box system.

### Support construction

Use U.S. Postal Service approved mailboxes. The AASHTO (American Association of State Highway and Transportation Officials) publication, *A Guide for Erecting Mailboxes on Highways*, contains detailed plans for mailbox assemblies and location. Insuring a firm mailbox-to-post attachment is one of the most important safety considerations.

Figures 3 and 4 show examples of a cantilever mailbox installation. While the cantilever design is helpful to snow removal operations it may cause the mailbox to impact a vehicle at the windshield. Raising the support arm height and firmly suspending the box below may be another way to lessen the windshield damage.

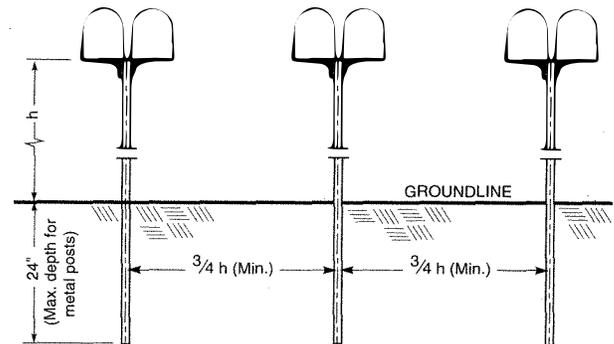


Figure 1: Spacing for multiple post installations

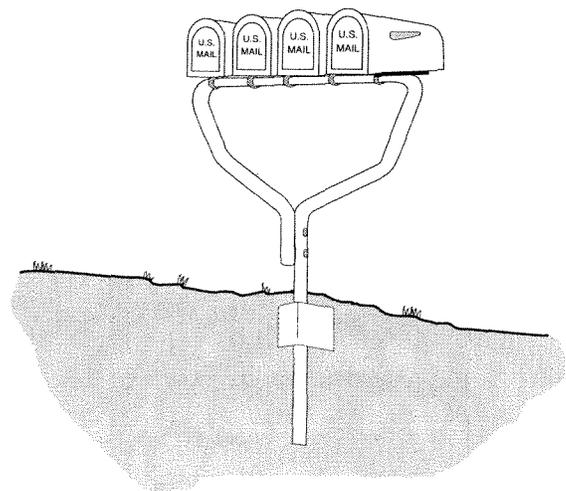


Figure 2: Suggested multiple box support system

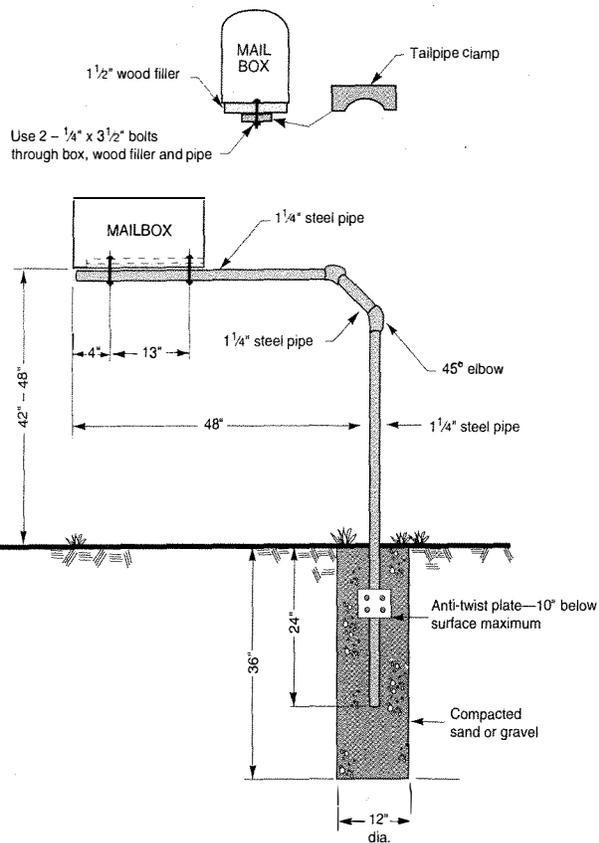


Figure 3: Example of a steel pipe cantilever mailbox support

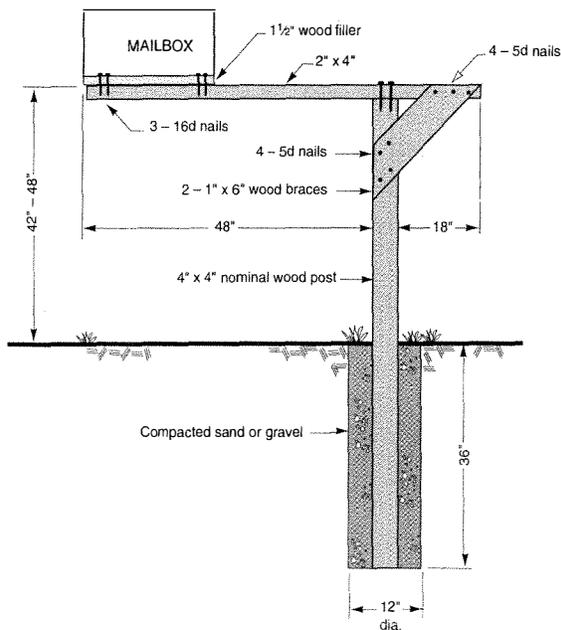


Figure 4: Example of a wood cantilever mailbox support

## Siting mailboxes

In Wisconsin snow removal operations frequently conflict with mailboxes. Several local agencies have developed a standard for mailbox installations which has been successful in reducing the number of mailboxes damaged or demolished by snow plows. The standard is published in local papers (Figure 5).

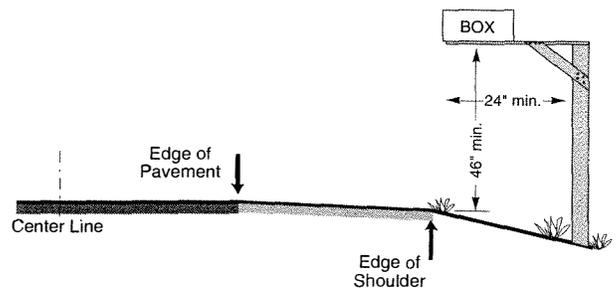
They recommend placing the box on a 24-inch minimum arm, at a minimum height of 46 inches. The front of the box should be aligned with the outside edge of the shoulder.

Locating mailboxes along the roadside is complicated by many factors other than snow removal. These require balancing the maximum convenience to the patron with safety considerations for highway traffic, and with postal carrier convenience and safety. You must also take into account existing roadside conditions such as proximity to intersections; blind spots caused by curves, hills and vegetation; and utility poles, guardrails, nearby bridges, and other physical installations.

