

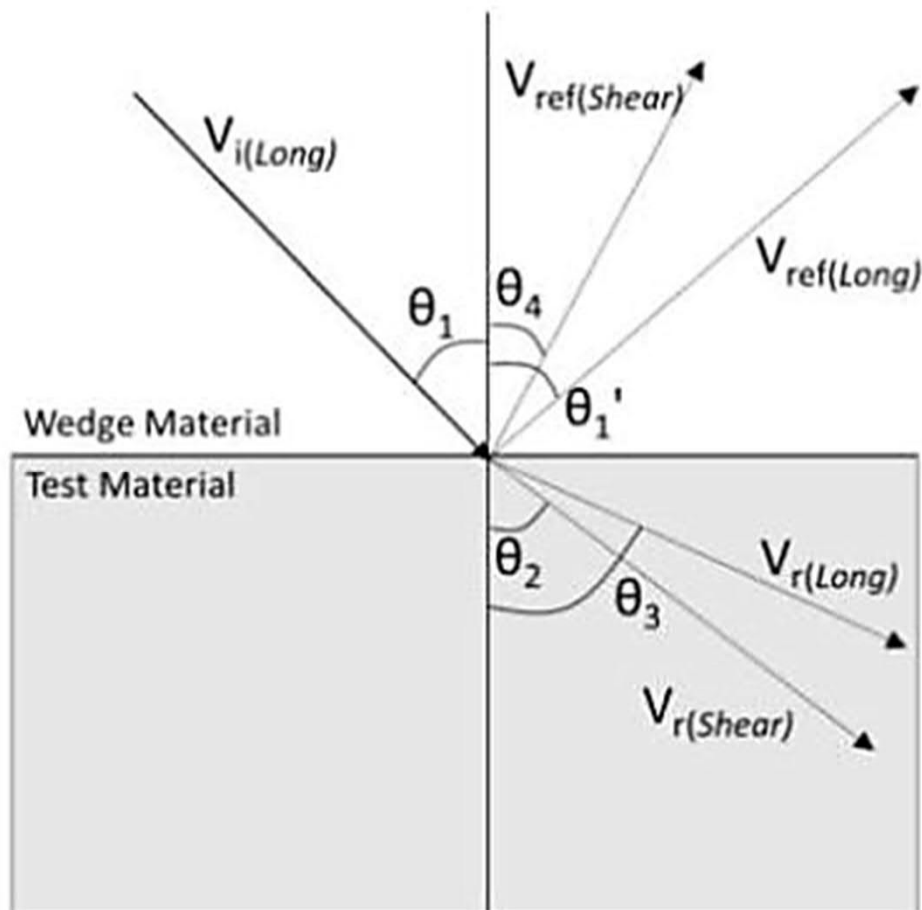


Figure 1

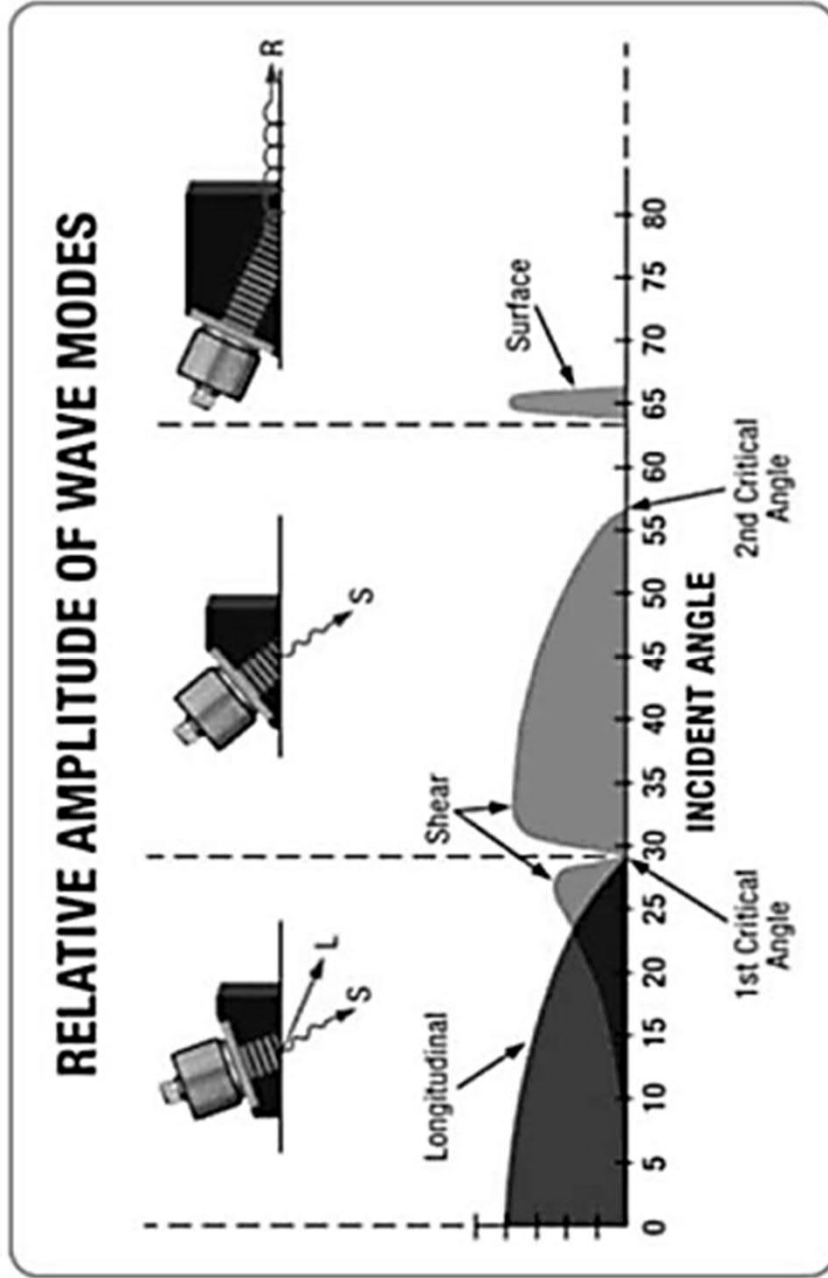


Figure 2

