

This training is for anyone who wants to use the Automotive Area. Lift training is not included, and requires another class.

### **I. Rules:**

A. Only member's vehicles and immediate family members vehicles are allowed in the Automotive Shop.

B. Remove all used fluids from the Space when you are done. Used oil can be dropped off at any auto parts store. Take coolant and brake fluid, and any other fluids, home with you.

C. Clean up the space, and return ALL tools to their proper place before leaving the Space. Remember; there are cameras on the area at all time, recording video. Do not make us have to watch hours of video to determine who left a mess!!

D. Spilled fluids must be cleaned up immediately. Absorbent material is available in the white can. See additional information below.

E. Coordinate with the other vehicles in the shop. Do not block-in another member. Be excellent to everyone.

F. Extremely loud exhausts are not allowed inside the building. If you have an extreme exhaust you must stop the engine outside the shop and push the vehicle inside. Use your judgment; if someone can complain that your vehicle is too loud, they will complain.

G. If you have to leave your vehicle for any period of time, you MUST put a note on the windshield with your name and phone number, and when you expect to return.

H. You cannot leave a vehicle in the shop overnight. If you are actively working overnight, that is acceptable. You cannot leave a vehicle in the parking lot overnight.

I. Spray painting is strictly forbidden at Makerspace. This is a BoD rule and must be strictly observed. Do not spray paint anything at the Space. Take it home and paint it there. Powder coating is available at the Space.

J. Dispose of all used parts either in the Dumpster, or take them home. Do not put used parts on the Donation Shelf. Do not fill trash cans with heavy parts; take them to the dumpster.

K. Some Nalgene (thin rubber) gloves may be available in the Shop. Please use them sparingly. They are not free. Donate a dollar when you take a new pair.

L. Playing music in the Shop is allowed, HOWEVER:

1. No extreme bass speakers allowed. If you can hear the thump-thump outside the Shop, turn it off.

2. Playing music is not a right. If even ONE person complains about the type of music, the volume, or anything else, shut it off. Be excellent to each other.

**II. Safety and Potential hazards.** You should always wear appropriate safety equipment when working in the Shop. Wear safety glasses at all times. Always wear closed toe shoes. Gloves should be worn whenever possible (but not with some power tools). Show good judgment and think about what you are working on and consider all the possible ways that something could hurt you or others. Specific hazards include:

A. Foot injuries, from lowering the lift, dropped tools, and rolling tires. Wear only closed toe shoes, and consider steel toe boots.

B. Hand injuries, from machinery or the vehicle. Keep your hands away from moving parts, fan belts, and cutting tools. Be aware of where your hands and feet are at all times. Keep hair, loose clothing, fingers, and all body parts away from moving parts of the car and the lift.

C. Head injuries, from striking the machinery or vehicle, falling components or tools. Wear a cap when working under a car. Consider wearing a bump cap or hard hat.

D. Eye injuries, from sharp objects, chips, dirt, and fluids under the car. Wear safety glasses, or goggles. Wear eye protection when working under the vehicle.

E. Crushing injuries from falling vehicle or collapsing lift. Ensure cars are supported two ways when on jack stands. Never work on a vehicle supported only by a jack; always use jack stands. Leave jacks in place, loose, for back-up support. Insert loose wheels under the car as an added safety measure.

F. Keep other people away when working under a car. If cars are pulling in or going out, get out from under the car until they are away.

G. To reduce the risk of electric shock, do not use electric tools in the wet.

H. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline, diesel fuel, oil, etc.). Spilled flammables must be cleaned up immediately. Keep a fire extinguisher close at hand when working with flammables. Know where the fire extinguishers are kept.

I. Be aware that some processes will change the center of gravity and the stability of the vehicle. Removing the engine, transmission, rear axle, shock absorbers, or other major components require special planning. Use the jack stands to stabilize the vehicle.

J. Check the brakes and steering before backing out. After working on the brakes they may have to be pumped a few times before they are effective.

K. If something catches fire which is not supposed to be on fire, do not hesitate to use a fire extinguisher to put it out. Red fire extinguishers are ABC type, suitable for oil or grease fires, as well as for paper, wood, etc. Yellow extinguishers (in Metal Shop, and Machine Shop) are specifically for extinguishing metal fires (magnesium, aluminum, thermite, titanium, plutonium, etc).

L. Think about what you are doing. The best safety device in the Shop is located directly

between your ears. Use it every day.

### **III. How to clean up**

A. Use oil absorbent to soak up any spilled fluids. Scrubbing the oil absorber into the concrete with the back of a push broom is a very effective way to remove oil stains. Sweep up the oil absorber and either dump it back into the white plastic bin, OR, if it is saturated, into the dumpster. Do not deposit large quantities of absorbent into trash cans; put it in the dumpster.

B. Antifreeze and water can be sucked up using the wet/dry vacuum. NEVER suck up ANY flammable fluid with the vacuum. This WILL cause a fire!!! Empty the vacuum into the janitor sink, and clean it out, when you are finished.

C. Water can be mopped up, using the bucket and mop provided. Do not mop oil; use the absorbent first. There is a janitor sink in the hallway outside of Sewing. Dump dirty water after mopping, and refill with clean water before putting the mop and bucket away.

D. Use the power floor cleaning machine if large areas of the floor are oily or very dirty. Training on how to use the floor cleaning machine is available.

E. Use the parts cleaning machines to clean parts. Do NOT clean parts in the Vapor Hone in the Metal shop. Wipe down and clean off any work benches that you use.

### **IV. Tools, etc.**

A. Replace all tools in their proper locations REGARDLESS of where you found them. No tools are stored on work benches. If you find a tool on a work bench, and no one is using it, put it away. If you do not know where it goes, ask someone, or leave it on the designated shelf. When cleaning up, put away more tools than you got out. This will keep the Shop clean and organized so that everyone can enjoy it.

B. Report broken or missing tools using the standard procedure on Talk. Always flag your posts with "[Team@Automotive](#)". This will ensure that the Committee is notified of a problem.

C. If you need a tool that we do not currently have, consider coming to an Automotive Committee Meeting to suggest it. Meetings are monthly, and posted in the Events calender. Sometimes, there is pizza.

D. If you have any tools or materials which you would like to donate to the Space, please ask the Committee Chair first. Do not just drop off items without permission. Contact the Committee through Talk, or send a message to the Chair.

E. If you are planning on doing a major project (for example, an engine swap, replace a transmission, or front end rebuild), consider asking for someone to help you, especially if you are doing something for the first time. Post something on Talk, talk to the Chair, and visit with the other members of the Committee. You are much less likely to have a major problem, run out of time, or get stuck waiting on a part or a tool, if you have other people available to help out.