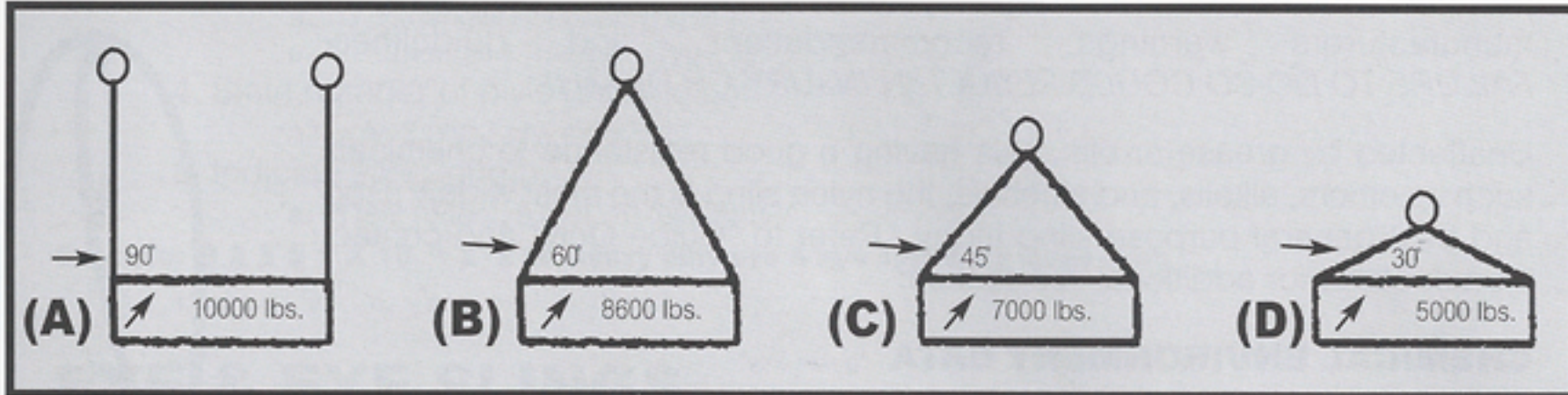


# SLING TO LOAD ANGLE EFFICIENCY

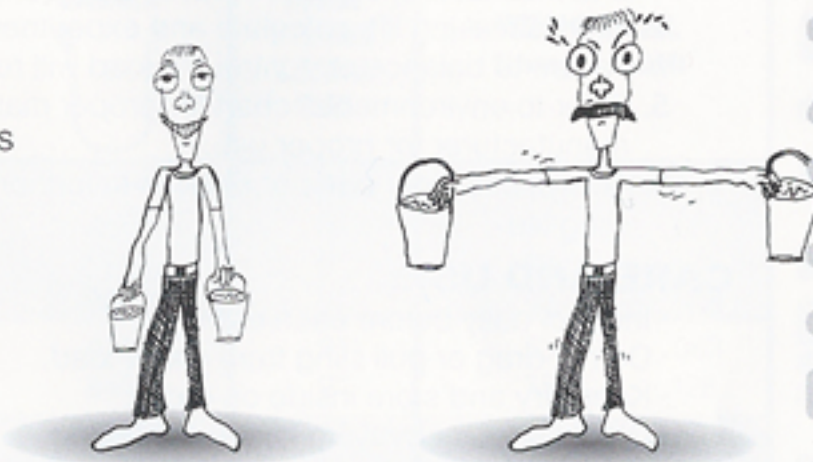
1. Sling working load limits whether nylon, wire rope or chain slings are rated with their respective vertical, choker, and basket capacities. When selecting these slings, careful consideration must be made for the proper sling to load horizontal lifting angle. The greater angle to sling configuration will result in a reduction of sling efficiency and a loss of rated work load limits! - SEE ILLUSTRATION:



Example: Using the above reference, load lifted is 10,000 lbs.

- (A) at a 90° sling to load angle the sling is at 100% of the WLL.
- (B) at a 60° sling to load angle a **loss of 14%** efficiency occurs and the sling is capable of lifting only 8,600 lbs.
- (C) at a 45° sling to load angle a **loss of 30%** efficiency occurs and the sling is capable of lifting only 7,000 lbs.
- (D) at a 30° sling to load angle the working load limit is **reduced by 50%** and the sling is capable of lifting only 5,000 lbs.

2. To further illustrate the stress to load angle perform the following experiment. Take two pails and fill each full of water. Pick them up and evenly hold at your side. You will experience very little or no stress. Now raise your arms up to shoulder height, and hold steady for as long as you can. You have just experienced a change of stress to load angle lifting!



3. **ALWAYS** use a larger angle of lift when selecting your sling.

4. **NEVER** use less than a 30° sling to load lifting angle.

LOAD ANGLE EFFICIENCY		
HORIZONTAL LIFT ANGLE	EFFICIENCY RATING	LOSS OF RATING
90°	100%	0%
80°	98%	2%
70°	94%	6%
60°	86%	14%
50°	76%	24%
45°	70%	30%
40°	64%	36%
35°	50%	50%