DEPARTMENT OF THE AIR FORCE **QTP24-3-L426**
Headquarters US Air Force **14 January 2019**
Washington, D.C. 20330-1030

M-Series Dolly

Vehicle Management Codes: L426 – L428, K430

QUALIFICATION TRAINING PACKAGE

CONTENTS

Section 1—OVERVIEW

1.1. Overview.

1.1.1. Send comments and suggested improvements on Air Force (AF) Form 847, *Recommendation for Change of Publication* through Air Force Installation and Mission Support Center (AFIMSC) functional managers via e-mail at AFIMSC.IZSL.VehicleOps@us.af.mil.

1.1.2. How to use this plan:

1.1.2.1. Instructor:

1.1.2.1.1. Provide overview of training, **Section 2** and **Section 3**.

1.1.2.1.2. Instructor's lesson plan for trainee preparation, give classroom lecture, **Section 4**.

1.1.2.1.3. Instructor's lesson plan for knowledge training, **Section 5**.

1.1.2.1.4. Instructor's lesson plan for demonstration, **Section 6**.

1.1.2.1.5. Instructor's lesson plan for performance and evaluation, **Section 7**.

1.1.2.2. Trainee:

1.1.2.2.1. Reads this entire lesson plan prior to starting lecture.

1.1.2.2.2. Follows along with lecture using this lesson plan and its attachments.

1.1.2.2.3. Uses **Attachment 2** and **Attachment 4** as guides for vehicle inspection.

1.1.2.2.4. Takes performance test.

Section 2—RESPONSIBILITIES

2.1. Responsibilities.

2.1.1. The trainee shall:

2.1.1.1. Ensure the trainer explains the Air Force Qualification Training Plan (AFQTP) process and the responsibilities.

2.1.1.2. Review the AFQTP/Module/Unit with the trainer.

2.1.1.3. The trainee should ask questions if he/she does not understand the objectives for each unit.

2.1.1.4. Review missed questions with the trainer.

2.1.2. Instructor shall:

2.1.2.1. Review the AFQTP with the trainee.

2.1.2.2. Conduct knowledge training with the trainee using the AFQTP.

2.1.2.3. Grade the review questions using the answer key.

2.1.2.4. Review missed questions with the trainee to ensure the required task knowledge has been gained to complete the task.

2.1.2.5. Sign-off the task(s).

2.1.3. The Certifier shall:

2.1.3.1. Evaluate the Airman's task performance without assistance.

2.1.3.2. Sign-off the task(s).

Section 3—INTRODUCTION

3.1. Objectives.

3.1.1. Given lectures, demonstrations, hands-on driving session and a performance test, trainees will be able to perform operator's inspection and complete the performance test with zero instructor assists.

3.1.1.1. Train and qualify each trainee in safe operation and preventive maintenance of the various M-series dollies.

3.1.1.2. This training will ensure the trainee becomes a qualified M-series dolly operator; an operator who has the knowledge and skills to operate an M-series dolly in a safe and professional manner.

3.2. Desired Learning Outcomes.

3.2.1. Understand the safety precautions to be followed pre-, during-, and post- operation of the M-series dolly.

3.2.2. Understand the purpose of the M-series dolly and its role in the mission.

3.2.3. Know the proper operator maintenance procedures of the M-series dolly, in accordance with (IAW) applicable technical orders (TOs) and use of Air Force (AF) Form 1800, *Operator's Inspection Guide and Trouble Report*.

3.2.4. Safely and proficiently operate the M-series dolly.

3.3. Lesson Duration.

3.3.1. Recommended instructional and hands on training time is 9 hours:

Table 3.1. Recommended Training Time for Training Activities.

Training Activity	Training Time
Trainee's Preparation	1 Hour
Instructor's Lecture and Demonstration	2 Hours
Trainee's Personal Experience (to build confidence and proficiency) ▪ Perform Operator Maintenance ▪ Operate the Vehicle	4 Hours
Trainee's Performance Evaluation	2 Hours

Note: This is a recommended time; training time may be more or less depending how quickly a trainee learns new tasks.

3.4. Instructional References.

3.4.1. Risk Management (RM) and Safety Principles IAW Air Force Pamphlet 90-803, *Risk Management (RM) Guidelines and Tools*.

3.4.2. Applicable TOs or Manufacturer's Operator's Manual (see Vehicle Management for TO number for vehicle being used in training).

3.4.2.1. 36A11-21-10-1

3.4.3. Air Force Manual (AFMAN) 24-306, *Operation of Air Force Government Motor Vehicles*.

3.4.4. AF Form 1800.

3.4.5. Special references based-off type of vehicle.

3.5. Instructional Training Aids and Equipment.

3.5.1. M-Series Dolly Lesson Plan.

3.5.2. M-series dolly.

3.5.3. Applicable TO or manufacturer's operator's manual.

3.5.4. AF Form 1800.

3.5.5. Videos (if locally produced).

3.5.6. Suitable training area.

3.5.7. Traffic cones.

Section 4—TRAINEE PREPARATION

4.1. Licensing Requirements.

4.1.1. Trainee must have in his/her possession a valid state driver's license.

4.1.2. AF Form 171, *Request for Driver's Training and Addition to U.S. Government Driver's License* IAW Air Force Instruction (AFI) 24-301, *Ground Transportation*.

4.1.3. Applicable local licensing jurisdiction requirements.

4.2. Required Reading.

4.2.1. Read this entire lesson plan.

4.2.2. Read AFMAN 24-306.

4.2.3. Read manufacturer's operator's manual for the vehicle being trained on.

Section 5—KNOWLEDGE LECTURE AND EVALUATION

5.1. Overview of Training and Requirements.

5.1.1. Training objectives:

5.1.1.1. Given lectures, demonstrations, hands-on driving session and a performance test, trainees will be able to perform operator's inspection and complete the performance test with zero instructor assists.

5.1.1.2. Train and qualify each trainee in safe operation and preventive maintenance of the various M-series dollies.

5.1.1.3. This training will ensure the trainee becomes a qualified M-series dolly operator—an operator who has the knowledge and skills to operate an M-series dolly in a safe and professional manner.

5.1.2. Desired learning outcomes:

5.1.2.1. Understand the safety precautions to be followed pre-, during-, and post-operation of the M-series dollies.

5.1.2.2. Understand the purpose of the m-series dolly.

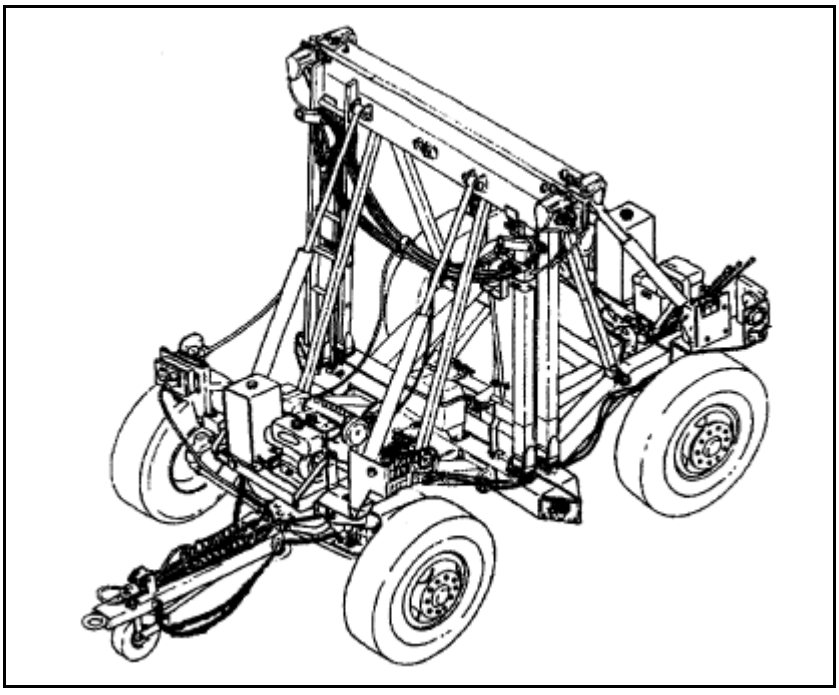
5.1.2.3. M-series dolly and its role in the mission.

5.1.2.3.1. Purpose is to provide full ground mobility for International Standard Organization (ISO) containers and shelters.

5.1.2.3.2. Role in the mission (Unit/Base/Community (during natural disasters)/Air Force).

5.1.3. M-series dolly design. The design of an M-series dolly varies depending on the vehicle type. Refer to the manufacturer's operator's manual for additional information on the specific M-series dolly being operated, and to the data plate for safe load capacity guidance. See **Figure 5.1**. The M-series dolly normally can be identified by the following characteristics:

Figure 5.1. M-Series Dolly.



5.1.3.1. Consists of front and rear dolly.

5.1.3.2. Mechanical or hydraulic lifting-leveling jacks (depending on model). The dolly set can raise and lower the transportable ISO shelter by means of hand-operated hydraulic

pumps and two hydraulic lift cylinders on each dolly. Provisions are also available to operate the hydraulic pumps from air motors included with the hydraulic pump assemblies

5.1.3.3. Air spring suspension with automotive-type shock absorbers.

5.1.3.4. Four wheel air-hydraulic brakes.

5.1.3.5. Military tires for highway and cross-country travel.

5.1.3.6. Taillights, stoplights, and blackout lights.

5.1.3.7. Manually operated handbrakes.

5.1.4. Capabilities. Maximum payload, speed, ground clearance, etc. varies by model. See manufacturer's operator's models for specifications.

5.1.5. Major Components. See **Figure 5.2.**

Figure 5.2. Major Components of an M-Series Dolly (1/4).

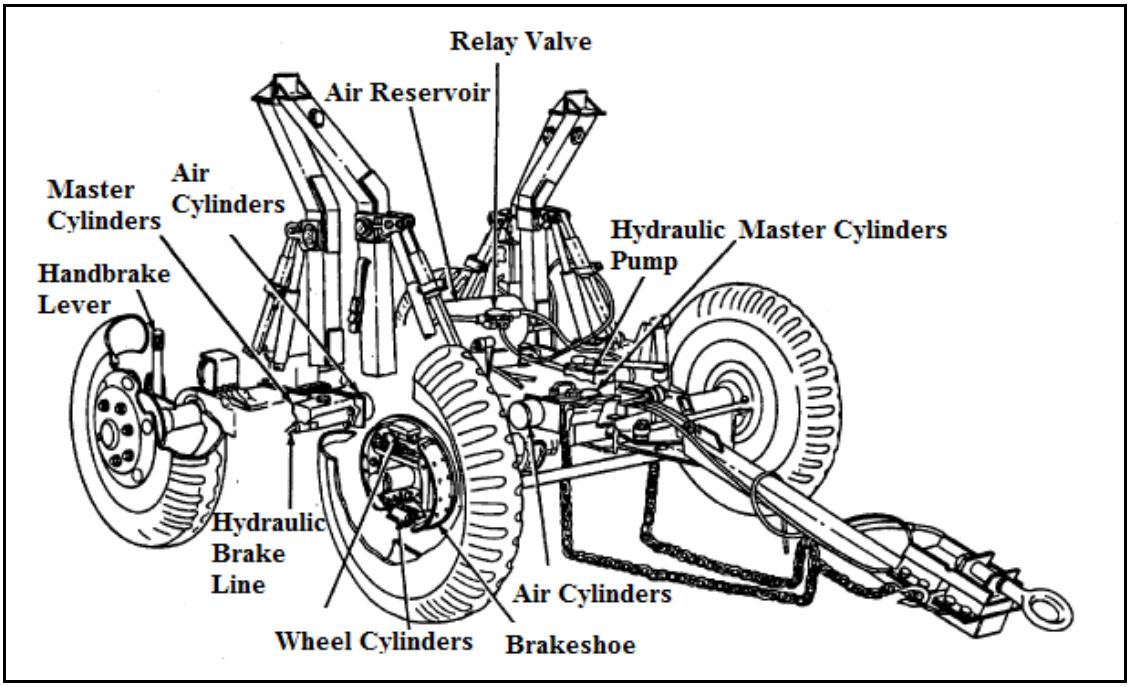


Table 5.1. Major Components of an M-Series Dolly (1/3).

