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SHOP SAFETY

By Mr.Pankaj Salunkhe , Wingsss College Of Aviation Technology, Pune. Download
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1. General shop safety

A. Appropriate Clothing

- Remove the necktie, wristwatch, and jewelry.
- **Sleeve** are out of danger when they are **rolled up**.



- The machinist should **wear an apron, shop coat, or coveralls**. Apron strings should be tied at the back, and **pieces of cotton waste should not be carried in the pocket**.
- **Never wear woolen sweater** because the strands of the wool that go into the making of a sweater are long and unbroken. One strand caught on a revolving dog or job can bring the machine operator much closer to danger.



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- **Avoid to wear canvas shoes** because The soft material from which the upper part of the canvas shoe is made offers no resistance to a hard object, whether i.t is falling or stumbled against. The rubber soles are easily penetrable by steel chips and sharp-edged machined surfaces



- **Gloves should be worn** when the worker is moving sheet metal or large pieces of stock, especially when stock edges are sharp or ragged. Gloves should also be worn when the worker is pouring liquids that are injurious to human skin and whenever it is necessary for him to handle metal chips of any size or shape.



- **Always use eye Glasses** because Injury to the eye can be caused by flying particles of metal that result when the workpiece resists the cutting tool. These flying pieces of metal do not single out the man behind the cutting tool. Chips can fly in any direction to hit anybody in the shop. Everybody in the shop needs the protection of safety glasses



2.Safety Partners

- **Don't attempt to lift a heavy object or job or machine attachment by yourself.** Before lifting, be sure that you have a firm footing and get a good balance. When you are ready to lift, push your body up with the strength in your legs. Keep the job close to your body until you have it in the normal and convenient carrying position .Walk with firm steps; don't twist your body to change your direction, but change the position of your feet. Breathe normally; don't hold your Breath. When lifting with another person's help, talk it over first, then move and lift together.



B.

- Although it is often easier to carry long pieces stock on the shoulder it is not a safety way. We tend to watch where we are going and forget what happens to the part we are not watching. **Stock should be carried vertically so that all of can be watched at the same time.**



- **Never leave pieces of stocks or tools on workshop floor** because Men do not walk through a machine shop with their eyes looking at the floor; therefore a workman is apt to step on a small piece of stock left on the floor. A fall can cause serious injury, fall that carries the victim into a moving machine can be fatal.



3.Chemical

- **Wipe up grease an oil that is dropped on the floor.** Clean off the excess grease that is left near bearings and grease cups because When it drips or is dropped on the shop floor. A oil slick under a quick moving foot may result in a serious accident.



3.Clean Work Areas

- **Good house keeping**

The term indicates cleanliness and neatness, a place for everything with everything in its place. The result of good housekeeping: a safe shop.



- **Floors, passageways and space around machines- kept clean and clear** of small pieces of metal and machine attachments and accessories. There should be plenty of disposal cans in Designated places to receive waste, scrap materials, and floor and machine sweepings. The aisles of passage between machines should be clearly outlined.



- **Chips should be removed from the table or bed of a machine**
Because metal chips have sharp edges, which cut and penetrate skin, chips should *never* be handled. Machines can be kept clear of chips by periodically sweeping (or brushing) them away.



- **Remove the fuse that controls the flow of electrical power** to the motor of the machine. This should be done before the guards are removed or any part of the mechanism is touched.



- Do not operate the machine without guard.





SAFETY ON THE BENCH

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- Sharp-edged or pointed tools should not be carried in clothing pockets. Arrange the tools on the bench with the sharp ends toward the back of the bench.

• Rules for safe use of files

- Be sure that the file has a handle.
- Remove burrs and abrasions from the file handle before using it.
- Do not use a file as a hammer.
- Never Strike a file with a hammer.
- Don't use a file as a lever or pry bar.
- Keep files separated from each other.
- Keep files teeth clear and clean.
- Do not let oil and dirt collect in the gullets of the file.



• Rules for safe use of Hammers

- Always check the fitting of the handle in the hammerhead.
- Do not use a hammer with a broken or split handle.
- Always remove oil, grease, and dirt from the face and the handle of the hammer.
- Never use the face of the hammer to strike against another hardened tool.
- Use the right sized hammer for the job.



• Rules for safe use of Wrenches

- Keep wrenches clean; wipe off oil and grease before using the wrench.
- Stop any machine before using a wrench.
- Be sure that the wrench fits the nut snugly.
- Stand with proper balance whenever it is necessary to pull hard on a wrench: one leg behind the other.
- Do not hammer on the end of a wrench.
- Use an adjustable wrench only when a nonadjustable type is not available.



