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Water

Your Daily Life is Your Trade

Exercise your trade in daily life. Apply these values to life and trade. Learn to fix, manufacture, repair what you can and seek assistance otherwise. As you learn more you can apply new skills to your trade and improving your trade can bring value to your daily life.

Your Mind is not Your Body

As a Technician your skills lie in your mind and not your body. Keep your mind clear to understand technology and devices. No matter how ill or frail your body, your mind can still understand the process of technical trades.

Keep Mindset Clear Of Effects

Since your trade relies on your mind; keep it clear of confusion, doubt or distraction. Stay relaxed do hurry or rush your thoughts no matter how rushed your body may be.

Focus On Mindset

Heed your own thoughts and advice. Be mindful of your thoughts and condition. Do not distract yourself by overthinking a situtation.

Expand Mind, Encompass All

Take in all you perceive. Understand the situation and what is happening around you, do not cloud your thinking with minutae. Study your trade and take in all the knowledge required. Do not learn uneccessary facts and rumors. Learn skills of related fields to enhance understanding of your own.

Others Do Not Affect Mindset

Keep your mind clear of the influence of others. Do not allow their preconceptions or doubts become your own. Do not ignore advice but seek out your own answers. Agree with advice you find to be true, otherwise do not.

Hone Wisdom, Recognize Flaws In Work

Take in the experience of your trade. Learn to recognize the flaws and mistakes of your performance and the performance of others. Understand what is wrong and right in your trade.

See Detail In Broad Work

When veiwing the complete work, see the details of the process used to make the work. Understand how each process is used to complete the work.

See Broad Work In Details

When veiwing any work process, see the final form of the complete work. Understand how complete the work is comprised of each process.

Keep Body As One Piece

Your body is one combined whole. It is not segmented or divided by any limb or boundary. While most trades do not require use of the full body, be mindful of your muscles and how they work. Proper use of muscles from any part of the body will make it easier to use tools and maintain posture while performing your trade.

Posture In Work

Keep yourself aligned according to spine and straight. Do not bend or lean except as needed to perform your trade. Proper alignment and posture prevents injuries to yourself. Proper movement in performance prevents injuries in others. Being mindful of your movement and movements of others prevents injuries.

Daily Posture is Your Work Posture

Good posture is required for both your trade and daily life. To maintain your body and health is beneficial when performing your trade or in life at home. Practice in one brings benefits in the other. Maintain good posture when at home or at your trade.

Keep Firm Footing

As well as your posture, be mindful of where you stand. Be aware of dangers around you and where you place your feet. Do not lose balance by maintaining a posture on your toes or balls of the feet and do not rock on heels. Always keep your footing firm and flat on the workspace floor.

If working on another surface, such as a roof, remember to keep your footing firm and flat to the surface on which you stand.

Like posture, this will prevent injuries to yourself and others.

Left/Right Movement

As you travel, walking or otherwise, remember to alternate steps between left and right feet. As you work with your hands remember to pass tools or work between them.

Do not juggle work or tools in your hands. Do not run, jump or other forms of horse-play in a workspace. Be mindful of your travel and do not interfere with others in the workspace.

Use tools as you would any other instrument, do not be concerned with handiness. When gripping tools, use them in the hand you are normally dominant with or the hand closest to the work. Do not use the hand farthest from the work, use the farthest hand for stabilizing the work or yourself.

Orientation/Positions

Keep yourself oriented in front of the work. Do not perform from a position that does not allow access to the work. Stand firmly in front of the work and remain focused on its position related to your own.

Don't Think Positions, Think Work

Do not focus on your position. It is a natural state. Focus on the work to be completed, it should be natural to be in the correct position as you perform your trade. Concentrate on performing your trade.

Just as you don't cloud your mind with overthinking, do not overthink your position.

⬆,⬌,⬇ "solid" Positions

To perform from a position above or below the work is aligned along the spine and a stable position. You can keep the load of the work along the spine for support. Keeping the work near the waist or lower torso is stable and at available reach. This is true even of seated positions.