Component	Description
Handbrake Lever	Applies mechanical pressure to brakeshoes, preventing movement of dolly set while parked.
Master Cylinders	Convert mechanical motion of hydraulic piston to hydraulic pressure in brake lines.
Air Cylinders	Apply air pressure to hydraulic piston in master cylinders.
Air Reservoir	Furnishes compressed air through relay valve to air cylinder when brakes are applied.
Relay Valve	Applies and releases compressed air to air cylinder.
Hydraulic Pump	Provides hydraulic pressure to raise shelter.
Brakeshoe	Applies pressure to brakedrums, slowing and stopping the dolly set.
Wheel Cylinders	Convert hydraulic pressure to mechanical motion, activating brakeshoes.
Hydraulic Brake Line	Provides hydraulic pressure from master cylinder to wheel cylinders.

Figure 5.3. Major Components of an M-Series Dolly (2/4).

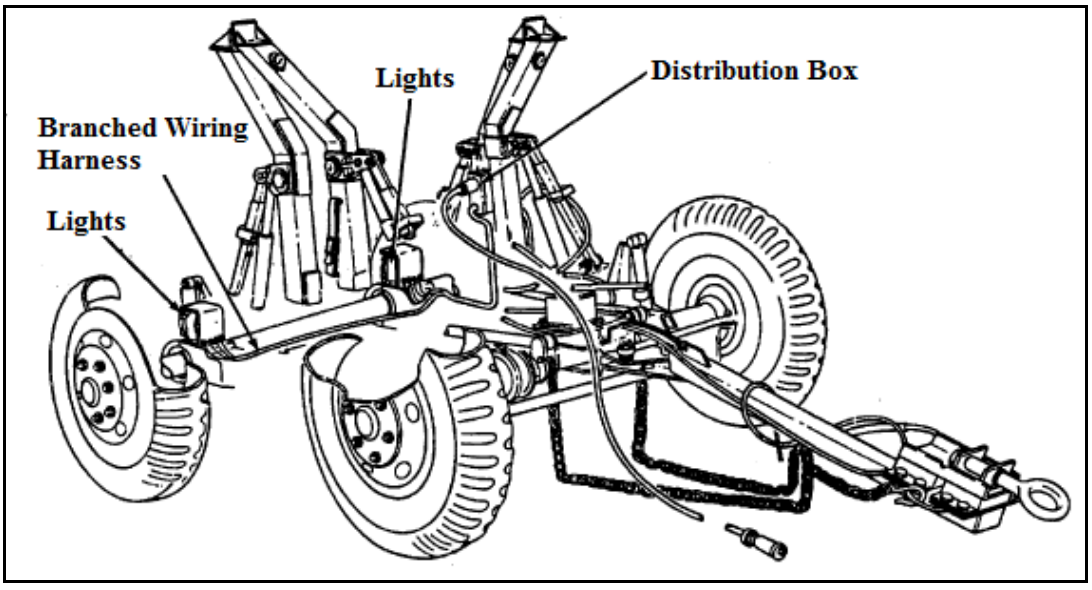


Table 5.2. Major Components of an M-Series Dolly (2/3).

Component	Description
Lights	Provide stoplights, taillights, turn signal lights, and blackout lights.
Branched Wiring Harness	Carries electrical current from distribution box to composite lights.
Distribution Box	Provides connecting point for intervehicular cable and branched wiring harness.
Lifting-Leveling Jack	Lifts and supports weight of shelter.

Figure 5.4. Lifting-Leveling Jack.

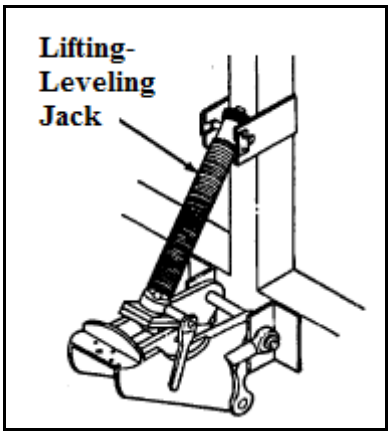


Figure 5.5. Major Components of an M-Series Dolly (3/4).

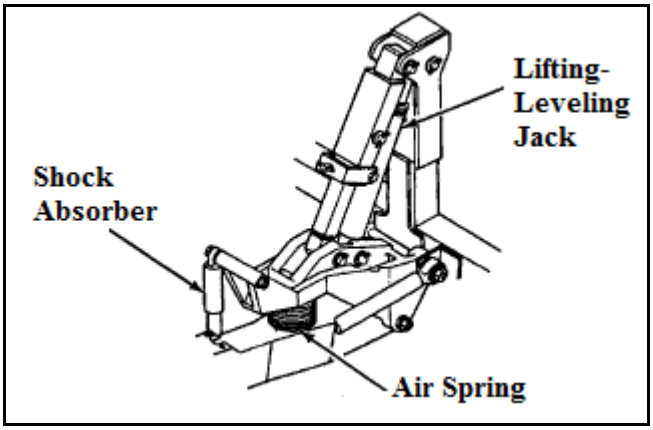


Figure 5.6. Major Components of an M-Series Dolly (4/4).

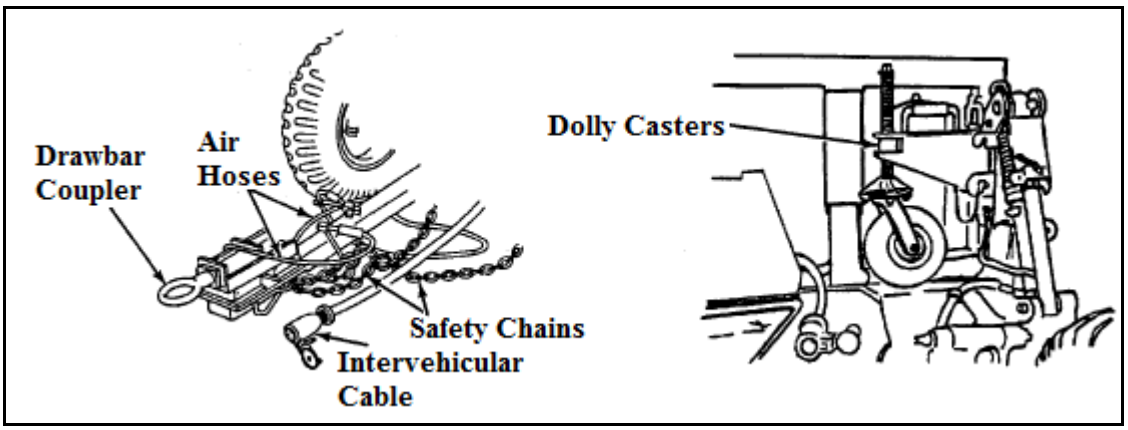


Table 5.3. Major Components of an M-Series Dolly (3/3).

Component	Description
Shock Absorber	Cushions road shock.
Air Spring	Supports weight of shelter.
Drawbar Coupler	Connects to towing vehicle pintle hook.
Air Hoses	Provide connection between towing vehicle and dolly set to operate brakes.
Safety Chains	Hook to eyebolts on towing vehicle to prevent dolly set from fully breaking away.
Intervehicular Cable	Provides connection between towing vehicle and dolly set electrical system to operate lights.
Dolly Casters	Help maneuver uncoupled dolly halves into desired position.

5.1.6. Controls and indicators. The operator should be aware of the location and use of the M-series dolly indicators and controls.

Table 5.4. M-Series Dolly Controls and Indicators.

Component	Description
Handbrake Lever	Applies handbrake.
Adjustment Knob	Adjusts handbrake cable tension.
Air Springs Valve Stem	Allows air to be added or released from air springs.
Lifting-Leveling Jack Valve	Retains or releases hydraulic fluid from lifting-leveling jack.
Release Valve Lever	Two-position lever allows hydraulic pump to switch from pumping to releasing pressure modes.
Dipstick	Indicates level of hydraulic fluid in pump.
Control Valve	Retains or releases hydraulic fluid from lifting-leveling jack.
Leveling Valve	Controls hydraulic pressure.

5.2. Vehicle Inspection.

5.2.1. Pre-trip vehicle inspection test. Use **Attachment 2** as a walk-around guide along with AF Form 1800.

5.2.2. A Seven-Step Inspection Method will help ensure the inspection is the same each time it is conducted, and that nothing is left out. See **Attachment 4** for the Seven-Step Inspection Method.

5.2.3. To ensure that the dolly sets are ready for operation at all times, they must be inspected on a regular basis so that defects may be found before they result in serious damage, equipment failure, or injury to personnel. This section contains systematic instructions on inspections, adjustments, and corrections to be performed by the operator/crew.

5.2.4. Types of vehicle inspection. If discrepancies are found they must be reported to the Vehicle Control Officer/Vehicle Control Non Commissioned Officer (VCO/VCNCO), the supervisor, and/or vehicle maintenance:

5.2.4.1. Pre-trip inspection – find items/problems that could cause accident or breakdown.

5.2.4.1.1. Operators need to inspect vehicle and sign the AF Form 1800.

5.2.4.1.2. Vehicle must have the following documentation.

5.2.4.1.2.1. Department of Defense (DD) Form 518, accident form.

5.2.4.1.2.2. Standard Form (SF) 91.

5.2.4.1.2.3. Waiver Card.

5.2.4.1.2.4. AF Form 1800.

5.2.4.1.3. Perform the following pre-inspection before coupling the dolly set to a towing vehicle. **Note:** Ensure the vehicle is parked on a level surface.

5.2.4.1.3.1. Check hose connection points and bleed plugs on four lift cylinders for evidence of hydraulic fluid leakage.

5.2.4.1.3.2. Check front and rear hydraulic valve banks for evidence of hydraulic fluid leakage.

5.2.4.1.3.3. Check hydraulic hoses and fittings for evidence of wear, cracks, abrasions, or leakage.

5.2.4.1.3.4. Brake systems.

5.2.4.1.3.4.1. Check for effective braking, even braking action at all wheels, and absence of noise when the brakes are engaged during normal operation of the dolly set.

5.2.4.1.3.4.2. Check operation of spring brake chamber by actuating control valve in towing vehicle cab.

5.2.4.1.3.4.3. Parking brake.

5.2.4.1.3.4.3.1. Set parking brake lever to ON and try to move dolly set. Be sure both wheels lock on rear dolly.

5.2.4.1.3.4.3.2. Adjustment.

5.2.4.1.3.4.3.2.1. Chock wheels, release parking brake.

5.2.4.1.3.4.3.2.2. Hand tighten adjustment knob.

5.2.4.1.3.4.3.2.3. Apply brake.

5.2.4.1.3.4.4. Handbrakes.

5.2.4.1.3.4.4.1. With dolly set coupled to towing vehicle, apply handbrakes. Move towing vehicle slightly forward and visually monitor dolly set wheels for rotation. Adjust handbrakes if necessary.

