

TWO TENSIONED ROPE LOWERS – CENTRALLY FOCUSED BRIDLE ATTACHMENTS

Many rescue teams operate their rope rescue stretcher operations with either:
a single tensioned mainline coupled with a separately managed belay line

or

two tensioned mainlines without a separate belay line - often referred to as
'Two Tensioned Rope Lowers'.

Two Tensioned Rope Lower configurations generally include two separate lines attached to the rescue package (patient, attendant(s), and stretcher), each supporting approximately half of the total mass. These configurations are rigged with a variety of stretcher bridle attachments, friction devices to manage the descent, attendant and patient tie-in methods, as well as rope types.

In 2003, we conducted a series of drop tests that focused on certain stretcher bridle attachment methods in a selection of Two Tensioned Rope Lower configurations. The 2003 drop test series looked exclusively at stretcher bridle configurations that included two separate bridles and respective mainline attachments. The findings of that drop test series was presented at the ITRS 2003 in Salt Lake City.

The primary focus of this presentation is on Two Tensioned Rope Lower configurations that incorporate a centrally focused stretcher bridle attachment method. This presentation will share the results of some failure analysis testing whereby we severed one of the two mainlines supporting the rescue mass. The testing was conducted in order to examine the outcome to the rescue package using certain combinations of rope type and size, rescue mass, fall factor, edge considerations, descent control device and gripping ability. The material presented seeks to offer some direction in answering the question, "Can the remaining line in a Two Tensioned Rope Lower system arrest the fall of the rescue mass given certain system configurations?"