The Upper Position is between the arms at chest height.

The Lower Position is near the waist but not below or to the knees.

The Middle Position is between the two others.

Do not place the work above your head or shoulders.

Do not place the work below the waist or knees.

This will prevent injuries.

⬅,➡, "fluid" Positions

Positioning yourself to the left or right of a work is good for passing work between process or when moving around the work. These positions allow for adjustment of workspace placement and tools. While not solid or benefiting from stability or strength of the spine, it follows the rotation of the waist and is a natural movement.

⬌, Middle Position Is Best

For overall strength and some access to waist rotation, the Middle Position is the best position to place yourself relative to the work. Unless otherwise required to perform your trade, or the process of the work, try to maintain this position.

Position is No Position

Just as you focus on performing your trade and not the position relative to your work. You should not also think of taking a position or changing positions. It should be a natural flow of movement and not an individual change between phases or steps. As you perform your trade and conduct a process, your position should change as neccessary.

Any Position Requires the Same Tool Use

Your position does not change how a tool is used. Use a given tool the same way in any position you take. To do so otherwsie will cause injuries to yourself or others.

Teams Share the Same Positions

Each member of a team performing the same trade should maintain the same position. Only maintain a different position if the process you are performing is different than the process of the others. Maintain the proper positon for your process. This will prevent injuries to yourself and others.

Hold Tools But Keep Loose

While firm grip of tools is required be sure to hold them loosely. There is a difference between a grip and a hold. Do not lock your muscles or limbs, allow them to move. Your muscle must move freely to perform a trade. Also as tools may be powered by motors or electricity, being able to drop a malfunctioning tool or a tool that has missed the work, may be important.

Path Of Tools

Your body must move to use a tool. The tool moves within a given space to perform its use. Be mindful of this path. Do not allow this path to miss the work or to strike yourself or another in the workspace. This will prevent injuries to yourself and others.

A tool that is electrically powered does not alter its path, be mindful of this.

A portable tool has a path you control, be mindful of this.

Tools That Cut

Saws, knives and similar tools cut materials. It is a slicing motion or a sawing motion back and forth, perpendicular to yourself. Keep its path clear except for material that is to be cut. Do not allow any other material or person in its path.

Some saws cut on the forward motion (towards the work), others cut on the return motion (towards you). Be mindful of when a tool cuts.

Tools That Blow

A hammer, and similar tools, strike or deal a blow to material. Its path is perpendicular to the work. Be mindful of the stroke away and towards the material.

The work may cause the hammer to "bounce" from it. This is the return path. Be mindful of the hammer's return path towards you or another.

Tools That Twist

Drivers, screws or ratchets are forms of twisting tools. These tools rotate and apply a force perpendicular to the work either to the left or right. Drills and wrenchs are also rotating tools.

Drills apply two forces, one perpendicular (cut) to the left or right of the work and another perpendicular (blow) to the work vertically.

The path of such tools are small and do not drift much from the work. Be mindful that the tool does not slip from its postion, it is not meant to do so.

Tools That Lever Tools

There are tools that apply a force between materials. The crowbar can separate two materials and the pliers can join two materials. Their purpose is either to move or reshape a work. The tools have a path near the work and are perpendicular to the work.

Tools That Punch

Similar to a hammer, punching tools like an awl or punch, will apply a force to pierce a material and leave an opening. They specifically reshape a material to allow another to pass through. Their path is easy and simple but blind, be mindful of what is behind or beneath the work.

Tools That Heat

Soldering irons, blowtorches or heat guns apply heat and may burn material. They possess no path and must touch the work directly. Be mindful of their placement and temperature to both protect the work and yourself or others.

They should only apply the amount of heat required by the process.

Tools That Shock

Power supplies or batteries are tools that apply an electrical charge to a circuit or device. They supply voltage to operate equipment, power tools or the work being completed.

Be mindful of the electricity and only supply, at appropiate ratings, what the process requires.

