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COMMERCIAL ITEM DESCRIPTION

MOBILIZER, DOLLY SET, 12-TON

The General Services Administration has authorized the use of this Commercial Item Description for all federal agencies.

1. SCOPE.

1.1 Scope. This commercial item description (CID) describes a battery powered, dolly set mobilizer that is capable of lifting, loading, and transporting a 20 ft. International Standard Organization (ISO) container or shelter with a payload of up to 12 U.S. tons (24,000 lbs.). The mobilizer consists of a front-steerable dolly and a rear-trailer dolly with interconnecting brake lines and electrical harnesses that can be towed across all surfaces, including primary roads, secondary roads, and cross-country terrain. Each dolly half is equipped with a battery-powered, hydraulic lift system, which allows the mobilizer to act as a shelter-handling device for lifting and loading on vehicles and aircraft. The mobilizer can be towed by any tactical vehicle that can meet the appropriate towing capacity and connections of the mobilizer. The system is designed to be loaded onto a C-5, C-17, and C-130 aircraft using its own power and the aircraft winch.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data that may improve this document should be addressed to AFLCMC/EZSS, Bldg. 28, 2145 Monahan Way, Wright-Patterson AFB, OH 45433-7017 or emailed to ENGINEERING.STANDARDS@US.AF.MIL. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil.

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2. SALIENT CHARACTERISTICS

2.1 Mobilizer description. The dolly set mobilizer shall be used as a method of lifting, loading, and transporting a 20 ft. ISO container or shelter with a maximum payload of 24,000 lb. (10,886 kg). The mobilizer shall be compatible with any vehicle with a 5-ton or higher rating and a pintle hook assembly. The mobilizer shall travel on primary roads and secondary roads and shall be air transportable. The mobilizer shall be able to attach to a shelter, lift for transport, secure in transport mode, and return the shelter to its uncoupled and original configuration.

2.2 Design and construction. The design shall promote cost effective, life-cycle sustainability by addressing considerations such as incorporating open standards, reducing pollutant emissions and wastes, while satisfying system performance requirements. It shall be designed and constructed so that no parts will work loose in service, and to withstand the strains, jars, vibrations, and other conditions incident to shipping, storage, installation, and service. It shall be weatherproof and designed to prevent the intrusion of water, sand, and dust into critical operating components. The mobilizer shall include a one year manufacturer's warranty.

2.2.1 Materials, protective coatings, and finish.

2.2.1.1 Protective coatings. Materials that deteriorate when exposed to sunlight, weather, or operational conditions normally encountered during the service life of the item shall not be used or shall have means of protection against such deterioration that does not prevent compliance with the performance requirements specified herein. Protective coatings that chip, crack, or scale with age or extremes of climatic conditions or when exposed to heat shall not be used. Exposed surfaces of fasteners, handles, and fittings shall also be primed and painted. Prior to painting, metal materials shall be coated with a Chemical Agent Resistant Coating (CARC) system in accordance with MIL-DTL-53072, and aluminum and aluminum alloys shall be coated with a Chemical Conversion Coating in accordance with MIL-DTL-5541, Class 3. See 2.2.4.1 for prohibited hazardous materials.

2.2.1.2 Finish. The exterior finish color of the mobilizer and the inner surfaces of compartments shall be desert tan, color chip number 33446 of SAE-AMS-STD-595.

2.2.1.3 Exclusion of water. The design of the mobilizer shall be such as to prevent water leaking into, or being driven into, any part of the mobilizer interior when either in an operating or travelling configuration. All compartments, covers, etc., shall be provided with sealing arrangements such that the entry of water is minimized when these items are correctly closed. Particular care shall be taken to prevent wetting of equipment and heat and sound proofing materials. Sharp corners and recesses shall be avoided so that moisture and solid matter cannot accumulate to initiate localized attack. Sealed floors with suitable drainage shall be provided for storage compartments, engine compartments, and other areas in the mobilizer that could collect and retain water.

2.2.1.3.1 Fluid traps and faying surfaces. There shall be no fluid traps on the mobilizer. Faying surfaces of all structural joints, except welded joints, shall be sealed to preclude fluid intrusion.

2.2.1.3.2 Ventilation. Ventilation shall be sufficient to prevent moisture retention and buildup.

2.2.1.3.3 Drainage. Drain holes shall be provided to prevent collection or entrapment of water or other unwanted fluid in areas where exclusion is impractical. All designs shall include considerations for the prevention of water or fluid entrapment and ensure that drain holes are located to effect maximum drainage of accumulated fluids. The number and location of drain holes shall be sufficient to permit drainage of all fluids when the mobilizer is on a 10-degree longitudinal slope facing both up and down and on a 10-degree side slope in each direction (right and left side facing up the slope). The diameter of the drain holes shall be a minimum of 0.375 inch.

2.2.2 Markings. All external devices which require an operational or maintenance interface shall be marked in accordance with MIL-STD-130. Markings shall be applied with decals and shall be 1-inch high block letters unless prohibited by the available space. In such cases, the markings shall be the largest size possible. Markings, Information/Caution shall be matte black in color and Markings, Warning/Danger shall be matte red in color. Tire inflation pressure, pintle hook rating, winch point capacity and tie down rating shall be marked as near to each respective item as practicable.

2.2.3 Identification and information plates. All data plates shall be permanently marked and constructed of a non-corrosive metal in accordance with MIL-STD-130. All data plates shall be attached using stainless steel or anodized aluminum screws or rivets, or with stainless steel or aluminum banding, if attached to hydraulic cylinders. Attachments shall be in a conspicuous location, which is readily viewable to service personnel standing on level ground during all stated procedures. The size of the plates shall not exceed the structure to which it is attached.