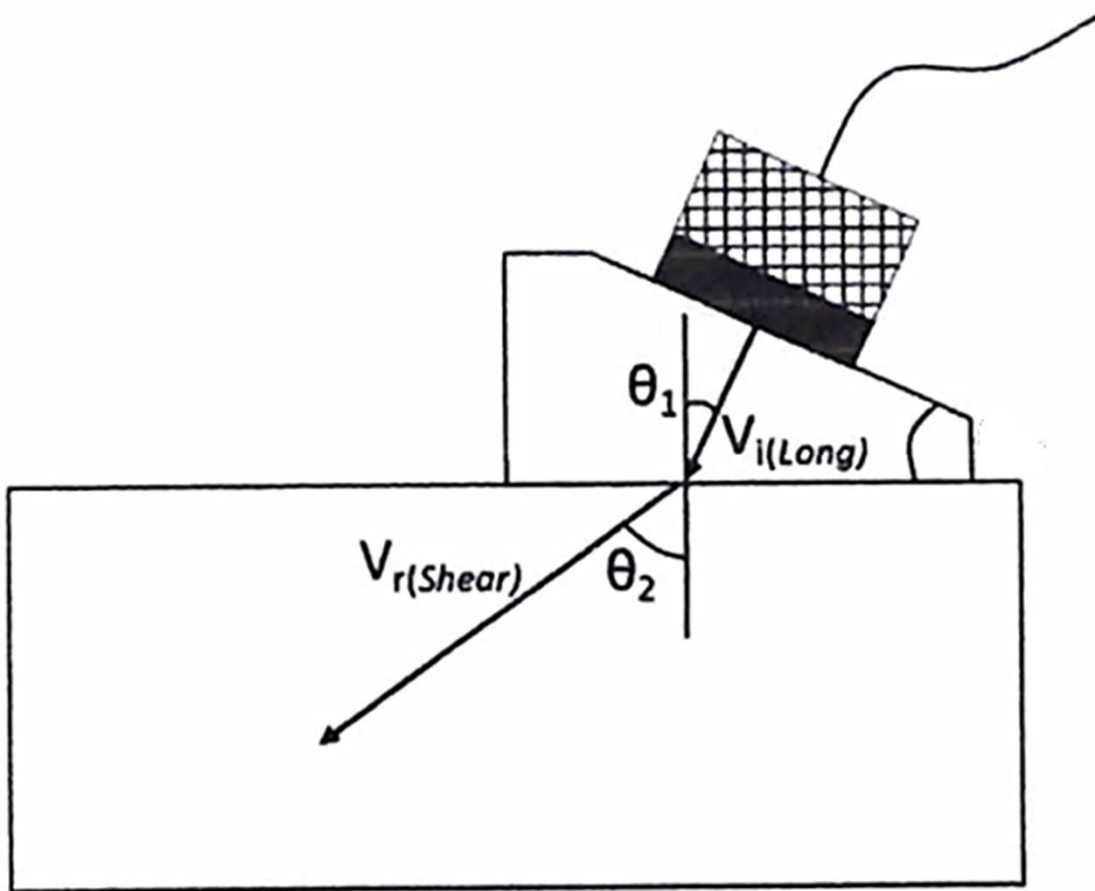


Figure 3

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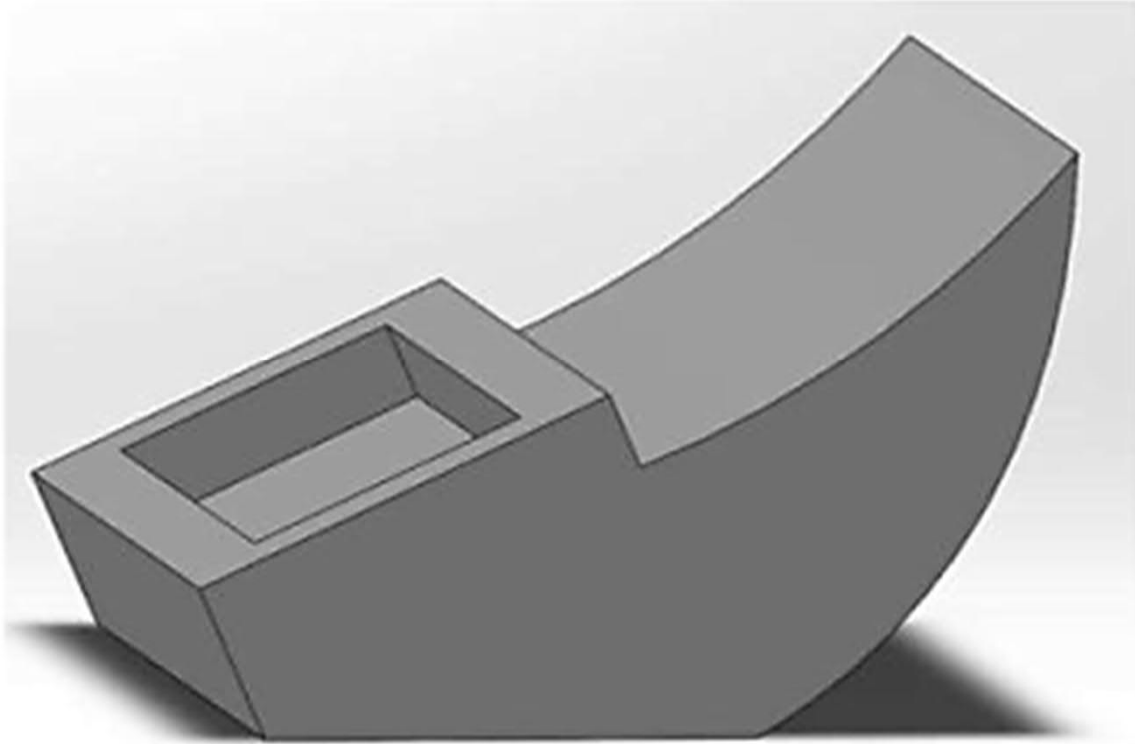


