



US Army Corps
of Engineers®

The Sign Post

A newsletter for the U.S. Army Corps of Engineers Sign Program
Autumn 2012 Edition

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Welcome back to The Sign Post.

The Sign Post is back by public demand. Several of you have missed it. Some readers have sent in photos, ideas for topics, and the occasional article. Thank you for reading The Sign Post and for your contributions.

This is a longer edition than usual with several topics regarding signs plus information about marking Corps vehicles and vessels. Topics of interest in this edition:

- Road Gate and Barrier Policy
- Safety Critical Sign Change - SDA-04M
- New Things on the Gateway
- Electronic Variable Signs
- Bigger is Better on Signs
- Unicorn Notes
- Two Recreation Area Signs Change
 - SWM-01
 - WRN-15
- The Sign Post Interview
- The Maintenance Corner: Plywood Substrates
- New Sign Material and Vandalism: Aluminum Clad Substrates
- Success With Signs.
- Vehicle and Vessel Marking
 - Vehicle Marking Summary
 - Vessel Marking, including the relevant ER and EP citations
- And several Sign Funnies.

Road Gate and Barrier Policy

Headquarters has clarified the Corps of Engineers policy regarding marking road gates and barriers. Corps policy is to follow the Manual of Uniform Traffic Control Devices to be consistent in our method of warning of a potential hazard. Gates and barriers should be clearly marked with highly reflective tape with an alternating red and white pattern. Depending upon the purpose of the road and the location of the gate in relation to the road the barrier may also be required to have either an R11-2 ROAD CLOSED sign or a Type 4 (red) object marker. To read the policy and see diagrams showing how to mark gates, the memo and guide have been posted on the NRM Gateway at:

<http://corpslakes.usace.army.mil/employees/sign/traffic.cfm>



Gate on a through road open to public travel. This gate is not located at a STOP-sign controlled intersection. Photo from Tully Lake, New England District.

Safety Critical Sign Change

The word “Matches” has been restored to the workplace safety sign regarding no smoking or open flame at the request of the Office of Safety. This sign appears as SDA-04M in SignPro. SDA-04 signs without “Matches” will remain unchanged in your SignPro inventory.

Reference to matches was removed from the SDA-04 sign in 2000 to be consistent with the Corps of Engineers Safety Manual, EM385-1-1. However, the word was added to the Safety Manual in the November 2003 edition, paragraph 09.A.06. When the Sign Manual was last revised in 2006 no one caught the change in the Safety Manual. That has omission has now been fixed.



SDA-04M

Safety signs at *all* Corps of Engineers Civil Works projects must comply with the sign standards of the Corps as shown in the Corps of Engineers Sign Standards Manual, EP310-1-6. Only signs that meet these criteria, including having an approved text, are allowed to be posted. Corps safety sign standards were created to exceed the minimum guidelines of the Occupational Health and Safety Administration (OSHA), to have clear language that can be clearly read and understood. A list of all approved safety related signs is found on the Gateway. The application form to request any change in the text of a danger, warning, or caution sign is available on the Gateway. Safety signs are considered a matter of Corps policy, so approval must come from Headquarters following review by the Office of Counsel, the Safety Office, and Operations.

Natural Resources Management Gateway

to the future . . .

New Things on the Gateway

The Sign Program section of the NRM Gateway is your one-stop resource for information regarding the Corps of Engineers sign program. The direct link is www.corpslakes.us/sign

Recent changes to the Gateway in the Sign Program Section:

- The **Security Sign** page is updated.
- The **Unicor** page has also been updated.
- A new page regarding the use and design of **Notice** signs has been added.
- Minutes from the **Sign Advisory Work Group** meetings of April and October 2011 are in the SAWG section.
- **Traffic gate marking** guidance policy memo from the Safety Office.
- Information on the new **minimum reflectivity standards for traffic signs:**
 - a. Policy memo from the Corps of Engineers
 - b. PowerPoint presentation from the Federal Highway Administration (FHWA).
 - c. Sign Retroreflectivity Tool Kit, also from FHWA.

This information and much more is on The Gateway.