## NOTICE

### Recommended Mailbox Installations

To avoid damage to your mailbox and also allow the snowplows to remove the snow from under your mailbox, the following dimensions are recommended.



Placing mailboxes a short distance away from driveways and intersections helps to avoid vision-restricting snowbanks and also damage to your mailbox. The box and base should be strong enough to withstand flying snow and slush from traffic and snowplows.

By order of the \_\_\_\_\_  
and with the approval of the U.S. Postal Service.

Highway Commissioner

Postmaster

Figure 5: Sample mailbox notice

| Highway type and traffic conditions                           | Width of shoulder or turnout at mailbox |         | Distance face of mailbox is to be offset behind edge of shoulder or turnout |                                      |
|---|---|---------|---|--------------------------------------|
|   | Preferred                               | Minimum | Preferred   | Minimum                              |
| Rural highway<br>Daily traffic volume over 10,000             | >12'                                    | 12'     | 8" to 12"   | 0"                                   |
| Rural highway<br>Daily traffic volume between 1,500 to 10,000 | 12'                                     | 10'     |   |                                      |
| Rural road<br>Daily traffic volume 100 to 1,500               | 10'                                     | 8'      |   |                                      |
| Rural road<br>Daily traffic volume under 100                  | 8'                                      | 6'      |   |                                      |
| Rural road<br>Daily traffic volume under 50<br>Speed = 40 mph | 6'                                      | 2'      |   |                                      |
| Residential street without curb<br>or all-weather shoulder    | 6'                                      | 0'      |   | 8" *                                 |
| Curbed residential street                                     | Not applicable                          |         | 8" to 12"<br>behind traffic<br>face of curb                                 | 6"<br>behind traffic<br>face of curb |

\* If a turnout is provided, this may be reduced to zero.