5.2.4.1.3.4.5. Service brakes.

5.2.4.1.3.4.5.1. Check brakes for any unusual conditions (grabbing, pulling, or slow operation).

5.2.4.1.3.4.5.2. Caution – Hot brake can cause serious burns. Use precaution before touching brakedrums. If available, use a temp stick.

5.2.4.1.3.4.5.3. After-operation, cautiously feel brakedrums and hubs for excessive heat.

5.2.4.1.3.4.5.4. Push auxiliary brake lever on front and on rear dolly, and try to move dolly set.

5.2.4.1.3.4.6. Suspension, axles, and wheel bearings.

5.2.4.1.3.4.6.1. If vehicle was required to ford water that covered the wheel hubs, and have maintenance check, clean, and lubricate wheel bearings IAW the lubrication order.

5.2.4.1.3.4.6.2. At all times during operation, be alert for unusual noises that may indicate looseness, defects, or deficient lubrication in these areas.

5.2.4.1.3.4.7. Visually check for evidence of brake fluid leaking from master cylinder and lines.

5.2.4.1.3.4.8. While an assistant actuates the service brakes, listen for air leaks at air couplings, relay valves, and air reservoir.

5.2.4.1.3.4.9. Check for brake fluid leaks at master cylinders, hydraulic lines, and at wheels.

5.2.4.1.3.4.10. On dolly equipped with inertia brakes system, actuate the service brakes during operation.

5.2.4.1.3.4.11. Be alert for unusual difficulty that would indicate that the service brakes are malfunctioning.

5.2.4.1.3.4.12. Cautiously feel each wheel hub and brake drum. Serious burns can result from touching an overheated brakedrum.

5.2.4.1.3.4.13. During halts, cautiously feel brakedrums and hubs for overheated condition. Hot brakedrum indicates dragging brakes.

5.2.4.1.3.5. Cleanliness/damage/missing items.

5.2.4.1.3.6. Leaks (fuel/oil/coolant/hydraulic/air).

5.2.4.1.3.7. All wheel rims (cracks, splits, etc.); check for loose or missing lug nuts.

5.2.4.1.3.8. All tires.

5.2.4.1.3.8.1. Proper inflation. **Note:** Notify VCO/VCNCO, the supervisor, and/or vehicle maintenance if split rim is completely flat.

5.2.4.1.3.8.2. Check tires for damage of low pressure.

5.2.4.1.3.8.3. Sidewalls, tread.

5.2.4.1.3.8.4. Cuts and abrasions.

5.2.4.1.3.8.5. Lug nuts.

Note: For models with caster tires, check for cuts, cracks, or penetrating objects.

5.2.4.1.3.9. Safety chains.

5.2.4.1.3.9.1. Inspect safety chains for damage or missing parts.

5.2.4.1.3.10. Intervehicular cable.

5.2.4.1.3.10.1. Visually inspect electrical connector for damage. Inspect insert for signs of deterioration or arcing. Inspect contacts for dirt, bends, burns, or damage.

5.2.4.1.3.10.2. Visually inspect wiring harness, clips, and shells for correct assembly and good condition.

5.2.4.1.3.10.3. Check resilient mounts for cuts or cracks.

5.2.4.1.3.10.4. Clean electrical connector as follows:

5.2.4.1.3.10.4.1. Use a rag to remove any buildup of grease, dirt, etc.

5.2.4.1.3.10.4.2. Use a scrub brush and clean water to thoroughly clean connector. See manufacturer's operator's manual for safety guidance regarding electrical connectors.

5.2.4.1.3.11. Bolts, nuts, and screws.

5.2.4.1.3.11.1. Ensure they are not loose, missing, bent, or broken. Report loose or missing bolts, nuts, and screws.

5.2.4.1.3.11.2. Tighten any found that are loose.

5.2.4.1.3.12. Welds.

5.2.4.1.3.12.1. Inspect for gaps where parts are welded together. Check for loose or chipped paint, rust, and cracks.

5.2.4.1.3.13. Differential, shocks, and brakes for leaks.

5.2.4.1.3.14. Visually check shock absorbers to verify cylinder is within proper range. If not, adjust air springs.

5.2.4.1.3.15. Check toolbox and platform assembly to make sure it is secure. Check butt hinge leaf, quick release pin, and toolbox latches.

5.2.4.1.3.16. Air reservoir.

5.2.4.1.3.16.1. Close draincock.

5.2.4.1.3.16.2. Make sure there are no air leaks.

5.2.4.1.3.16.3. Open drain cock and leave open.

5.2.4.1.3.16.4. Couple dolly set to towing vehicle. An assistant will be needed while checking light and brake operation.

5.2.4.1.3.17. Suspension, springs and shocks.

5.2.4.1.3.18. Control panel.

5.2.4.1.3.19. Mirrors.

5.2.4.1.3.20. Lights and reflectors.

5.2.4.1.3.20.1. An assistant is needed when checking the brake lights.

5.2.4.1.3.20.2. Check the operation of composite lights or stoplights (if a tactical situation permits).

5.2.4.1.3.20.3. Check for damaged or missing reflectors.

5.2.4.1.3.21. Fire extinguisher.

5.2.4.1.4. Inspect the following items after coupling the dolly to the towing vehicle.

5.2.4.1.4.1. Leveling jacks.

5.2.4.1.4.1.1. Check for damage and security mounting. Check that levels jack legs extend and retract smoothly.

5.2.4.1.4.1.2. Equipment is not ready or available if any levels jack is loose, damaged, or inoperative.

5.2.4.1.4.2. Towbar and Related Parts.

5.2.4.1.4.2.1. Check for cracked or bent towbar.

5.2.4.1.4.2.2. Check lunette for wear, loose, or broken mountings.

5.2.4.1.4.2.3. Check for missing or broken safety chains.

5.2.4.1.4.2.4. Check for damaged or leaking glad-hands.

5.2.4.1.4.3. Steering.

5.2.4.1.4.3.1. Inspect steering link assembly for damage or distortion.

5.2.4.1.4.3.2. Inspect drawbar pin and steering pin for damage, and secure mounting.

5.2.4.1.4.4. Air springs.

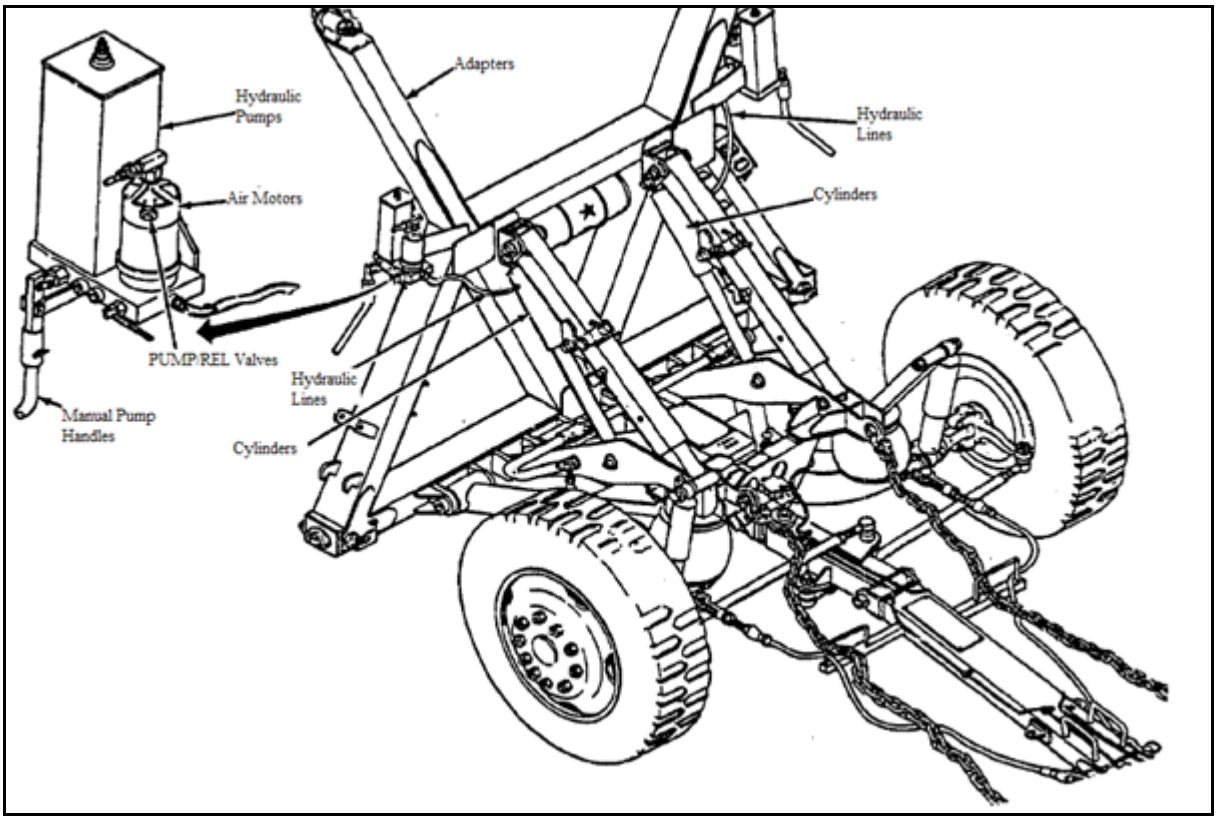
5.2.4.1.4.4.1. Adjust air springs to the correct pressure for the load being carried. See **Table 5.5.**

Table 5.5. Air Springs Adjustment

Payload	**Load On**
6,000 lbs	25 pounds per square inch (psi)
9000 lbs	45 psi
12,000 lbs	60 psi
15,000 lbs	75 lbs

5.2.4.1.4.5. Hydraulic lift system. See **Figure 5.7.**

Figure 5.7. Hydraulic Lift System.



5.2.4.1.4.5.1. Check if hydraulic pumps raise and lower adapters properly using both the manual pump handles and the air motors.

5.2.4.1.4.5.2. Check that hydraulic PMP/REL valves allow smooth control of load when lowered.

5.2.4.1.4.5.3. Inspect all hydraulic lines for evidence of damage, leakage, and for kinds, which could restrict proper flow of fluid.

5.2.4.1.4.5.4. Check pumps, cylinders, and hydraulic PMP/REL valves for proper operation and any evidence of leakage.

5.2.4.2. During-operation.

5.2.4.2.1. Stoplight-taillights.

5.2.4.2.1.1. An assistant is required while checking stoplight-taillights.

5.2.4.2.1.2. Connect intervehicular cables to towing vehicle (if applicable).

5.2.4.2.1.3. Operate towing vehicle light switch through all settings and check stoplights-taillights.

5.2.4.2.2. Dolly operation.

5.2.4.2.2.1. Be alert for any unusual noise while towing dolly. Stop and investigate any unusual noises.

5.2.4.2.2.2. Make sure dolly is tracking correctly behind towing vehicle, with no side pull.

5.2.4.2.3. All gauges and warning lights for proper operations.

5.2.4.2.3.1. Warning lights.

5.2.4.2.3.2. Gauges (oil pressure, fuel gauge, water temperature, voltage).

5.2.4.2.3.3. Indicators.

5.2.4.2.4. Listen for exhaust and air leaks. Listen for any unusual sounds.

5.2.4.2.5. Stay alert for any unusual smells or odors.

5.2.4.2.6. Stay alert for any abnormal vibrations or handling problems.

5.2.4.2.7. Ensure that the dolly is tracking correctly with no side pull. Be alert for any unusual noises while towing the dolly. Stop and investigate.