2.2.3.1 Identification plate. The mobilizer shall have three identification plates: one for the rear-dolly half, one for the front-dolly half, and one for the mobilizer as a whole. The identification plates for the rear and front dolly, individually, shall include the following: nomenclature, National Stock Number (NSN), registration number, manufacturer's name, manufacturer's serial number, and contract number. The identification plate for the mobilizer as a whole shall be securely attached to the mobilizer in a readily-accessible location and shall contain the following information: nomenclature, registration number, part number, manufacturer's name, manufacturer's serial number, date of manufacture, date of warranty expiration, Commercial and Government Entity (CAGE) code, NSN, technical manual number, and contract number. The mobilizer and any of its components, for which the Government's unit cost is more than $5,000 or the procuring agency determines is mission essential, is serially managed and shall have Unique Identification (UID) (also known as Item Unique Identification (IUID)) information permanently affixed on or near the respective identification plate(s), marked in accordance with MIL-STD-130. UID information shall be included as both a bar code and legible markings.

2.2.3.2 Transportation data plate. A transportation data plate shall be securely attached to the mobilizer in a readily-accessible location. The following information, at minimum, shall be provided for an unloaded configuration of the mobilizer set.

a. Side and rear silhouette views of the mobilizer in transport configuration with dimensions of overall height, width and length, horizontal and vertical location of the center of gravity, axle locations, axle springs, and ground clearance.

b. A chart with actual weights from the first production mobilizer, with all equipment in storage position. The chart shall provide the front and rear axle loads, lunette load, complete vehicle loads (unloaded and evenly loaded to full capacity), loading cubage, tie down information, and lifting provisions.

2.2.3.3 Lubrication data plate. The mobilizer shall be provided with a permanently-marked lubrication data plate constructed of a non-corroding metal, mounted on the exterior surface of the mobilizer that shall direct attention to all lubrication fittings and components that require lubrication. The plate shall identify the type and grade of lubricant required for operational temperatures as specified in 2.3.1.

2.2.3.4 Coupling plate. The coupling plate shall give instructions for the coupling and uncoupling of the mobilizer. The plate shall detail, at the least, the coupling of the mobilizer to the container, lifting and preparation for shipment, lowering and uncoupling from shelter, and preparation for unloaded mobilizer movement. The plate shall be attached in a conspicuous place, readily accessible during all stated procedures (see 2.8.2).

2.2.4 Environment, Safety, and Occupational Health (ESOH).

2.2.4.1 Hazardous material. The design shall minimize and control hazards associated with the inclusion or use of hazardous or toxic materials and the generation of toxic or noxious gases. The mobilizer shall not generate or use Class I or Class II Ozone Depleting Substances (ODS) during operation, maintenance, or disposal. Class I ODS and hazardous materials shall not be used in any system, component, or process. The mobilizer shall not contain or use either hexavalent chromium or cadmium without written approval by the procuring activity. Hazardous materials are defined in AFMAN 32-7002; Class I and Class II ODS are defined in 40 CFR 82.

2.2.4.2 Component protection. All space in which work is performed during operation, service, and maintenance shall be free of hazardous protrusions, sharp edges, or other features, which may cause injury to personnel. All rotating and reciprocating parts and all parts subject to high operational temperatures or subject to being electrically energized, that are of such nature or so located as to be hazardous to personnel, shall be guarded or insulated to eliminate the hazard. All wires, cables, tubes, and hoses shall be supported and protected to minimize chafing and abrasion and shall be located so as to provide adequate clearance from moving parts and high operational temperatures. Grommets shall be provided wherever wires, cables, tubes, or hoses pass through bulkheads, partitions, or structural members.

2.2.4.3 Foreign object damage (FOD). All loose metal parts, such as pins or connector covers, shall be securely attached to the mobilizer with wire ropes or chains. "Dog tag" style beaded chains shall not be provided. Removable panels, if provided, shall be attached with captive fasteners. Tire valve stem caps shall be made of plastic.

2.2.5 Human systems integration. The mobilizer shall be designed in accordance with MIL-STD-1472 for ease of operation, inspection, and maintenance, including the use of arctic mittens and Mission-Oriented Protective Posture (MOPP) Level 4 Chemical Warfare Gear. Chemical Warfare Gear is not required for preventive maintenance or major corrective

maintenance. Warning decals or labels shall be added to surfaces exceeding temperature requirements in accordance with 5.7.6.9 of MIL-STD-1472.

2.2.6 Fastening devices. All screws, bolts, nuts, pins, and other fastening devices shall be properly designed, manufactured, and installed with adequate means of preventing loss of torque or adjustment. Cotter pins, lock washers, or nylon patches shall not be used for this purpose, except for the attachment of trim items or as provided in commercial components (see 6.3.1). Tapped threads shall have a minimum thread engagement in accordance with Table I.

TABLE I. Minimum thread engagement.

Material	Minimum Thread Engagement
Steel	1.0 times the nominal fastener diameter
Cast iron, brass, or bronze	1.5 times the nominal fastener diameter
Aluminum, zinc, or plastic	2.0 times the nominal fastener diameter

2.2.7 Welders and welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface parts to be welded shall be free from rust, scale, paint, grease, and other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the welded parts. Welds shall transmit stress without cracking or permanent distortion when the parts connected by the welds are subjected to test, proof, and service loadings.

2.3 Environmental conditions.

2.3.1 Operating temperature range.
The mobilizer shall be capable of operating in ambient temperatures ranging from -40 °F to 125 °F (see 4.5.2.1).