Electronic Display Signs

This sign type is a lighted sign with a message that may be programmed for easily changing use. These signs are also known in the business as variable message signs. The sign manual is intentionally vague on the subject of electronic display signs. Currently there is one page in Section 7, Recreation Signs, on the subject.

Variable message signs may be useful for temporary text messages. You may see them at major airports announcing the threat condition, at special events, or even on major highways and bridges to control traffic lane closures. Possible uses at Corps facilities include at the visitor center or the entrance to a major recreation area to promote interpretive programs, announce special events, display water safety messages, or to advise of special conditions such as abnormal water levels, a full campground, or facility closures.

This sign type must never be used to display a safety critical message. Only approved safety signs may be used to warn visitors of hazards. Likewise electronic display signs must not be incorporated into identifications signs.

Electronic signs are not inventoried in SignPro. We do not have a good number of how many are used at Corps projects, but apparently the most common variable message are those mounted on construction trailers.

Construction trailer mounted signs have a couple of advantages:

- They are mobile and can be used when and where needed.
- They often come with a generator so they can be placed where access to power is unavailable.
- They can be leased for temporary use.



Construction trailer mounted sign at Conchas Lake, Albuquerque District.

Disadvantages of this style of variable message sign:

- The generator, if used, is noisy and should not be used close to a recreation area.
- The trailer needs to be secured to discourage theft.
- They are not attractive, visitors may overlook them.

More permanent variable message signs are available. These may cost from a thousand dollars to a million dollars, depending upon the size, the structure, and the sophistication of the system. You may have seen these signs at the theater box office or along the highway.



Large highway variable message sign.
Photo provided by Skyline Products

Advantages of permanent variable message signs:

- Permanent capability for message in case of emergency.
- More aesthetically appealing. Multiple color displays are now available.
- Message may be changed remotely, from the office.
- Better return on the investment than frequent lease.
- Quieter. Some models are even solar powered.

With LED technology, electronic signs are becoming brighter and use less power. If ordering a variable message sign for use in a visitor center or campground contact station a commercial grade LED sign is probably adequate. For outdoor uses, however, be sure to order a traffic grade sign that can better withstand the weather and are designed to be more visible to drivers.

Bigger Is Better on Signs

Why are waterways signs so big? Why are there no 24" X 24" traffic signs in SignPro? The answer to both of these questions is illustrated by the table shown below and by the tables on page 2-6 of the Corps of Engineers Sign Standards Manual. Table B on page 2.6 of the Sign Manual shows that it takes 3 seconds for a vehicle driver or boat operator to detect a sign. After that the amount of time needed to react to the instructions on the sign will depend upon the speed, driving conditions, and the abilities of the driver.

Maximum Viewing Time in Seconds for LED Variable Message Signs				
Miles Per Hour	True 18-inch Characters (from 1100 to 150 feet from sign)	True 12-inch Characters (from 750 to 100 feet from sign)	True 8-inch Characters (from 475 to 65 feet from sign)	True 6-inch Characters (from 375 to 50 feet from sign)
30	21.6	14.8	9.3	7.4
35	18.5	12.7	8	6.3
40	16.2	11.1	7	5.5
45	14.4	9.8	6.2	4.9
50	13	8.9	5.6	4.4
55	11.8	8.1	5.1	4
60	10.8	7.4	4.7	3.7
65	10	6.8	4.3	3.4
70	9.3	6.3	4	3.2
75	8.6	5.9	3.7	3

Larger letters give drivers much more time to react. Chart provided by Skyline Products

The Federal Highway Administration recognizes that the average age of the American driver is increasing, and the average eyesight is therefore decreasing. The Manual of Uniform Traffic Control Devices calls for larger signs with bigger letters to help mitigate our aging eyeballs. Notice that new STOP signs are 36" X 36", street signs in cities now have 9" or 12" letters, and highway directional signs keep getting bigger and brighter.

Unicor Notes

Federal Prison Industries, doing business as Unicor, has a large sign shop in Lompoc, California. They produce all types of signs for Federal agencies including the Department of Justice, the Transportation Security Administration, the Fish and Wildlife Service, the National Park Service, the USDA Forest Service, and the Corps of Engineers.

