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Kansas Local Technical Assistance Program (KS LTAP)



Workplace & Equipment Safety Workbook

A program of the KU Transportation Center • www.ksltap.org



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INTRODUCTION

A portion of this Kansas Local Technical Assistance Program (KSLTAP) workbook “Workplace and Equipment Safety” was taken from safety fact sheets provided by the Pennsylvania LTAP and reprinted with their permission. KS LTAP staff rewrote some sections. Kansas county road and bridge staff reviewed an initial draft and gave input into the development of the final copy. The “Workplace and Equipment Fact Sheet” isn’t an exhaustive listing of safety suggestions for Kansas public works staff; it is a simply written, specific list of considerations that will serve as a resource for safety conversations between workers and supervisors and supervisors and managers. Additional copies of this workbook may be obtained by contacting KS LTAP. KS LTAP also provides workshops on safety topics and maintains video and publication lending library. Contact us for more information or visit us on line at <http://www.ksltap.org>.

Topics Covered:

Hard Hat Use
Lifting and Carrying
Special Considerations for Season/Weather/Time of Day
Safe Flagging/New Regulations for
Safety Vests
Shop Safety
Safe Road Maintenance and Sign Installation
Safe Vehicle Maintenance
Safe Trenching
Safe Forestry Operations
Safe Motor Grader Operation
Solid Waste Collection Safety
Safe Mowing
Poison Ivy
Lyme Disease
West Nile Virus
Dealing with Meth Labs
Contact Lens Safety

HARD HAT USE

You May Not Need A Hard Hat, If... That’s right, you may not need to wear a hard hat if:

- X-rays show you have 4-inches of skull surrounding your brain and all the other sensitive wiring above your shoulders.
- You have six months to live and five months have already gone by.
- You’re the kind of person who enjoys playing Russian roulette.
- You enjoy being the center of attention – as when that 2-pound rock is pinched by the tires of a grader and flies across the road until it is stopped by your head!

Questions and Comments about Hard Hats: For some reason, there’s always someone who objects to wearing a hard hat. Here are some answers to the most commonly heard objections and comments:

Why all the emphasis on hard hats?

Remember, the brain is the control center of the body. The slightest damage to any part will cause a malfunction of some area of the body, either temporarily, or permanently.

The skull, under normal circumstances, protects the brain, but when the possibility of brain damage from outside sources exists, additional protection is required.



My hard hat is too hot in the summer. Tests in hot weather have shown that the temperature inside a hard hat is 12 degrees cooler than a baseball style cap. Your head is kept cool because of the ventilation provided by air spaces between the shell and the suspension. The hat’s surface also reflects the heat. (PA LTAP Fact Sheet # 44. Oct. 1990).

My hard hat is too cold in winter. Liners that come down over the ears are readily available for use on cold days.

My hard hat is too heavy and strains my neck. The weight of the hat should go unnoticed if the hat is properly worn and maintained. The average safety hat weighs about 13 ounces. Your head weighs

about 13 pounds. That is one ounce of protection or every pound of head. It's a real bargain.

How to Wear Your Hard Hat. It is important that you properly adjust the inner suspension. The weight of the hat should go unnoticed if the hat is securely on you. The new ratchet adjustment helps by allowing a more accurate and faster adjustment.

By the way, chinstraps are available to afford maximum protection. Think of the limited protection a football player would have without a chinstrap on his helmet. Several injuries are reported each year when hard hats are knocked off and head injuries occur as a result. Remember, a hard hat cannot protect you if it is not on your head. In addition to cushioning blows, your hat can protect against electric shock, chemical spills, or hot materials.

Hard hats must NOT be worn on top of everyday hats or parkas, and of course, you must not remove the suspension. Periodically, check the shell for cracks and the suspension system for cracking, tearing, or fraying. Never paint, drill holes, or use solvents on your hard hat because they weaken the shell. As a general rule, the entire hat should be replaced every two years.

When to Wear a Hard Hat: Check with your supervisor for the official rules about safety and protective clothing. As a general rule, always wear a hard hat when working:

- On or adjacent to the traveled portion of the roadway.
- In contractor hardhat zones.
- While operating heavy equipment.
- Where there is danger of head injury from impact, and/or falling or flying objects.
- Where there is danger of contact with a high voltage electric source.

LIFTING AND CARRYING

Advice for Crew Members - Correct Lifting Techniques

- Warm up with stretching exercises before attempting to lift any object.
- Rock the load to estimate its weight. It is not advisable to lift an object weighing over half your body weight.
- Use a crane, hoist, a dolly, or other lifting and moving equipment when lifting or moving heavy or bulky objects.
- Use a dolly or enlist a helper if the load is too bulky to see over.
- Inspect objects for slivers, jagged or sharp edges before you begin lifting.
- Repair damaged loads to make them safe before moving them.
- Wipe off greasy, wet, slippery, or dirty objects before trying to handle them.
- Position your feet correctly. One cause of muscle injury, particularly to the back, is the loss of balance due to working with your feet too close together. To minimize injury, place your feet about shoulder-width apart, with one foot in the proposed direction of movement and the other in a position where it can give thrust to the body.
- Keep the load as close to your torso as possible. When your arms are held away from your body, they lose much of their strength and power. Tucking your arms in will help keep your body weight centered.
- Keep your back relatively straight and your knees bent when lifting an object.
- When lifting a load that is too large to pass between your knees, bend over slightly (but don't bend your back into an extreme curve) and pull the load close to your torso. If you are going to carry a compact load, squat down and straddle the object with your knees. Keep your back relatively straight, pull the load toward your torso, and use your leg muscles to help lift the load. Remember your legs are four times as strong than your back.
- Grasp an object correctly; keep your fingers away from pinch and shear points.
- Grasp boxes at alternate top and bottom corners; grasp stacked materials at alternate corners. Get a firm hold.

- Move as smoothly as possible. If the load interferes with normal walking, get help or use mechanical aids. Seek advice from your supervisor.
- Keep work areas free of debris to avoid tripping, and keep a clear view over the load.
- Use extra caution when walking on ice and snow.
- Never turn at the waist to change direction or to set an object down.
- Set your load down close to your body, or place it on the near edge of a shelf or truck bed, then slide it into position.
- Never throw or drop loads or equipment from elevated places. Use a suitable lowering device.

Team Lifting

- Adjust your load so that it is level. Lift, walk, and set down in unison. Call out commands of “lift,” or “set down” if more than two people involved.
- Place long sections of pipe on shoulders when carrying them, and use shoulder pads.



Advice for Supervisors

- Locate storage areas and loading platforms in the most convenient locations. Storage racks should be within easy reach of the shortest employee; frequently handled heavy loads should be stored between knee and waist level; and carrying distances should be minimized.
- Analyze current practices. Determine whether the job can be managed to eliminate manual handling as much as possible. Ordering material in smaller lots will result in safer lifting practice.
- Provide proper lifting aids and provide safe use instruction.
- Provide a list of physical requirements to prospective employees and physicians who do pre-employment physical examination.
- Set aside a warm-up period for employees who routinely perform lifting tasks. Encourage other employees to participate.

