SAFETY CHECKLIST A list of some common and not-so-commonplace places to find hazards in your distillery.

FACILITY

- Use and maintain proper personal protective equipment (PPE): gloves, face shields, boots, and eye protection are some examples. (See the Occupational Safety & Health Administration website for comprehensive PPE regulations: https://www.osha.gov/SLTC/personalprotectiveequipment/index.html.) Wear leather welding gloves and a shirt with long sleeves when lighting burners or handling hot objects. Wear eye protection and latex gloves when handling raw products, high-proof alcohol or chemicals. Wear anti-static clothing or matting—low humidity and certain fabrics can cause a static discharge. Some synthetic fibers can burn onto skin when exposed to heat or chemicals. Always wear closed-toe shoes with nonskid soles in production areas. No flip-flops ever.
- Before light up—Have adequate ventilation for alcohol vapors. Open sliding doors, and turn on vent fans. Note: Vent fans should be positive pressure, not exhaust type fans—this is because alcohol vapors are "heavier than air," and will initially collect close to the floor. Ensure a minimum of five air exchanges per hour in the still house. Secondly, you do not want to suck ignitable vapors through a general-purpose (sparking) fan motor.
- Use a dust-collection system or exhaust fan in milling areas and make sure it is operating before starting to grind or process grain. Grain dust is highly flammable so never allow it to accumulate or coat the milling area.
- Store all finished (proofed product) as well as collected distillate or aging product in a separate area, away from the main distillery. Install lightning rods on buildings. All metal tanks must be electrically grounded to dissipate static electricity. Avoid the use of plastic totes and plastic buckets—these can build up large amounts of static charge on the plastic surface (Static spark + vapor = explosion). All tanks must be vented to outside the building. Install a flame arrestor on each vent. Do not splash-fill from one container to another container (splash filling generates a static-charged vapor cloud). Store distillates away from heat areas, burners, electrical sparks and other possible sources of combustion. Do not store high-proof alcohol in glass carboys, or glass of any kind. Glass fails catastrophically, and creates its own hazard with sharp fragments.
- Test for electrical faults everywhere, and particularly ground faults near wash bays and other wet areas. Do not use general-purpose (household type) electrical items in your distillery, i.e.: plugs / wiring / motors / switches / instrumentation. General-purpose electrical items all produce sparks, which will ignite vapors. Areas within your distillery that have occasional exposure to vapors—As per the National Fire Protection Association (NFPA) code, such electrical equipment must be a minimum of Class 1, Div 2; and for areas that have a continual exposure to vapors, the electrical equipment must be Class 1, Div 1. For this you need the assistance of a knowledgeable electrical engineer to produce a stamped "Electrical Area Classification Drawing," followed by a licensed electrical contractor to do the electrical installation to NFPA Code.
- Keep a regular schedule of maintenance and inspection for all distilling equipment (welds, gauges, pressure relief valves, heat sources) and boilers. Have an OSHA-trained boiler inspector examine any stills that were not made by long-established companies.
- Maintain a fire-suppression system that is of adequate size for your growing enterprise. Work with local fire marshals to best understand safe storage, handling and processing practices for flammable materials.
- Vent piping for both the final vent and the pressure relief valves should be directed outside the distillation room, in separate pipes without obstructions.
- Interlock boiler operation to a VOC meter in the still house.
- Prevention of fire and explosion within a "Hydrocarbon Processing Facility" (your distillery) is more than just meeting the building and fire codes—in general, the building and fire codes assume that your facility will catch fire, and their interest is only in dealing with the aftermath. To tackle the subject of the prevention of fire and explosion you will need to engage the services of electrical and mechanical engineers who are knowledgeable in American Petroleum Institute (API) and NFPA codes.

BE PREPARED

- Make sure whoever runs the still knows that particular unit completely. Read and understand the owner's manual. If you have an issue not described in the owner's manual, contact the manufacturer.
- Get training in general food-processing safety for at least one member of your staff.
- Any employee who uses a forklift should receive proper training.
- Record and review all accidents and near accidents or close calls for your own education. Remember the situations so as not to recreate the conditions that make accidents likely.
- Have a safety plan in place for likely accidents and potential emergencies!
- A must-have for your own reading is a copy of the manual "DISCUS—Fire Protection Practices for Distilled Spirits Beverage Facilities (3rd Ed.)." You can purchase this online from The Distilled Spirits Council (http://www.discus.org/policy/fireprotection/) for the modest cost of $150. It is highly recommended and well worth the read.

DEVELOP GOOD HABITS

- Always know where tour groups or visitors are at all times. Visitors drinking high-proof spirits can be dangerous, for many legal, liability and health reasons. In case of an accident, know where all visitors are at all times.
- Always check surrounding areas, especially before lighting burners or bringing a still up to temperature for distilling. Remain diligent to keep paper, cardboard or other flammables away from burners and heat zones.
- Keep a steady check of gauges, for distiller pot temperature, column temperature, etc., any time that you are running equipment. Never leave a running still unattended.
- Always use the right tool for the job.
- Always lift safely, using your legs and not your back.
- Avoid working alone. If an accident happens, you want someone around to call for help.
- Stay out of your supply: No drinking when operating distilling systems.
- Be smart, work safe, communicate with the people you work with and know what they are doing.

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"As we leave today and as we go on, please be your brother's keeper, because that's what we are—we are basically a family." –Jeffrey Holmes