Unicor is careful that any sign it produces for the Corps of Engineers adheres to our Sign Standards Manual. Sign orders *must* be approved by the district sign program manager.

Can a non-Federal entity such as a local partner or a contractor purchase signs from Unicor? They can as long as the outside agency is using the materials on federal property for federal agencies. Another occasion is when agencies are utilizing Federal Grant monies to complete a project or to become compliant with a newly instituted program or law. As long as there is a written agreement or contract in place to verify that the signs are going on Federal property, Unicor can make the signs.

For more information on ordering signs from Unicor, check out the NRM Gateway at <http://corpslakes.usace.army.mil/employees/sign/unicor.cfm>.

Sign Funny



Perhaps George Bernard Shaw saw this sign before he quipped that the British and Americans were two people separated by a common language. Mike Kidby, member of the Sign Advisory Work Group representing the Navigation Community of Practice, saw this sign on a visit to London. It was a good thing Mike was not driving when he saw the sign or he would still be going around in circles.

Keep left!
Keep left!

Have you seen a funny, bizarre, or just unusual sign? Send photos you have taken to **The Sign Post**.

Two Recreation Area Signs Change

A few of you have noticed that the SWM-01 has changed in the SignPro catalog. Office of Counsel says that we “cannot sign away risk.” Therefore, at the request of Headquarters, mention of risk has been removed from both the SWM-01 and the WRN-15 as pictured.



New SWM-01

Please use the new format for any new or replacement signs. Existing signs need not be removed until the end of their service life and should still appear in your Corps SignPro inventory with the original text and layout.



New WRN-15

The Sign Post Interview: John Tennery, Tulsa District Sign Program Manager and Southwest Division representative on the Sign Advisory Work Group.

The Sign Post - Please tell us about where you work.

John - I work in the Natural Resources and Recreation Branch of Tulsa District. Tulsa sits on Old Route 66 and was once known as the Oil Capitol of the United States. It is a beautiful green city near the banks of the Arkansas River. After years of living on the plains of Oklahoma City this is now home to me.



The Sign Post - How long have you been with the Corps?

John - I started with the Corps as a Park Technician at Lake Eufaula (Oklahoma) in May 1978 so I am now in my 35th year.

The Sign Post - Have you any other Government service?

John - I was one of the lucky winners of the first draft lottery held in the fall of 1969 and as my prize I spent nearly 18 months in the Army in 1970-72. I served with various units including the 23rd Infantry Division in Viet Nam. I also worked three seasons as a firefighter with the Bureau of Land Management in the mid 1970's; two summers in Eastern Oregon and one in New Mexico. I did work on a lot of big project fires in Northern California as a member of the Vale Helitak crew.

The Sign Post - What is your strongest memories working for the Corps?

John - My favorite memories are associated with the dedicated and entertaining folks I've worked with and met during my career. A keen visual memory is seeing the devastation caused by the 1989 Loma Prieta earthquake in San Francisco when I was deployed there to work at the disaster field office.

The Sign Post - How long have you been involved in the sign program?

John - I started with the sign program in 1988 when I attended the first nationwide training session conducted to introduce the new sign standards manual to the Corps.

The Sign Post - What is the funniest or most original sign you have seen?

John - Most recently, the sign from the Cliffs of Moher near Galway, Ireland, got my attention. It's about as straight forward as a symbol sign can be - if you stumble you are going to fall 600 feet to the ocean below. Not necessarily funny but entertainingly simple.



Warning sign, European style, at the Cliffs of Moher, Galway, Ireland.
Photo by John Tennerly

The Sign Post - Summarize what does, or could, SAWG do?

John - The SAWG to me is essentially a clearinghouse for management of the sign standards program - keeping up with trends in signage, working with partners to develop new or redesigned products and providing useful, concise guidance and tools for consistent nationwide implementation of the sign program.

The Sign Post - What would you like me to share about you?

John - Married to wife Karen. We have one child, Hope, who is spending the first semester of her junior year of college studying abroad in Galway, Ireland. Hope is taking civil engineering and Irish studies classes. She is absolutely the best child who has ever lived!

Other things I enjoy are travelling to visit my brother in Colorado, birding, cooking, and following the Oklahoma State Cowboys.

