



Inventors

Dr. Benjamin Ruddell

Assistant Professor
Department of Engineering,
College of Technology and
Innovation

Intellectual Property

Status:

Patent Pending

Contact

Bill Loux

Director of Business
Development, Physical
Sciences

Arizona Technology
Enterprises, LLC (AzTE)

P: 480.884.1992

F: 480.884.1984

BLoux@AzTE.COM

TECHNOLOGYVENTURES@AzTE.COM

Process Modifying Standard Logistical Transport Pallets to Create Modular Configurable Structures and Structural Elements

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Background

Deployment into combat zones requires rapid construction of outposts and the efficient utilization of every piece of equipment available onsite. A pallet system known as the 463L is used to rapidly load and unload aircraft. During transport the pallets use valuable space within the aircraft. After the pallets are unloaded, they have no use and disposal can be difficult. Developing uses for the pallets would improve space utilization in the transport aircraft and create more functional outposts.

Tents provide no protection from shrapnel, enemy fire, or the environment. The 463L pallet is made from a sandwich-construction design of wood, covered with aluminum. Pallets can include a foam core that has insulation value. Structures built from the 463L pallets would be more durable and provide better protection than tents, which are currently in use.

Invention Description

Researchers at Arizona State University have developed a system for building shelters from 463L pallets. Pallets that are already being used to move materials are connected with uniquely designed brackets that allow the pallets to be connected in various configurations. The pallets can be used to build structures for command posts or housing. Small bridges can be built that will support troops or light vehicles. Fences can be built that can help secure the perimeter of the outpost site. The pallets provide greater protection than tents, and they improve outpost construction efficiency.

Potential Applications

- Military Outposts
- Research Expeditions
- Disaster Relief

Benefits and Advantages

- **Lower Costs** – Requires few additional parts for use in construction.
- **Retrofit** – Allows for reuse of parts already needed for other applications.
- **Structural** – Provides more protection from combatants and the elements than cloth tents.
- **Greater Efficiency** – Allows for use of materials that are already being transported.