2.3.2 Storage temperature range. The mobilizer shall be capable of being stored in ambient temperatures ranging from -65 °F to 160 °F (see 4.5.2.1).

2.3.3 Precipitation.

2.3.3.1 Rain. The mobilizer shall be capable of storage and operation during rainfall of 5 inches per hour for three consecutive hours and 10 inches per hour for ten consecutive minutes, with winds of up to 35 knots and with 6 inches of rain per hour impinging on the mobilizer at angles from vertical to 45 degrees for 30 consecutive minutes (see MIL-STD-810, Method 506.6).

2.3.3.2 Snow. The mobilizer shall be capable of storage and operation during accretion of wet snow up to 2 inches per hour for at least 12 hours.

2.3.4 Solar radiation. The mobilizer shall not be adversely affected by full time exposure to solar radiation, such as those conditions encountered in desert environments.

2.3.5 Sand and dust. The mobilizer shall be capable of storage and operation during exposure to wind-blown sand or dust without damage or deterioration of performance.

2.4 Weight and dimensions. Overall weight and dimensions in an empty (unloaded) configuration (see 2.5.2) shall not exceed:

Weight	7,000 lbs.
Length (with tow bar)	220 inches
Width	96 inches

2.5 Transportability.

2.5.1 Surface transportability. The mobilizer shall be transportable via all modes of surface shipment (highway and water) in accordance with MIL-STD-1366, and shall be capable of withstanding the mechanical shock and vibration characteristics of highway and water transport.

2.5.2 Air transportability. The mobilizer shall be transportable on, C-5, C-17, and C-130 aircraft in accordance with MIL-STD-1791. The mobilizer shall be air transportable in an empty, unloaded configuration (mobilizer set) and a fully loaded configuration with a 20 ft. ISO container. The tow bar shall be stowed in air transportable configuration. The total weight specified in 2.4 does not include the container. The container will be restrained to the aircraft separately and independently. In all air transport configurations, the mobilizer, including all equipment, shall be capable of being restrained and withstanding, without loss of serviceability, 2.0 G up and 4.5 G down accelerations, and shall be capable of being restrained and withstanding, without loss of structural integrity, 3.0 G forward, 1.5 G aft, and left/right hand 1.5 G lateral accelerations. The mobilizer shall be equipped with pressure relief devices or configured for air transport to prevent any part from becoming a projectile in the event of catastrophic loss of aircraft cabin pressure. The mobilizer shall roll on and off the aircraft, negotiating the required maximum ramp angles without shoring.

2.5.2.1 Winch points. Winch points shall be provided at the front and rear of the mobilizer for aircraft loading using the aircraft's winch. Winch points shall be marked for capacity (see 2.2.2).

2.5.2.2 Equipment removal and reconfiguration. Preparation for air transport shall take no more than 30 minutes and restoration to operating configuration shall take no more than 30 minutes for four persons using common hand tools (see 6.3.2). All equipment removed shall be stored on the mobilizer; caps and plugs shall permit moving and storage in transport configuration.

2.5.3 Tie downs. The mobilizer shall be symmetrically restrained during air and ground transport. Tie down points shall be rated to the gross vehicle weight rating (GVWR), marked for capacity (see 2.2.2), with a clear opening compatible with MIL-DTL-25959 and MIL-PRF-27260 tie down devices. Each end of each tie down device shall terminate at a tie down point and not pass through any other tie down point. There shall be no interference between tie down devices and the mobilizer. The tie down provisions shall be in accordance with 4.1 through 4.12 of MIL-STD-209.

2.5.4 Lifting provisions. The mobilizer shall be equipped with sufficient attachment points so located that it can be lifted by crane; each attachment point shall be marked "Lift Point". The lifting provisions shall be in accordance with 5.1 through 5.1.4 of MIL-STD-209.

2.6 Inspection and servicing provisions.

a. Pre-use inspections and servicing tasks shall not require tools.

b. Routine service and preventive maintenance shall not require special tools (see 2.7 and 6.3.5).

c. Drain plugs and filters shall be directly accessible from the ground and oriented to have unimpeded drainage to a catch pan.

d. The mobilizer shall be designed with maximum usage of sealed lifetime lubrication bearings.

2.7 Special tools. The design of the item shall minimize the requirement for special tools (see 6.3.5). All special tools shall be provided with, and stored on, the mobilizer.

2.8 Performance.

2.8.1 Payload. The mobilizer shall be capable of transporting an 8-foot high by 8-foot wide by 20-foot long shelter or container (the payload) configured with ANSI/ISO corners. The standard payload shall not exceed 24,000-lbs.b gross weight. The CG of the load can be described by a rhombus that varies not more than ±5 ft. of either side of the longitudinal axis of the shelter and ±2 ft. of either side of the lateral axis. The vertical CG shall not exceed 4 ft. from the floor of the shelter. The design of the dolly shall be such to accommodate this variation in loading.

2.8.2 Coupling. The coupling (or loading) function of the mobilizer shall ensure the mobilizer attaches to each end of an ISO shelter to secure for transport. The uncoupling function, or reverse procedure, shall include detaching the shelter from the mobilizer and placing on a surface. A single mobilizer half shall be designed to be easily maneuverable by the crew over all types of terrain likely in preparation for coupling to a shelter.

2.8.2.1 Attaching devices. The mobilizer shall be capable of being attached to the container or shelter utilizing any combination of the ANSI/ISO twist-lock couplers, which shall meet the requirements stated herein. Four couplers are required on each unit of the mobilizer (front and rear), arrayed to match with the fittings at the ends of an ISO shelter or container in accordance with ISO 1161 and ISO 668.