5.2.4.3. After-trip inspection and report.

5.2.4.3.1. Ensure vehicle and components are cleaned.

5.2.4.3.2. Equipment is properly stowed.

5.2.4.3.3. Refueled.

5.2.4.3.4. Parked.

5.2.4.3.5. Apply brakes.

5.2.4.3.6. Place wheel chocks.

5.2.4.3.7. Place transmission in neutral (park for an automatic).

5.3. Vehicle Safety and Equipment.

5.3.1. Hazards and human factors:

5.3.1.1. Traffic due to size and weight.

5.3.1.2. Cargo loads beyond the vehicle's capability.

5.3.1.3. Jerky starts and stops.

5.3.1.4. Not properly securing the cargo.

5.3.1.5. Overhead clearance.

5.3.2. Safety clothing and equipment:

5.3.2.1. Safety steel-toed boots must be worn.

5.3.2.2. Gloves will be worn during cargo loading and unloading (take off rings/jewelry first.

5.3.2.3. First aid kit.

5.3.2.4. Inclement weather gear, if applicable.

5.3.2.5. Reflective belt during hours of reduced visibility and on flightline.

5.3.2.6. Fire extinguisher.

5.3.2.7. AF Form 1800.

5.4. Driving Safety and Precautions.

5.4.1. Coupling and uncoupling dolly set. Warning – Failure to ensure personnel are clear of towing vehicle and dolly set during coupling and uncoupling operation may result in serious injury or death to personnel.

5.4.2. Securing dolly set. When dolly set is not coupled to towing vehicle, make sure that handbrakes are applied and wheels are securely chocked. Caution - Failure to set handbrakes may allow dolly set to roll, resulting in injury to personnel or damage to equipment.

5.4.3. Off-road driving. For more information on off-road driving and safe vehicle operation guidance, refer to AFMAN 24-306.

5.4.4. Heavy components.

5.4.4.1. Drawbar. When raising the drawbar to a vertical position, exercise care and control. Drawbar is heavy. Use two persons to lift and lower drawbar. Warning - Failure to use two persons to lift and lower drawbar may result in damage to shelter or injury to personnel.

5.4.4.2. Drawbar and positioning lever. When removing dolly set from shelter, apply downward pressure to drawbar and positioning lever as bolts are removed. Failure to do so will allow dolly to drop to the ground, resulting in possible injury to personnel.

5.4.4.3. Reach tube, spring assembly, and axle are heavy and awkward to handle. Use caution, provide adequate support, and use assistance when removing and installing. Failure to follow this warning may result in burns.

5.4.4.4. Ensure that spring assembly is supported before removing axle. Spring assembly will fall without support. Failure to follow this warning may result in serious injury or death to personnel.

5.4.4.5. Use assistance when lifting tire and wheel. Failure to follow this warning may result in serious injury to personnel.

5.4.4.6. Never crawl under equipment when performing maintenance unless equipment is securely blocked. Keep clear of equipment when it is being raised or lowered. Do not allow heavy components to swing while suspended from lifting device. Exercise extreme caution when working near a cable or chain under tension.

5.4.5. Hot components.

5.4.5.1. Hub and brakedrum. A hot brake can cause serious burns. Use extreme caution before touching brakedurm after the road test. Slowly move the hand toward the brakedrum. If brakedrum is overheated, radiated heat will be felt before actually touching brakedrum. Warning - Serious burns can result from touching an overhead brake drum. Use precaution before touching overheated brakedrums.

5.4.5.2. When checking for improperly adjusted brakes or dry wheel bearings, cautiously feel each wheel hub and brake drum.

5.4.6. Towing.

5.4.6.1. Steering locking pin MUST be removed from front axle and steering link before dolly set is towed in a four-wheel configuration. Warning - Failure to unlock steering will damage steering linkage and may result in an accident. Failure to follow this warning may result in injury or death to personnel. Seek medical attention in the event of an injury.

5.4.6.2. DO NOT tandem tow dolly sets with shelters. To safely tow two dolly sets, they must be empty. Tandem tow on off-public roads ONLY. Observe a maximum towing speed of 25 miles per hour (mph) (40 kilometers per hour (kph)). Warning - Failure to adhere to tandem tow requirements may result in injury or death to personnel and damage to equipment. Seek medical attention in the event of an injury.

5.4.7. Redundant power operation. Redundant power kit is NOT to be used for side lift operations.

5.4.8. Vehicle operation/movement hazards.

5.4.8.1. When dolly set is not coupled to towing vehicle, ensure that parking brakes are applied or wheels are securely chocked. Failure to do so may allow dolly set to roll.

5.4.8.2. All personnel standing on ground MUST stand clear when cross brace assemblies are being stowed in top beams.

5.4.8.3. DO NOT operate control valve levers to put front or rear dolly in maneuvering position unless telescopic brace and front axle steering locking pin are installed. Telescopic brace and front axle steering locking pin must ALWAYS be installed before lift cylinders reach their vertical position.

5.4.8.4. Front axle steering locking pin must ALWAYS be installed for side lift operation. Failure to follow this warning may cause front or rear dolly to overturn.

5.4.8.5. While in maneuvering position, DO NOT operate positioning cylinders lever. Failure to follow this warning may cause bottom beam to lower to the ground.

5.4.8.6. Caution - When climbing and working on top of shelter during side lift operations always be aware of hazards on work surfaces, personnel and tools. Ensure that top of shelter is free of ice or debris which could cause slips and falls. When working with twist locks from on top of shelter, maintain a three-point contact with shelter as much as possible. When on top of shelter, always be aware of where other personnel and tools are located to prevent accidental bumps and trips. May result in injury or property damage.

5.4.8.7. Use extreme caution when installing/removing twist locks. Keep hands and/or feet clear of top hooks, top and bottom beams, and from between beams and shelter.

5.4.9. Electrical system. Caution - Failure to ensure interior vehicular cable assembly is disconnected from towing vehicle before performing maintenance on electrical system may result in electric shock or burns.

5.4.10. Batteries.

5.4.10.1. DO NOT perform battery system checks or inspections while smoking or near fire, flames, or sparks. Battery gases may explode.

5.4.10.2. Caution – Sulfuric acid contained in batteries can cause serious injuries and burns to personnel. In case of an incident/accident follow procedures IAW Safety Data Sheet for example:

5.4.10.2.1. Eyes: Flush with cold water for no less than 15 minutes and immediately seek medical attention.

5.4.10.2.2. Skin: Flush with large amounts of cold water until all acid is removed. Seek medical attention as required.

5.4.10.2.3. Internal: If corrosion or electrolyte is ingested, drink large amounts of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Immediately seek medical attention.

5.4.10.2.4. Clothing/equipment: Wash area with large amounts of cold water. Neutralize acid with baking soda or house hold ammonia.

5.4.11. Brake dust. Avoid prolonged exposure or breathing of brakedust fumes. Work in a well-ventilated area. Failure to follow this warning may result in injury to personnel.

5.4.12. Hydraulic system.

5.4.12.1. DO NOT disconnect hydraulic lines and fittings while engine is running or before hydraulic system pressure has been released. When engine is running, hydraulic system is under pressure. Dolly set must be fully lowered to the ground and engine must be shut down before lines and fittings are disconnected. A line or fitting disconnected under pressure will explode with great force.

5.4.12.2. Caution – Escaping hydraulic fluid under pressure can penetrate the skin, causing serious injury to personnel. Relieve pressure before disconnecting hydraulic lines and fittings. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject hydraulic fluid under high pressure. Use a piece of cardboard or paper to search for leaks. If any hydraulic fluid is injected into the skin, it MUST be surgically removed within a few hours by a doctor familiar with this type of injury or gangrene may result.

5.5. Vehicle Operation.

5.5.1. General M-series dolly operation. Operators should refer to the manufacturer's operator's manual to learn the following procedures:

5.5.1.1. Starting engine.

5.5.1.2. Shutting down engine.

5.5.1.3. Operating hydraulic control valve.

5.5.2. Using and storing dolly set caster assemblies. See **Figure 5.8.**

5.5.2.1. Only certain models are equipped with caster assemblies.

5.5.2.2. Rotate bearing post counterclockwise to free caster wheel from suspension bar.

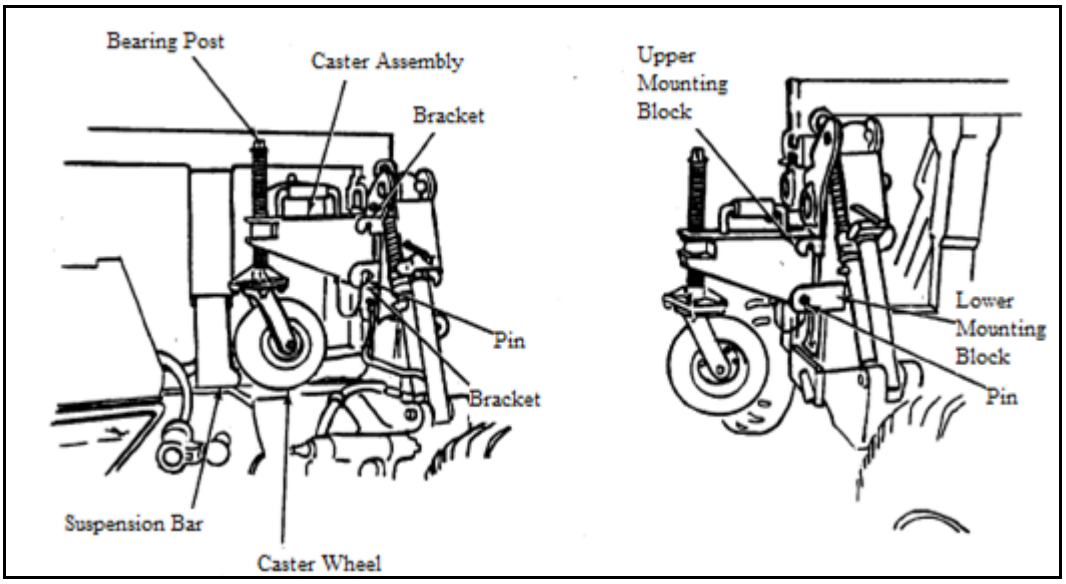
5.5.2.3. Support bottom of caster assembly, remove pin, and remove caster assembly from brackets on rear dolly.

5.5.2.4. Install pins on caster assembly in upper mounting block and rotate caster assembly forward into lower mounting block.

5.5.2.5. Insert pin through lower mounting block and caster assembly.

5.5.2.6. Install two caster assemblies in brackets on rear dolly and secure each with pin when not in use. For each caster assembly, rotate bearing post clockwise until caster wheel rests firm against suspension bar.

Figure 5.8. Using and Storing Dolly Set Caster Assemblies.



5.5.3. Positioning dollies for coupling to shelter.

5.5.3.1. Attach dolly casters to front or rear dolly set and disengage the dolly adapters as previously described.

5.5.3.2. Secure safety straps between hydraulic cylinder mounting brackets and the lower arms.

5.5.3.3. Release brakes before attempting to roll dolly into position. Ensure the parking brake is also released on the rear dolly.

5.5.3.4. Push the dolly on dolly casters, in position against the end of the shelter, and align in place with the shelter.

5.5.3.5. Install upper and lower ISO locking pins on dolly adapter.

Note: If air brake system is fully charged, auxiliary brake control knobs must be depressed on front and rear dollies to release brakes. If air brake system is not charged, refer to parking brake data plate for brake release instructions for rear wheel spring brakes (manually operated parking brake).

