SEARCH AND RESCUE BRIDGE

Sketch Model Presentation
Search and Rescue Bridge

- **Design**
  - Portable bridge used to cross rivers during SAR operations
  - Lightweight
  - Quickly and easily deployed and retracted

- Currently: Rope bridge or avoid river

- Nationwide SAR equipment allocation: $30 million to $120 million
Requirements

- Estimated 1,250 pound capacity
  - 4 people with packs and one body in a litter
- Deploy from one side of river
- Quick set-up
- Modular
Design Strategies

- Sandwich Beam Design
  - 3 joint variations

- Keystone Bridge Design
Joint Shapes
145 lb limit
150 lb limit
>305 lb limit
Joint Shape Results

- Square tongue-in-groove is superior
- Adhesion between the core and the facings is very important
Concept-Keystone Bridge
Keystone Sketch Model
Keystone with Surface Material
Keystone Conclusions

- Precision of joints is very important
- Using rope to hold tension on bridge is effective
- Deployment of bridge from one side of river is greatest challenge
The Takeaway

- Tests don’t rule out concept
- Next steps:
  - Explore deployability
  - Explore implementation of joint shapes in keystone