• Rules for safe use of Hacksaw

- Never use a dull hacksaw blade because More pressure, with poor cutting action, will cause the blade to break.
- While mounting blade, The teeth of the hacksaw blade should be pointed away from the handle and toward the front of the frame. the blade should be straight, not twisted.
- The speed of hacksawing should be high for soft metals (Aluminum) 60 strokes and less for hard materials(cast iron).
- Grip the work in the vise.
- Apply pressure only on the forward stroke.

Drill Press Safety

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- The job roost be securely held, clamped, or bolted down.
- Never hold the job by hand.
- Drill press operator must be keep his hair cut short, or wear a cap.
- It is safer to roll the sleeves above the elbow, remove the necktie.
- Never use dull drill that cause an accident.
- make sure that the quick return lever is firmly locked in place.
- Remove drill drift from spindle or chuck key from the drill chuck immediately after use.
- As the drill breaks through the work. Relieve the down-feed pressure.
- Stop the machine before using a brush to remove chips and excess coolant.
- *safe way of forcing the taper shank drill into the spindle* First clean the shank of the drill and the tapered hole in the spindle. Use a cloth, not fingers. After making certain that the tang of the drill is correctly aligned, jam the drill into the spindle.

SAFETY ON LATHE

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- The lathe should be stopped before making adjustments to the tool holder.
- A Lathe chip is both hot and sharp so never touched by hand.
- Prevent the chip from winding around work.
- Don't accumulate the large amount of chips in lathe pan so Stop the lathe at short intervals and clean out the chips.
- Lifting a lathe chuck onto the spindle cause painful back dislocations.
- Never Leave the chuck key in the chuck. Later he may start the lathe without noticing the key in the chuck and serious injury may result.

SAFETY ON THE MILLING MACHINE

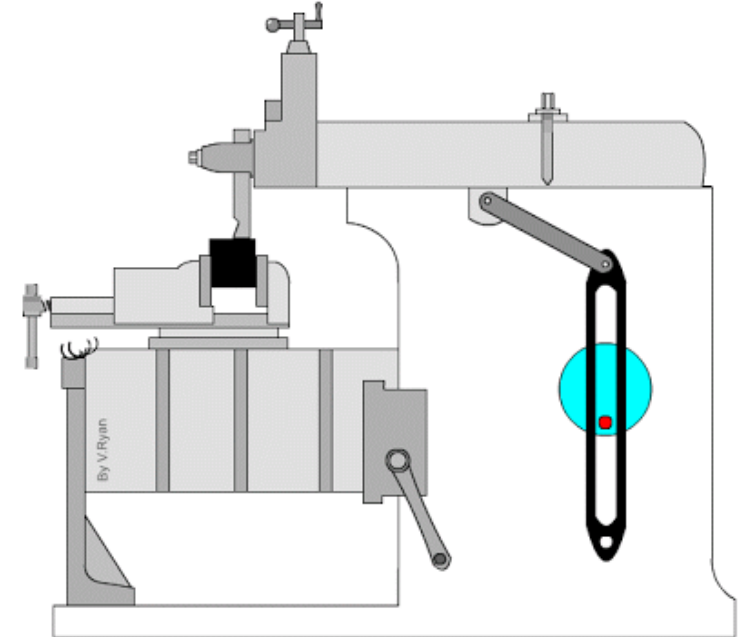
- Milling cutters have sharp cutting edges and should be handled carefully. They should be held in a piece of cloth to prevent injury to the Operator and to the cutting edges.
- The milling machine operator should not stand on the side that the cutter is entering the work.
- Be sure that you are aware of the function of every operating control. Don't push a button, move a handle, or engage a clutch unless you are sure of the machine action, which will occur when you do so.
- Be sure that everything is secure before turning on the power. Check the cutter, the bolts holding a vise, or any attachment.
- Check setting of speed and feed before turning on the power.

- Do not lean on the machine; stand upright.
- Keep your head out of the direct line of the cutter.
- Stay on the going-away side of the cutter
- Remove chips with a brush.
- Keep cotton waste and rags away from any part. of a milling machine while it is in operation.
- Stop the machine before measuring the job, feeling the surface of the finished cut, tightening a bolt, changing the speed, or reversing the feed.

Safety on the Shaper Machine

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- Don't attempt to remove chips by hand. Wait until the cutting tool is on the return stroke; then brush the chips away.
- The operator should be standing on the going-away side that is the safe side of the cutter.
- Operator should wear safety glasses.
- Check the speed and length of stroke before start the machine.