2.8.2.2 Operational cycle. The mobilizer operational cycle includes coupling to a shelter of up to 24,000 lbs., lifting the shelter for transport, lowering, and uncoupling the shelter. The operational cycles shall be accomplished without special tools (see 2.7 and 6.3.5) or auxiliary equipment, in both paved and cross-country conditions, by four personnel, and in 30 minutes or less. The reverse procedure shall also meet the same criteria.

2.8.2.3 Transport mode. A mobilizer in transport mode shall raise a shelter, using mobilizer power, to a traveling height that meets the minimum ground clearance, and leveled. The mobilizer with shelter can then be coupled to a towing vehicle and transported effectively.

2.8.3 Towing vehicle capability. The mobilizer shall be compatible with commercial and military tactical wheeled vehicles of 5-ton rating or greater with a rear pintle capable of towing a fully loaded mobilizer, an empty or unloaded mobilizer, and two mobilizers in tandem.

2.8.3.1 Unloaded operation. The mobilizer shall have the capability of being towed as one empty mobilizer, with no special preparation. All braking and lighting requirements specified herein shall be met.

2.8.3.2 In-tandem operation. The mobilizer shall have the capability of being towed as two unloaded mobilizers in tandem in all environments specified herein, with no special preparation, without incurring unusual wear on the mobilizers or prime movers. Interconnection of the mobilizers in tandem shall be provided to meet braking and lighting requirements specified herein.

2.8.3.2.1 Pintle hook. The mobilizer shall be fitted with one pintle hook capable of towing an unloaded dolly set in tandem, mounted in accordance with 3.13 of SAE AS8090. A permanent label of the pintle hook rating shall be placed near the pintle.

2.9 Mobility. The mobilizer shall be capable of meeting the requirements within 2.8, towed by a vehicle in accordance with 2.7.3, as 1) an unloaded, empty configuration and 2) a fully loaded configuration with a maximum payload of 24,000 lbs.

2.9.1 Terrain.

2.9.1.1 Paved surfaces. The mobilizer shall be towable at speeds up to 55-miles per hour (mph) over paved surfaces.

2.9.1.2 Graded gravel. The mobilizer shall be towable at speeds up to 20-mph over graded gravel (see 6.3.4).

2.9.1.3 Cross-country. The mobilizer shall be towable at speeds up to 25-mph over cross-country terrain (see 6.3.3).

2.9.2 Gradeability. The towed mobilizer, fully and uniformly loaded, shall exhibit stability and gradeability specified herein, without spillage of any fluid.

2.9.2.1 Longitudinal inclines. The mobilizer shall follow the tow vehicle, without weaving to an extent which adversely affects the controllability of the vehicle combination when ascending or descending longitudinal inclines having a 20 degree slope without spillage of any fluid.

2.9.2.2 Side slope negotiation. The mobilizer shall be able to negotiate an 11.5-degree side slope in each direction (right and left side facing up the slope) without spillage of any fluid.

2.9.3 Fording. The mobilizer shall ford hard bottom salt or fresh water crossings to depths covering all four tire and wheel assemblies. The mobilizer shall withstand submergence for at least 15 minutes without being damaged, and without special preparation or servicing before or after fording operations. No evidence of water leakage or moisture penetration into sealed wheel bearings shall be permitted.

2.9.4 Clearances. The mobilizer, fully loaded, shall have a minimum ground clearance of 14 inches.

2.9.5 Suspension. The suspension shall be able to provide approximately the same ride performance between half of the maximum load and the maximum load (12,000 lbs. - 24,000 lbs.). Any requirement for the use of air pressure in the suspension system or elsewhere shall not exceed the maximum pressure available from tow vehicle. When operating on the maximum side slope, the suspension roll stiffness shall be sufficient to prevent a significant change in the CG location of the load that would in itself cause an unstable geometry, i.e., overturning.

2.9.6 Brakes.

2.9.6.1 Parking brakes. The mobilizer shall have parking brakes in accordance with 3.6.1 of SAE AS8090 and hold at a 20-degree longitudinal incline.

2.9.6.2 Service brakes. The mobilizer shall have service brakes in accordance with 3.6.2 of SAE AS8090 and hold at a 20-degree longitudinal incline.

2.9.6.3 Emergency brakes. The system shall include emergency breakaway features and relay emergency valves that comply with the requirements of 49 CFR, 393.43. Upon breakaway from the tow vehicle, emergency brakes shall hold the brakes stationary on grades up to 30 percent for a period of 15 minutes.

2.9.7 Towing force. The towing force shall be in accordance with 3.3.4 of SAE AS8090.

2.9.8 Steering. The mobilizer shall have a steering system in accordance with 3.5.1.1 of SAE AS8090.

2.9.8.1 Tracking ability. The mobilizer shall conform to the tracking requirements of Federal Motor Carrier Safety Administration (FMCSA), 49 CFR 393.70.

2.9.8.2 Safety chains. The mobilizer shall be equipped with safety chains for coupling to the tow vehicle in accordance with 49 CFR 393.70.

2.9.8.3 Maneuvering. The fully-loaded mobilizer shall be capable of maneuvering a 38-degree steering angle in both directions to the coupled towing vehicle without interference or damage to the mobilizer or tow vehicle.

2.9.9 Tow bar. The mobilizer shall be equipped with a tow bar in accordance with 3.17.1 of SAE AS8090. It shall have a lunette eye in accordance with A-A-52464 and accommodate any pintle

hook height from 27 through 40 inches and cover ranges of all military tactical vehicles of 5-ton ratings or higher. The tow bar shall have a securing mechanism to be stowed in air transportability configuration or when not in operation.

