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<tr>
<td>01/08/06</td>
<td>First draft</td>
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Module 2 – Geometry and Pattern Development

Unit 10 – Oblique Cones

Duration – 12 Hours

Learning Outcome:

By the end of this unit each apprentice will be able to:

- Identify the characteristics of the oblique cone
- Identify the geometrical differences between the right cone and oblique cone
- Develop patterns for oblique cones cut by angular and curved planes

Key Learning Points:

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Training Resources:

- Drawing instruments, equipment and materials
- Textbook: The Geometry of Sheet Metalwork
- Instructor handouts, drawings

Exercise:

Sample exercises - Figure 1, Figure 2 and Figure 3.

Key Learning Points Code:

M = Maths  D = Drawing  RK = Related Knowledge  Sc = Science
P = Personal Skills  Sk = Skill  H = Hazards
Figure 1 - Oblique Cones 1

Exercise/Procedure Instructions
Answer Sample Questions

OBLIQUE CONES
1. Develop the full template for the oblique cone frustum shown in Fig. 6, with the seam on the shortest side. Scale: full size.
2. Fig. 7 shows the elevation of an oblique cone cut by angular planes. Develop the full template with the seam on the short side. Scale: full size.
3. Part of a roof ventilator in the shape of an oblique conic frustum is shown in elevation in Fig. Develop the full template. Scale: 1:1 0.
4. Develop the full template for the frustum of the oblique cone shown in elevation in Fig. 9, placing the seam on the shortest side. Scale: full size.
5. Fig. 10 shows the elevation of a junction piece formed from two conic frustums. Develop the full template for one leg. Scale: 1:5.
Exercise/Procedure Instructions

Answer Sample Questions

OBLIQUE CONES

6. An elevation of a hood is given in Fig. 11. Develop the full template, locating the seam at SS. Scale 1:10.

7. The elevation of a hopper is shown in Fig. 12. Develop the full template with the seam on the short side. Scale 1:5.

8. Develop the full template for the hood shown in Fig. 13, with the seam at SS. Scale 1:5.

9. A hopper intended to feed a circular conveyor is shown in Fig. 14. Develop the full template with the seam on the short side. Scale 1:10.

Figure 2 - Oblique Cones 2
**Oblique Cones**

A right cone has its apex directly above the centre of its base and forms a 90° angle with the base.

An oblique cone has its apex away from the centre and forms any angle other than a 90°.

When drawing or fabricating a cone we always put the joint on the shortest side unless otherwise stated.
Self Assessment
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