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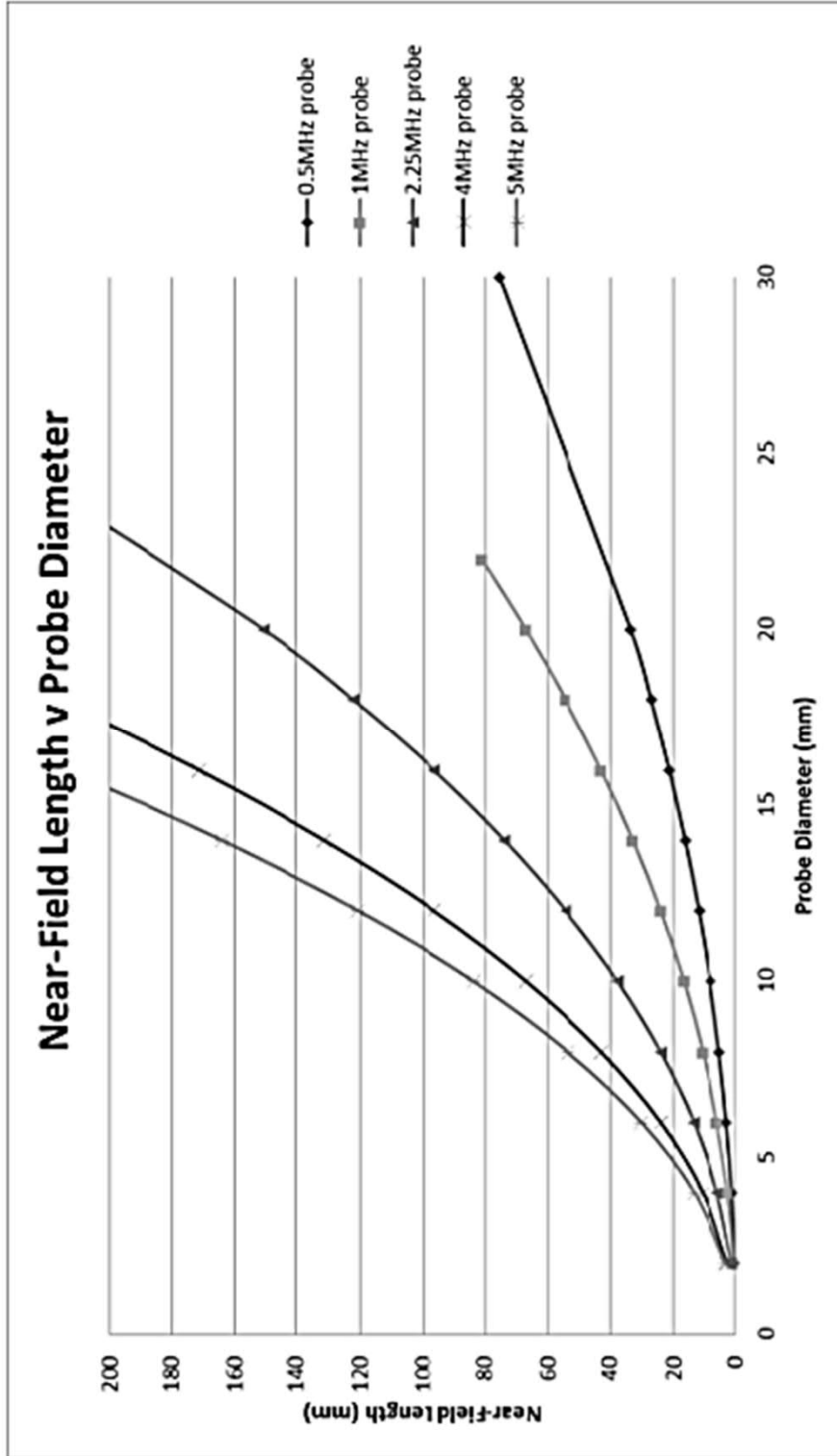


Figure 5

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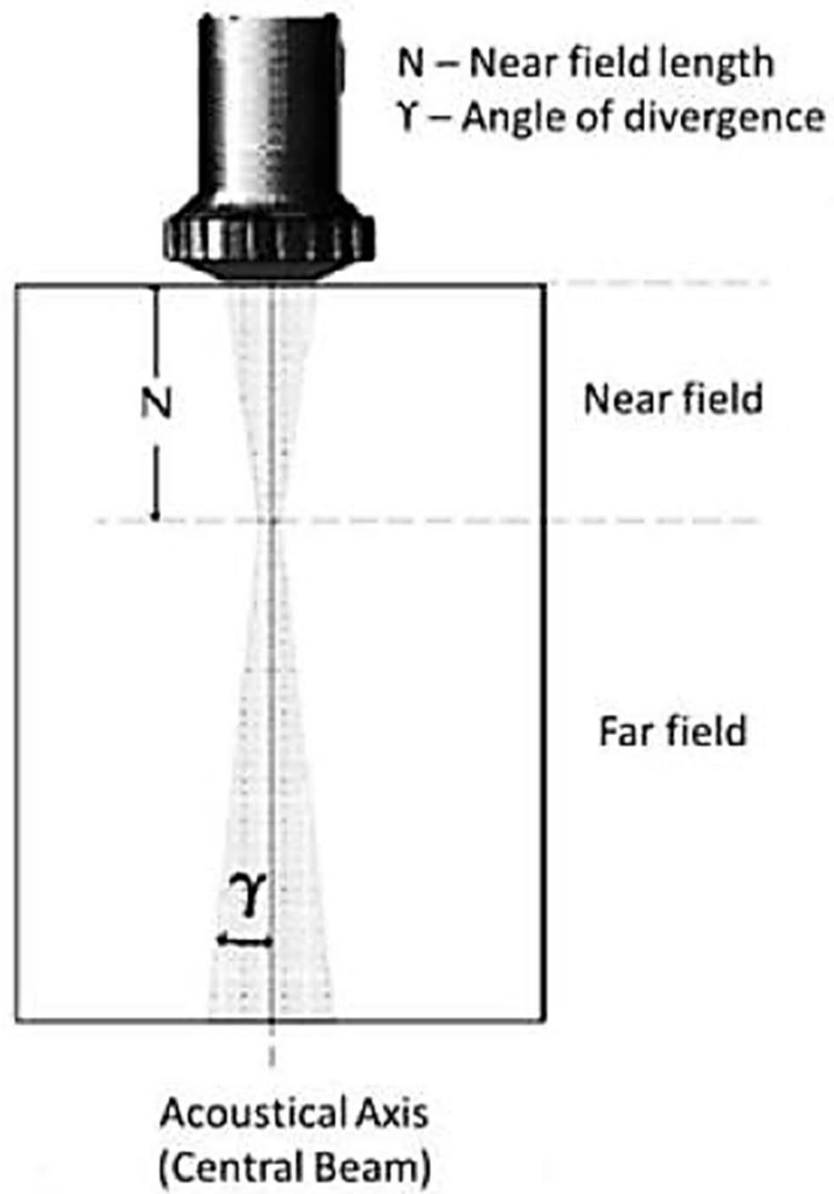