5.5.3.6. Align the dolly to mate all ISO pins on adapter to ISO sockets on shelter, using dolly casters to obtain ground clearance. If it is necessary to bring the dolly adapter to a vertical position, adjust the safety strap.

5.5.3.7. Remove dolly casters from positioned dolly, attach to the other dolly, and push other dolly to other end of shelter.

5.5.3.8. Align and mate each dolly to shelter, ensuring that ISO pins offset matches the elongation of the ISO sockets.

5.5.3.9. Rotate ISO pins 90 degrees outward and secure each pin in place with a castle nut. Secure castle nuts with attached safety pins and, at the bottom of the adapter, ensure that the safety pins are inserted in both the locking plate and the castle nut. (Ensure that the arrows on the locking pins are horizontal.).

5.5.3.10. Remove the safety straps and dolly casters and store on front dolly.

5.5.3.11. Repeat the uncoupling/positioning/coupling procedure for the rear dolly.

5.5.3.12. Stow the safety straps and dolly casters on the front dolly in the space provided.

5.5.4. Attaching dolly to shelter. **Note:** Steps will vary depending on model type. Refer to manufacturer's operator's manual for additional guidance.

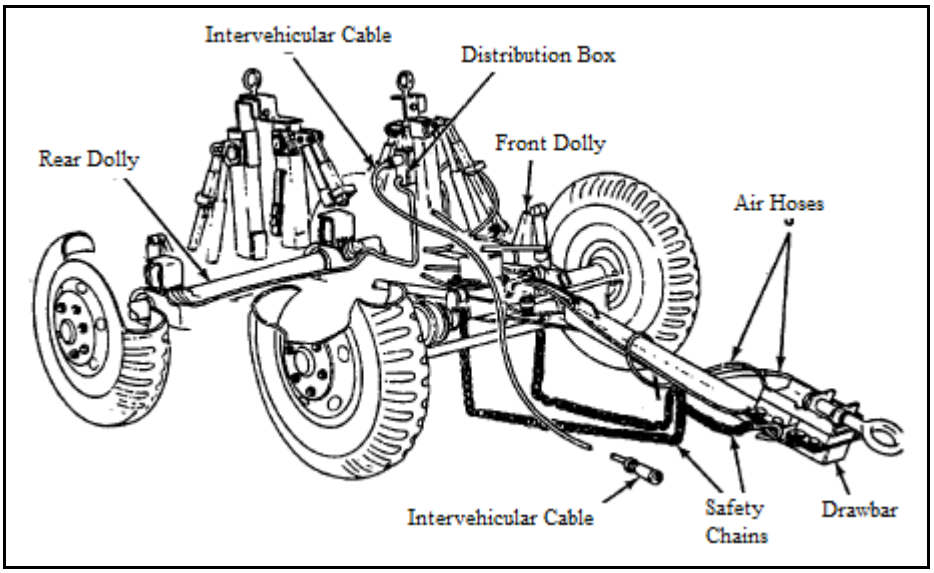
5.5.4.1. Make sure shelter is resting on ground.

5.5.4.2. Unless otherwise directed, attach dolly set to shelter so shelter door will be at the rear.

5.5.4.3. Apply handbrakes.

5.5.4.4. Disconnect safety chains, intervehicular cable, air hoses, and drawbar from towing vehicle. See **Figure 5.9.**

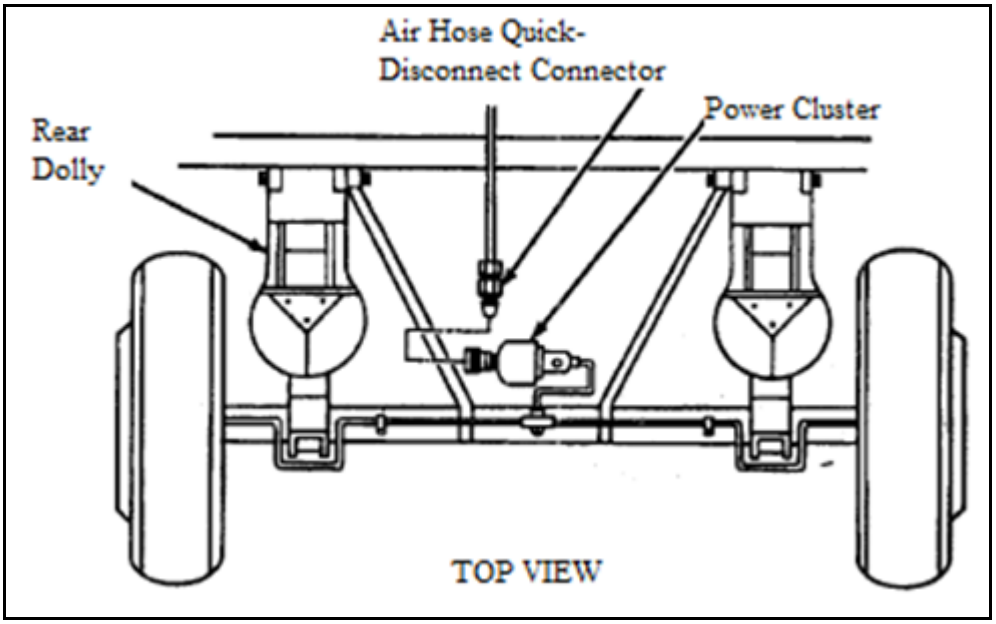
Figure 5.9. Attaching Dolly Set to Shelter.



5.5.4.5. Disconnect air hose quick-disconnect connector from power cluster on the rear dolly. Coil air hose on front dolly.

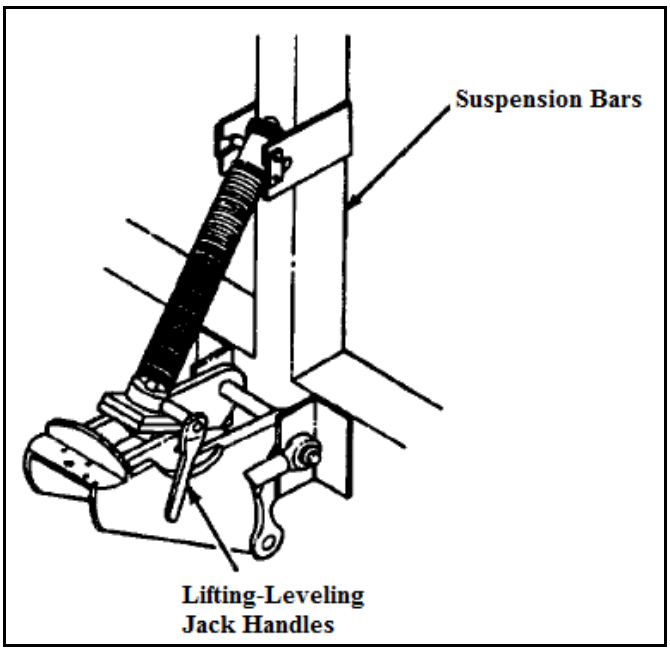
5.5.4.6. Disconnect intervehicular cable from distribution box on rear dolly. Coil cable on front dolly. See **Figure 5.10.**

Figure 5.10. Top View.



5.5.4.7. Using four personnel, operate four lifting-leveling jack handles counterclockwise at the same time until mechanical stops are reached and suspension bars rest on the ground. See **Figure 5.11.**

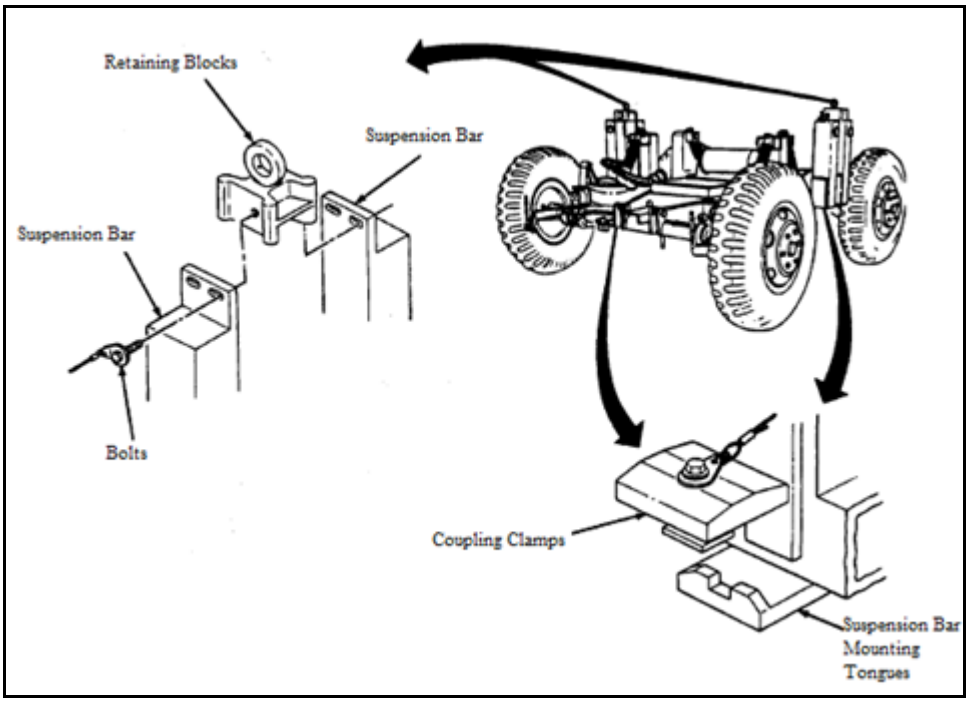
Figure 5.11. Lifting Leveling Jacks.



5.5.4.8. Remove four bolts and two retaining blocks from the suspension bars.

5.5.4.9. Remove two coupling clamps from suspension bar mounting tongues. See **Figure 5.12.**

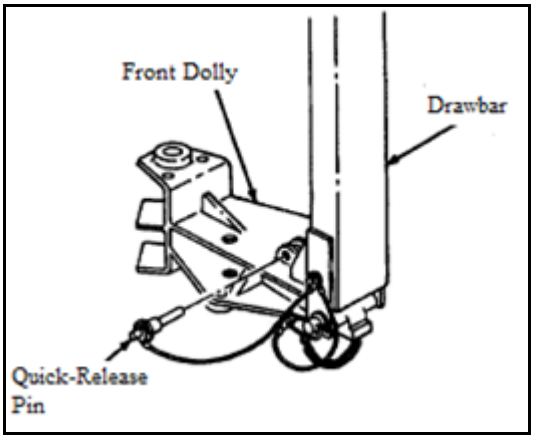
Figure 5.12. Removing Bolts, Blocks, and Clamps.