2.9.10 Tires and wheels. The mobilizer shall be equipped with single or dual tubeless steel belted radial tires with on/off-road type tread mounted on steel disc wheel assemblies. Tire and wheel assemblies shall be identical at all wheel positions. Tires and wheels shall be in accordance with the *Tire and Rim Association Year Book* (see 6.1.7) requirements for this application. MIL-STD-1791 shall be used for selecting the tire and tire pressure or wheel to preclude use of rolling or other weight spreading shoring during loading and unloading. The internal tire pressure shall not exceed 100 pounds per square inch (PSI), without loss of weight carrying capabilities, to eliminate weight spreading shoring when air transporting in the C-130.

2.10 Lifting system. The mobilizer shall be equipped with a lifting system, hydraulically driven via an onboard battery system that complies with the following requirements:

a. The lifting system shall be able to lift a shelter into transport mode (see 2.7.2.3), i.e. up to required ground clearance with the suspension active. The capacity of the system shall be sufficient to lift shelter weights of up to 24,000 lbs. with maximum CG shifts as prescribed in 2.8.1.

b. The lifting system shall be able to lift a shelter up to the maximum payload to a minimum of 32 inches from the ground.

c. The system shall be able to relieve the payload from the wheels while the dolly set is attached to the deployed shelter.

d. The lifting system shall allow sufficient adjustment for aircraft boarding. The lifting system shall have a positive mechanical lock to secure to a shelter in the travel mode.

e. The mobilizer shall be able to level the shelter on uneven terrain.

f. The lifting system shall be able to perform a minimum of eight operation cycles (see 2.8.2.2) on a fully charged battery.

2.10.1 Hydraulic system. The hydraulic system shall be designed in accordance with 3.13.1.3 of SAE ARP1247 except as otherwise specified herein. O-ring face seal hydraulic fittings may be used in lieu of flared fittings (see 3.13.1.3.12 of SAE ARP1247). Hydraulic fluid shall be in accordance with MIL-PRF-83282. All hydraulic system components, including the hydraulic tank, shall also comply with all corrosion resistance requirements specified herein.

2.10.2 Batteries and battery compartment.

2.10.2.1 Batteries. The mobilizer shall have a battery on each half to power the hydraulic lifting system. Batteries shall be sufficient in capacity to fully operate and power the mobilizer and meet all applicable requirements specified herein. Batteries shall be of the commercial (see 6.3.1)

maintenance-free sealed lead acid, starved electrolyte, gas recombination, spiral wrapped, absorbent gas mat (AGM), top post type in accordance with MIL-B-18013/1.

2.10.2.2 Battery charging. The batteries shall be rechargeable from a 120-volt AC power source and take no more than four hours to recharge and compatible with the power adapter kit (see 2.14).

2.10.2.3 Battery compartment. The batteries shall be enclosed in a corrosion-resistant, weatherproof box or compartment, resistant to environmental conditions within 2.3, and shall be readily accessible.

2.10.2.4 Battery cables. The battery cables shall be sized to handle the system voltage and current levels, be clearly identified with "+" and "-" or red and black markings, and shall not be spliced.

2.11 Air line couplings and markings. On the front unit of the mobilizer set, permanently-attached air lines and hoses (attached with thread fittings) shall be provided to supply air for braking requirements. The air lines shall be routed along the trailer tongue, and shall be sufficiently long to couple with the glad hands at the rear of the tow vehicle. No pulling or kinking of lines shall occur throughout the entire articulation range between the towed and towing vehicle. The mobilizer shall have couplers in accordance with 3.5 of SAE AS8090. Dummy couplers shall be provided for storing air lines when they are not in use. The use of the tow vehicle air pressure shall not interfere with the operation of the braking system of the tow vehicle and the Mobilizer.

2.11.1 Brake system hoses and fittings. Air-hose fittings and locations shall comply with SAE J702.

2.11.1.1 Intravehicular brake connecting hoses. A line of sufficient length shall provide a connection between braking system of the front and rear mobilizer sections when loaded with a 20-foot shelter by routing the line over the shelter. Stowage location shall be provided for excess line when the mobilizer is towed in the empty configuration, and to hold the brake lines to the top of the shelter when loaded.

2.11.1.2 Intervehicular brake connecting hoses. Line(s) of sufficient length to reach the towing vehicle without interference during operation and capable of connecting to the towing vehicle connector shall be provided.

2.11.1.3 Tandem interconnector. A quick-disconnect, air line connector shall be provided on the rear section of the mobilizer to permit the towing of tandem, unloaded mobilizers.

2.11.2 Electrical system. The mobilizer shall have a 12- or 24-volt, negative ground electrical system in accordance with 3.13.1.2 of SAE ARP1247 except as otherwise specified herein.

2.11.2.1 Intravehicular electrical connecting cable. A cable of sufficient length shall provide an electrical connection between front and rear dolly sections, when loaded with a 20-foot shelter, by routing the cable over the shelter. A stowage location shall be provided for excess cable when the dolly is towed in the empty configuration.

2.11.2.2 Intravehicular electrical connecting cable. Cables of sufficient length shall be provided to reach the towing vehicle without interference during operation and capable of connecting to a 7-pin connector in accordance with SAE J560 and a 12-pin connector in accordance with MS75021.

2.11.2.3 Tandem interconnector. One 7-pin electrical connector in accordance with SAE J560 shall be provided on the rear section of the dolly to permit towing of an unloaded mobilizer in tandem. A stowage location shall be provided for cable when not in use.

2.11.2.4 Lighting. The electrical lighting system shall be of LED type. All lights and reflectors shall be protected from operational hazards by mounting in guarded locations. Weatherproof connectors, resistant to environmental conditions within 2.3, shall be employed throughout. Additionally, the rear dolly shall be equipped with stoplights and taillights in accordance with FMCSA and FMVSS guidance.