My favorite food is Green Chile - a lifelong love resulting from my time spent in New Mexico and southern Colorado.

The Sign Post - What is your advice for surviving an extensive drought and weeks of triple digit temperatures?

John - A good ice chest is probably the most important survival tool. After that, it helps to have a good sense of humor and some shade.

More Sign Funnies: Home Grown Department



Beware, the trees at Lake Texoma are out to get those who text while driving. You have been warned!

Photo by Jim Harris,
Lake Texoma,
Tulsa District



Meanwhile, spotted somewhere out in the friendly Northwest, is this new take on the old “No Trespassing” theme.

Photo by “Colonel Flag” who was *not* seen visiting the M*A*S*H 4077th or Seattle District.



The Maintenance Corner: Plywood Substrates

By James West, Tully Lake Sign Shop Manager

Traditionally there have been two preferred options for sign substrates: aluminum or plywood. So why do projects pick plywood when aluminum is available? Some projects prefer a more park-like look and feel – plywood achieves this. Plywood signs lack the sharp edges of aluminum. Others opt for plywood because the aluminum signs look too good to individuals who specialize in scrap metal recycling, also known as VANDALS! Aluminum signs tend to be more expensive than plywood as well. For whatever reasons you want plywood, they need to be maintained to increase their legibility & longevity.

Plywood comes in two categories: Medium Density Overlay (MDO) and High Density Overlay (HDO). HDO is marine grade plywood. It can be left outside unsealed for years and doesn't weather that much. MDO is a grade below HDO. MDO is lighter and significantly cheaper, therefore manufacturers tend to use it over HDO. When sealed correctly it is just as effective as HDO and will last just as long.

The major problem with plywood substrates is failure due to moisture. Moisture is able to permeate vinyl signs on any unprotected surfaces on the back and edges, including holes where the mounting hardware was installed. In order to maintain MDO signs we need to act like a raindrop and spend most our time on the top and bottom edges. These are the edges that break down to the elements first. During your sign inspection, look for paint breakdown and possibly moisture starting to work its way into the substrate. If you can see texture cropping out from behind the reflective face or back, a breakdown is occurring.



Example of a plywood approach directional (APRDIR) sign.

What can we do? In the early life of a plywood sign you can follow these quick tips:

1. Lightly sand down the edges.
2. Take your favorite wood glue, I use Titebond[®] II or III purchased at any hardware store, and put a generous layer around the edge. Lightly spread it with your finger to seal the entire edge making sure to slightly go over onto the vinyl sign face. You may also use clear silicone, but it is far more expensive product.
3. Allow the wood glue to dry, Titebond[®] takes less than 30 minutes, then apply your Corps brown stain to edges, back face, and post to seal the remainder.
4. Apply clear silicone to around mounting bolts in the sign face.

These simple steps can greatly prolong the sign's life. You may say, I have 1000 plywood signs on my project, how am I to do this to each one? Just following steps 1&2 above is a fairly quick solution that will provide an extended seal on the sign.

Finally what do you do if the sign is 8 or more years old, the edge is cracking, moisture has entered, and your sign is degrading? It is time to reorder using SignPro! Vinyl faces have a minimum life expectancy of 8-years on the reflective material. In many cases on aluminum you may get longer life out of the face, but the vinyl on both substrates may be at the point where the retro-reflectivity is no longer acceptable and it is starting to crack or peel.

Now that Fall is here, and the recreation season has slowed, think about a little care for those panels so you don't have to replace signs as often in the hot Summer sun!

New Sign Material and Vandalism: Aluminum Clad Substrates
By Ken Wilk, Melvern Lake, Kansas City District

We have been curious about the new aluminum clad sign materials and how they will hold up to vandalism. We took the liberty of taking a sample sign made at Truman Lake Sign Shop with the new sign material and shooting at it with a variety of calibers. A couple of photos of the sign are included with this message. We shot at it with a 20 gauge shot gun with 3" magnum #4's, a .45 caliber pistol, and a .22 caliber rifle. The .45s are the large holes along the bottom right of the sign. The .22s are the medium sized holes along the top left of the sign. The shot gun blast is scattered throughout the sign.



Cross-section example of aluminum-clad corrugated polymer signs.