SAFE FLAGGING

Advice for Flaggers

- Constantly bear in mind that vehicles and drivers may be erratic, unpredictable, inattentive or careless – all create hazards for the flagger. In these cases be prepared to give warnings of danger to your fellow workers and the public when necessary.
- Use a STOP/SLOW paddle with a rigid handle as your primary hand-signaling device.
- Stand in a conspicuous position, visible to drivers from at least 500 feet on the right edge of the traveled way.
- Never stand in an open traffic lane.
- Do not stand near equipment or vehicles.
- Never turn your back to the traffic.
- Stand alone. Do not allow yourself to become distracted by the work operations.
- Avoid creating extended delays for the public, as much as possible.
- Do not leave your flagging station to pick up or replace signs or barricades.
- Treat each and every driver courteously.
- Be alert to changing conditions at the worksite.
- Do not leave your station until you are properly relieved.
- Do not lean on vehicles or argue with motorists.
- Wear adequate protection from the weather – sunscreen, visor hats, sunglasses in the summer, sun protection and layered clothing during winter operations.
- Use your work breaks to re-hydrate – important in both cold and warm weather.
- Make sure you have an escape route.
- Always park vehicles so that they do not obstruct an escape route.



Advice for Supervisors

- Locate your flagger far enough before the work space so that approaching traffic has sufficient distance to stop before entering the work space. These distances should be based on

approach speeds, friction factors, and pavement type.

- Be sure your flagger is familiar with your standard flagging procedures.
- Provide adequate proper advance warning devices and signs.
- Be available to pick up or replace signs or barricades.
- Be sure your evening flagging stations are illuminated.
- Be sure to schedule rest breaks for your flagger.
- Be sure your flagger has clothing and equipment, as specified in the Manual on Uniform Traffic Control Devices (MUTCD).

Nighttime Work:

- Wear retro reflective garments, safety glasses and a white hard hat. White outer garments with retro reflective material may be worn in lieu of colored vests, jackets, and/or shirts.

Safety Equipment Suggestions

Weather-appropriate clothing

Appropriate vest, shirt or jacket

Sun protection

Hard hat

Water

Whistle, air horn or other warning device

Prohibited Items

Personal radios, CD players, ipods, etc.

Reading materials

Chairs

Personal cell phones (talking or texting)

Section 6 of the MUTCD Guidance:

Because flaggers are responsible for public safety and make the greatest number of contacts with the public of all highway crew workers, they should be trained in safe traffic control practices and public contact techniques. Flaggers should be able to satisfactorily demonstrate the following abilities:

- Ability to receive and communicate specific instructions

clearly, firmly, and courteously;

- Ability to move and maneuver quickly in order to avoid danger from errant vehicles;
- Ability to control signaling devices (such as stop/slowpaddles) in order to provide clear and positive guidance to drivers approaching a work zone in frequently changing situations;
- Ability to understand and apply safe traffic control practices, sometimes in stressful or emergency situations; and
- Ability to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury.

New Regulations for SafetyVests

Rules about high-visibility clothing require compliance by November 24, 2008 for EVERYONE working on or near Federal-aid Highways. This excerpt was taken from the KUTC Newsletter Winter 2008 issue. The Federal Highway Administration published final rules regarding worker visibility as Part 634 of Title 23 Code of Federal Regulation. The rule meets part of the SAFETEA-LU Section 1402 requirements to reduce the likelihood of worker injury and maintain the free flow of traffic when workers are on or in close proximity to Federal-aid highways. Formerly, this compliance was a recommendation in the Manual of Uniform Traffic Control Devices (MUTCD). By November 24, 2008, all workers shall wear ANSI 107-2004 Class 2 or Class 3 apparel while working on or in the rights-of-way of Federal-aid highways

Class I Apparel

Class I apparel is not permitted for workers on or near Federal Aid Highways. This class of apparel is for workers exposed to traffic traveling less than 25 MPH. The main difference between Class I and Class 2 apparel is the amount of fluorescent background material and retroreflective material.

Typical occupations that require Class I apparel include:

- Parking lot attendants

- Warehouse workers
- Sidewalk maintenance personnel
- Shopping cart retrievers. Even if you have employees who might perform these kinds of tasks, most transportation-agency workers are likely to also perform other tasks that require Class 2 or Class 3 apparel, so purchasing Class 1 apparel isn't recommended.

Class 2 Apparel

Class 2 apparel offers many workers adequate visibility to motorists traveling at 25 MPH or more and in inclement weather. Class 2 is for workers whose attention might be distracted from approaching traffic and work in close proximity to moving vehicles. The most common Class 2 garments are shirts, jackets, or sleeveless vests. This apparel provides 360 degrees of torso visibility with horizontal and vertical retroreflective stripes.

Typical occupations that require Class 2 apparel are:

- Forestry operations
- Ship cargo loading operations
- Roadway construction, utility and railway workers
- School crossing guards
- Delivery vehicle drivers
- High-volume parking and toll gate personnel
- Airport baggage handlers/ground crew
- Emergency response and law enforcement personnel
- Trash collection and recycling operations

Class 3 Apparel

The main difference between Class 2 apparel and Class 3 apparel is the larger area of your body that Class 3 apparel covers. There are no sleeveless vests that, when worn alone, provide Class protection.

Class 3 apparel is for workers who are constantly exposed to high-speed traffic and who cannot pay attention to approaching traffic. If you aren't sure which class of apparel to wear, you can't go wrong

with the extra protection provided by Class 3.

Typical workers who must wear Class 3 apparel include:

- Roadway construction personnel and traffic regulators
- Utility workers
- Survey crews
- Emergency response personnel

Law enforcement and firefighters on your roads

Firefighter apparel must meet different visibility and protection requirements than construction and law enforcement apparel. Law Enforcement personnel have different rules for when they must wear ANSI clothing, but Class 2 apparel meets the visibility requirements for these workers when they are present on Federal Aid roads and are not exempt from the rule.

Other applications

Class 1 and Class 2 apparel are excellent for those evening runs and walks. Class 2 and Class 3 apparel is also GREAT for accompanying trick-or-treaters, and will earn you lots of compliments from envious parents. Plus, you're likely to collect some treats since you are "in costume!"

References

For specific information regarding when, what, and where to use ANSI Class 2 or 3 apparel in Kansas, call Kelly Geer at KDOT Construction and Maintenance, (785) 296-3576.

Sources:

mmm.com:ANSI/ISEA 107-2004 MADE EASY:A Quick Reference to High-Visibility Safety Apparel.

Federal Register: November 24, 2006 (Volume 71, Number 226). Page 67792-67800. From the Federal Register Online via GPO Access.

<http://www.gpoaccess.gov/fr/Index.html>.

DOCID:fr24no06-4. U.S. Department of Transportation, Federal Highway Administration. 23 CFR Part 634. FHWA Docket No. FHWA-2005-23200. RIN 2125-AF11.

For the complete article on the New Regulations of Safety Vests refer to the KUTC Newsletter Winter 2008 issue.

Must be marked ANSI/ISEA 107-2004 to comply with new regulations:

- XYZ Manufacturer
- ANSI/ISEA 107-2004
- 100% Polyester
- Reflective Material
- Model #: abc
- Size: Large

Must show Class 1, Class 2, or Class 3. Select class according to where and when you will work.

Sample ANSI/ISEA 107-2007 Garment Label.

If the garment is not marked ANSI/ISEA 107-2004, you should not wear it. The label must clearly show the Class compliance.