2.11.2.5 LED blackout light. LED blackout lights shall be installed on the rear of dolly frame near the taillight. The taillights and stoplights shall be installed such that they shall not function during the use of the LED blackout lights. The rear dolly shall be equipped with stoplights and taillights in accordance with FMCSA and FMVSS guidance.

2.12 Reflectors. Reflectors shall be mounted in accordance with 49 CFR 393.11.

2.13 Redundant power system. The mobilizer shall include a design capability to share power between mobilizers in the field. A kit shall be provided with each mobilizer which shall allow operation of one mobilizer unit from the other (front-to-rear or rear-to-front) in the event of a failure on one unit. This shall be accomplished with extension hoses from one end to the other. The kit shall allow the use of each mobilizer unit to connect to and raise a container for transport, and shall not require the use of special tools. The kit shall include all hardware and instructions necessary to safely install and operate the mobilizer. All hardware shall be stowed on the mobilizer when not in use, and all hoses shall utilize quick-disconnect connections.

2.14 Power adapter kit. A power adapter kit shall be provided with each mobilizer to ensure international usage of the battery charger. The kit shall be stowed on the mobilizer when not in use.

2.15 Winterization system. When specified, a winterization system may be provided for starting in temperatures below -25 °F. The winterization system may include heaters for battery warmers. The winterization system shall be designed to operate from an external 12- or 24-volt DC power source utilizing the external electrical connections (see 2.11.2) and compatible with the power adapter kit. The winterization system shall incorporate high-temperature shutoff switches to prevent overheating of any fluid or component.

2.16 Steps and handles. The mobilizer shall be equipped with, or a combination of, fixed steps, handles, handrails, or a detachable ladder which safely allow personnel to completely attach and detach the mobilizer and container combination in accordance with MIL-STD-1472. Removable items (i.e. ladder) shall be secured to the mobilizer and not shift or fall during mobile operation.

2.17 Storage box. A fully enclosed storage box shall be provided to store any special equipment or tools, basic issue items, and manuals. The box shall have a hinged door with appropriate latch to secure the door closed. In addition, there shall be provision for locking the storage compartment with a padlock. The box shall be fully accessible in both loaded and unloaded mobilizer configurations. The storage box shall be sealed against the entry of water due to rain or washing. Drainage shall be provided to prevent the accumulation of condensation.

2.18 Workmanship. The mobilizer, including all parts and accessories, shall be constructed and finished in a thoroughly workmanlike manner. Workmanship objectives shall include freedom from blemishes, defects, burrs and sharp corners and edges; accuracy of dimensions, surface finish, and radii of fillets; thoroughness of welding, painting, and riveting; marking of parts and assemblies; and proper alignment of parts and tightness of assembly fasteners.

2.18.1 Bolted connections. Bolt holes shall be accurately punched or drilled and shall be deburred. Threaded fasteners shall be tight and shall not work loose during testing or service usage.

2.18.2 Riveted connections. Rivet holes shall be accurately punched or drilled and shall be deburred. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the component.

2.18.3 Gear and lever assemblies. Gear and lever assemblies shall be properly aligned and meshed and shall be operable without interference, tight spots, loose spots, or other irregularities. Where required for accurate adjustment, gear assemblies shall be free of excessive backlash.

2.18.4 Cleaning. The mobilizer shall be thoroughly cleaned. Loose, spattered, or excess solder; welding slag; stray bolts, nuts, and washers; rust; metal particles; pipe compound; and other foreign matter shall be removed during and after final assembly.

3. REGULATORY REQUIREMENTS

3.1 Recycled, recovered, environmentally preferable, or biobased materials. Recycled, recovered, environmentally preferable, or biobased materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR). However, used, rebuilt, or refurbished items shall not be provided.

3.2 Green Procurement Program (GPP). Green Procurement Program (GPP) is a mandatory federal acquisition program that focuses on the purchase and use of environmentally preferable products and services. GPP requirements apply to all acquisitions using appropriated funds, including services and new requirements. FAR 23.404(b) applies and states the GPP requires 100 percent of EPA designated product purchase that are included in the Comprehensive Procurement Guidelines list that contains recovered materials, unless the item cannot be acquired: a) competitively within a reasonable timeframe; b) meet appropriate performance standards, or c) at

a reasonable price. The prime contractor is responsible for ensuring that all subcontractors comply with this requirement.

4. PRODUCT CONFORMANCE PROVISIONS

The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace, modified as necessary to comply with the requirements herein. The Government reserves the right to require proof of such conformance.

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First production inspection (see 4.2).

b. Conformance inspection (see 4.3).

4.2 First production inspection. The first production mobilizers shall be subjected to the analyses, demonstrations, examinations, and tests described herein. The contractor shall provide or arrange for all test equipment and facilities, including the compatibility test described herein. All verification methods, test facilities, analyses, and certifications shall be approved by the Government technical point of contact prior to the start of testing. The contractor is to receive DoD test rates at a Major Range Test Facility Base.

4.3 Conformance inspection. Each production mobilizer shall be subjected to the examination described in 4.5.1.

4.4 Inspection requirements.

4.4.1 General inspection requirements. Apparatus used in conjunction with the inspections specified herein shall be laboratory precision type, calibrated at proper intervals to ensure laboratory accuracy.

4.4.2 Data. During all testing specified herein, at least the following data, unless not applicable, shall be recorded at intervals not to exceed 30 minutes. Additional data or shorter intervals shall be provided as appropriate for any specific test.

a. Date.

b. Time started.

c. Time finished.

d. Ambient temperature.

e. Ambient humidity.