Tools That Measure

There are tools that process no work and are only used to provide metrics. Rulers, meters or oscilloscopes will provide measurements of the process as it is performed. This information is compared to specifications to verify work has been completed as designed.

Be mindful that this is to verify the process and work, it does not verify or measure the tradesman or his performance. There is no path for these tools except the path of the work itself (usually in parallel to the work).

Be mindful of all measure marks and specifications, these indicate where the process or tools are to be applied.

Tools That Calculate

There are tools to process data or calculate values. The simplist of these would be an abacus or calculator to the more complex personal computer (PC). These tools have no path but process information regarding the work.

Computers can also control or automate the use of other tools. This does not change the use or path of those tools. Any tool controlled by a computer must still use the same path and be used in the same manner as by hand. This does not reduce the amount of work required to complete a work. Even if the Tradesman is not performing the process himself, it must still be done to complete the work. Do not treat the process as if it not performed or measure as if no time is required. Automation does not remove the process only changes who performs the process.

Tools that Sense

Magnifying Glass, microscope and even lights can either grant vision or enhance the vision of the tradesman. Some tools such as cameras can record this vision. These tools have no path but require an unobstructed view of the work. Treat this vision as a path and be mindful of it.

These same requirements apply to tools of other senses such as hearing (microphones).

Standard Tool Forms

The Pistol Grip; tools such as powered tools or some saws have a gun-like grip. No motion is required for power tools but the saw is pushed or pulled by this grip. Other tools make use of a trigger to control an electric motor.

The Pencil Grip; tools such as the soldering iron are held as you would hold a pencil and applied in the same manner. The probes of meters and scopes are also held as such.

The Can Grip; tools such as screwdrivers or similar twist tools are gripped liek a can of soda or a doorknob. Loosely around the body of the tool and motioned in a twisting fashion.

The Pole Grip; most lever tools have a grip like that of a pole or handrail. Like the Can Grip, except that the entirety of the tool and maybe part of yourself is motioned to exert force. Hand tools like pliers have a similar grip but are squeezed. This also applies to hammers which have a Pole Grip likened to a baseball bat.

The Instrument Grip; some tools such as computers, scopes and other diagnostic equipment are used as a typewriter or musical instrument. They possess buttons, knob and switches to control functions. Be mindful of all settings and configurations. Leave all equipment as configured for the process required.

Any Tool Use is Work Production

No matter what tool you use, use it to produce work. A tool is not used for any other purpose. To use a tool in manner other than it is designed is incompetence. Do not cause incompetence.

Specific Techniques Of Tools

Some tools have specific characteristics or styles to be learned. This list is not complete, and as tools are developed, it never will be. Always learn the properties of your tools and the techniques to use them.

Straight cuts, for saws and other cutting tools, otherwise the cut made in the work will be curved or at an angle. Always keep the saw perpendicular to the work unless otherwise required by the process.

Threaded twists, as some twisting tools are threaded; one can reverse the twist until a click can be heard or felt. This is the threads of the tool falling into place. Once aligned the twist can then be performed in the correct direction until fastened. This prevents stripping of threads from bolt, nut, screw or threaded hole.

When soldering be mindful of the color change of the metal. As the metal heats it changes color. Watch as the edge of this change flows along the material. Once the change hits the insulation of wires, Stop, the heat has reached the limits and any more will melt the insulation.

When soldering keep the solder perpendicular to the pad and component. The flow should be a smooth curve of 90 degrees. Be mindful not to flow solder to another pad or part.

When soldering stranded wire, only flow enough solder to blend in with the strands. If the number of strands can no longer be seen and resembles a solid wire, you have flowed too much.

When soldering connectors, always crimp a good mechanical connection and flow solder for a good electrical connection. Unless the process says otherwise. Do not flow solder on insulated connectors, it will melt the insulation.

When soldering for signal paths (radios or computers), use silver-based solder and not the normal lead-based rosin core solder, it will handle signals better and give better perfomance.

[?? This section to be revised as techniques can be expanded.]

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