With the advent of increased awareness within US Military agencies for enhanced mobility and rapid deployment, the M1022-A1 Dolly Set Mobilizer has become the US Military’s standard system to lift, load and transport ISO Tactical Shelters. More than 800 M1022-A1 systems have been fielded with US Military agencies since 1996.

The M1022-A1 is especially valuable when used as both a shelter handling device (for lifting, handling, truck or aircraft loading), and as a shelter transport device (for highway or rough terrain travel). The self-loading Dolly Set can be used to lift and load ISO Containers or Shelters, transport them over the road or on rough terrain, and unload and position them at their final destination. It facilitates the intermodal transport of ISO Shelters and Containers in forward operating areas where more expensive assets such as cranes, forklifts, RTPCs, PLS systems, trailers, and K-Loaders may not be available.

The Dolly Set is also capable of roll-on/roll-off loading of 8-ft. or 8.5-ft. tall ISO shelters and containers to/from C130 aircraft. Up to two shelters can be loaded per aircraft with the auxiliary C130 Loading Kit.

Each M1022-A1 system consists of a front steerable dolly and a rear trailer dolly along with interconnecting brake and electrical lines to connect to the tow vehicle. After connection to each end of a shelter by means of four twistlock bolts, the Dolly Set raises the shelter to ride height in just a few seconds with its on-board diesel-powered hydraulic system. The M1022-A1 can be towed at highway speeds up to 55 mph (90 kph) or on rough terrain at reduced speeds. When not connected to a shelter, the dolly set can be coupled together as a 4-wheel trailer (in tandem if desired) for transport by road, rail, ship or air.

The M1022-A1 system includes a 6.2 hp diesel engine powered hydraulic system with four cylinders on each half to provide the power required for all connection and lift sequences. The unique patented design also provides for a balanced 3-Wheel handling position for each dolly for ease of unloaded movement and positioning.

The M1022-A1 system was certified by the US Army to meet all specified United States road regulations including the Federal Motor Vehicle Safety Standards (FMVSS) and the Federal Motor Carrier Safety Regulations (FMCSR).

Although designated as a 7.5 ton system, the M1022-A1 Dolly Set has a built-in 10-ton “Overload Capacity” for transport over highways or generally level or improved cross country terrain.
US Army Test & Certification
The M1022-A1 Dolly Set was operationally tested by the US Army at Aberdeen Proving Ground to meet all specified design requirements. A total of 12,000 miles (20,000 km) of testing was performed on two dolly sets over paved highways, gravel roads, cross country terrain, Belgian Block and vibration courses, and both longitudinal inclines (30% grade) and side slopes (20% grade).

At the completion of all tests, the reliability and maintainability of the M1022-A1 system was scored by the US Army as follows:
- Mean Miles Between Mission Failure - 12,000 miles (20,000 km)
- Mean Cycles Between Mission Failure – 55 cycles
- Total Scheduled Maintenance Per Semi-Annual Service – 1.2 hours
- Total Unscheduled Maintenance (over 12,000 miles) – 11.6 hours
- Maintenance Ratio (Hours per Operating Mile) - .003
- Mean Time to Repair - .25 hours

The dolly set was also successfully operated in a cold chamber at temperatures down to -25°F (-32°C) unaided, and at temperatures down to -50°F (-46°C) with the assistance of an auxiliary cold start kit.

Special Purpose Kits
Various Special Purpose Kits have been tested and approved by the US Army and are available for the M1022-A1 system:
- **Side Lift Kit** (NSN 3950-01-418-0930) – Provides new high lift cylinders and all frames and lift chains to permit side loading of ISO Shelters and Containers. This feature permits loading and unloading of Shelters to or from other trucks, trailers and rail cars.
- **Redundant Power Kit** (NSN 1730-01-406-2585) – Provides hydraulic lines and accessory parts to permit the hydraulic system on one dolly half to power the other dolly in the event of an engine/pump malfunction.
- **Cold Start Kit** (NSN 6110-01-466-6395) – Provides an electrical enclosure with associated hardware and connectors to permit fail-safe 12V/24V jumping of the dolly set system direct from the tow vehicle for operation below -25°F (-32°C).

Additional product upgrades (S-280 Shelter Adapters, improved toolboxes, cylinders, engine covers) and auxiliary systems (C130 Loading Kits, Complexing Dollies) are also available and are detailed in separate publications.