4.4.3 Test rejection criteria. Throughout all tests specified herein, the mobilizer shall be closely observed for the following conditions, which shall be cause for rejection.

a. Failure to conform to design or performance requirements specified herein or in the contractor's technical proposal.

b. Any spillage or leakage of any liquid, including fuel, coolant, lubricant, or hydraulic fluid, under any condition, except as allowed herein.

c. Thermal or structural failure of any component, including permanent deformation, or evidence of impending failure.

d. Evidence of excessive wear. If excessive wear is suspected, the original equipment manufacturer’s (OEM’s) specifications or tolerances shall be utilized for making a determination.

e. Evidence of corrosion or deterioration.

f. Misalignment of components.

g. Conditions that present a safety hazard to personnel during operation, servicing, or maintenance. The criteria for safety hazards to personnel shall be in accordance with MIL-STD-1472 and at the discretion of the Government technical point of contact.

h. Interference between the mobilizer components or between the mobilizer, the ground, and all required obstacles, with the exception of normal contact by the tires.

i. Evidence of undesirable mobility characteristics, including instability in handling during cornering, braking, and while traversing all required terrain.

4.5 Test methods.

4.5.1 Examination of product. Each mobilizer shall be examined to verify compliance with the requirements herein prior to accomplishing any other demonstrations or tests listed in 4.5. A contractor-generated, Government-approved checklist (part of the test procedure) shall be used to identify each requirement not verified by an analysis, certification, demonstration, or test, and shall be used to document the examination results. Particular attention shall be given to materials, workmanship, dimensions, surface finishes, protective coatings and sealants and their application, welding, fastening, and markings. Proper operation of each mobilizer function shall be verified. Certifications and analyses shall be provided in accordance with requirements herein. Each production mobilizer shall be inspected to a Government-approved reduced version of the checklist.

4.5.2 Environmental testing.

4.5.2.1 High temperature storage and operation test. A first production mobilizer shall be tested in accordance with MIL-STD-810, Method 501.7, to demonstrate compliance with the low temperature storage and operating requirements of 2.3.1 and 2.3.2. Test duration shall be one 24-hour cycle. An engineering analysis may be performed in lieu of testing to demonstrate compliance with high temperature storage and operating requirements.

4.5.2.2 Low temperature storage and operation test. A first production mobilizer shall be tested in accordance with MIL-STD-810, Method 502.7, to demonstrate compliance with the low temperature storage and operating requirements of 2.3.1 and 2.3.2 and with the winterization system requirement of 2.15. Test duration shall be one 24-hour cycle for each procedure beginning no less than two hours after test item temperature stabilization.

4.5.3 Weight and dimension tests.

4.5.3.1 Weight and center of gravity test. The weight and center of gravity of a first production mobilizer shall be measured to demonstrate compliance with 2.4 and 2.8.1.

4.5.3.2 Dimension measurement. A first production mobilizer shall be measured to demonstrate compliance with the dimensional requirements of 2.4.

4.5.4 Transportability verification.

4.5.4.1 Air transportability analysis. An engineering analysis shall be performed to demonstrate compliance with the air transportability requirements of 2.5.2. The analysis shall include the tie downs (see 2.5.4), and all major components, and their ability to withstand the accelerations. The analysis shall demonstrate the accessibility and structural adequacy of the winch points specified in 2.5.2.1. The evaluation shall also include a dimensional analysis for the mobilizer while traversing the ramp and while loaded aboard C-5, C-17, and C-130 aircraft. The contractor shall contact the Government prior to acceptance of the first production unit to coordinate the Air Transportability certification with Air Transportability Test Loading Agency.

4.5.4.1.1 Tie down provision analysis. An engineering analysis shall be performed to demonstrate compliance with the tie down provision requirements of 2.5.3.

4.5.4.1.2 Lifting provision analysis. An engineering analysis shall be performed to demonstrate compliance with the lifting provision requirements of 2.5.4.

4.5.4.2 Equipment removal and reconfiguration demonstration. A first production mobilizer shall be configured for transport on C-5, C-17, and C-130 aircraft and then reconfigured for operation to demonstrate compliance with 2.5.2.2. It shall be demonstrated that the forces required do not exceed those allowed in MIL-STD-1472.

4.5.5 Mobility tests. A first production mobilizer shall be tested to demonstrate compliance with the mobility requirements of 2.8. A first production mobilizer shall be tested in a fully loaded configuration to comply with 2.8.1.

4.5.5.1 Parking brake test. The mobilizer shall be tested in accordance with 4.5.7.1 of SAE AS8090 to demonstrate compliance with 2.9.6.1.

4.5.5.2 Service brake test. The mobilizer shall be tested in accordance with 4.5.7.2 and 4.5.8 of SAE AS8090 to demonstrate compliance with 2.9.6.2.

4.5.5.3 Emergency brake test. The mobilizer shall be tested to demonstrate compliance with 2.9.6.3.

4.5.5.4 Paved surfaces. A first production mobilizer shall be towed for 10 miles at its maximum speed of 55 mph on a dry, level, paved surface to demonstrate compliance with 2.8.1 and 2.9.1.1.

4.5.5.5 Graded gravel. A first production mobilizer shall be towed for 10 miles at its maximum speed of 20 mph on graded gravel to demonstrate compliance with 2.8.1 and 2.9.1.2.

4.5.5.6 Cross-country terrain. A first production mobilizer shall be towed for 10 miles at its maximum speed of 25 mph on cross-country terrain to demonstrate compliance with 2.8.1 and 2.9.1.3.

