Hand Tool Safety for Surveyors

Hand tools include power tools and non-power tools. In both cases, the goal is to prevent injury, especially to your eyes and hands.

In general, for all hand tools and power tools, you should wear safety glasses and gloves. Where digging tools or M.H. Hooks are used, steel toed boots or Survey issued toe protectors are to be used.

Ear protection should be used in all cases that involve hammering noises.

- **Sledgehammers**: Check handle for splintering or other damage. Be sure head is secure. Keep your eye on the target; you will be less likely to smash a finger. Occasionally, a piece of gad or concrete might become a missile and lodge in your skin or eye if not protected. Stand back from the one swinging the hammer. Make sure that the area around you is clear before you swing the hammer. Let the weight of the hammer do most of the work, especially if you are doing a lot of staking. Bend your knees at impact to ensure a level blow to the intended target. This will save your back, hands, and shoulders.

- **Power Jackhammer**: This is used on the monument rig especially when you need to cut through street. Gloves are advised. Safety glasses are recommended to deal with dust.
● **Grinding Wheel**: Do not use unless trained. After being trained, if you are sharpening chisels, drills or brush hook blades, hold the tool by the handle, not the blade. Wear safety glasses and gloves when sharpening tools. Stand to the side of the wheel so that, in the event that the blade gets thrown, it misses you. Feed the blade to the wheel slowly so that the blade does not get carried off by the wheel into the guard and then thrown or draws your hand into the guard. Be careful not to overheat the tool and destroy the temper.

● **Handsaws**: Wear gloves and safety glasses. Saw with the sharp edge away from your body. Anticipate where the blade will go from a consideration of the direction of pressure. Feed the blade slowly so that it doesn’t grab and let go in an unanticipated manner and cut you. Beware because you can not only cut off fingers or hands, but you can hit an artery.

● **Star Drill, Chisel**: Wear safety glasses and gloves. Watch your target. Keep your blades sharp. Check for mushrooming prior to and during use. Do not use if mushroomed.

● **Power Drill**: Wear safety glasses and gloves. Hold the drill firmly so it doesn’t get away from you. Listen to it cut and feel it while it cuts, so that you can cut power immediately if it grabs and starts wrapping around. Discard or sharpen dull blades.

● **Machetes, Brush hooks**: Give your co-workers plenty of clearance. Swing the blade away from them in the event the tool falls out of your hand. Don’t swing the blade toward you or it might reach its target! Wear gloves and safety glasses. This is not just to protect you from the blade, but to protect your hands when they (occasionally but inevitably hit a branch), and to protect your eyes from getting poked by a branch.

● **Wrenches and Socket Drivers**: Generally wear gloves since your hands can bang on a nearby surface in the event that your tool lets go unexpectedly.
● **Maintenance Hole (M.H.) Hooks:** Make sure handle is welded securely. Check that the bend at the end of the hook is adequate. Strike the Rim of the M.H. with a sledgehammer (see Sledgehammers above) to ensure that the M.H. lid is loosened prior to attempting to pull it open. Insert M.H. hook into hole in the M.H. lid. Pull with your legs and a slight jerk of your arms. The lid should pop off easily. If the lid does not move, return to step one. After loosening the M.H. lid pull/drag the lid with your legs to a safe spot within your work area.

● **Digging Bars:** Use gloves, protective glasses and either steel toed boots or toe guards. When striking the ground be aware of the type of surface that you contact. Asphalt, rock or concrete can ricochet and can strike you, another crew member or passing cars. Because of its weight, rotating personnel will alleviate accidents due to fatigue.

● **Shovels:** Use gloves, protective glasses and either steel toed boots or toe guards. Even with toe guards, a heavy soled boot should be used. Stepping on a shovel to add weight can injure the sole of your foot without proper footwear. Asphalt, rock or concrete can ricochet and can strike you, another crew member or passing cars. Because of its weight, rotating personnel will alleviate accidents due to fatigue.

● **Picks:** At times a pick may be used to break up hard surfaces. Use gloves, protective glasses and either steel toed boots or toe guards. When striking the ground be aware of the type of surface that you contact. Asphalt, rock or concrete can ricochet and can strike you, another crew member or passing cars.

● **Single Jacks and Hammers:** When setting spikes, nails, lead and tags, wood stakes, lath or any other objects with a hammer or single jack, safety glasses should be worn. The weight of the single jack should be taken into account when striking chisels and drills due to the tendency to rebound. All precautions listed under “Star drills, Chisels” should be followed. Be careful when holding the stake/spike with the other hand not to smash a finger or thumb.

● In using tools that are especially hazardous or which require a lot of skill: Get training first! These include, e.g. a skill saw and all power saws, and staple guns, grinding wheel.