

DESIGN LIFE NOW

NATIONAL DESIGN TRIENNIAL 2006

Podcast Transcript: Chuck Hoberman

My name is Chuck Hoberman, and I am an inventor. The rapidly deployable structure is a 500-square-foot tent, designed to military use, which can be set up in about three minutes. Compared to standard tents of the same size, they normally take a couple of hours to set up, so the primary goal of this design is to get a very strong, a very durable tent set up, virtually instantly.

In a rapid military deployment, the first piece of shelter that needs to get set up is the command post, where all of the equipment goes. So the forces would throw a tent out of the back of a Humvee, and four service people would be setting it up in the couple of minutes that it takes, and then putting underneath it, all of the sensitive equipment that has to do with the command control and logistics of the operation.

Our tent was designed to a rigorous and very specific set of specifications that the military has for standard-issue tents, so we were responding to requirements having to do with both ease and speed of setup, the demographics of what the service people are, which would include women, smaller people, the amount of strength that they have, and then all of the structural requirements that have to do with wind loads, rain, and, of course, snow loads. Our picketer tent can take up to ten pounds per square foot of snow, which basically translates into over two tons of weight on the tent without any kind of significant deflection or failure.

When Johnson Outdoors came to us and asked us to look at making a rapidly deployable tent, the thing that they were familiar with was the structures that I've built as toys. But they were able to have the imagination to see that that technology might be applied into this area of military tents. So working with my lead designer, Matt Davis, we analyzed the other rapidly deployable systems that were on the market and basically determined that the scissor linkage, which underlies both my toy and the competitive tents, was actually not the optimum structural system.

So we developed a proprietary, patent pending, structural linkage, which uses gears, gears that have never really been used in this structural context before. This tent had to perform as a mechanism and as a structure, as a mechanism in terms of its rapid deployment and as a structure, once it is deployed; that it gets locked out and can weather all of the kind of use and abuse that it needs to survive.

My specialty is the rapid deployment and structural part of the tent. The covering and fabric was the specialty of Johnson Outdoors. There's a big variety of both materials and requirements that are associated with those coverings. For example, in some cases, you have a requirement to have absolute blackout, so the idea is that at night, the tent has absolutely no light signature whatsoever so that it can be identified.

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Another requirement, of course, is all the weather that the tent has to resist, weather that may go from freezing arctic conditions to very hot desert conditions. There's a series of ancillary components, such as flexible photocell membranes, that go on some of the tents, so, basically, they become self-sustaining as far as power, just soaking up solar power and converting that to electricity.

For me, design is the creation of behaviors, of activities, of interactions. I think that there really is a wide-open, new field of a physical interactivity, if you will, where products or structures can transform, can change size and shape and function in a new, dynamic way.