Automotive Shop Safety

Donald Jones
Brookhaven College

Safe Work Habits

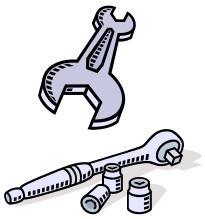
- Develop a safe attitude
- Keep yourself and the work area neat
- Dress for the job
- Have respect for tools and equipment
- Have respect for hazardous materials

Personal Safety

- Safety glasses must be worn at all times during lab activities
- Students must wear closed toe shoes to class at all times
- Avoid wearing loose fitting clothing

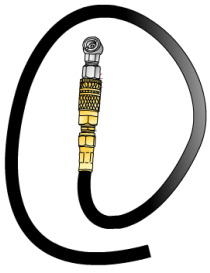
Hand Tool Safety

- Wear safety glasses
- Keep hand tools clean and in good condition
- Use tools for their intended purpose
- Do not use a hardened hammer on a hardened surface
- Pull on wrenches rather than push



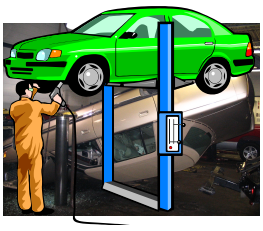
Air and Power Tool Safety

- Air can be just as dangerous as electricity
- Wear safety glasses
- Be certain you know how to use the tool
- Keep power tools clean and in good condition
- Check the condition of electrical cord or air line before using
- Disconnect power tools when not in use



Vehicle Lifts

- Always use the manufacturer recommended lift points
- Raise the vehicle a few inches and check stability
- Never operate the lift with someone working around the vehicle
- Lock the lift or use jack stands after raising the vehicle



Introduction to Automotive Service

Lifting a Vehicle

- Check the condition of the lift and the vehicle being lifted
- Set the lift up for the proper lift points
- Raise the vehicle slightly and check balance
- Raise to the desired level and set the lift's locks

Introduction to Automotive Service

Floor Jacks

- Park the vehicle on a level surface and place the transmission in neutral
- Check the condition of the jack and the vehicle being lifted
- Set the jack up on a proper lift point
- Raise the vehicle slightly and check balance
- Raise to the desired level and install jack stands
- Lower the vehicle onto the jack stands

Introduction to Automotive Service

Fire Safety

- Be aware of shop fire hazards
- Store flammables in their proper containers
  - Gasoline
  - Solvents
  - Oily rags
- Know where the fire extinguishers are located and how to use them

Introduction to Automotive Service

Types of Fires

- Combustibles
  - Wood, paper, cloth, etc.
- Flammable liquids
  - Grease, gasoline, oil, etc.
- Electrical fires
  - Wiring, electric motors, switches, etc.
- Burning metals
  - Magnesium

Introduction to Automotive Service

Class A Fire Extinguishers

- **Class A Extinguishers** will put out fires in ordinary combustibles, such as wood and paper.

Introduction to Automotive Service

Class B Fire Extinguishers

- **Class B Extinguishers** should be used on fires involving flammable liquids, such as grease, gasoline, oil, etc.

Introduction to Automotive Service

Class C Fire Extinguishers

- **Class C Extinguishers** are suitable for use on electrically energized fires. The extinguishing agent is non-conductive.

Introduction to Automotive Service

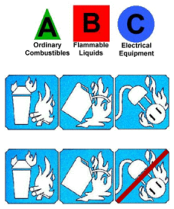
Class D Fire Extinguishers

- **Class D Extinguishers** are designed for use on flammable metals and are often specific for the type of metal in question.

Introduction to Automotive Service

Multi-class Ratings

- Many extinguishers available today can be used on different types of fires and will be labeled with more than one designator, e.g. A-B, B-C, or A-B-C.



Introduction to Automotive Service

Fire Extinguisher Operation

- **Pull** the pin at the top of the extinguisher that keeps the handle from being accidentally pressed.
- **Aim** the nozzle toward the base of the fire.
- **Squeeze** the handle to discharge the extinguisher. Stand approximately 8 feet away from the fire and squeeze.
- **Sweep** the nozzle back and forth at the base of the fire. After the fire appears to be out, watch it carefully since it may re-ignite!

Introduction to Automotive Service

Hazardous Materials

- What hazardous materials might be common in automotive repair facility?
  - Motor oil and lubricants
  - Engine coolant
  - Gasoline
  - Solvents
  - Brake fluid
  - Battery acid
  - Refrigerant (R12 and R134a)

Introduction to Automotive Service

Material Safety Data Sheets

- Section I
  - Manufacturer information
- Section II
  - Hazardous ingredients
- Section III
  - Physical/Chemical characteristics
- Section IV
  - Fire and explosion hazard data
- Section V
  - Reactivity data
- Section VI
  - Health hazard data
- Section VII
  - Precautions for safe handling and use
- Section VIII
  - Control measures