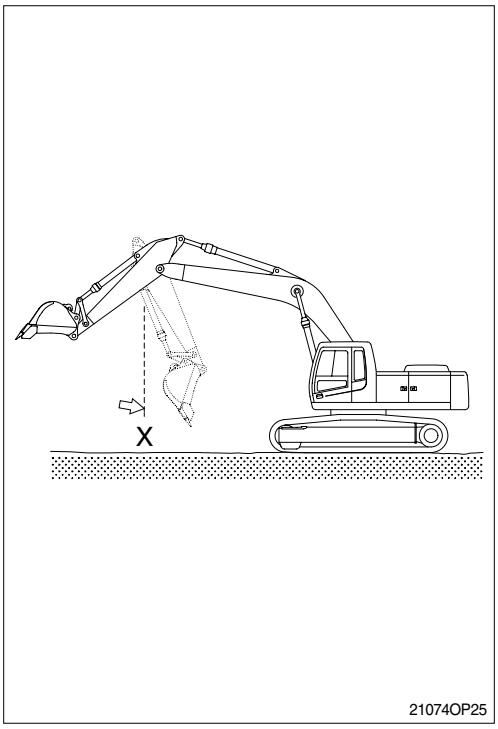
9. NORMAL OPERATION OF EXCAVATOR

Followings may occur during operation due to the nature of a hydraulic excavator.

1) When rolling in the arm, the roll-in movement stop momentary at point **X** in the picture shown, then recovers speed again after passing point **X**.
   The reason for this phenomenon is that movement by the arm weight is faster than the speed of oil flow into the cylinder.

2) When lowering the boom, one may hear continuous sound.
   This is caused by oil flow in the valve.

3) Overloaded movement will produce sound caused by the relief valves, which are for the protection of the hydraulic systems.

4) When the machine is started swing or stopped, a noise near the swing motor may be heard. The noise is generated when the brake valve relieves.