4.5.5.7 Longitudinal inclines. The fully-loaded mobilizer and tow vehicle shall be able to ascend and descend a 30-percent grade ramp in compliance with 2.9.2.1.

4.5.5.8 Side slope negotiation. A first production mobilizer, loaded to its GVWR, shall be driven on a side slope of at least 11.5-degrees with its right side facing up slope to demonstrate compliance with 2.9.2.2.; this shall be repeated with the left side facing up slope.

4.5.5.9 Fording. A first production mobilizer, with a container at maximum capacity, shall ford hard bottom salt or fresh water crossings to depths covering all four tire and wheel assemblies, and be able to withstand submergence for at least 15 minutes without damage to demonstrate compliance with 2.9.3.

4.5.5.10 Clearances. A first production mobilizer, loaded to its GVWR, shall be parked on a flat, level surface and its ground clearance shall be measured to demonstrate compliance with 2.9.4.

4.5.5.11 Suspension. A mobilizer shall be tested in accordance with 3.4.1.2 of SAE AS8090 to demonstrate compliance with 2.9.5.

4.5.6 Compatibility test.

4.5.6.1 Coupling. The mobilizer shall be tested to demonstrate compliance with 2.8.2.

4.5.6.2 Attaching devices. A mobilizer shall be tested to demonstrate compliance with 2.8.2.1.

4.5.6.3 Operational cycle. The mobilizer shall be tested to demonstrate compliance with 2.8.2.2.

4.5.6.4 Transport mode. The mobilizer shall be tested to demonstrate compliance with 2.8.2.3.

4.5.7 Towing vehicle capability. The mobilizer, with a container at maximum capacity, shall be able to demonstrate compliance with a wheeled vehicle of a 5-ton rating or greater, and with a rear pintle-hook assembly. The mobilizer shall be able to maneuver a 38-degree steering angle in both directions to the coupled towing vehicle.

4.5.7.1 Pintle hook. The mobilizer shall be tested in an accordance with 3.13 of SAE AS8090 to demonstrate compliance with 2.8.3.2.1.

4.5.7.2 Tow bar. The mobilizer shall be tested to demonstrate compliance with 2.9.9.

4.5.8 Lifting system. The first production mobilizer shall be able to lift a container during end-lift transport to demonstrate compliance with 2.10.

4.5.9 Redundant power system test. A first production mobilizer shall be tested to demonstrate compliance with the redundant power system requirements of 2.13.

5. PACKAGING.
Preservation, packing, and marking shall be as specified in the contract or order.

6. NOTES.

6.1 Source of documents.

6.1.1 Department of Defense and Federal documents. Department of Defense and Federal documents are available online at https://quicksearch.dla.mil/.

6.1.2 AFMAN. Copies of Air Force Manuals are available online at http://www.e-publishing.af.mil/.

6.1.3 CFR. Copies of the CFR are available online at http://www.ecfr.gov/.

6.1.4 FAR. The FAR may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh PA, 15250-7954. Electronic copies of the FAR may be obtained from http://farsite.hill.af.mil/.

6.1.5 SAE documents. Application for copies should be addressed to SAE International, 400 Commonwealth Drive, Warrendale PA, 15096, or online at http://www.sae.org/.

6.1.6 Tire and Rim Association documents. Application for copies should be addressed to The Tire and Rim Association, Inc., 175 Montrose West Ave., Suite 150, Copley OH, 44321, or online at http://www.us-tra.org/.

6.2 Ordering data. Acquisition documents should specify the following:

a. Title, number, and date of this CID.

b. Packaging requirements (see 5).

6.3 Definitions.

6.3.1 Commercial item.

(1) Any item, other than real property, that is of a type customarily used by the general public or by non-Governmental entities for purposes other than Governmental purposes, and—

(i) Has been sold, leased, or licensed to the general public; or
(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (1) of this definition through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (1) or (2) of this definition, but for—

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. Minor modifications means modifications that do not significantly alter the non-Governmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of items meeting the requirements of paragraphs (1), (2), (3), or (5) of this definition that are of a type customarily combined and sold in combination to the general public;

(5) Installation services, maintenance services, repair services, training services, and other services if—

(i) Such services are procured for support of an item referred to in paragraph (1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and

(ii) The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government;

(6) Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed or specific outcomes to be achieved and under standard commercial terms and conditions. For purposes of these services—

(i) "Catalog price" means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and

(ii) "Market prices" means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.

(7) Any item, combination of items, or service referred to in paragraphs (1) through (6) of this definition, notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a contractor; or

(8) A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local Government. (Reference the Federal Acquisition Regulation (FAR) 2.101)

6.3.2 Common hand tool. A non-powered tool that is likely to be found in a typical mechanic's toolbox. Common hand tools include open end, boxed end, combination, socket (both 6- and 12-point in both standard and deep-well), and hex key wrenches, in SAE sizes up to and including 1-inch and metric sizes up to and including 25-mm; ratchet handles, extensions, and swivels; slotted and Phillips-head screwdrivers; regular and snap-ring pliers; and a ball-peen hammer.

6.3.3 Cross-country terrain. Cross-country terrain consists of unimproved open fields, broken ground, loose sand, and gravel road encountered by tactical vehicles supporting an army in the field.

6.3.4 Gravel road. A gravel road is a level or rolling gravel trail.

6.3.5 Special tools. A tool that is not commercially and readily available from a source other than the mobilizer contractor.

6.4 Key words.

Container
Hydraulic lift
ISO mobilizer
Mobility wheel set
Shelter

CONCLUDING MATERIAL

MILITARY INTEREST:

Custodians:

Air Force - 184

DLA - GS

Reviewer:

Army - AT

Preparing activity:

Air Force - 184

Agent:

Air Force - 110

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