

SAFETY

Safety in an automotive shop is something that must be practiced at all times. To operate safely you must first know and understand what the dangers are, and then you can practice work habits that make the shop a safe place in which to be. Most safety practices are just plain common sense.....

SAFETY: - freedom from danger, risk or injury.

ACCIDENT: - an unintentional event causing injury or damage.

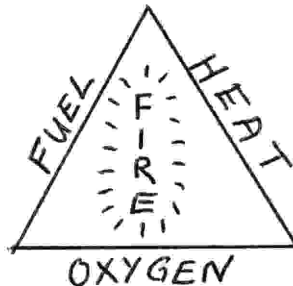
FIRST AID: - immediate, temporary care of a victim until qualified help is available.

***** PREVENTION RATHER THAN CURE *****

***** NO HORSEPLAY IN THE WORKPLACE *****

FIRE:

With flammable fuels and solvents ever present in the autoshop you must be constantly on the alert for any possibility of fire. Fire can be fatal, it can disfigure you permanently, and it can be expensive!



The above triangle represents fire. Fire can only exist if all three ingredients are present. Remove any one of the three and the fire will be extinguished.

CLASS A FIRE: Ordinary garbage/rubbish type, wood, paper, etc.. It can safely be put out with water.

CLASS B FIRE: Flammable liquids such as gasoline, kerosene, solvents, paint thinners etc.. They should be extinguished with a dry powder or CO2 type of extinguisher..NEVER WITH WATER..(spreads fire)

CLASS C FIRE: Electrical fires (wiring). You should only use a dry powder or CO2 type extinguisher... using water could get you electrocuted if the voltage is high enough!

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CLASS D FIRE: These flammable metal (magnesium, sodium) type fires can produce vast clouds of smoke that can cause you to be confused and to suffocate. They can be extinguished with CO2 or dry powder or smothered with earth or dry sand.

FIRE EXTINGUISHERS: Make sure that you know in advance how to operate them and always aim them at the base of the fire, NOT at the flames. They should be checked regularly to make sure that they are full and in operating order.

IN THE EVENT OF A FIRE: Notify someone immediately to get help. If the fire cannot be immediately controlled using the appropriate extinguisher pull the fire alarm.. DON'T WAIT UNTIL IT IS A BLAZING INFERNO..THE FIRST FEW MINUTES ARE IMPORTANT TO THE SUCCESS IN PUTTING IT OUT...

DO'S & DON'TS WITH GASOLINE:

DON'T try to extinguish it with water, you may spread it!
DON'T store gasoline in the house, the fumes can ignite.
DON'T use gasoline as a cleaner or solvent...the fumes!
DON'T try to start a car that has a gasoline leak..BOOM!
DON'T pour or transfer gasoline in an enclosed area....
DON'T smoke anywhere near gasoline fumes...BOOM!.....
DO only use CSA approved containers to store gasoline.
DO remove gasoline soaked clothing immediately...
ONLY store oily/greasy rags in approved containers.

ELECTRICAL PROBLEMS:

-Use correct extinguisher type.--NOT WATER--
-Notify someone, get help.(pull fire alarm if serious)
-Shut off power at source or it will rekindle fire.
-If there is a victim do NOT touch them until you are sure that the power is OFF or you may be next!
-If it is safe to touch the victim check to see that they are breathing.
-Report any suspect wiring to your instructor so that he/she may prevent a possible fire before it starts.
-Be careful when drilling into the lower sections of the car body, there may be water trapped in there..ZAPP!!!!
-Know where the power emergency stop buttons are, and at home you should know where the circuit breakers are.

***** REMEMBER THAT PREVENTION IS BETTER THAN CURE *****

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BRAKE FLUID: a very special fluid with special properties. From a safety point of view you should know that it is:

- a/ poisonous
- b/ harms your eyes (wash with water)
- c/ hygroscopic, that means that it absorbs moisture from the air which can after a period of time ruin your brake system.
- d/ it will also ruin paint if it is left in contact with it for any length of time. (Not dangerous, but damaging).

HOISTS:

- are NOT to be used without permission.
- require a safety stand if left in the up position overnight.
- are safest if the WEIGHT of the car is centered on them.
- when operating them you must give a loud, clear verbal warning that the car is going UP/DOWN.

POWER MACHINERY:

- is NOT to be operated unless you have permission and have been instructed in its safe use.
- must have all its safety guards in place.
- you MUST wear appropriate safety equipment such as eye and ear protection.
- must be switched OFF if you leave it unattended.
- must be unplugged or isolated before repairs or any adjustments are made.
- must only be used for its intended purposes.
- you should NOT stand in line with revolving parts.