Washing Instructions:

- Wash warm - max 25 x
- Do not bleach
- Tumble dry low
- Do not iron
- Do not dry-clean

SHOP SAFETY

Advice for all Shop Workers

Tripping

Keep access-ways and aisles free of debris. Return tools and materials to their proper storage areas immediately after use.

Minimize the use of extension cords or other loose wires. When you do use them, properly cover or mark them to prevent tripping or shock. Mark obstructions such as low overheads or short steps with highly visible warning signs on tape. Put small hand tools in their proper places. Small hand tools lying about or improperly stored are especially hazardous because they are a common sight; workers are less likely to notice a screw driver on a step for example.



Slipping

Clean up spills promptly but do not use highly volatile product such as naphthalene or alcohol to clean up spills – use a biodegradable solvent (Floor Dry is a brand name that you might consider). Remove grease, oil, ice, snow, or mud from steps, walks, ladders, etc.

Stacking Materials

Do not allow material to protrude past shelf/bin edges. Use a front lip in stack bins to prevent material from falling out of the bin. Use pallets to even stacks. Build a pyramid when stacking pipe – block the first layer. Store all tires vertically in racks. Sort excess lumber by size and store it in a separate area. Remove nails from lumber prior to stacking. Securely strap all gas cylinders to a support unless they are being moved. The protective cap must be in place when moving a cylinder.

Combustibles/Hazardous Material

Store flammables in their designated areas and in proper

(and properly labeled) containers: oily rags in covered cans; paint in a paint locker; explosives in a protective hut; fuel oil and kerosene behind a concrete barrier. Use fire safety cabinets.

Ground gas cans to prevent sparking; refill empty gas cans with gasoline to prevent fume buildup. Use NEPA approved gasoline transport containers at all times. Keep

all sources of ignition (lighted cigarettes, welding heaters, running vehicles, and sparks from steel striking concrete) away from combustible storage. Remember combustible gases are heavier than air and collect in potentially explosive pockets generally near the ground. Know what each class of fire extinguisher does and how to operate each. Check fire extinguishers monthly, and maintain records of inspection. Have a fire extinguisher company inspect yearly. Know how to use a respirator to be safe around airborne toxic materials.



Leaning Equipment and Material

Store pipe, ladders, structural steel, etc., horizontally, or secure with brackets. Vibration from machines or accidental brushing could cause them to fall.

Advice for Supervisors

Designate (and label if possible) a storage space for everything.

- Provide sufficient housekeeping tools: brooms, clean rags, an spill absorbers. Make sure that directions are followed when using chemical cleaners.
- Define areas for scrap storage and schedule regular collection, removal, and disposal.
- Assign clean-up responsibilities and make sure work sites are cleaned and cleared before quitting time. It is wise to provide a specific time for this activity.
- Avoid removing or procuring excess materials, parts, and tools from their designated storage areas of suppliers. This requires thoughtful job planning.

- Provide proper class fire extinguishers:
Class A: Wood, paper, etc.
Class B: Flammable liquids
Class C: Electrical fires
Class D: Reactive metals
- Properly label, regularly inspect, and maintain fire extinguishers in easily accessible locations.
- Install non-slip treads on ramps and steps.
- Remove weeds around combustible storage areas, including tanks and pipes where combustible material is stored or transported.
- Clearly mark aisles and passageways.
- Allow a minimum of 18" clearance between storage and sprinklers.
- Secure all storage racks to the floor, wall and to each other.
- Provide designated racks for sheet metal and pipe.

Suggestions for Training

- Prepare a list of worksite items. Ask your crew to identify their proper storage place or procedure.
- Draw a simple floor plan of your work area, and ask the crew to identify who is responsible for cleanup of each area. Assign clean up responsibilities for any unassigned areas.
- Coordinate with your local fire department to provide your crew demonstrations of fire hazards and training in fire extinguishing.

Safety Equipment Suggestions

Safety glasses/goggles or shields

Hard hats

Steel toed shoes and metatarsal protection

Work gloves with palm and knuckle reinforcement

SAFE ROAD MAINTENANCE AND SIGN INSTALLATION

Advice for Crew Members - General Conditions

- Make adjustments in driving techniques to accommodate the changing handling characteristics of your vehicle. As sewer cleaning trucks and street sweepers substantially increase or decrease their loads their centers of gravity will change depending on the load weight.
- Use ear plugs or other ear protection in environments that are noisy, such as where jack hammers or vacuums are working, or where many pieces of equipment are running.
- Wear the proper type of air mask or respirator in dusty environments, or, when available, use air conditioning in the vehicle. This will help prevent damage to your lungs.
- Wear the proper clothing for the job when using chemicals such as sewer grouting material, plant sprays, or insecticides. Some chemicals may require use of respirators, rubber gloves, and special clothing. Be sure to read the label and follow the instructions.
- Use a professional laundry to clean work clothes on which chemicals are spilled; don't permit contaminated clothing to mix with home laundry items. Be sure to tell the laundry what chemicals are on the clothing.
- Be aware of the dangers inherent in spraying any kind of material that vaporizes or is a fine dust.
- Explosions may occur when ignition sources heat explosives. Confined spaces and still air are especially dangerous conditions where, in the absence of ventilation, explosive mixtures are ready to ignite. Explosive materials include, but are not limited to, gasoline, heavy solvents, and methane gas.
- Do not work in the roadway without having proper traffic control devices in place.



Asphalt Sealing/Patching/Paving

- Wear the proper clothing when working around asphalt. This includes long-sleeve shirts, long trousers without cuffs, hard-soled shoes, and gloves. These are necessary due to

the extreme heat given off by the asphalt, coupled with the possibility of contact with the asphalt itself. Burns will occur if skin comes in contact with hot asphalt, since the asphalt is normally in the range of 275 to 375 degrees Fahrenheit.

- Make deliberate movements when handling hot asphalt. Deliberate movements will help minimize spills.
- Be sure the asphalt always covers the heating coils in a kettle. If this precaution is not followed, the heating coils could melt and allow open flames to contact the asphalt which will result in either a fire or an explosion.
- Break asphalt into small chunks, 1 to 3 pounds each, when recharging a kettle. Do not throw the chunks into the kettle. To prevent splashing, slide them in.
- Keep the asphalt temperature below its flash point. Do not trust the kettle thermometer unless you have checked its accuracy. The flash point of most asphalt is in the range of 375 to 400 degrees Fahrenheit.
- Keep the spout used in crack sealing as close to the ground as possible to prevent splashing and burns.
- Douse skin that has been splashed with hot asphalt with cold water to cool it, but do not remove the asphalt from the skin. Cover the burn to prevent infection. Consult a physician to have any asphalt removed from your skin.
- Turn off the heat source if the kettle discharges thick white to yellow smoke, and allow asphalt to cool about 30 degrees before turning the heat back on. The thick smoke indicates that the flash point has been reached. Keep all other sources of flame away during the cooling period.
- Do not eat in the area where asphalt fumes are present to assure that the fine airborne solids don't contaminate your food. Asphalt fumes can cause respiratory complications. Minimize your exposure to asphalt fumes.



Concrete Patching/Paving

- Wear the proper respirator when working around cement and aggregate dust.
- Read the label on chemical spray to determine its contents and use the spray as it was designed.
- Always spray downwind to prevent inhalation of the spray.