Figure 6

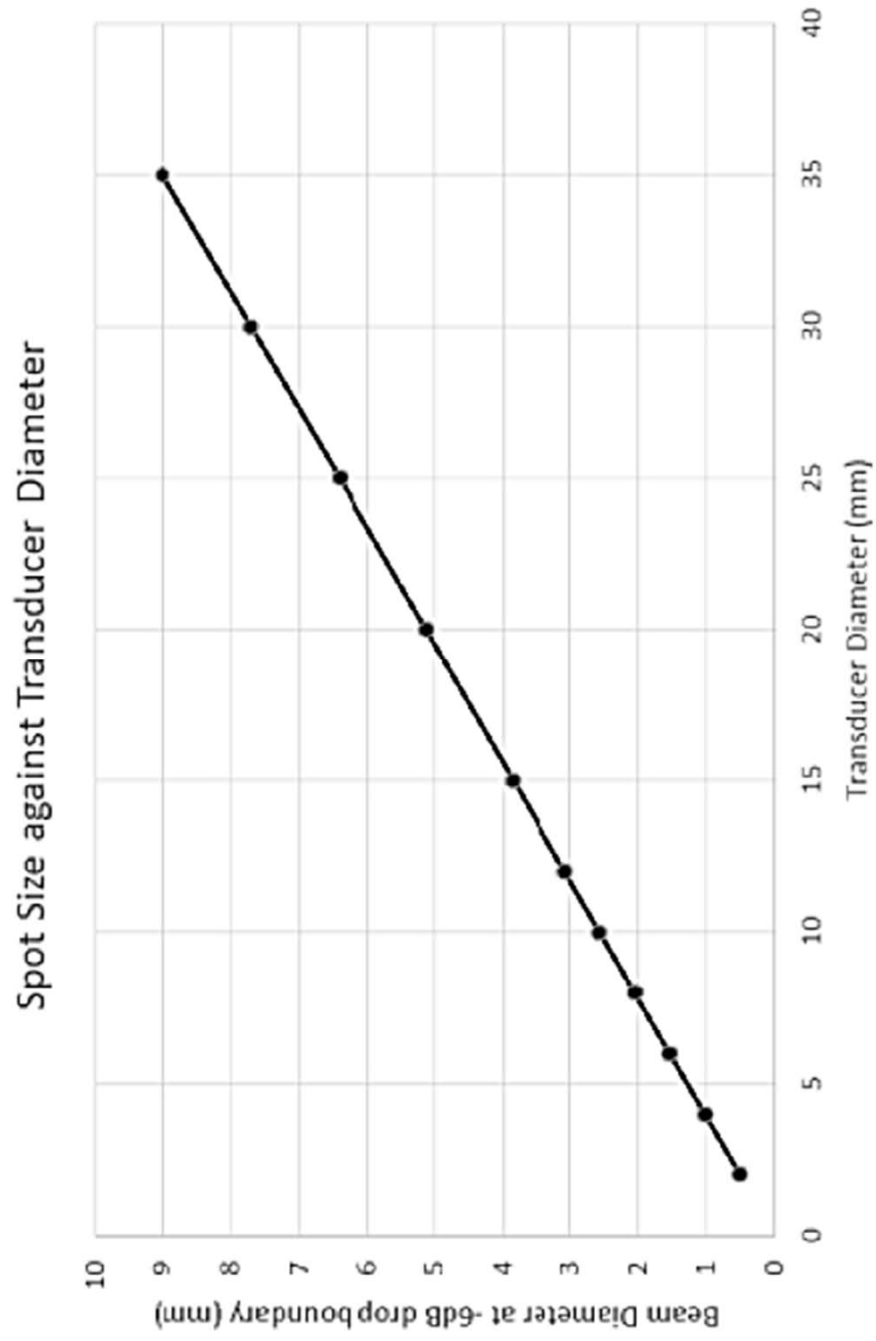


Figure 7

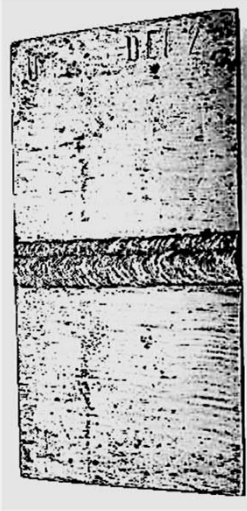
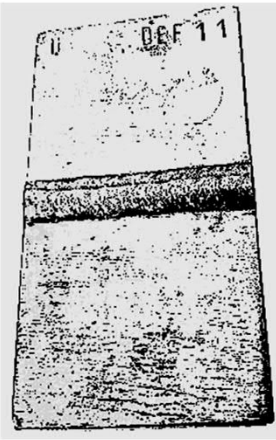
Defect 2 – Root Crack		Defect 5 – Centreline Crack		Defect 11 – Incomplete Root Penetration	
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Figure 8