5.5.4.10. When raising drawbar to vertical position, exercise care and control.

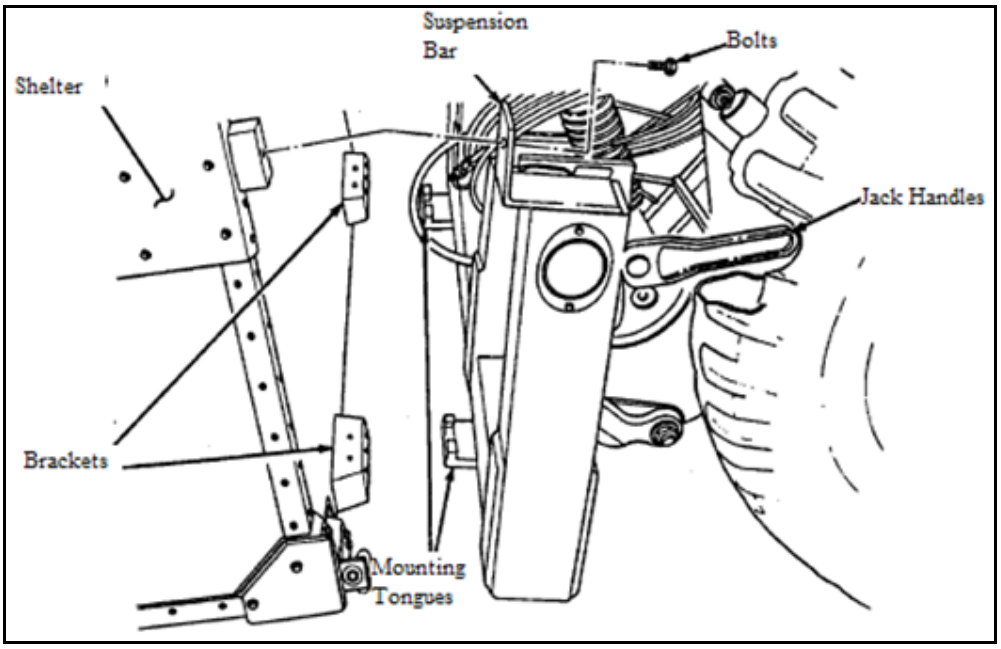
5.5.4.11. Raise drawbar, install quick-release pin in drawbar and position front dolly so mounting tongues are installed in brackets at the bottom of the shelter. See **Figure 5.13.**

Figure 5.13. Raising Drawbar.



5.5.4.12. Lower drawbar to lift suspension bar, ensuring mounting tongues remain fully installed in brackets at the bottom of the shelter. See **Figure 5.14.**

Figure 5.14. Attaching Dolly to Shelter.



5.5.4.13. Using two personnel, operate two lifting-leveling jack handles clockwise at the same time until upper surface of each suspension bar rests against the shelter.

5.5.4.14. Install two bolts to secure suspension bar to shelter corner brackets. Do not fully tighten bolts. See **Figure 5.15.**

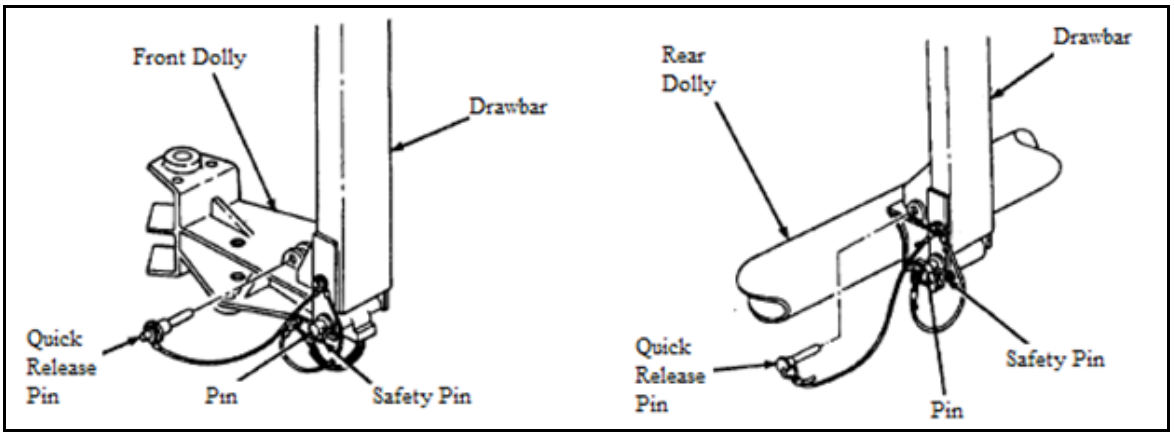
5.5.4.15. Remove quick-release pin and lower the drawbar to the ground.

5.5.4.16. Remove the safety pin, pin, and drawbar from the front only.

5.5.4.17. Install drawbar to rear dolly with pin. Install safety pin.

5.5.4.18. Raise drawbar and install quick release pin.

Figure 5.15. Removing and Install Pins.



5.5.4.19. Release handbrakes.

5.5.4.20. Raise drawbar and position rear dolly, so mounting tongues are installed in brackets at bottom of shelter.

5.5.4.21. Lower drawbar to lift suspension bar, ensuring that mounting tongues remain fully installed in brackets of shelter.

5.5.4.22. Using two personnel, operate two lifting-leveling jack handles clockwise at same time until upper surface of each suspension bar rests against shelter.

5.5.4.23. Install two belts to secure suspension bar to shelter corner brackets. Do not fully tighten bolts.

5.5.4.24. Apply handbrakes.

5.5.4.25. Remove quick release pin and lower drawbar to ground.

5.5.4.26. Remove safety pin, pin, and drawbar from rear dolly.

5.5.4.27. Install drawbar to front folly with pin. Install safety pin.

5.5.4.28. See manufacturer's operator's manual for additional guidance.

5.5.5. Lifting shelter. See manufacturer's operator's manual for guidance on lifting the shelter for specific M-series model being used.

5.5.6. Coupling dolly set with shelter to towing vehicle.

5.5.6.1. Connect air hose quick-disconnect connector to rear power cluster.

5.5.6.2. Connect intervehicular cable to distribution box on rear dolly.

5.5.6.3. Secure air hose and intervehicular cable along top of shelter to front dolly.

5.5.6.4. All personnel must stand clear of towing vehicle and dolly set during coupling operations.

5.5.6.5. For M832 and M840 M-series dollies, remove lanyard rod from front axle connecting link.

5.5.6.6. Attach lunette to towing vehicle.

5.5.6.7. Connect two safety chains to towing vehicle.

5.5.6.8. Remove emergency and service air hoses from dummy couplings. Connect emergency and service air hoses and intervehicular cable to towing vehicle. Open air valves on towing vehicle.

5.5.6.9. For the M832 and M840 M-series dollies, make sure quick-release pins are installed and lifting-leveling jack valves are closed.

5.5.6.10. Proper air pressure in air springs is essential for smooth riding of shelter. Weight of shelter determine show much pressure should be in air springs. Dolly set should be on level ground with weight evenly distributed.

5.5.6.11. Use one of the following methods to inflate air springs to proper pressure depending on availability of air pressure and pressure gauge:

5.5.6.11.1. Method 1:

5.5.6.11.1.1. Lower shelter fully to ground.

5.5.6.11.1.2. When payload is under 6200 lbs, inflate air springs (14) to "load off' pressure on data plate that corresponds to payload.

5.5.6.11.1.3. Lift shelter to transport position.

5.5.6.11.2. Method 2 (Only applicable to certain M-series dolly models. See manufacturer’s operator’s manual for designation.)

5.5.6.11.2.1. Raise shelter into position, making sure support struts are locked in place.

5.5.6.11.2.2. Add or release air in air springs to align shock absorber with markings. Do not exceed 160 psi (1103 kPa).

5.5.6.11.2.3. Release handbrakes.

5.5.6.11.2.4. Check operation of lights and brakes.

5.5.7. Prior to towing. Caution – Failure to accomplish the necessary checks could result in damage to the dolly set and/or injury to personnel. Prior to towing the dolly set ensure the dolly set and tow vehicle are ready. Ensure checks are followed and checklist completed:

5.5.7.1. Check chains and cables between tow vehicle and front of dolly for proper routing, and ground clearance.

5.5.7.2. Check all air hoses and electrical cable connections between tow vehicle and dolly set and between front dolly and rear dolly. The air hoses and electrical cables should be routed over the top of the shelter and clipped to the top of the front adapter.

5.5.7.3. Make sure clamps on mechanical struts are tight, and strut assembly lockout pins are fully inserted in the RIDE position for towing vehicle.

5.5.7.4. Check tire air pressures and inflate/deflate to proper pressure.

5.5.7.5. Check air springs riding height as indicated on shock absorbers to ensure that air pressure is correct. Correct any discrepancies.

5.5.7.6. Make sure dolly parking brakes are off on rear dolly.

5.5.7.7. Make an operational check of the electrical system by checking tow vehicle and dolly set brake lights, running lights, turn signals and blackout lights.

5.5.7.8. Double check that all ISO interface bolts are tight and properly installed, and that all castle nuts are tight and all safety pins are correctly inserted and locked. If properly installed, the arrows on the ends of the pins will be horizontal to the right or left.

5.5.7.9. Make sure that only one loaded dolly is being towed.

5.5.7.10. Ensure that front and rear auxiliary brake control valves are in the extended position. That indicates sufficient air pressure from prime mover for dolly set brake system.

5.5.8. Towing dolly set with shelter. **Note:** Keep in mind the overall length of the towing vehicle and dolly set when passing other vehicles, turning and backing.

5.5.8.1. Turning:

5.5.8.1.1. When turning corners, remember that dolly set wheels turn inside turning radius of towing vehicle. Make right turn by driving towing vehicle approximately halfway into intersection and then cutting sharply to the right. This will keep dolly set wheels off the curb. Keep vehicle close enough to edge of road to prevent following vehicles from attempting to pass on right.

5.5.8.1.2. Tow hook will be disconnected and wheel set repositioned manually for all backing, u-turns or turns greater than 45°. **Note:** Failure to comply will result in damage to equipment and injury or death to personnel.

5.5.8.1.3. During turning of the wheel set a spotter must be positioned in view of the tow bar and hook to ensure movements do not cause damage to equipment. Spotter will issue commands to the driver when necessary.

5.5.8.2. Stopping:

5.5.8.2.1. The brakes of the towing vehicle and dolly set are applied at the same time when stopping. During normal operation, stepping on brake pedal will stop both towing vehicle and dolly set.

5.5.8.2.2. Pressure to the brake pedal must be applied gradually and smoothly.

5.5.8.3. Parking:

5.5.8.3.1. When leaving the towing vehicle and dolly set unattended or parking for an extended amount of time, set the parking brakes on the towing vehicle and rear dolly.

5.5.8.3.2. Turn-off engine before leaving the cab of the towing vehicle.

5.5.8.4. Backing:

5.5.8.4.1. Adjust rearview mirrors before backing.

5.5.8.4.2. Always use a spotter. The operator must keep visual contact with the spotter at all times. If visual contact is lost, the operator must immediately stop the vehicle. Spotters must be trained IAW AFMAN 24-306 regarding standard AF spotter safety guidance and hand signals.

5.5.8.4.3. When towing vehicle and dolly set are in straight line, rear of dolly set will move opposite to direction front towing vehicle wheels are turned. When towing vehicle wheels are turned to right, rear of dolly set will move to left. When towing vehicle wheels are turned to left, rear of dolly set will move to right.

5.5.8.4.4. To decrease angle of turn, gradually turn towing vehicle wheels in direction the dolly set is turning. This will gradually decrease angle until towing vehicle and dolly set are in a straight line.

5.5.9. Uncoupling dolly set with shelter from towing vehicle (before use).

5.5.9.1. Park the dolly set as close to the shelter as possible.

5.5.9.2. After the tow vehicle has completely stopped, apply parking brake on rear dolly set by placing parking brake lever to ON position. Brakes are applied automatically when dolly set is disconnected from prime mover.

5.5.9.3. Disconnect the intervehicular electrical cable (front harness) from the tow vehicle and from the electrical junction box on the front dolly. Coil harness and stow in place on left side of rear dolly adapter.