- Never pour water into acid when mixing concrete treatment agents. The resulting reaction is violent and will explode.
- Always pour acid into water.
- Know the location of, and how to operate, the eyewash and deluge shower in case of an acid spill.

Painting

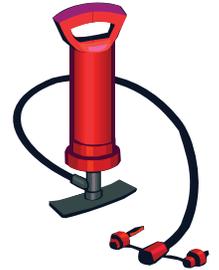
- Always use the properly designed respirator to avoid breathing paint and its solvents.
- Remember that many paint pigments and solvents are classified as hazardous materials. Read and follow the label.
- Be especially wary of dusts when sanding or grinding off lead-based paint.
- Do not heat paint inside an enclosed structure unless the ventilation equipment meets the National Fire Protection Code.
- Keep out of the direct spray area when spraying paint. Paint sprayed at a pressure of only 30 pounds per square inch can become imbedded in your skin.
- Do not use high pressure air to blow dust from your clothing.
- Never field-rig a high pressure hose coupling. Always use a factory-made and tested coupling.
- Do not exceed the pressure rating on hoses and couplings.
- When not in use, keep paint containers in a designated and approved paint storage cabinet.



Pneumatic Tools

- Wear hearing protection while working with air tools that operate in a range above 85 decibels.
- Take frequent breaks when you operate an air-hammer to reduce the cumulative effects of vibration and noise.
- Wear safety shoes while operating an air-hammer.
- Do not guide the air-hammer tool with your feet to start a drill hole.
- Wear eye protection to protect against flying chips during the drilling operation.

- Be sure a deadman switch is standard equipment on your air-hammer, and be sure that it is in operating order.
- Employ wet drilling rather than dry drilling to reduce the amount of debris and dust.
- Properly secure hose connections.
- Vent the compressor air tank prior to removing the hoses or disconnecting the air-hammer after completing an operation.
- Use retainer clips on an air-hammer to prevent premature tool ejection.
- Do not allow the heads of cutting tools to mushroom. Deformed heads should be ground to their original shape. This will prevent splinters from chipping off the tool when being struck.
- Warm the cutting tool before use in very cold weather to prevent spalling during use.
- Check bolts for adequate tightness and the chuck-bushing for excessive wear before using any tool.
- Pay attention to where chips are thrown when cleaning a pot-hole with air pressure. Chips can travel up to 25 miles per hour and pose a significant hazard to those nearby.



Sign Installation

- Make sure proper underground facility locates have been completed.
- Install signs to MUTCD guidelines.
- Be prepared with approved safety vests, safety glasses, and fire extinguishers.
- Be alert to surrounding traffic conditions.
- Review the work zone plan before you leave the shop.
- Downed signs need to be replaced immediately after notice is received that a sign is down.

Advice for Supervisors

- Reduce the effects of vibration and fatigue on the operator by installing thick rubber hand grips on the air hammer.

- Encourage workers to leave the immediate area when they are not laying asphalt. Prolonged breathing of asphalt fumes can lead to respiratory complications.
- Be alert to medical considerations when laying hot asphalt. Watch for flushed skin, reduced perspiration, and sluggish movements. If these symptoms are present, get the worker to a cool place and give small quantities of water until the symptoms pass. If a worker passes out, call emergency services immediately. Don't wait for him/her to revive.
- Review safety guidelines for safe operation of equipment and coach your crew on safe operating procedures; this should include traffic control.
- Schedule sign installation work based on good weather conditions.
- Make sure each sign installation vehicle is equipped with the relevant sections of the MUTCD.
- Pre-plan your work zone – have a traffic plan ready for review.
- Be sure to provide your crews with equipment that is in good working order.

Safety Equipment Suggestions

Safety glasses or face shields

Thermometers (for hot asphalt)

Ear plugs or ear protection

Rubber boots (for concrete work)

Safety shoes with metatarsal protection

Hard hats

Proper clothing

Rubber gloves and aprons

Dust masks or respirators

Cones and barricades

Safety vests

Signs, standards, and flashers

SAFE VEHICLE MAINTENANCE

Advice for Maintenance Personnel

- Make daily and routine maintenance your priorities to reduce

the possibility of catastrophic failures.

- Resolve each equipment defect complaint.
- Acquire training to properly diagnose and eliminate equipment defects. Vehicle manufacturers who give clinics on new equipment care are a good source for training.
- Mount multipiece rims using a guard cage.
- Mark pit edges and lifts with paint or tape to prevent falls and bumps.
- Provide adequate ventilation for solvent vapors, gasoline vapors, other chemicals, and exhaust fumes.
- Spray paint only in approved paint booths.
- Know and employ proper maintenance methods to reduce contact with asbestos and asbestos dust.
- Monitor welding to assure fire hazards are eliminated from the area and proper ventilation is utilized.
- Use small power tools safely:
 - Don't use in explosive environments.
 - Don't stand in liquids.
 - Don't use a tool with a frayed cord or exposed conductors.
 - Don't use a tool with a broken off grounding plug.
- Guard grinding wheels against explosion. Use the properly rated wheel in the grinding device.
- Remove all ignition sources from the fuel area.
- Clean up spills immediately.
- Do not wear clothing that has been in contact with flammable liquids.
- Never hang clothes or rags near operating machinery lines, heating vents, or ventilation ducts.
- Monitor noise in the shop. Be alert and pay attention to horn, alarms, or verbal commands.

Advice for Vehicle Operators

- Come to work fit to work. Sick operators may be relieved from duty.
- Report all medications that might affect your driving ability.
- Maintain an appropriate driver's license.
- Follow your written pre-trip inspection routine before taking

any vehicle out of the yard. That routine inspection might include:

- Check major controlling functions: steering and brakes, hydraulics, cables, heating and exhaust units.
- Check safety equipment: lights, flashers, alarms, fire extinguishers, first aid kits.
- Clean all glass and mirrors, clean out the floor of the cab, etc.
- Check the exhaust system for leaks.
- Calibrate appropriate controls for proper operation.
- Repair and clean equipment only when it is not running.
- Ventilate the cab. Use air conditioning when working in dusty conditions.
- Use mirrors, horn and warning signals, and spotters when backing equipment.
- Turn off the motor before exiting. Avoid dismounting into traffic. Always use steps and hand holds.
- Drive defensively, yield the right-of-way.
- Use your seat belt.
- Check to be sure that all the required safety equipment is on your vehicle. Review the proper use of each item: backup alarms, load tie downs, towing devices, wheel chocks, outriggers, and fire extinguishers.

Advice for Supervisors

- Routinely check with your drivers to be sure their driver's licenses are current. Do not allow any employee who has an inappropriate or expired license to drive until the problem is corrected. Make note of any employee who has a driver's license that will expire prior to the next routine check.
- Routinely check your drivers for disabilities or color blindness, visual correction requirements, etc.
- Routinely provide drivers with driver training or driver's tests. The training or test should be both a practical demonstration of the driver's ability to handle the equipment and a review of state driving laws.
- Require proficiency on specialized equipment.
- Review proper backing procedures. Emphasize the usefulness of a spotter in backing up.