We were impressed on how the material seems to close up the "wound" of the bullet hole on the front side of the sign. It responded better than a regular aluminum sign to bullet holes. This is some very interesting stuff.



The target: an aluminum clad sample sign



The holes show clearly from the back.

Sign Funnies

Here are a couple examples of signs gone bad. Someone needed a sign plan.



Left: Spotted in Duluth, Minnesota – To park or not to park, that is the question.

Photo by The Sign Post Photography Department

Right: Spell check was not working the day this was made. Perhaps spell check does not work on signs that are not MUTCD compliant.

Photo by Kevin Ewbank, Illinois River Waterway, Rock Island District.



Success with Signs

Among the goals of the National Sign Program are:

- Deliver a readable and understandable message to the intended viewer.
- Establish a cohesive and distinctive image for all Corps signs. This image is like a corporate brand....
- Establish visual and verbal consistency for signs at each project.
- Increase effectiveness of project management.
- Reduce overall procurement and maintenance costs.

The Sign Post is provided to help you achieve these goals at your project, and to share tips, ideas, and successes with signs. If you have you a sign product, method of mounting signs, SignPro tip, or any other sign management tip or idea, we want to know. Please share your sign success stories. Tell us about signs that made a difference. Have you a special sign that has improved visitor experience, made the job of you or your coworkers easier, or saved the money?

If you have a photo you took of an interesting sign, even one far off Corps property, a sign topic or a candidate for the interview to suggest for The Sign Post please let us know.

The Sign Post

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The Sign Post is an unofficial newsletter for Corps of Engineers people involved with the sign program. Contributions to The Sign Post are welcome. Send short articles, ideas, suggestions, or photos that you have taken of unusual signs via your District Sign Program Manager to the National Sign Program MCX.

The Sign Post Special Insert

Vehicle and Vessel Marking

Occasionally questions are asked regarding how to mark Corps vehicles and boats. The National Sign Program does not include these markings, they are addressed briefly by the Graphics Standards Manual (EP310-1-6) as is the Sign Program. Neither the Sign Manual nor Corps SignPro includes markings for vehicles or vessels. Both Corps sign shops at Truman Lake (NWK) and Tully Lake (NAE) do make the decals and can provide guidance how to place them. The following information is provided to assist the reader interested in the standards for marking vehicles and vessels in use by the Corps of Engineers.

Vehicle Marking

Park Ranger vehicles need to be consistently and clearly marked for easy identification by our visitors. The Graphics Standards have been supplemented by the Operations regulations and EP1130-2-550. See the attached link to read the guidance provided on the subject:

<http://140.194.76.129/publications/eng-pamphlets/ep1130-2-550/a-j.pdf>



To summarize, the Corps Communication Mark, including the Castle and Signature, is centered on the (front) door of the vehicle. The Signature may include the name of the district and also includes the phrase, "For Official Use Only." The Castle is 3 ½ inches high and the lettering is 7/8 inch Helvetica Medium. Both components are black. "PARK RANGER" is centered above the Corps Mark on vehicles used for visitor assistance. The lettering is 2 ½ or 3 inch, black, all capitalized Helvetica.

Vessel Marking

The proper way to mark Corps of Engineers boats is stipulated in ER and EP 1130-2-500. The details of how to do it depend upon the size of the vessel.

The pertinent section of ER1130-2-500 neatly summarizes the basic requirements regarding the markings on Corps of Engineers vessels. EP 1130-2-520 provides a great deal of detail and should be referred to by anyone who needs to know more. They are copied here for reference:

ER 1130-2-500

Section II. Floating Plant Identification and Record Information

7-6. Policy. It is the policy of the Corps of Engineers that:

b. Standards for Marking Floating Plant.

(1) Names and/or other designations of floating plant shall be placed on vessels in accordance with Chapter 7 of EP 1130-2- 500. The words "CORPS OF ENGINEERS" and "U.S. ARMY" shall appear on or near the stern of all vessels. Vessel designations shall be displayed on both sides of the bow and on the stern of the hull proper and, where appropriate, on name boards located above the weather deck.