AIR LINES:

- are NOT playthings
- must NEVER be aimed at anyone
- are NOT for cleaning clothing
- are NOT to be used to clean brake dust off brakes unless the proper collection system is in use. (brake dust is a recognized cause of lung cancer)
- spray out oil and water which can cause problems in certain circumstances.
- require that you ALWAYS wear eye protection when using them.
- can be LEATHAL if air is injected into a person.

RADIATOR CAPS:

- hold pressure in the cooling system, a sudden release of this pressure when the engine is hot can result in the release of boiling water/steam.
- a slow/careful release of this pressure can make it safe to remove the cap from a hot radiator.

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HAND TOOLS:

- should NOT be left on the floor.
- should be kept clean of oil and grease.
- should be kept clear of rotating machinery.
- should NOT be placed on top of a battery. (BOOM!)
- should only be used for their intended purpose.
- you should use the correct tool and size of tool.
- remember that a PULL is safer than a push.
- defective tools should be reported, NOT used.

GRINDERS:

- YOU MUST ALWAYS WEAR SAFETY EYE PROTECTION WHEN USING!
- wheels must not be cracked or used on their sides.
- the tool rest must be within 1/8" or 3mm of the wheel.
- small parts must be held in Vise Grips.
- you shouldn't stand in line with them when starting up
- you should report any problems to your instructor.

LIFTING (HEAVY OBJECTS):

- use your legs, NOT your back.
- if turning, move your feet.
- if really heavy get help.

ACCIDENTS:

- ALL accidents are to be reported to your instructor.

CLEANLINESS:

- keeping yourself, tools, and the floor clean can help to reduce the number of accidents in the shop.

AIR CONDITIONING:

- IF NOT SURE ASK!
- Freon gas in the system "boils" at -21 degrees and will freeze you skin or your eyes if it contacts them.
- the hoses look very similar to heater hoses but can be very dangerous if cut.

OIL & GREASE:

- you should wipe up spills AT ONCE. (prevent slipping).
- should only be stored in CSA approved containers.
- must be kept away from oxygen bottles.
- hands and tools should be kept free of them to avoid slipping and possible injury.
- fires require the use of type "B" extinguishers.
- keep both off of the car exterior and interior.

EXHAUST FUMES:

- carbon monoxide is: odorless, tasteless, invisible and POISONOUS!!!!!!!!!!
- the extractor system must be used on cars in the shop.
- catalytic convertors can get VERY hot. (2000 degrees F)
- if you're in doubt, get out into the fresh air.

- JACKS: - NEVER TRUST A JACK BY ITSELF, ALWAYS USE A SAFETY STAND(S) AS WELL. Even if you are only changing a tire, you may drop a wheel nut and chances are that it will roll under the vehicle.
- Bumper jacks are DANGEROUS and should only be used to change a tire in an emergency. They must not be used on modern unit-bodied cars as their bumpers are not designed to be lifted and you may tear them off!
 - When using a garage trolley jack always leave the handle in the vertical or "UP" position so that nobody trips over it.

CREEPER BOARDS: These boards that mechanics use to scoot around on under cars are more dangerous than skateboards and should not be left on the ground. When you are not using them stand them up against a wall or put them away. Do NOT push them under a car, you may drive over them.

SAFETY GLASSES / FACE SHIELDS: These protective devices MUST be worn whenever there is a danger to your eyes from flying particles. Eg...when using:

- a) grinders c) welding e) a hammer and chisel.
- b) air hoses d) soldering

CLOTHING / PERSONAL ITEMS:

- a) wear coveralls to protect yourself and the car.
- b) remove ties, fasten cuffs
- c) remove metal watches, rings and jewelry
- d) tie back long hair or wear a hair net.

PAINTING: Must be done in a well ventilated area and away from any flames or sparks. Spray painting should only be done in a proper spray booth. NEVER throw an empty aerosol can into a fire, it will explode. Solvent-soaked cleaning rags should not be kept in your house or garage unless in an approved container, they may self-ignite.

ENGINES (before starting):

- check that they contain oil and water.
- check under the hood for loose tools, parts, wires, etc. that may end up in the fan.
- attach the exhaust extractor if car is in the shop and switch on the extractor system fan.
- check that the transmission is in either PARK or NEUTRAL and the emergency brake is ON.
- do NOT attempt to start if there is a gasoline leak.
- do NOT prime the carb with gasoline in the shop.
- report anything unusual to your instructor.

BATTERIES:

- are ALWAYS to be considered DANGEROUS.
- contain acid and give off explosive gases.
- do NOT check the cell levels with a naked light.
- do NOT lay tools on top of them (BOOM!)
- use a proper battery carrying strap to move them.
- know the location of the emergency eye wash and how to use it.
- be extra careful when connecting or disconnecting things to the battery.
- do NOT hold a battery against your clothing, the acid will burn holes in them.
- do NOT boost a dead 6 volt battery with a 12 volt one , you may harm the other cars electrical system.
- always disconnect the GROUND cable before the other one, and always reconnect the GROUND cable last.