- Develop a written pre-trip inspection routine, if one isn't already in place. Provide copies to each crew member. With the form write up a report of your findings, along with recommendations for remedies and distribute the report to the appropriate personnel.
- Know your equipment and the condition it is in. You are responsible for providing the best possible equipment for your crew to use.
- Inform operators about the types of minor repairs they are allowed to make on their vehicles. Communicate your repair policy with all of your operators.
- Make the process for obtaining new equipment a team effort. Request input from the foreman and operators who will use it. Tailor specifications to assure your new equipment will meet the needs of the users.
- Watch carefully for alcohol or drug abuse. Supervisors who knowingly permit an employee to work under the influence of alcohol or drugs may also be subject to disciplinary action and possible personal liability.
- Check the maintenance area safety:
 - Inspect condition of mechanics' hand tools.
 - Check the functioning of ventilation equipment for effective removal of exhaust, paint spray, welding solvent fumes, and break and clutch lining asbestos dust.
 - Check the condition of power tool cords and hoses.
 - Ensure that tires, lubricants, paint, and parts are safely stored.
 - Check equipment operators' and mechanics' reports for prompt repair of defective safety equipment - Lights, wipers, horns, mirrors, etc.
 - Ensure that maintenance reports are completed promptly and correctly dated.

SNOW AND ICE OPERATION SAFETY

Advice for Crew Members

- Take a dry-run of your assigned route before ice and snow arrive. Make a record of your concerns and, in some instances, flag hazards for ease in sighting during a storm.

Check especially for these hazards:

- Low hanging cable sign posts
- Deep side ditches
- Fire hydrants
- Steep shoulders
- Guardrails
- Raised manholes
- Fences
- Offset curb and pavement joints
- Congested areas
- Railroad crossings
- Mail boxes
- Yield and merge intersections
- Narrow roadways
- Blind and left-turn intersections
- Special maneuvering areas, cul-de-sacs, steep grades, dead ends.



- Avoid situations that require backing up. If it is necessary, in such areas as cul-de-sacs, dead ends, or steep hills, use a spotter if one is available.
- Keep your plow blades and hoppers in working condition. Frostbite can occur if you perform outdoor maintenance/repair work on your equipment.
- Be aware of frostbite, which can be dangerous. Severe pain followed by a feeling of warmth are the signs. Do not be fooled by the apparent return of warmth. Return to the shop and seek aid from a qualified individual.
- Watch for pedestrians when plowing. Do not exceed 25-30 miles per hour. At speeds greater than this, even an adult could be knocked down by the force of thrown snow.
- Stay with your truck if it is immobilized. Keep fresh air circulating to avoid carbon monoxide buildup; run your motor sparingly and open the downwind window to provide ventilation.
- Dress in layers of thin clothing instead of single layers of thick clothing. You'll be warmer and as the temperature changes, you can easily remove layers to remain comfortable.

- Choose mittens instead of gloves. They're warmer.
- Wear a hat. Body heat is lost through the top of the head.
- Cover your mouth with fabric (coat flap or scarf) to protect your lungs from directly inhaling the extreme cool air.
- Keep a full change of clothes handy. The severity of hypothermia and frostbite increase when socks, boots, and gloves are wet.
- White outer garments SHOULD NOT be worn during snow or fog conditions.
- Attend training on the safe handling of chemicals used in snow and ice control operations.
- Carbon monoxide is colorless, odorless, and tasteless. If you feel drowsy, check the cab.

Advice for Supervisors

- Assign each truck to a particular area. If a problem arises, you will know where to locate your vehicle.
- Keep track of your crew. Equip each truck with a two-way communication device or establish check points for the trucks on their route. Keep a record of the trucks loading at the sand/salt storage areas. A disabled truck can be identified when it doesn't show up as expected.
- Be ware of fatigue in your crew. The duration of a shift should be communicated to crew members.
- Pre-qualify drivers to re-acquaint them with the equipment. This may minimize problems during plowing operations.
- Check with your drivers often to determine if they have noticed any vision problems. If they have, a rest period may be in order. Falling snow, blowing snow, extended night driving, sun glare, and white-outs lead to eye fatigue. Vision acuity and depth perception capability of the eye may be reduced and may increase the possibility of an accident.
- Check with a physician if doubt arises concerning a driver's vision. Certain eye defects, which affect perception and the ability to see colors, may disqualify a driver from plowing operations, even though the driver is qualified for normal work operations.
- Treat your private contractors the same way you treat your staff. Expect, train for, and require the same safety procedures from them as you do from your own crew members.

- Exercise care when storing and handling all ice control chemicals. The manufacturer's Material Safety Data Sheet (MSDS) should be posted wherever chemicals are stored and handled.
- Provide training on the safe handling of chemicals.
- Place your salt on an impermeable pad, and cover it, to avoid environmental contamination.

Safety Equipment Suggestions

Warm, dry, bright-colored clothing so you can be seen in the snow

First aid kits

Flashing lights

Two-way radio, cell phone or other communication-devices

Ice scraper

Snow Shovel

Flashlight

Sunglasses

SAFE TRENCHING

Advice for Crew Members

- Keep all tools and materials at least 2 feet from the edge of the trench.
- Do not drive equipment up to the edge of the trench.
- Inspect the trench for signs of failure after a rain and first thing every morning.
- Do not jump across the trench. Erect a bridge or other suitable passage.
- Locate emergency exits from the trench no more than 25 feet apart. Ramps, or ladders extending at least three feet past the top of the trench and tied securely, are adequate.
- Take care when working adjacent to sidewalks, buildings, utility poles, trees, or similar structures. In some cases, underpinning may be necessary.
- Install shoring from the top down; remove shoring from the bottom up. This will reduce the chances of ditch collapse during an installation/removal operation.



- Install jacks or bracing perpendicular to the trench sides to prevent them from kicking out under pressure.
- Do not support construction equipment on the shoring unless it was specifically designed for that function.
- Backfill the trench immediately after the shoring is removed. A trench has a greater possibility of cave-in due to the construction activity at the time.
- Keep out of the space needed to operate excavating and backfilling equipment. No one but the operator should be near a vehicle being loaded or unloaded.
- Use life lines in excavations over 15 feet deep due to the danger of asphyxiation or poisonous gases collecting in the trench bottom.

Advice for Supervisors

- Test and classify soil before digging trenching.
- Use qualified people to design the shoring or trench shields. Any trench more than five feet deep must be shored.
- Remember, if you design the shoring plan, account for equipment and traffic vibration.
- Cut back the trench sides at the angle of repose of the soil if no shoring is used.
- Extend sheeting or shielding at least 18 inches above the bottom of the sloped part of the excavation.
- Locate utilities before you dig.
- Expose ground utilities by hand to prevent damage to them and injury to your workers.
- Inspect frequently. If cave-ins, tension cracks along the top of the trench, or slumping at the bottom of the trench are discovered, clear the area of workers until the cause is ascertained and the problem remedied.
- Always post a lookout to observe the trench workers. This lookout should be out of harm's way but near enough to fully observe all of the trench workers.
- Never have all your workers in the trench at the same time.

If a Trench Collapses

- Call 911.

- Notify the supervisor.
- Do not stay in the trench.
- Do not attempt a rescue wait for emergency response
- Do not try to dig trapped persons out by using a shovel.
- Do not remove any hand tools.
- Do not use heavy equipment.
- Note the exact time and location of the trapped worker.
- Stop any nearby traffic that might cause vibration.
- Keep everyone back at least 50 feet away from the edge of the trench.