(2) Names and/or other designations shall be placed on the exterior of launches and similar type craft in the following locations: name boards, both port and starboard bows, and across the stern. Lettering style and wording shall be in accordance with Chapter 7 of EP 1130-2-500.



MV General Warren,
U.S. Army Corps of Engineers.

EP 1130-2-520

Section II. Floating Plant Identification And Record Information

b. Standards for Marking Floating Plant.

(1) All floating plant will be appropriately marked for easy identification with only the authorized designation. Acceptable markings for various types of floating plant can be found in Appendix J. Markings may be adjusted for acceptable locations based on vessel design and arrangement as appropriate. Colors that contrast with background coloring will be used for marks. All lettering will be Gothic block capitals and all numbers will be Arabic. Lettering may be painted on, stenciled, inlaid, burned in, welded, attached with studs, etc., to suit. The sizing and spacing of the lettering will preferably be as indicated in Table K-1, Table K-2, and Table K-3 in Appendix K. However, smaller size lettering may be used where the table size results in an impractical or disproportionate arrangement. In no case, will the lettering size be reduced to less than one half the table size, or less than four inches.

(a) Name Boards - General. Name or number of vessel, of suitable size and with at least a one-inch margin at top, bottom and ends of board(s). Name boards will normally have blue background with gold lettering. The material used for this purpose may be patent gold leaf letters with a Prussian blue smalt preparation background, or appropriate modern blue and gold reflective or illuminating paint.

(b) Letters of a color that contrasts with background coloring will universally be used on the hull, life rings, etc.

(c) An uninterrupted appearance of the vessel identification will be obtained by considering all interfering or projecting structural members or fittings, such as port-holes, stanchions, rubbing stakes, fenders, etc.

(2) The Classes of Corps of Engineers floating plant are designated as follows:

Class Determination

- A vessels under 16'-0" in length overall
- 1 vessels 16'-0" or over in length overall but less than 26'-0"
- 2 vessels 26'-0" or over in length overall but less than 40'-0"
- 3 vessels 40'-0" or over in length overall but less than 65'-0"
- 4 vessels 65'-0" or over in length overall



Marion II on patrol in the Cape Cod Canal

c. Class 3 and Class 4 Self-Propelled Plant.

(1) Name Boards. Names of vessels will be displayed on name boards located above the weather deck on both port and starboard sides preferably abreast of, or on top of, the pilothouse at the outboard rails. Name boards shall be wood or steel or other acceptable product for exterior use and shall be rectangular in shape. The vertical dimension shall be twice the height of the lettering used. The designation marking shall be as indicated in Fig. K-1, Table K-1, page K-1, except that if the resulting name board would be disproportionately large, the lettering may be reduced in height to not less than one-half that specified. The board should have a Prussian blue background with gold color letters, or modern blue background with gold color letters.

(2) Port and Starboard Bows. Identification designation will be displayed on both sides of the bow in the following preferred manner:

CORPS OF ENGINEERS
U.S. ARMY

Where the above arrangement is not practical, a single line may be used as follows:

CORPS OF ENGINEERS U.S. ARMY

[Omitted here are several sections dealing with large vessels, Class 3 and Class 4.]

e. Class A, Class 1 and Class 2 Plant.

(2) Without Pilothouse. [Patrol boats, vessels under 40' in length.]

(a) Name or Number Designation. Small plant with no distinct pilothouse shall have the name or number of the vessel on the bow, port and starboard in letters not less than 4" high.

(b) Stern Designation. See 7-9.e.(1)(c), above.



Seamoor showing off the Prussian blue with gold name board.

(3) In those cases where the above identification on the stern is impractical, a name board facing aft mounted above the deck in the vicinity of the stern will be used, or in the case of a tug, the designation may be centered on the aft bulkhead of the house.

(4) [Vessels] designated by numbers rather than names shall not use the prefix "No" or "CE" ahead of the number.

(5) Launches and small boats on Class 3 and Class 4 plant will have the name of the plant on the port and starboard bows applied with the procedure noted in 7-9.e.(1)(b) above, and across the stern, or on the port and starboard sides, the designation shall be as stated in 7-9.e.(2)(a), above. Where more than one boat exists on the plant, they will be designated after the name with a Roman numeral dash I and dash II.