This is NOT the end of the safety program. Safety will be stressed in every lesson where it is applicable. You will be expected to act at ALL times in a safe and responsible manner in the autoshop. If you behave in a manner that seems likely to harm yourself or others you will be removed from this course at once.

NOTE: You may NOT leave the school grounds or go for a test drive during class time without your instructors permission.
Only those students who hold a FULL valid drivers licence may operate a vehicle in any manner.

Please remember that if you have any doubts as to the safety of something ASK!

DELTA FIRE DEPT.
FIRE PREVENTION OFFICE



- (1) Take time to think, quickly size up situation.
- (2) Get everyone out, call Fire Dept. at once!
- then if fire is still small, FIGHT IT.
- (3) Keep near door - so you have an escape.
- (4) Stay low - out of heat and smoke.
- (5) Aim extinguisher at base of fire.
- (6) Stay outside small rooms - shoot stream in.
- (7) Ventilate only after fire is out.

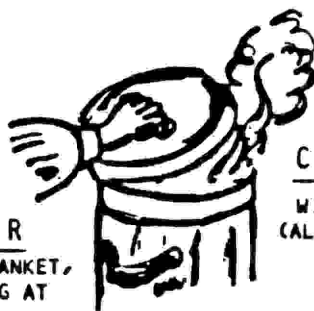
But if fire gets LARGE - get out, close doors!

CAUTION - NEVER DELAY REPORTING A FIRE - REMOVING PERSONS FROM IMMEDIATE DANGER OR CLOSING DOORS TO CONFINE HEAT AND SMOKE

INSTANT ACTION



SMOTHER
WITH TOWEL, BLANKET,
RUG OR ANYTHING AT
HAND AND QUICK



COVER
WITH LID
(ALWAYS HAVE ONE
AVAILABLE)



THROW A PITCHER
OR A BUCKET OF
WATER ON IT

EXCEPT NOT
ON HOT GREASE
OR ELECTRICAL
FIRES

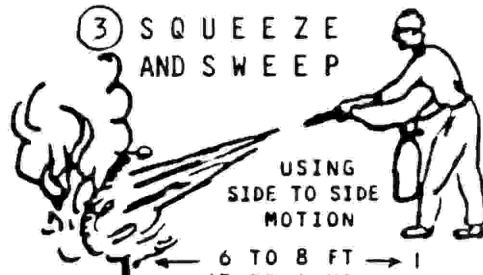
USING FIRE EXTINGUISHERS



① REMOVE FROM BRACKET
AND PULL PIN (BREAKING SEAL)



② HOLD UPRIGHT
AND AIM AT THE
BASE OF FIRE



③ SQUEEZE
AND SWEEP
USING
SIDE TO SIDE
MOTION
6 TO 8 FT - 1
(3 TO 4 M)
WATER EXTINGUISHERS 20 FT.

CAUTION - GAS AND CHEMICAL EXTINGUISHERS WILL OPERATE ONLY 9 TO 15 SECONDS EXTINGUISHERS MUST BE REFILLED AFTER EVERY USE - NEVER PLACE USED EXTINGUISHER BACK INTO IT'S BRACKET.

A ORDINARY COMBUSTIBLES
FOR WOOD, PAPER, CLOTH
TRASH AND OTHER ORDINARY
MATERIALS
GREEN

B FLAMMABLE LIQUIDS
FOR GASOLINE, GREASE, OIL
PAINT AND OTHER FLAMMABLE
LIQUIDS.
RED

C LIVE ELECTRICAL EQUIPMENT
FOR LIVE ELECTRICAL
EQUIPMENT, T.V.'S, STOVES,
DRYERS, COMPUTERS.
BLUE

USE WATER OR A.B.C. EXTINGUISHER
PRESSURIZED WATER - PUMP TANKS - STAND PIPE
FIRE HOSE - (WATER BUCKET - GARDEN HOSE.) ETC.

USE DRY CHEMICAL OR GAS EXTINGUISHERS
B.C. POWDER, A.B.C. POWDER, CARBON DIOXIDE,
HALONS, ETC.

