National Energy Board
Office national de l'énergie

Safety Advisory

NEB SA94-2

April 1994

Hazardous Application of Polyester Round Slings

Accident Description

A construction worker was injured when a series of polyester round slings, connected together end to end with shackles, broke while being used to separate a set of pipe flanges on a large diameter pipeline. One end of the series of slings was looped around the pipe. The other end of the series of slings was connected to a side-boom tractor by a shackle. As the tractor applied tension to the series of slings, one of the slings broke which created a catapulting action of the slings attached to the pipe. The end of the slings struck and seriously injured a worker.

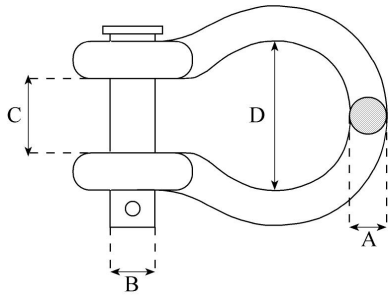
Cause of the Accident

The cause of the accident was the improper sizing of the shackles. More specifically:

a) the dimensions of the shackle body and pin (refer to dimension "A" and "B" below) were less than the minimum bending radius of the sling, thereby causing high stress in the sling fibres at the shackle and severely affecting the rated capacity of the sling; and

b) the overall width of the shackle (refer to dimensions "C" and "D" below) was not large enough to prevent the sling from bunching up in the shackle, thereby further reducing the rated capacity of the sling.

In order to utilize the rated capacity of the sling, the shackle would have had to be significantly larger than was needed for the load being applied. The manufacturer stated that the sling was not designed to be used in the manner which caused it to fail.



Preventive Actions

a) Pipeline Companies should advise its inspectors and contractors of the hazards associated with the improper use of slings.

b) Contractors should obtain all available information from the manufacturer on the proper use and limitations of slings and incorporate the information into their construction and maintenance practices.

For additional information regarding this advisory please contact the National Energy Board at (403) 292-4800 and ask for assistance from staff who deal with pipeline incident investigation matters.

Canada