Safety Equipment Suggestions

Safety glasses

Hard hats

Safety shoes

Gloves

Walkways

Ladders

Sound shoring material

Ear protection

Cell phone in case of an emergency

SAFE FORESTRY OPERATIONS

Advice for Crew Members - Wood Chipping

- Set up the chipper away from combustible material.
- Keep the chipper emergency shut-off within reach of the operator.
- Do not feed wood with imbedded nails or other foreign objects into the chipper. Remove foreign objects to prevent ejecting them or chipping a blade.
- Do not overfeed the chipper with large limbs.
The resulting kickback could cause injury.
- Wear safety glasses. The entire crew should wear safety glasses due to the potential for flying debris.
- Turn off and lock out the chipper when it is not in use.

- Do not wear loose fitting clothing which could become entangled and draw you into the chipper.
- **REMEMBER:** the chipper is SELF-FEEDING!
- Wear gloves that you can slip off easily, but not so loose that they impair your ability to do the job safely.
- Wear heavy soled shoes to prevent injuring your feet in brush stubble.
- Make sure all outrigger pads are firmly in contact with the ground to prevent the chipper from walking or tipping over.
- Know and follow the limits of the machine.
- Securely tie down your debris load to prevent it from shifting once the truck is loaded with limbs and stumps. If the strapping shows signs of excessive wear, replace it.

Stump Grinding

- Wear ear muffs or plugs when grinding.
- Wear safety glasses to avoid flying debris.
- Check the teeth on the grinder for tightness before beginning to grind. Vibrations during grinding may loosen the teeth.
- Keep operating controls and the safety stop within easy reach of the operator at all times.
- Be aware of the location of all crew members during the grinding operation.

Brush Clearing

- Machetes – use in light brush (less than one inch in diameter trunks)
Keep your machete in a scabbard when it is not in use.
Sharpen your machete to assure a clean bite. The blade should not be sharpened for the first six inches from the handle nor the last two inches from the point.
Install a saber-type hand guard on the machete. This will help prevent the tool from accidentally being thrown during a swing.
Do not hit the ground with your machete. The flexible blade could recoil from the impact, resulting in an injury.
Clear the swing area of obstacles prior to advancing through a bushy area. An interrupted swing could deflect the tool to the user.

- Ax, Brush Ax, or Hatchet – use in heavier brush (more than one inch in diameter trunks)
Keep axes sharp. Dull axes tend to glance off wood while sharp axes bite into the wood.
Use hatchets for small jobs such as splitting wood. Lightly tap the log to start the hatchet, then lift the log and force the hatchet through by striking the log on a solid block of wood.
Do not use the hatchet to drive nails. The head of the hatchet is not tempered to withstand the force of driving, and a metal splinter may pop off.

Mowing

- Do not remove the throw guards from your mower.
- Operate riding mowers up and down the slope to prevent tipping the machine.
- Operate push-type mowers across the slope to prevent the operator from falling into or under the machine.
- Read the manual before you operate your mower. New equipment may look similar to that used previously, but may require special knowledge.
- Wear close fitting clothing to avoid getting tangled up in the mower.
- Check to be sure the area to be mowed is clear of debris prior to mowing. Some mowers are capable of throwing objects at a speed of 25 miles per hour.
- Turn off the engine and disconnect the spark plug wire when working on your mower.
- Wear safety shoes while operating a push mower.
- Wear light colored clothing during summer months to minimize heat discomfort. Dark clothing will absorb more heat than light colored clothing.



Tree Felling

- Be alert to the dangers power lines may pose. Assume that all lines are energized unless the power company is present and they assure otherwise.
- Rope off your work area to keep civilians out.

- Use trained flaggers to control and direct traffic through your work area when working adjacent to a highway.
- Do not attempt to move a fallen electrical wire. Station an observer at a safe distance from the wire and keep everyone away from this area.
- Do not use metal or painted wood ladders. They are highly conductive to electricity. Under the right circumstances, which vary according to the prevailing weather conditions, electricity can arc up to 10 feet. Work outside this 10-foot area when working around unknown lines.
- Use nonconductive handles (unpainted wood, rubber coated, plastic coated, or fiberglass). They will not totally eliminate the danger of electrocution, but they will substantially reduce the risk.
- **DO NOT USE AERIAL BUCKETS WITHIN 10 FEET OF ANY POWER LINE!**
- Post a trained observer /spotter to direct the felling operation and to watch the clearances from the power lines.

Chain-Saw Operation

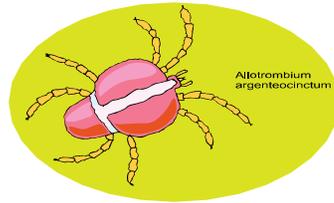
- Wear eye protection when you operate a chain-saw. To minimize the chance of material entering your eyes, stand upwind of the cutting operation so the chips blow away from you.
- Use ear plugs or ear muffs if you are in close proximity to an operating chain-way.
- Do not force the cut. Binding may result. Allow the chain to cut naturally.
- Keep a clear work area. Debris in the area may lead to an injury.
- Keep the saw within close proximity of your body. This will help you avoid back strain.
- Do not use electric tools from an aerial bucket. The problem of grounding is compounded.
- Never allow an untrained worker to operate a chain-saw unsupervised.
- Chain-saws should be properly maintained.
- Crews should be trained in recognizing poisonous plants.

Contact with Poisonous Plants and Animals

- Be alert to poisonous plants such as poison ivy, poison oak, or poison sumac. In the event that contact is made, use a lotion or liniment to counteract the effects. In the event of a massive contact, medical advice may be warranted.
- Do not burn poisonous plants. Smoke from the burning may injure you just as much as direct contact.
- Immediately treat insect bites, cuts, and animal bites. Animal bites should have medical treatment to address the possibility of rabies.
- Do not take snake bites lightly. Go to the hospital immediately, especially if you are sure or uncertain if the snake was poisonous.

Lyme Disease

Road crews are at risk for Lyme disease, because of their work mowing and clearing brush. Do you know the facts about Lyme disease?



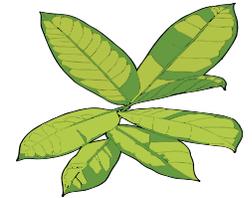
- Lyme disease is a bacterial infection caused by deer ticks in this part of the U.S.; western black-legged ticks also cause the disease but they are found further west, on the Pacific coast.
- A symptom of Lyme disease is a large circular rash, fever, stiff neck, fatigue and Meningitis. The rash is the most distinctive symptom.
- Meningitis is a rare complication of the disease, if left untreated.
- The treatment for Lyme disease is common antibiotics if caught early.
- Seventeen cases (people) were diagnosed with Lyme disease in Kansas in 2000. Compare that with about 12,500 cases annually in the United States, and you can see that Lyme disease is not very common here. Cases in Kansas have been spread out around the state. There is no distinct area of concentration.
- To avoid Lyme disease do the following:
 - Use DEET products
 - Don't sit on stone walls
 - Get vaccinated

- Do thorough tick checks
- Wear light-colored clothing to better detect ticks
- Vaccination is available, but is not recommended for Kansans because of the low incidence of Lyme disease in the state.
- Deer ticks are much smaller than common dog and cattle ticks.
- To remove a tick The Center for Disease Control advocates tweezers as the safest and most reliable tool.
- Deer ticks are most prevalent in Kansas between November and December, however, national statistics show the most common months to contract Lyme disease are June-August.