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Figure 9

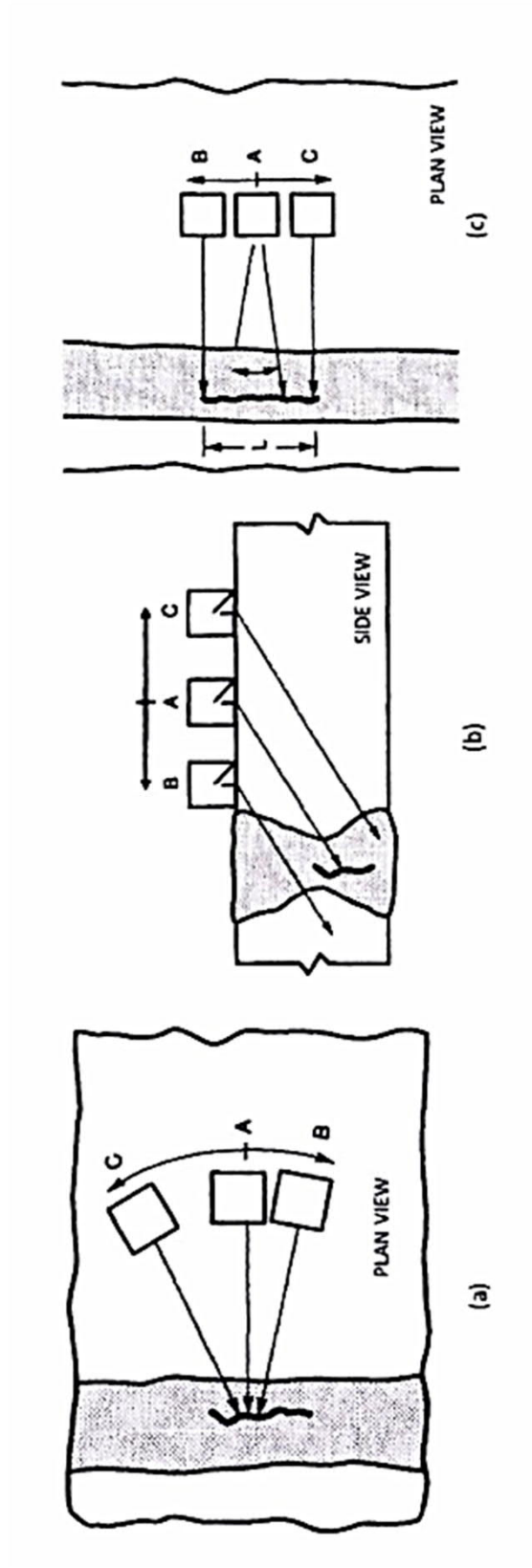


Figure 10

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Figure 11



Figure 12

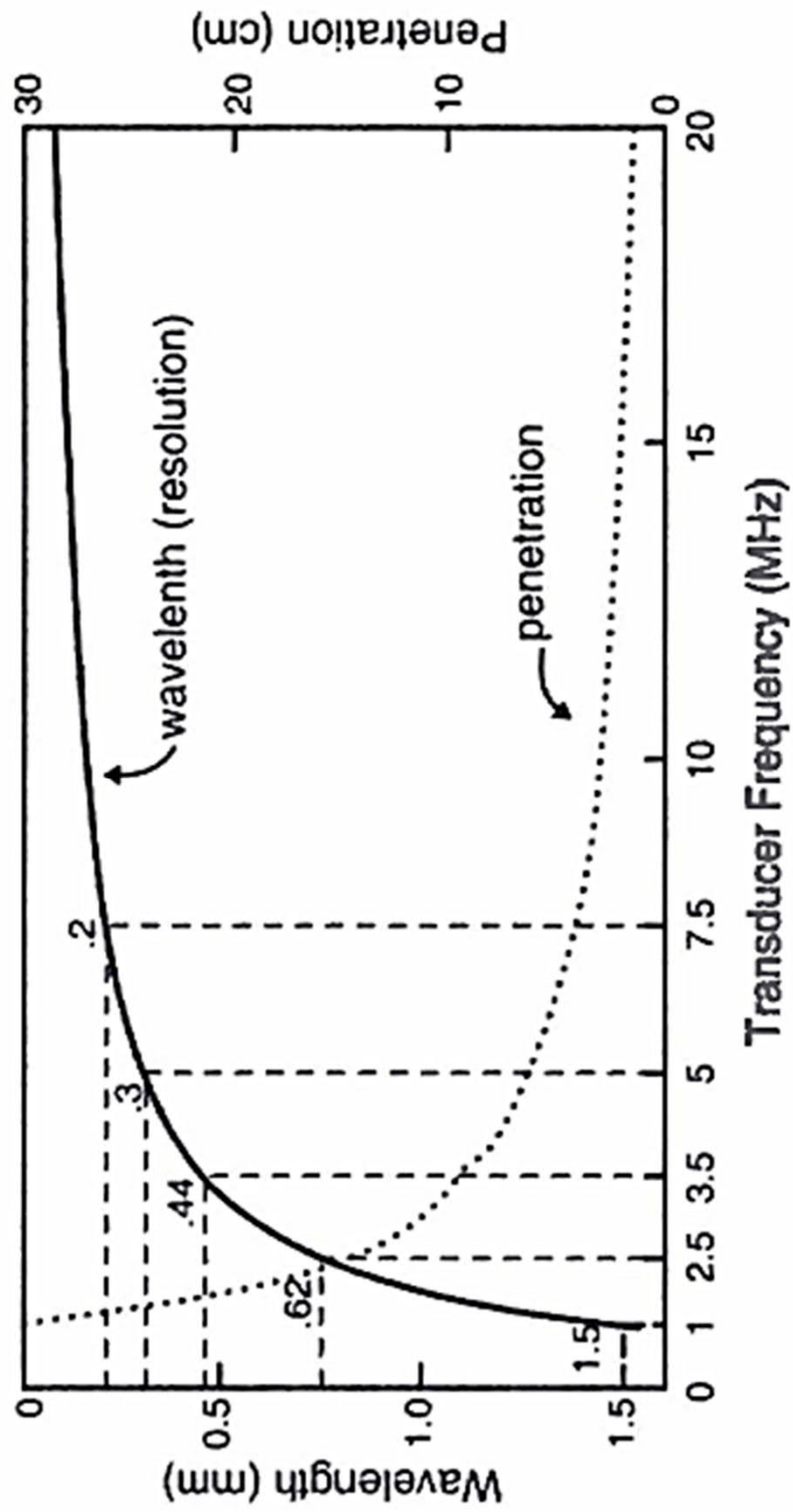


Figure 13

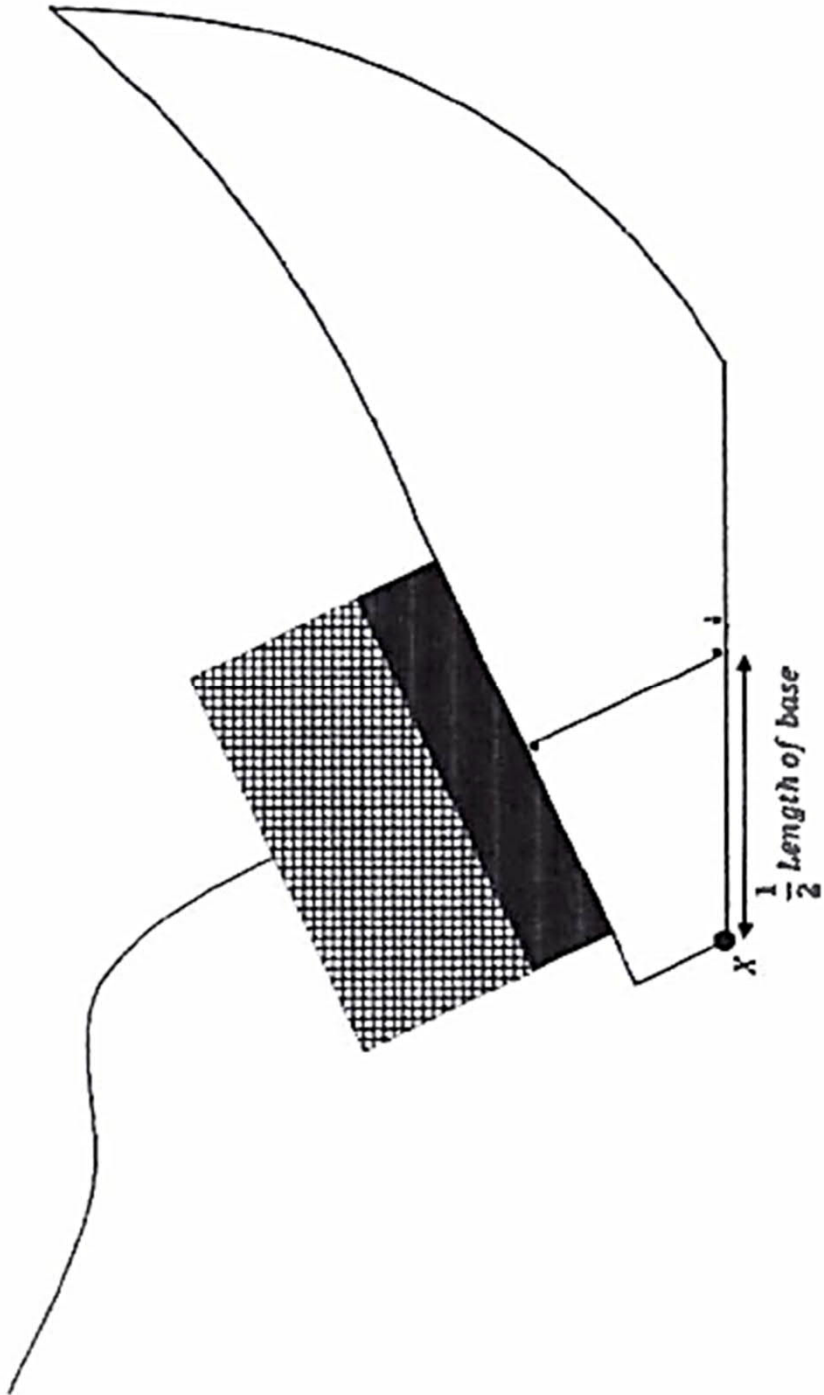


Figure 14



Figure 15

Table 1. Types of Root Defects

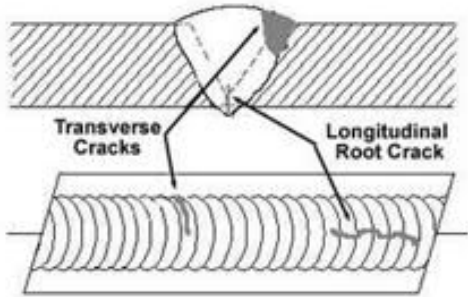
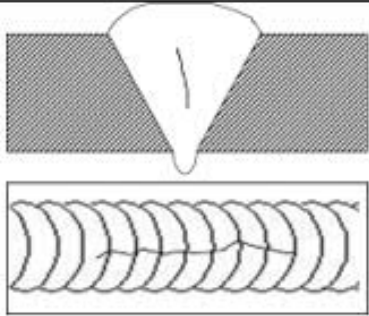
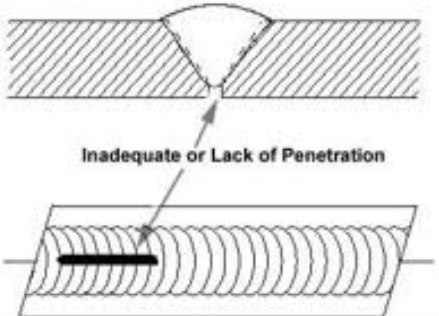
Type of Defect	Diagram
Defect 2 – Root Crack [43] Follows the profile of the root pass	 The diagram shows two cross-sectional views of a weld joint. The top view shows a V-groove weld with a crack originating from the root. Two arrows point to the crack: one labeled 'Transverse Cracks' and the other 'Longitudinal Root Crack'. The bottom view shows a similar weld joint with a crack following the root pass.
Defect 5 – Internal Substrate Centreline Crack Located within the weld	 The diagram shows two cross-sectional views of a weld joint. The top view shows a V-groove weld with a crack originating from the root and extending into the substrate. The bottom view shows a similar weld joint with a crack following the root pass.
Defect 11 – Incomplete Root Penetration [43]	 The diagram shows two cross-sectional views of a weld joint. The top view shows a V-groove weld with a gap at the root. An arrow points to the gap with the label 'Inadequate or Lack of Penetration'. The bottom view shows a similar weld joint with a gap at the root.