5.5.9.4. Remove safety chains from the tow vehicle and stow them by connecting to eye holes on the end of tow bar rail.

5.5.9.5. Disconnect dolly set tow bar lunette from the pintle assembly of the tow vehicle.

5.5.9.6. Close service and emergency air valves on tow vehicle.

5.5.9.7. Disconnect service and emergency air hoses from the tow vehicle.

5.5.9.8. Disconnect the ends of the service and emergency air hoses from the rear dolly. Coil and stow the air hoses on the tool box until needed for coupling procedures.

5.5.9.9. Apply handbrakes.

5.5.9.10. Close air valves on towing vehicle, open the draincock on dolly set air tank reservoir, and disconnect emergency and service air hoses. Install emergency and service air hoses to dummy couplings on drawbar.

5.5.9.11. Disconnect air-hose quick disconnect from the power cluster of rear dolly. Coil air hose on front dolly.

5.5.9.12. Disconnect intervehicular cable from the towing vehicle and distribution box on rear dolly. Coil intervehicular cable on the front dolly.

5.5.9.13. Disconnect two safety chains from towing vehicle.

5.5.9.14. Remove drawbar coupler from pintle of towing vehicle.

5.5.9.15. For M832 and M840 M-series dollies, lock steering on front axle by installing lanyard rod into front axle connecting link.

5.5.9.16. M-series dolly – M1022/M1022A1.

5.5.9.16.1. Park the dolly as close to the shelter as possible.

5.5.9.16.2. After tow vehicle has completely stopped, apply parking brake on rear dolly set by placing parking brake lever to ON position. Brakes are applied automatically when dolly set is disconnected from prime mover.

5.5.9.16.3. Disconnect the intervehicular electrical cable (front harness) from the tow vehicle and from the electrical junction box on the front dolly. Coil harness and stow in place left side of rear dolly adapter.

5.5.9.16.4. Remove safety chains from tow vehicle and stow them by connecting to eyeholes on end of the tow bar rail.

5.5.9.16.5. Disconnect dolly set tow bar lunette from the pintle assembly of the tow vehicle.

5.5.9.16.6. Close service and emergency air valves on tow vehicle.

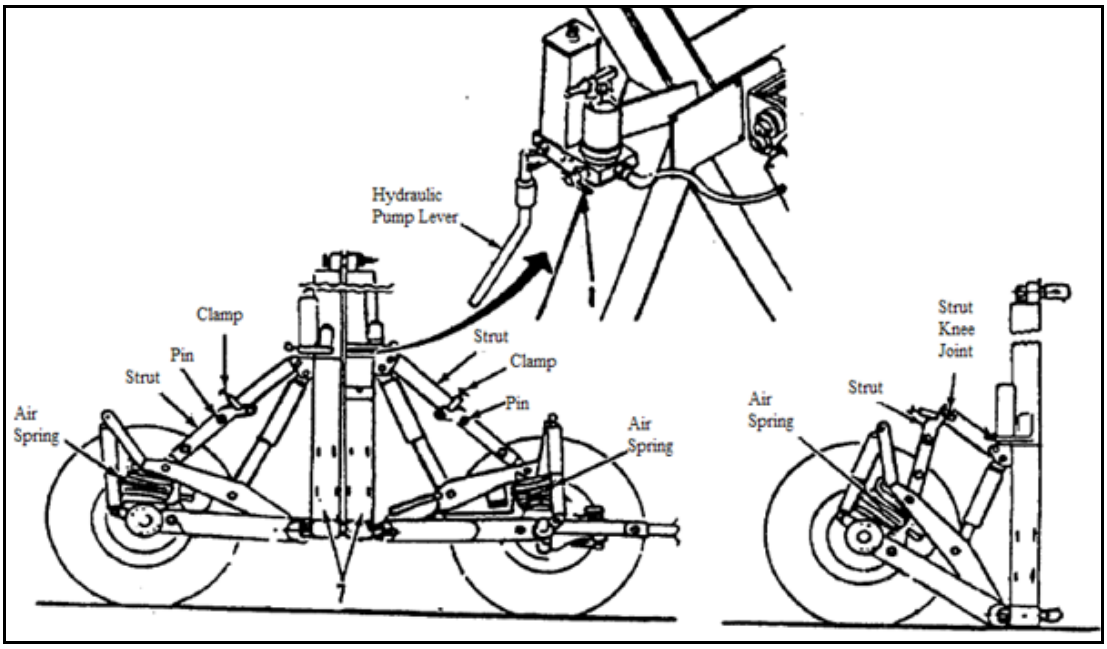
5.5.9.16.7. Disconnect service and emergency air hoses from tow vehicle.

5.5.9.16.8. Disconnect ends of service and emergency air hoses from the rear dolly.

5.5.9.16.9. Coil and stow the air hoses on the tool box until needed for coupling procedures.

5.5.10. Uncoupling two empty dolly sets towed in train (M-series dolly – M1022). See **Figure 5.16.**

Figure 5.16. Uncoupling Two Empty Dolly Sets.



5.5.10.1. After tow vehicle has completely stopped, apply the hand-operated parking brake on the rear dolly by placing lever to ON position. Brakes are applied automatically when dolly is disconnected from prime mover.

5.5.10.2. Remove the intervehicular electrical cable (front harness) between the tow vehicle and the junction box on the first dolly set and the inter-dolly cable between the junction box and the rear dolly harness (and the intervehicular connection cable between the two dolly sets).

5.5.10.3. Coil the electrical cable and stow in strap mounted on curbside of rear dolly adapter.

5.5.10.4. Remove service and emergency brake air hoses between quick disconnect gladhand on platform of first dolly and connect to quick disconnect gladhand on towbar of second dolly.

5.5.10.5. Coil the service and emergency brake air hoses and stow in strap mounted on roadside of rear dolly adapter.

5.5.10.6. Remove the safety chains of second dolly set from lifting shackles on platform of first dolly set.

5.5.11. Lowering empty dolly set to the ground.

5.5.11.1. Check that all personnel in the area are standing clear of dolly set (combined front dolly and rear dolly). **Note:** Perform the operator/crew preventative maintenance checks and services before doing the procedures.

5.5.11.2. Chock the wheels loosely and release the service brakes and parking brakes.

5.5.11.3. Assign four crewmen to perform procedure, one crewman on each hydraulic pump and strut.

5.5.11.4. Slowly close all four hydraulic pump valves by turning handles clockwise to PUMP position.

5.5.11.5. Each crewman should loosen his strut assembly by unscrewing clamps. Carefully, with hands and fingers away from struts, pump hydraulic pump levers until cylinders open strut knee joints at pivot points. Apply hand pressure on the inside of the pivot point to open struts, being extremely careful not to allow fingers in a potential "pinch" point. The struts must break open at this point.

Note: CAUTION – Turning the hydraulic pump valves too quickly will allow the dolly set to drop rapidly, possibly causing damage to the dolly set and/or injury to the operating crew. Crew should stand clear of dolly set during lowering operation.

5.5.11.6. Adapter arms must remain vertical until contact is made with the ground. If adapter arms are tilted, the sides are not being lowered at the same rate.

5.5.11.7. Pushing the safety pins from the strut assemblies using the fingers should not be attempted under any circumstances at the fingers should not be attempted under any circumstances as the fingers could be severed if the strut released with a finger in the pin hole.

5.5.11.8. An alternate method to break the strut can be accomplished by applying hydraulic pressure to cylinders that will remove pressure from the pins. Do not attempt to push out safety pins with fingers.

5.5.11.9. Slowly, in unison (all four crewman), open the hydraulic pump valves by turning handles counterclockwise to REL (release) position. This will lower all cylinders in unison ensuring that the strut knee joint is bending and is not locked straight.

5.5.11.10. Check for obstructions that could prevent strut knee joints from bending.

5.5.11.11. Ensure that strut knee joints are bending. Stop operation immediately if strut knee joints are not bending and are locked straight. Raise immediately and try again.

5.5.11.12. Lower all four sides of dolly set to ground in unison, ensuring that adapter arms remain vertical (not tilted) while lowering dolly set until contact is made with the ground. Tilted adapter arms means that one side is lowering faster or lower than the others. However, to correct this condition, open the valves on the pumps of the tilted adapter and close the valves on the other. Activate hydraulic pumps until adapters are in a vertical (straight) position.

Note: CAUTION – Serious damage to dolly set can result if only one strut knee joint is locked straight and lowering operation is continued. Lowering operation should be stopped immediately if strut knee joint remains locked straight. Raise dolly set and again try lowering.

5.5.11.13. Reduce pressure in all four air springs to 10 psi after contact is made with the ground.

5.5.11.14. Crew should stand clear of dolly set during lowering operation.

5.5.11.15. Slowly close all four hydraulic pump valves by turning handles clockwise to PUMP position.

5.5.11.16. Adapter arms must remain vertical until contact is made with the ground. If adapter arms are tilted, the sides are not being lowered at the same rate.

5.5.11.17. Each crewman should loosen his strut assembly by unscrewing clamps. Carefully, with hands and fingers away from struts, pump hydraulic pump levers until cylinders open strut knee joints at pivot point. Apply hand pressure on the inside of pivot point to open struts, being extremely careful not to allow fingers in a potential "pinch" point. The struts must break open at this point.

5.5.11.18. Pushing the safety pins from the strut assemblies using the fingers should not be attempted under any circumstances as the fingers could be severed if the strut released with a finger in the pin hole.

5.5.11.19. An alternate method to break the strut can be accomplished by applying hydraulic pressure to cylinders that will remove pressure from the pins. **Note:** CAUTION – Do not attempt to push out safety pins with fingers.

5.5.11.20. Serious damage to dolly set can result if only is one strut knee joint locked straight and lowering operation is continued. Lowering operation should be stopped immediately if strut knee joint remains locked straight. Raise dolly set and again try lowering.

5.5.11.21. Slowly, in unison (all four crewmen), open the hydraulic pump valves by turning handles counterclockwise to the REL (Release) position. This will lower all cylinders in unison ensuring that the strut knee joint is bending and is not locked straight.

5.5.11.22. Check for obstructions that could prevent strut knee joints from bending.

5.5.11.23. Ensure that strut knee joints are bending. Stop operation immediately if strut knee joints are not bending and are locked straight. Raise immediately and try again.

5.5.11.24. Lower all four sides of dolly set to ground in unison, ensuring that adapter arms remain vertical (not tilted) while lowering dolly set until contact is made with the ground. Tilted adapter arms means that one side is lowering faster or slower than the others. However, to correct this condition, open the valves on the pumps of the tilted adapter and close the valves on the other. Activate hydraulic pumps until adapters are in a vertical (straight) position.

5.5.11.25. Reduce pressure in all four air springs to 10 psi after contact is made with the ground.

5.5.12. Leveling the shelter.

5.5.12.1. To level shelter, close all hydraulic pump release valves by moving valves clockwise to PUMP position.

5.5.12.2. Open all hydraulic cylinder valves.

5.5.12.3. Extend all hydraulic cylinders by operating manual hydraulic pumps until all cylinders are extended (leave pump control lever closed).

5.5.12.4. Remove the individual safety lockout pins from struts and free the individual mechanical struts.

5.5.12.5. Close all hydraulic cylinders by placing hydraulic pump release valve in pump position.

Note: The shelter payload is leveled by raising or lowering the four hydraulic cylinders independently as necessary. There are two ways the shelter must be leveled: end-to-end and side-to-side.

5.5.12.6. Turning the pump release valve too quickly will allow the shelter to drop rapidly, causing possible damage to equipment and/or personnel injuries. Stand clear of the dolly set and shelter during lowering operation.