Sources: "Lyme disease" Lawrence Journal-World, May 30, 2002; The Center for Disease Control, www.cdc.gov/ncidod/dvbid/lyme _

Poison Ivy Facts

When you head for the weeds to do some brushcutting, you may get more than you bargained for.



- Dead plants remain active much longer than two years; up to 10 years in dry climates like in Kansas.
- Poison ivy contains an irritating sap that causes the reaction. The best remedy is to avoid the sap or wash it off—fast.
- Blisters do not contain poisonous sap and will not spread the rash.
- Poison ivy can only be contracted by coming into contact with the oil in the sap of these plants. It is not contagious.
- Sensitivity to poison ivy tends to decrease with age.

Source: www.zanfel.com/help/rashfaq.html. *Poison Ivy, Oak & Sumac: A Rash of Information about Identification, Treatment and Prevention*, Zanfel Laboratories, 2006.

What Is West Nile Virus?

West Nile virus (WNV) is a potentially serious illness. Experts believe WNV is established as a seasonal epidemic in North America that flares up in the summer and continues into the fall. This contains

important information that can help you recognize and prevent West Nile virus.

What Can I Do to Prevent WNV?

The easiest and best way to avoid WNV is to prevent mosquito bites.

- When you are outdoors, use insect repellent containing an EPA-registered active ingredient. Follow the directions on the package.
- Many mosquitoes are most active at dusk and dawn. Be sure to use insect repellent and wear long sleeves and pants at these times or consider staying indoors during these hours.
- Make sure you have good screens on your windows and doors to keep mosquitoes out.
- Get rid of mosquito breeding sites by emptying standing water from flower pots, buckets and barrels. Change the water in pet dishes and replace the water in bird baths weekly.
- Drill holes in tire swings so water drains out. Keep children's wading pools empty and on their sides when they aren't being used.

What Are the Symptoms of WNV?

- **Serious Symptoms** in a Few People. About one in 150 people infected with WNV will develop severe illness. The severe symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. These symptoms may last several weeks, and neurological effects may be permanent.
- **Milder Symptoms** in Some People. Up to 20 percent of the people who become infected have symptoms such as fever, headache, and body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach and back. Symptoms can last for as short as a few days, though even healthy people have become sick for several weeks.
- **No Symptoms** in Most People. Approximately 80 percent of people (about 4 out of 5) who are infected with WNV will not show any symptoms at all.

How Does West Nile Virus Spread?

- **Infected Mosquitoes.** Most often, WNV is spread by the bite of an infected mosquito.
- Mosquitoes become infected when they feed on infected birds. Infected mosquitoes can then spread WNV to humans and other animals when they bite.
- **Transfusions, Transplants, and Mother-to-Child.** In a very small number of cases, WNV also has been spread through blood transfusions, organ transplants, breastfeeding and even during pregnancy from mother to baby.
- WNV is not spread through casual contact such as touching or kissing a person with the virus.



How Soon Do Infected People Get Sick?

- People typically develop symptoms between 3 and 14 days after they are bitten by the infected mosquito.

How Is WNV Infection Treated?

- There is no specific treatment for WNV infection. In cases with milder symptoms, people experience symptoms such as fever and aches that pass on their own, although even healthy people have become sick for several weeks.
- In more severe cases, people usually need to go to the hospital where they can receive supportive treatment including intravenous fluids, help with breathing and nursing care.

What Should I Do if I Think I Have WNV?

- Milder WNV illness improves on its own, and people do not necessarily need to seek medical attention for this infection though they may choose to do so. If you develop symptoms of severe WNV illness, such as unusually severe headaches or confusion, seek medical attention immediately.
- Severe WNV illness usually requires hospitalization. Pregnant women and nursing mothers are encouraged to talk to their doctor if they develop symptoms that could be WNV.

What Is the Risk of Getting Sick from WNV?

- People over 50 at higher risk to get severe illness. People over the age of 50 are more likely to develop serious symptoms of WNV if they do get sick and should take special care to avoid mosquito bites. Being outside means you're at risk.
- The more time you're outdoors, the more time you could be bitten by an infected mosquito.
- Risk through medical procedures is very low. All donated blood is checked for WNV before being used. The risk of getting WNV through blood transfusions and organ transplants is very small, and should not prevent people who need surgery from having it. If you have concerns, talk to your doctor.
- Talk with your care provider if you have concerns.

Source: *The Center for Disease Control* http://www.cdc.gov/incidod/dvbid/westnile/wnv_factsheet.htm.

Advice for Supervisors

- Report animal bites to animal control, and get the victim to the hospital. In this instance, no wound is too small. Animals may carry rabies. If it is possible to capture the animal, do so with care. If the animal cannot be captured, try to find where it lives (also applicable to snakes).

Suggested Safety Equipment:

Safety glasses
Non-conducting tools
Ear plugs/ear muffs
Safety lines
Safety shoes
Safety vests
Hard hats
Cones
Loose-fitting gloves
Signs and flashers

SAFE MOTOR GRADER OPERATION

Advice for Operators

- Do read the operator's manual.
- Do a pre-trip inspection.
- Clean windows, lights, etc, and clean any debris from the floor of the grader.
- Do not let anyone ride along – inside or outside cab.
- Look, then look again, before backing up.
- Move your vehicle at a slow speed in congested areas.
- Give the right-of-way to loaded vehicles.
- Watch for overhead dangers.
- Know your work area. Check weight limitations, types of surfaces, and clearances.
- Report defective equipment.
- Keep your mind on your job.
- Select a safe parking area.
- Shut down your grader according to the operator's manual.
- Wear your hardhat.
- Wear your seatbelt.
- Wear your safety gloves and appropriate safety gear.
- Remove the ignition key when leaving your grader unattended.
- Ground your blade when leaving your grader unattended.
- Use colored flags on each end of moldboard when blading.
- Shift your blade to the center of the grader and lock it when your grader is parked.
- Be aware that boarding and exiting the grader may put you in danger of slipping, tripping, or falling. Use a three-point (two feet and one hand or one foot and two hands) approach when entering or exiting the cab.
- It would be a good risk management idea to put "Stay Back 75 Feet" signs on the back of our mowers and graders. The idea being thrown debris within that 75' arc, and vehicles pulling into a grader's blind spot, are the areas where we have the big losses.
- Avoid operating the graders on



the wrong side of the road, especially in a hilly area or blind curve, without any kind of warning device placed on the road to warn drivers.

- When grading at a railroad crossing, turn off the radio, AC, and open the door to the cab so that you can hear an approaching train.
- Communicate with traffic.
- Use flashing safety lights on your grader when blading.
- Keep your headlights on whenever you operate a motor grader.
- Be alert to traffic waiting to pass, and provide the driving public passing opportunities.
- Use signing and proper flaggers to warn traffic of work in progress or as warning if the grader is left unattended.
- Make sure your signs and sign locations conform to the Manual on Uniform Traffic Control Devices (MUTCD) or the official manual on traffic control devices (sign manual) for Kansas.
- Be sure that your grader has the following on board:
 - A slow moving vehicle triangle for the back of your grader.
 - A visible fire extinguisher – know how to use it, and make sure it is properly charged.
 - A hand shovel in good condition.
 - The operator’s manual.