Figure 16



Figure 17

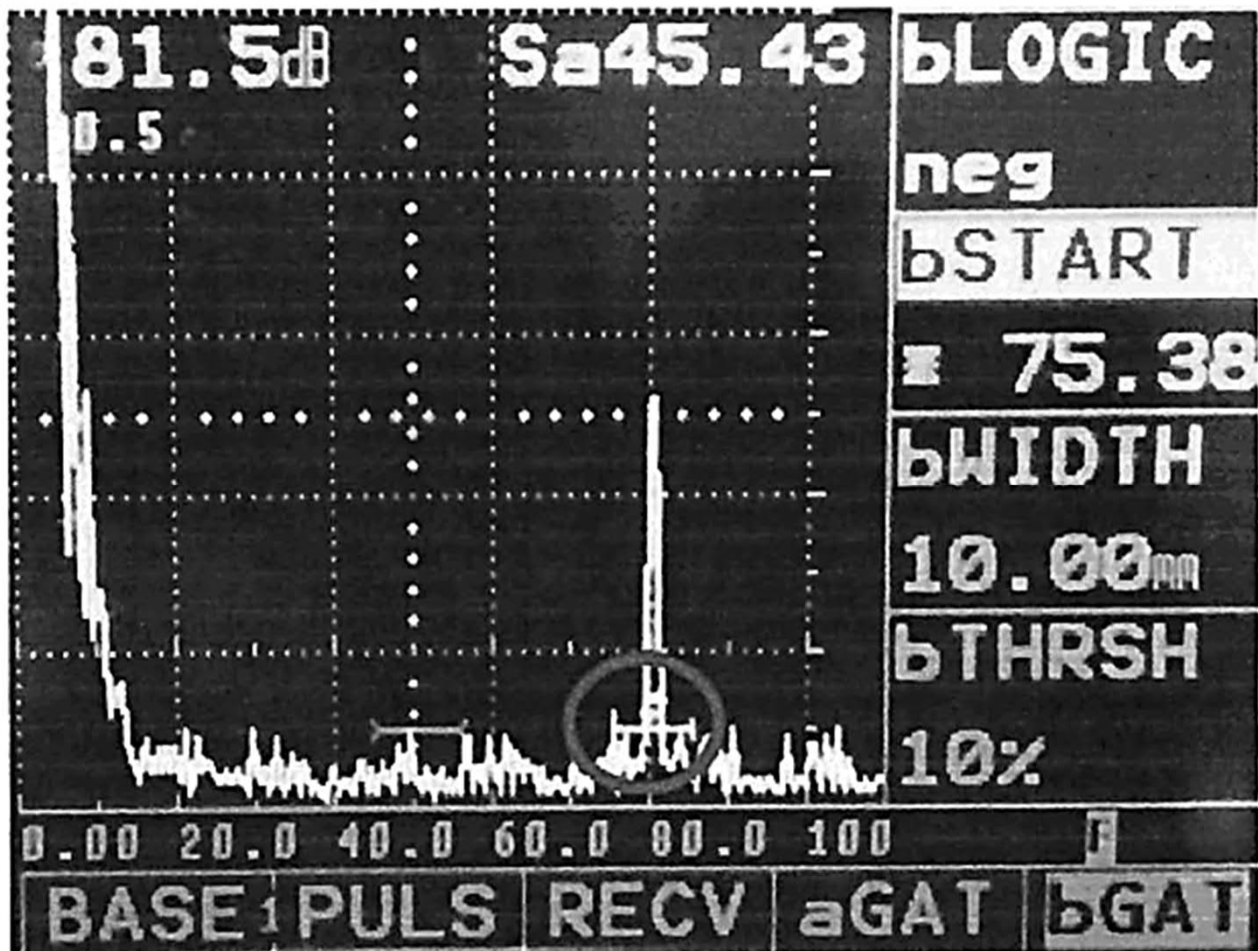


Figure 18

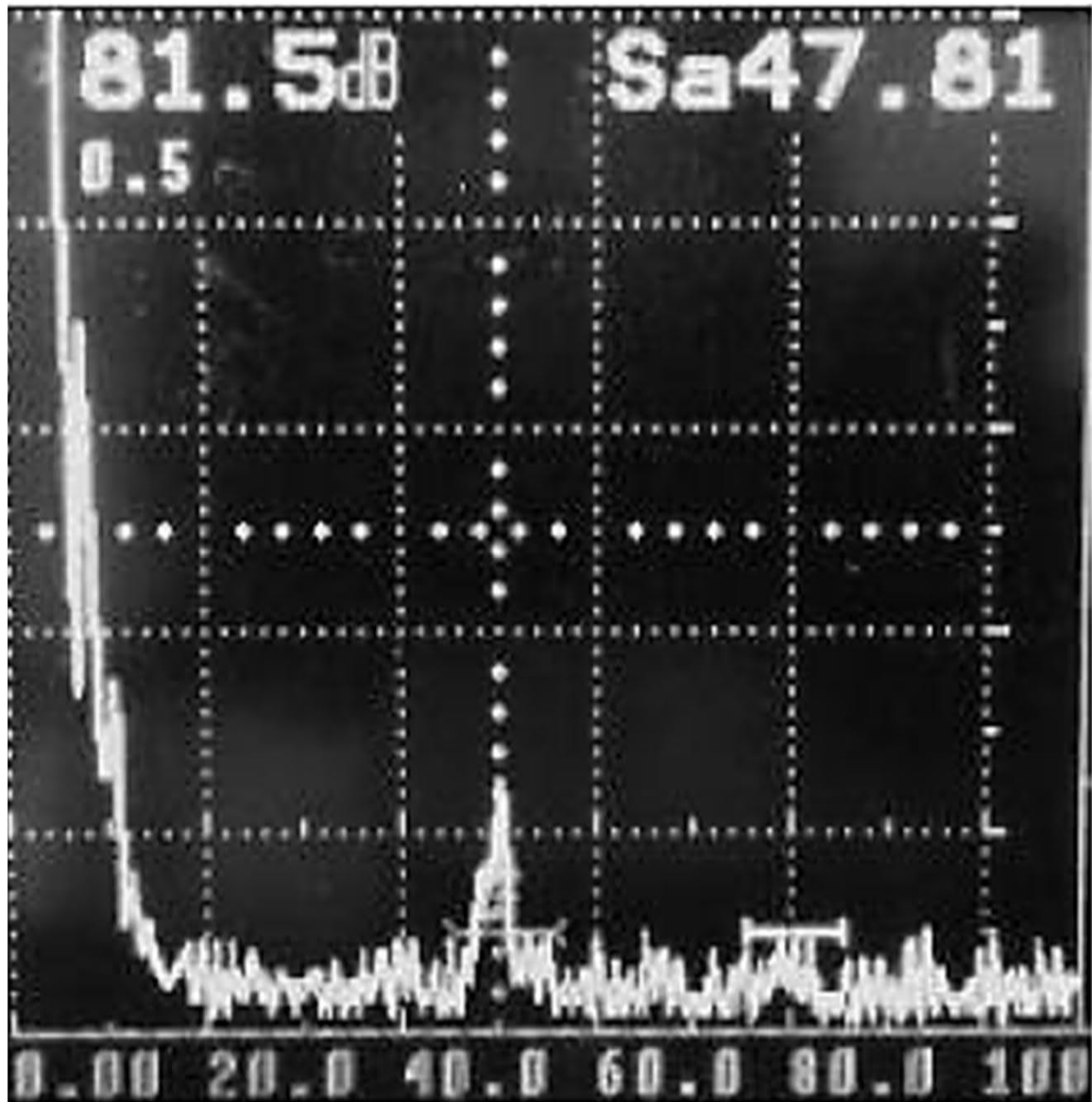


