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How Handbells Are Made

eslvideo.com Quiz by: claganach

1. To what is handbell music similar?

- ○ Football score
- ○ Piano score
- ○ Quiz score

2. At the start of the process, with what is the bottom half of the flask filled?

- ○ rough diamonds
- ○ molten metal
- ○ special coarse sand

3. What does the worker do before he turns the metal flask over and places guide rods onto the bell shapes?

- ○ He compacts the sand
- ○ He leaves it to settle
- ○ He pours in molten metal

4. What does the worker put onto the flask before compacting the sand?

- ○ ramming board
- ○ joining board
- ○ compacting herd

5. What does the worker put into the crucible to melt down?

- ○ gold nuggets
- ○ silver salvers
- ○ bronze ingots

6. At around what temperature is the molten metal poured into the cavity of the mould?

- ○ 200 degrees fahrenheit
- ○ 2200 degrees fahrenheit
- ○ 2020 degrees fahrenheit

7. When does the worker stop pouring into the cavity?

- ○ When he sees the heat-sensitive material smoking
- ○ When he runs out of molten metal
- ○ When the molten metal overflows

8. What do workers use to free the finished castings from the sand mould?

- ○ vibrating bed and small hammers
- ○ static armchair and large pincers
- ○ empty cupboard and chisel

9. Why does a worker drill a central hole in the casting?

- ○ to sand the sharp edges of the casting
- ○ to rotor blast clean the dirty castings
- ○ for the assembly screw

10. How does the carbide cutting tool make the casting the correct shape?

- ○ It is working with a stylus that follows a template of the bell
- ○ It is following instructions from the worker
- ○ It comes out of the mould already in the correct shape

11. What must a tracing of the shape of the casting match?

○ a photograph

○ it does not need to match

○ a master template

12. What does the worker use to test the bell's sound quality?

○ a stroboscopic tuner, and the human ear

○ good luck and hope

○ a thermometer

Transcript

How it's made - handbells

Handbells can be seen in church choirs, schools and ringing concerts. There, skilled ringers read music similar to a piano score, playing all the notes found on a modern musical keyboard. Finely crafted and tuned, handbells will continue to entertain generations to come.

Handbells have a long tradition of making beautiful music. From church music to the music of Beethoven.

It all starts with a casting mould that a worker encases in a two-part container or flask. He fills the bottom half of the flask with special coarse sand that's ideal for making sand moulds.

He compacts the sand, and then he turns the metal flask over. He places guide rods onto the bell shapes, and fills the top part of the flask with sand.

He puts a ramming board on again and he compacts the sand that fills the top part of the flask. Now he removes the guide rods. Then he removes the top half of the flask and takes out the casting mould. He re-connects the top of the flask and then frees it completely from the sand mould.

A worker places bronze ingots into a crucible to melt them down. He places heat-sensitive material on to the sand mould, and then heavy weights to hold the mould together safely.

When the melted bronze reaches about twenty two hundred degrees fahrenheit, a worker guides the crucible over to the sand mould, and pours the molten metal into the cavity of the mould. He stops pouring when he sees the heat-sensitive material smoking. This indicates the mould cavity is filled.

Workers then use a vibrating bed and small hammers to free the finished castings from the sand mould.

Rotor blasting cleans the dirty castings. A worker trims off the excess pieces that feed the molten metal into the bell cavity. He sands the sharp edges of the bell, and then drills the central hole for the assembly screw.

The bell casting then goes on a lathe. Here a carbide cutting tool, working with a stylus that follows a template of the bell, removes the coarse casting surface and makes the bell shiny. This turning operation also shapes the bell to give it the right tone.

Another carbide cutting tool shapes the inside of the bell casting, giving it shine, and the desired tuning as well.

Using a custom-made tracing device a worker reproduces the outside shape of the bell on paper. He then traces the inside of the bell casting until he creates an exact replica of the inside and the outside shape. And this must match a master template.

A worker polishes the bell using fine sandpaper. He also puts a jewellers finish on the inside. Then he tests the bell's sound quality using a stroboscopic tuner, and the human ear. He re-sands the bell to make a slight tonal adjustment. Then he tests it again to make sure it strikes the perfect musical note. A worker gives the bell that final polish, and another craftsman engraves the bell for the customer.

Finally a worker puts the ringer (clapper assembly) and bell (casting) together. She puts a washer, a (handguard) disk and a handle onto the assembly screw, and screws it all into place.

Handbells make wonderful music in the hands of skilled ringers, whether the musical compositions are performed by an intimate gathering of friends, or by a concert bell choir of thiteen ringers or more. The music made by traditional handbells is timeless.