**Table 1: AASHTO recommended guidelines for lateral mailbox placement**

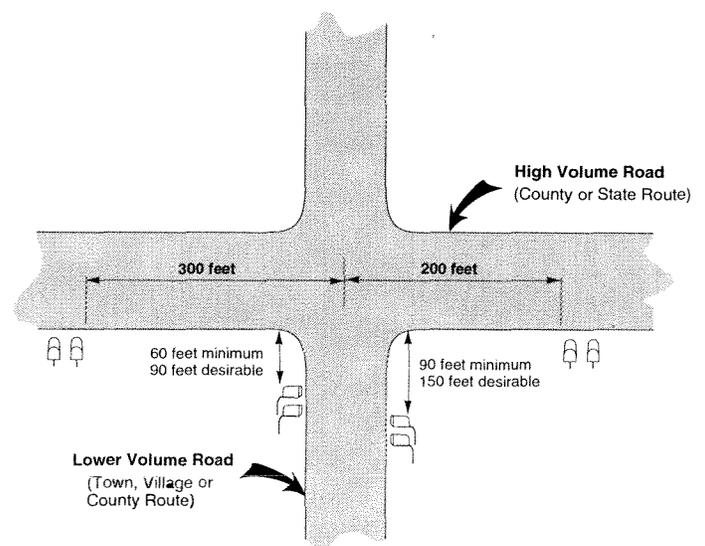
The type of roadway affects the setback of the mailbox. Under no circumstances should the roadside face of the mailbox project onto the usable shoulder or onto the traveled way of the street or road. On major highways with moderate to high speeds, allow sufficient setback so the rural carrier can leave the road to make the delivery. Turnouts with hard surfaces are most desirable. Table 1 shows guidelines for lateral mailbox placement as recommended by AASHTO.

Mailboxes should always be installed on the right side of the road in the direction of the carrier's line of travel, and on the far side of the patron's driveway. Where there is a conflict with guardrails, mailboxes should be installed behind the guardrails, projecting enough for the carrier to reach them.

Figure 6 shows recommended mailbox locations at major intersections.

In some instances following these guidelines may locate the mailbox where blind spots or poor sight distance create a pedestrian hazard. It is a good idea to move the mailbox to a more visible position. However, the postal patron should not have to walk more than 200 feet along the shoulder.

Unfortunately, a large proportion of mailboxes in Wisconsin cannot adhere to the recommended standards because of physical conditions on the local roads. You will have to use judgment in siting such mailboxes, taking safety and convenience into account.



**Figure 6: Mailbox location at major intersections**



## Summary

Local government should encourage safety on the highways it maintains. This includes concern for safe mailbox installations. Local officials may work with property owners and the postal service to develop safe mailbox installations. Property owners should be encouraged to remove unsafe installations. Providing examples of proper installation guidelines can go a long way in promoting safety.

It is vitally important to understand that mailboxes can be obstacles along any roadway. The Wisconsin Department of Transportation has established standards that mailbox supports must adhere to, based on requirements in the *Manual on Uniform Traffic Control Devices (MUTCD)*. These standards apply not only immediately along the travelway, but also in adjacent

clear zones, areas which must be clear of obstacles for vehicle safety.

The AASHTO manual, *A Guide for Erecting Mailboxes on Highways*, can be used for implementing the standards and applications in the *MUTCD*. This includes suggestions for post sizes for different installation types. The Wisconsin D.O.T. has an informational pamphlet for homeowners and detailed installation information.

The Federal Highway Administration is taking an active role in pressing for the application of recommended guidelines for new and replacement installations. In Wisconsin the D.O.T. will be taking a lead role in advising counties of their responsibilities in mailbox installation, relocation, and reinstallation on Federal Aid projects as they come up.

## Suggested items for an ordinance regulating mailbox installation

The intent of the ordinance should be to establish standards for providing safe mailbox installation. The mailbox support and mounting standards recommended here do not conflict with the requirements of the U.S. Postal Service.