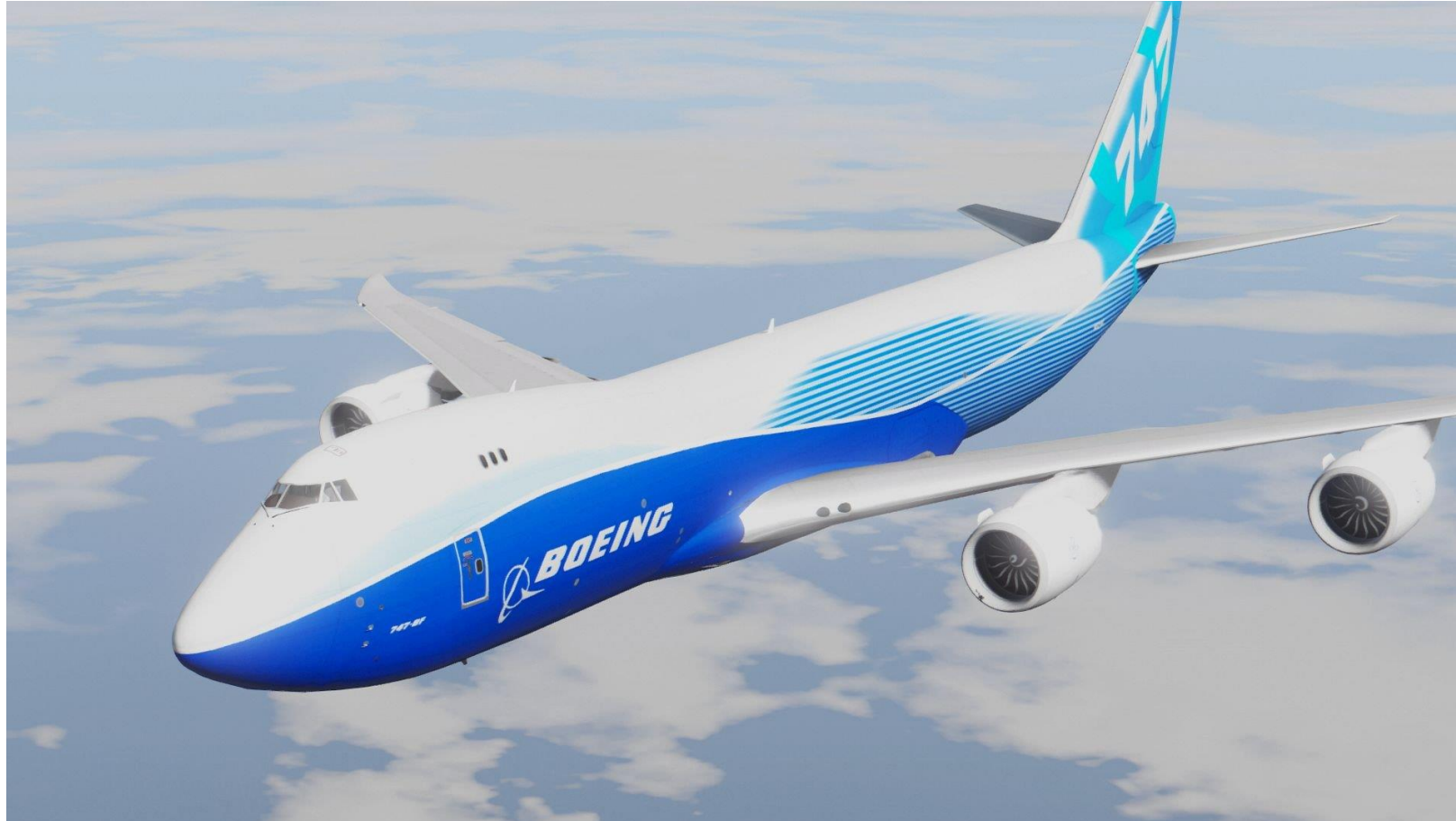


SAFETY ON THE GRINDING MACHINE

- Safety goggles must be worn at all time.
- Test the soundness of the grinding wheel and inspect it for cracks before mounting it on the machine spindle.
- Check the wheel bushing and the machine spindle.
- Check the operating speed of the machine.
- See that all guards and protective hoods are in place and tightly secured.
- Do not start an unguarded machine.
- Always feed the work gently and steadily.
- Keep your head out of the line of the sparks.
- *Never* place your hands near the revolving wheel.

TODAY'S AMAZING FACT???????

A Boeing 747 is made up of six million parts



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