Safety Equipment Suggestions:

- Reflective vest
- Seat belt
- Road work a head signs
- Hard hat
- Radio or phone
- Close fitting clothing
- Work gloves
- Ear protection and safety work shoes

SOLID WASTE COLLECTION SAFETY

Advice for Crew Members

- Work smoothly when loading the packer. Jerking tends to increase the possibility of back injury.
- Don’t ride on the jump steps, except for rides of one block or less. Ride in the cab.
- Never ride in the hopper. Packer blades have been known to cycle on their own during transit.
- Handle with extreme care those containers that have rusted bottoms, steel splinters, or other similar hazards. Report these containers to the route supervisor.
- Be especially observant for containers that are frozen to the ground in winter.
They can cause severe strains when lifting because the effective weight may be eight to ten times the actual weight.
- Watch for nails and splinters when gathering scrap.
- Do not lift bags from the bottom. Broken glass tends to settle to the bottom of the bag and could result in an injury.
- Do not lift cans or bags over fences or hedges. Walk around these barriers.
- **ALWAYS WATCH FOR TRAFFIC.**
- Dump containers from your hip level whenever possible. This position results in the least back strain.
- Do not antagonize animals. If an animal bites a worker, identify the animal and attempt to find out where it lives. The animal should be checked for rabies.
Do not attempt to catch it—leave that to Animal Control.
- Do not throw empty cans from the truck to the sidewalk or full bags from the curb to the hopper. You may hit your partner coming around the truck.
- Do not reposition material in the hopper.
Keep you hands out of the hopper because of danger of recycle.
- Remember, recycle is more likely as the packer approaches capacity.
- Do not hold onto or ride the loading sill. The packing cycle may self-actuate, which would result in injury to fingers, toes, or any other part of the body that is in the way.



- Do not jump from, or onto, a moving truck.
- Observe the packing cycle. Make certain that the motion of the packer blade will not endanger yourself or another worker.
- Know where the emergency stop controls are and how to operate them properly.
- Do not override or disconnect the safety controls. If they are not working properly, get them fixed. They are there for your protection.
- Do not scavenge. You may get caught in a recycle.
- Use a shovel and broom rather than your hands to clean up a spill.
- Stand away from the opening to avoid being hit by ejected garbage when loading the packer.
- Never stand under a raised hopper unless it is properly blocked and supported.
- Never drive the truck with the hopper in a raised position. The truck is very unstable at this time due to the high center of gravity.
- Lock out the controls and keep the keys with you at all times if you must enter the packer body.
- Do not handle suspected hazardous materials. Report them to the route supervisor for disposal.
- Do not let civilians congregate around the packer.

Advice for Supervisors

- Ensure that the riding steps are self-cleaning, of adequate size, and within the body line of the truck to provide safe transport for the riding crew for short distances.
- Locate handholds in areas that are not awkward to use.
- Enact and adhere to a garbage can standard.... Standards might specify can size, weight, capacity, location, and condition. This will help minimize worker injury.
- Design the collection routes, whenever possible, for right turns and right side collection only. This is a good way to prevent traffic conflicts.
- Watch carefully for alcohol or drug abuse. Supervisors who knowingly permit an employee to work under the influence of alcohol or drugs may also be subject to disciplinary action

and possible personal liability.

- Report animal bites to Animal Control.



Kansas Facts about Methamphetamine

- As of July 2008, 45 dumpsters were found and 38 Lab Seizures occurred in Kansas - *Kansas Bureau of Investigation*
- In 2005 Kansas was ranked 9th in the nation in the number of meth labs seized. - *Kansas Bureau of Investigation*
- Methamphetamine is second only to alcohol and marijuana as the drug used most frequently in many Western and Midwestern states. - *DEA*
- Things to look for involving a meth lab include, batteries that have been peeled open, converted soft drink containers, over-the-counter cold medication packages, blue-tinged valves, or frost on propane bottles, coolers and fuel cans. - *Kansas Department of Health and Environment*
- If you come across a meth lab DO NOT pick up or open containers, DO NOT bother the site, LEAVE the area, and CONTACT local law enforcement. - *Kansas Department of Health and Environment*

Safety Equipment Suggestions:

Safety glasses or face shields

Hard hats

Safety shoes with cleats

First aid kits

Heavy gloves with palm and knuckle protection

Safety vests

CONTACT LENS SAFETY

Managing Safety: Protecting Wearers of Contact Lenses



Business 21 Publishing: Safety for Supervisors, July 14, 2008 Vol. 6, No. 18

When handling and working around hazardous chemicals, you may think contact lens wearers should take out their contacts and wear glasses instead. But that's not always true. Unless banned by regulation, employees can wear contact lenses when handling

hazardous chemicals provided that certain safety guidelines are followed.

Protect everyone.

- First and foremost, provide eye protection for all workers exposed to eye injury hazards, whether they wear contact lenses or not. For chemical vapor, liquid, or caustic dust hazards, minimum protection consists of well-fitting, non-vented or indirectly vented goggles or full-face piece respirators.

Take note of lens wearers.

- Supervisors should know who wears contact lenses to ensure that the proper eye protection and first aid equipment are available.

Provide medical attention.

- Train first aid personnel in the removal of contact lenses. In the event of chemical exposure, begin eye irrigation immediately and remove contact lenses as soon as practical. It is not necessary to delay irrigation while waiting for contact lens removal.

Watch for trouble.

- Instruct employees to remove their contact lenses at the first signs of eye redness or irritation. Contact lenses should be removed only in a clean environment after the wearer has washed his or her hands. Evaluation continued lens wear with the worker and the prescribing ophthalmologist or optometrist. Encourage workers to routinely inspect their contact lenses for damage.

- Source: National Institute for Occupational Safety and Health (NIOSH)

Special Considerations for Weather Conditions

Summer Days

- If you must work in the heat, wear loose, lightweight, light-colored, layered clothing to help keep your body temperature down. This type of clothing reflects heat and sunlight and helps your body maintain normal temperatures.

- Layered clothing slows dehydration and minimized exposure.
- Drink plenty of water to avoid dehydration.
- Take frequent rest breaks. Humidity and heat decrease your body's endurance level by adding extra demands on your heart to cool your body, causing many to suffer from heat-stroke.
- Wear a hat/cap – one that protects your neck and ears from sunburn.
- Use sunscreen and wear sunglasses.

Rainy Days: Keeping dry and safe when working in the rain?

Proper planning.

- To avoid condensation two important elements need to be considered in regard to your raingear: sizing and design. Worker visibility is also a major consideration in rainy weather.

Sizing:

- A slightly oversized suit with a vented cape-back, adequate sleeve size and room inside can make the garment pump hot air and moisture out of the rainwear system when you move. Likewise a rain suit that is too tight may be responsible for many condensation problems and water leaking into your suit.
- Breathable material for the exterior of the suit will make more difference in your comfort due to the suit's capacity to allow water to escape but still prevent it from returning.

For more topics on Safety check out the Summer 2008 edition of the KUTC Newsletter.