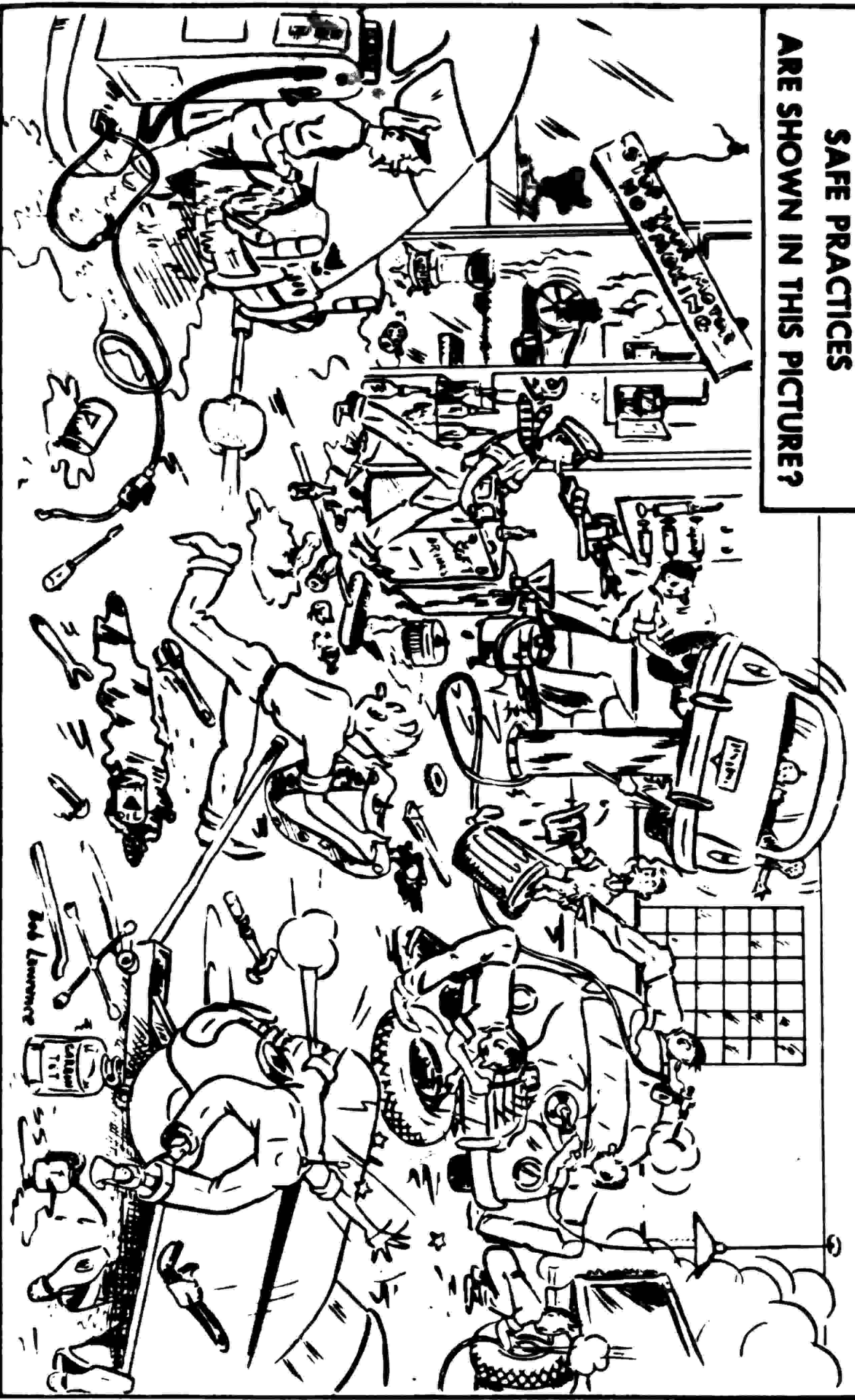
DO NOT USE WATER - (MANY TIMES
ELECTRICAL FIRES CAN BE PUT OUT BY SWITCHING
OFF ELECTRICITY OR BY PULLING THE CORD PLUG
OUT FROM ITS RECEPTACLE).

EMERGENCY
FIRE OR INHALATOR
911

**WHAT VIOLATIONS OF
SAFETY STANDARDS
AND
SAFE PRACTICES
ARE SHOWN IN THIS PICTURE?**

Yes — you!

LUBRICATING { WASHING { FIRE REPAIRS



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COLUMBIA



Delta Secondary School
Home of the Pacers

Safety Assignment

Your Mission:

/30

To individually generate 30 unique safety questions to aid in studying for the mandatory safety exam. The questions should be from all sections of the safety handout and should be answered in full sentences. Copying any of the questions from the example will get you a zero. See the example of some questions below to understand what's going on.

SAFETY

1. What does a radiator cap do ?
2. How should you remove a radiator cap if it is hot ?
3. What do you do if there is an accidents ?
4. What shouldn't you do with hand tools ? [3]
5. Give me some functions that hand tools are used for. [5]
6. What should be always worn when using a grinder ?
7. What should you watch for on the wheels of a grinder ?
8. How should small parts be held when using a grinder ?
9. Where should you stand when you start up the grinder ?

EXAMPLE
EXAMPLE
EXAMPLE