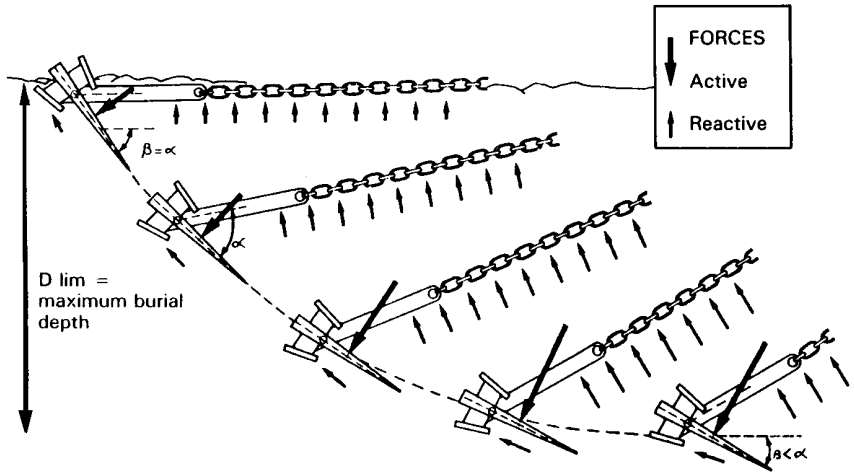
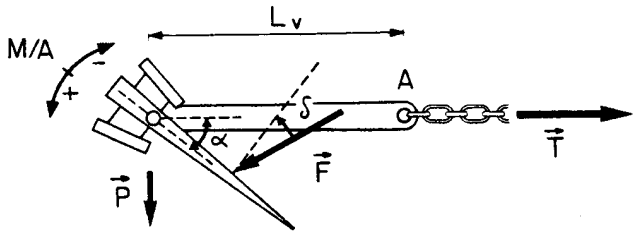
LIMIT BURIAL DEPTH OF ANCHOR (PENETRATION)

A limit burial depth necessarily exists, depending upon the type of anchor used and the type of soil.



In hard soil (dense sand, stiff clay), reversible anchors do not generally become buried. The soil shear strength is too high to allow such burial. Certain special stripped anchors can nevertheless be buried in these types of formation.

In loose soil (loose sand, mud, and soft clay), most anchors can be buried quite deeply. A relative depth of burial equal to about twice their largest dimension is feasible.



α = Fluke Angle

δ = Roughness

L_v = Shank Length

$\overrightarrow{P}$ = Anchor Weight

$\overrightarrow{F}$ = Soil Reaction on Flukes

$\overrightarrow{T}$ = Traction Force

Condition necessary for Penetration

$$M/A\left(\overrightarrow{F}+\overrightarrow{P}\right)>O$$

STABILITY OF ANCHOR

An anchor is said to be stable if it can be pulled over long distances (several times its dimensions) without lying on its side, overturning, or breaking out of the ground. Two types of instability may be distinguished:

1. Instability of the first type or lateral instability: the general movement of the anchor is a rotary movement about an axis provided by the traction line.

   This is most often observed during penetration, but may also occur while dragging, with the consequence that the anchor is raised toward the surface.

2. Instability of the second type: at the end of penetration or while dragging, the anchor initiates its extraction from the soil. The anchor lifts in a vertical plane passing through the traction line.

   This may involve translation motion and/or rotation about a horizontal axis passing through the end of the shank.