Figure 19

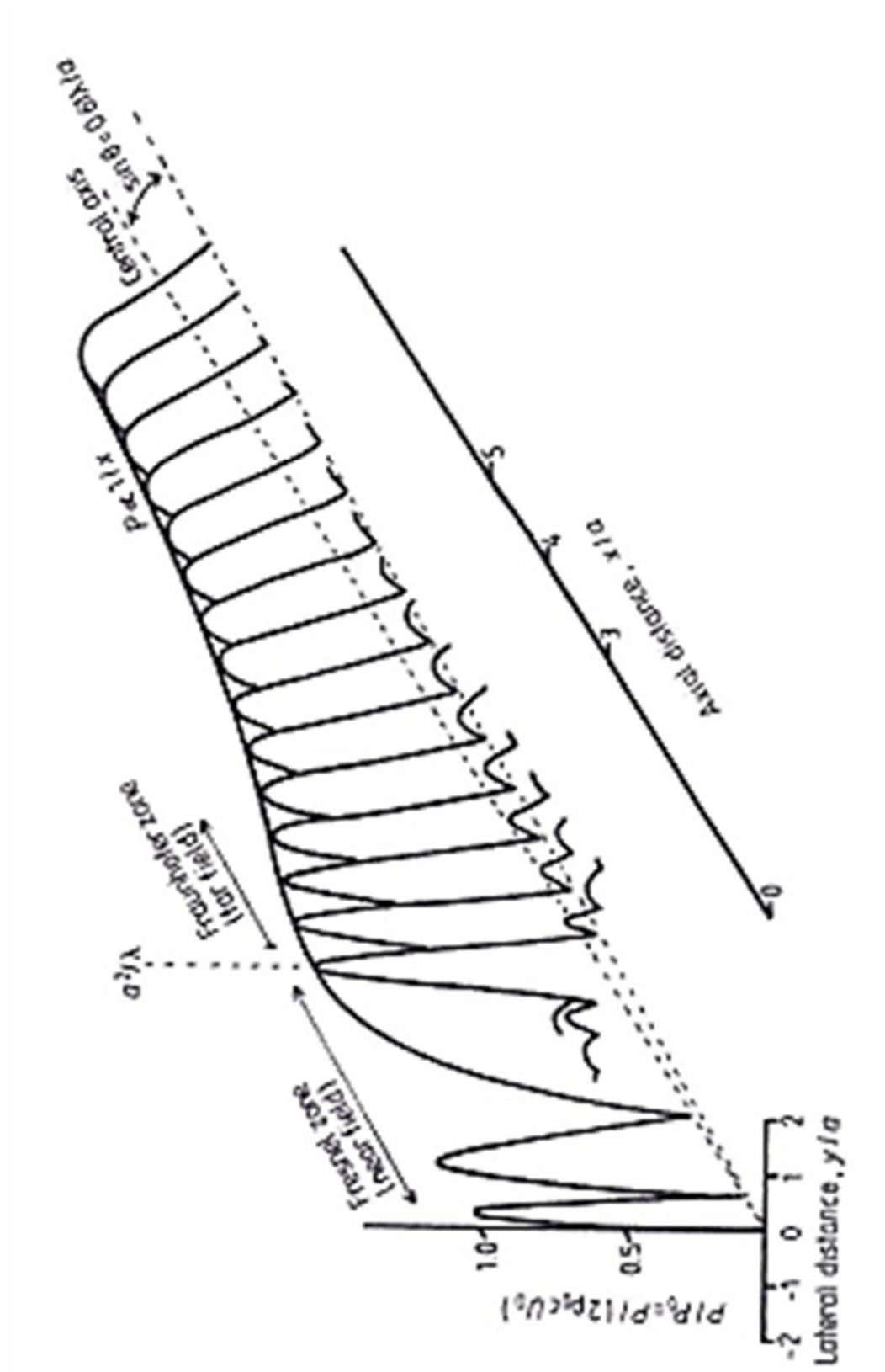


Figure 20

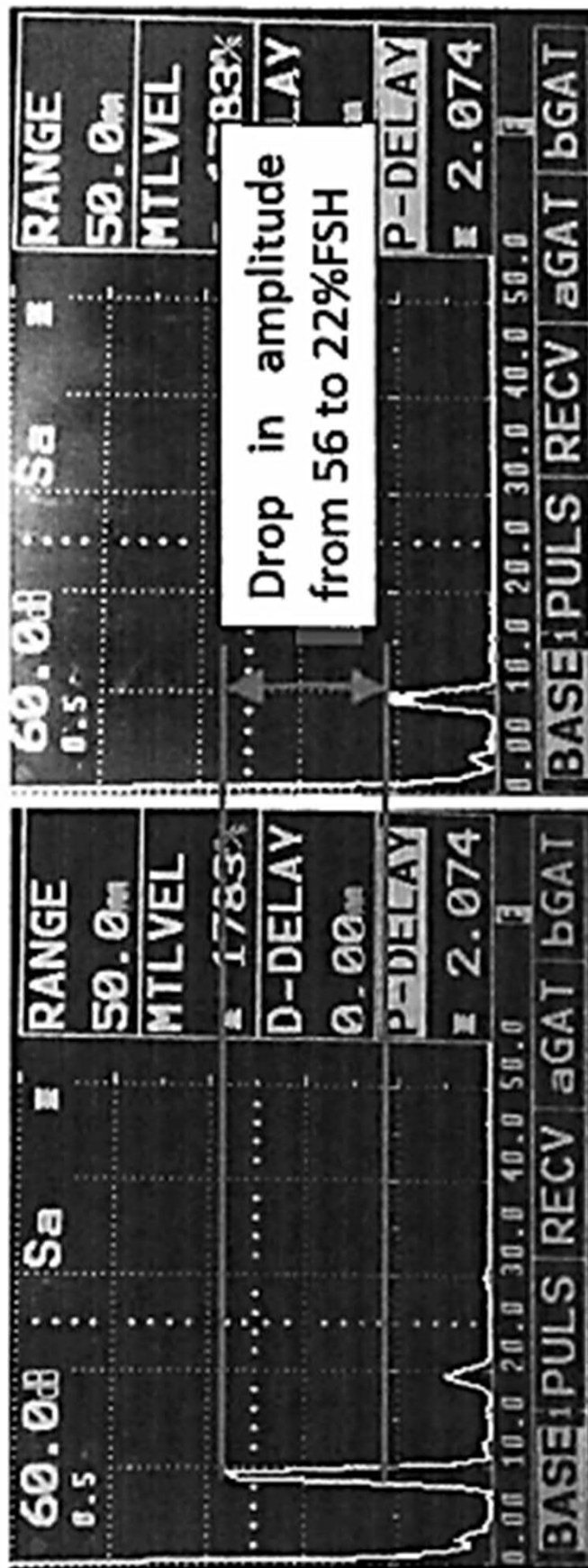


Figure 21