1. **Support.** The support should be a wood post, steel pipe, or steel channel installed no more than 24 inches in the ground and extending to a vertical height such that the bottom of the mailbox is a minimum of 42 inches but not to exceed a maximum of 48 inches above the ground surface. The support should be the following dimensions:

- Square wood post: 4 x 4 inch nominal
- Round wood post: 4 inch diameter
- Steel pipe: 1 1/2 inch inside diameter
- Steel channel: 2 pounds per foot

Dimensions exceeding these should be deemed unacceptable and in violation of the ordinance.

The support should not be set in concrete, nor is a base plate acceptable. Anti-twist flanges may be installed on the pipe or channel supports but should not be imbedded more than 10 inches into the ground.

2. **Attachment.** The box-to-post attachment should be sufficient to prevent the separation of the box from the support post when struck.
3. **Multiple mailboxes.** No more than two mailboxes should be mounted on one support post. For a multiple installation, support posts must be spaced a minimum longitudinal distance apart which is equal to three-quarters of the height of the posts in the installation. Thus, for example, in an installation where posts are four feet above ground, they should be spaced three feet apart.
4. **Location.** Mailboxes must be located on the right side of the road. (The left side is permissible on one-way roads or streets.) They should be located on the far side of driveways. The face of the mailbox must not extend over the edge of the traveled way or of a paved shoulder.
5. Installations should avoid blind spots or poor sight distance locations.
6. The Town, Village, City or County will maintain a supply of standard drawings of approved mailbox installations for issuance.



## Sample letter of notification

Once your municipality has adopted a mailbox ordinance, you should start to notify residents with hazardous mailboxes that they will have to move/replace the mailbox and/or support. Plank-mounted, grouped mailboxes are particularly dangerous. Notify the residents by placing a form letter in their mailboxes along with a copy of your municipality's mailbox ordinance and sample plans taken from, or consistent with, the AASHTO guidelines. As a policy you might wish to do this for each non-conforming mailbox support located on a road where you are reconstructing, paving, or improving the shoulder or other portions of the clear zone. Such a policy should be consistent with removal of other important roadside hazards such as trees and utility poles.

Finally, any mailbox for a newly constructed residence should conform with the mailbox ordinance. You can help to ensure this by attaching a copy of the mailbox ordinance to either your department's driveway permit or to your municipality's building permit.

Dear Homeowner,

Mailboxes can be attractive, functional and safe. You determine its attractiveness and beauty. The U.S. Postal Service determines the regulations for mail delivery. The Board of Supervisors, out of a concern for the increasing number of injuries and deaths nationwide from improperly placed mailboxes, has passed the attached ordinance which sets forth standards for the physical location of mailboxes. The ordinance was adopted in order to improve roadside safety for vehicles that might inadvertently leave the roadway.

Unfortunately, your mailbox and/or support does present a hazard to the motoring public. I am asking you to reconstruct and/or relocate your mailbox so that it conforms with the mailbox ordinance. For this portion of (name of road) your mailbox should be a minimum distance of (distance from the edge of pavement, shoulder, etc.). To meet mail delivery needs, the bottom of your mailbox should be \_\_\_\_\_ inches above the ground. Sample plans that conform to the ordinance are also attached.

In accordance with the ordinance you must take appropriate action within 30 days. If you fail to do so, the Highway Department must remove your mailbox and support. If you have any questions on this matter, please feel free to call (name of appropriate highway department employee) at (telephone number).

We look forward to working with you to ensure a safe and attractive mailbox. Thank you for your cooperation.

Very truly yours,

Highway Superintendent

*Reprinted from a factsheet published by the Local Roads Program of the Department of Agricultural Engineering, Cornell University, Ithaca, NY.*

## Resources

AASHTO, American Association of State Highway and Transportation Officials, *A Guide for Erecting Mailboxes on Highways*.

*Full Scale Vehicle Crash Tests on Nebraska Rural Mailbox Designs*, Nebraska Department of Roads.

Wisconsin Department of Transportation, *It's nice to be different, but . . .*

*Manual on Uniform Traffic Control Devices*.

Literature from the Local Roads Program of the Department of Agricultural Engineering, Cornell University.

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