5.5.12.7. To level the shelter end-to-end, SLOWLY open the hydraulic pump release valves for both cylinders to be raised/lowered at the high end of the shelter by moving the associated hydraulic pump release valves to the REL position (counterclockwise).

5.5.12.8. Slowly turn the pump release valve back and forth between PMP and REL positions as required.

5.5.12.9. Gently lower shelter at high end until both ends of the shelter are at the same height.

5.5.12.10. To level the shelter at high end until both ends of the shelter are at the same height (level).

5.5.12.11. To level the shelter side-to-side, decide which side of the shelter is higher.

5.5.12.12. Open the hydraulic cylinders, one on each dolly, on the cylinders on the high side of the shelter by placing the pump release valve to the REL position.

5.5.12.13. Slowly turn pump release valves on the hydraulic pumps on the high side of the shelter back and forth between PMP and REL positions as required.

5.5.12.14. Gently lower shelter at high side until both sides of shelter are at the same level.

Note: Additional leveling adjustment can be obtained by removing the bolts attaching the platform at either side on the rear dolly. This will lower arm assembly. The bolts at the front dolly can also be removed to provide additional leveling adjustment.

5.5.12.15. Close all hydraulic cylinders by coupling dolly set with or without shelter to tow vehicle.

5.5.12.16. Back-up tow vehicle and position near tow bar on the front dolly.

5.5.12.17. Hook dolly set tow bar to pintle hook on tow vehicle.

5.5.12.18. Hook up safety chains to tow vehicle.

5.5.12.19. Connect intervehiclular electrical cable (front harness) between tow vehicle and front dolly junction box.

5.5.12.20. Ensure chains and electrical cables do not drag.

5.5.13. Operation in extreme cold.

5.5.13.1. Special care must be taken when operating dolly sets in cold weather. Refer to manufacturer's operator's manual for additional guidance.

5.5.13.2. Care must be taken when handling electrical cables. Extreme cold weather can cause insulation material on electrical wire to crack, causing short circuits. Construction material may become hard, brittle, and easily damaged or broken.

5.5.13.3. When parking for any period of time in temperatures below 0°F (-180°C), park in a sheltered area out of the wind and clean off any buildup of ice or snow. Place footing of planks or brush under tires to prevent them from freezing to ground. Make sure tires are properly inflated. Underinflated tires will freeze, resulting in flat spots.

5.5.14. Operation in extreme heat.

5.5.14.1. Refer manufacturer's operator's manual for proper lubrication during extreme heat conditions.

5.5.14.2. Do not park dolly set in sunlight for long periods of time. Heat and sunlight shorten tire life.

5.5.14.3. Shelter or cover dolly set with canvas, if available.

5.5.14.4. When humid, frequently inspect, clean, and lubricate to prevent rapid rusting and growth of fungi.

5.5.15. Operation in mud.

5.5.15.1. Immediately after operation in mud, thoroughly clean, inspect, and lubricate if tactical situation permits.

5.5.15.2. Pack bearing wheel bearings as required.

5.5.16. Operation in saltwater areas.

5.5.16.1. Clean, inspect, and lubricate dolly set more often when operating in saltwater areas.

5.5.17. Operation in sandy or dusty areas.

5.5.17.1. Clean, inspect, and lubricate dolly set more often when operating in sandy or dusty areas.

5.5.17.2. Maintain proper tire pressure.

5.5.17.3. Reduce tire pressure to psi listed in the manufacturer's operator's manual for operation on soft sand.

5.5.17.4. Return the tire pressure to normal operating psi when operation resumes on hard-surface roads, if tactical situation permits.

5.5.18. Operation in snow.

5.5.18.1. Refer to AFMAN 24-306 for special instructions on driving hazards in snow.

5.5.18.2. Reduce tire pressure to psi listed in the manufacturer's operator's manual.

5.5.19. Fording. Fording depth of the dolly set is limited to the fording depth limit of the trailer's shelter.

Section 6—EXPLANATION AND DEMONSTRATION.

6.1. Instructor's Preparation.

6.1.1. Establish a training location.

6.1.2. Obtain appropriate vehicle operator's manual.

6.1.3. Schedule/reserve a vehicle.

6.1.4. Ensure trainee completes AF Form 171.

6.2. Safety Procedures and Equipment.

6.2.1. The following safety items should be followed by both the instructor and trainee.

6.2.1.1. Chock wheel (if required) when M-series dolly is parked.

6.2.1.2. Remove all jewelry and identification tags.

6.2.1.2.1. If jewelry contacts a battery terminal, a direct short will result causing instant heating of jewelry

6.2.1.3. Personal protective equipment and equipment items.

6.2.1.3.1. Safety steel-toed boots must be worn.

6.2.1.3.2. Gloves will be worn during cargo loading and unloading.

6.2.1.3.3. First aid kit.

6.2.1.3.4. Inclement weather gear, if applicable.

6.2.1.3.5. Hearing/eye protection, if applicable.

6.2.1.4. Walk around vehicle to become familiar with and to familiarize and the trainee with all warning labels and signs.

6.2.1.5. Ensure trainee wears seat belts.

6.2.1.6. Properly adjust driver's seat and all mirrors, if available.

6.2.1.7. Throughout demonstration, practice M-series dolly safety.

6.2.2. Practice basic RM process during demonstration:

6.2.2.1. Identify hazards.

6.2.2.2. Assess hazards.

6.2.2.3. Develop controls and make decisions.

6.2.2.4. Implement controls.

6.2.2.5. Supervise and evaluate.

6.3. Operator Maintenance Demonstration.

6.3.1. With trainee, accomplish vehicle inspection using AF Form 1800. The vehicle inspection will follow the seven-step method as described in **Attachment 4**. An inspection guide (**Attachment 2**) can be used to ensure all areas of the tractor and dolly are covered in addition to the "Operation Demonstration" guidelines provided below.

6.4. Operation Demonstration.

6.4.1. Throughout demonstration:

6.4.1.1. Allow for questions.

6.4.1.2. Repeat demonstrations as needed.

6.4.2. For all M-series dollies, within the training area, demonstrate and explain the following. **Note:** Use information contained on the data plate and/or the operator's manual:

6.4.2.1. Specific M-series dolly capacities.

6.4.2.2. M-series dolly controls.

6.4.2.2.1. Starting engine.

6.4.2.2.2. Shutting down engine.

6.4.2.2.3. Operating hydraulic control valve.

6.4.2.3. Point out the items to be inspected during operations.

6.4.3. Demonstrate the following M-series dolly operations:

6.4.3.1. Attaching dolly to shelter.

6.4.3.2. Raising/lifting dolly set with shelter.

6.4.3.3. Leveling shelter.

6.4.3.4. Coupling dolly set with shelter to towing vehicle.

6.4.3.5. Explain and demonstrate the items that need to be checked prior to towing.

6.4.3.6. Towing dolly set with shelter.

6.4.3.6.1. Turning.

6.4.3.6.2. Stopping.

6.4.3.6.3. Parking.

6.4.3.6.4. Backing. Always use a spotter when backing.

6.4.3.7. Uncoupling dolly set from towing vehicle.

6.4.3.8. Detaching dolly set from shelter.

6.4.3.9. Lowering empty dolly set to the ground.

6.4.4. Show trainee the after-operation inspection and report.

6.4.4.1. Ensure vehicle is cleaned.

6.4.4.2. Cargo straps and chains are properly stowed.

6.4.4.3. Refuel vehicle.

6.4.4.4. Following manufacturer’s shut-down procedures.

6.4.4.5. Park.

6.4.4.6. Perform a walk-around inspection.

6.4.4.7. Annotate any discrepancies found on AF Form 1800.

6.4.5. Conclude by allowing time for questions and any requested re-demonstrations.

Section 7—TRAINEE PERFORMANCE AND EVALUATION

7.1. Trainee Performance.

7.1.1. Instructor will:

7.1.1.1. Ensure safety at all times. **Note:** Stop training when safety items are violated. Proceed only when the trainee fully understands how to avoid repeating the safety infraction(s).

7.1.1.1.1. Chock wheel (if required) when M-series dolly is parked.

7.1.1.1.2. Remove all jewelry and identification tags.

Note: If available, mark vehicle with magnetic sign indicating "Driver-in-Training" or "Trainee Operator."

7.1.1.2. Personal protective equipment and other items:

7.1.1.2.1. Safety steel-toed boots must be worn.

7.1.1.2.2. Gloves will be worn during cargo loading and unloading.

7.1.1.2.3. First aid kit.

7.1.1.2.4. Reflective belt during hours of reduced visibility or on the flightline.

7.1.1.2.5. Inclement weather gear, if applicable.

7.1.1.2.6. Hearing/eye protection, if applicable.

7.1.1.3. Ensure trainee wears seat belts.

7.1.1.4. Properly adjust driver's seat and all mirrors.

7.1.1.5. M-series dolly safety items/procedures.

7.1.1.6. Ensure the driver is aware of driving situations he/she is to perform.

7.1.1.7. Conduct during/after-action reviews with the trainee (demonstration may need to be re-accomplished).

7.1.2. Trainee Performance.

7.1.2.1. Conduct operator maintenance (have trainee explain items being inspected). **Note:** Allow trainee to use **Attachment 2** as a guide while performing inspection.

7.1.2.1.1. Pre-inspection.

7.1.2.1.2. During-inspection.

7.1.2.2. Ensure AF From 1800 is properly documented.

7.1.2.3. Trainee should explain the following:

7.1.2.3.1. Specific M-series dolly capacities.

7.1.2.3.2. M-series dolly controls.

7.1.2.3.2.1. Starting engine.

7.1.2.3.2.2. Shutting down engine.

7.1.2.3.2.3. Operating hydraulic control valve.

7.1.2.3.3. Point out the items to be inspected during operations.

7.1.2.4. Trainee should demonstrate the following M-series dolly operations:

7.1.2.4.1. Attaching dolly to shelter.

7.1.2.4.2. Raising/lifting dolly set with shelter.

7.1.2.4.3. Leveling shelter.

7.1.2.4.4. Coupling dolly set with shelter to towing vehicle.

7.1.2.4.5. Explain and demonstrate the items that need to be checked prior to towing.

7.1.2.4.6. Towing dolly set with shelter.

7.1.2.4.6.1. Turning.

7.1.2.4.6.2. Stopping.

7.1.2.4.6.3. Parking.

7.1.2.4.6.4. Backing. Always use a spotter when backing.

7.1.2.4.7. Uncoupling dolly set from towing vehicle.

7.1.2.4.8. Detaching dolly set from shelter.

7.1.2.4.9. Lowering empty dolly set to the ground.

7.1.2.5. Continue having the trainee demonstrate until trainee can show proficiency in operating.

7.1.2.6. Perform after-operation inspection.

7.1.2.6.1. Ensure vehicle cleaned.

7.1.2.6.2. Cargo straps and chains are properly stowed.

7.1.2.6.3. Refueled.

7.1.2.6.4. Following manufacturer's shut-down procedures.

7.1.2.6.5. Park.

7.1.2.6.6. Perform a walk-around inspection.

7.1.2.6.7. Report any discrepancies found on AF Form 1800.

7.2. Performance Evaluation.

7.2.1. Trainee will perform performance evaluation found in **Attachment 3**.

7.2.1.1. Instructor and trainee will review **Attachment 3**.

7.2.1.2. Instructor will answer trainee's questions.

Note: If available, mark vehicle with magnetic sign indicating "Driver-in-Training" or "Trainee Operator".

7.2.2. Instructor will:

7.2.2.1. Ensure safety at all times.

7.2.2.1.1. Place wheel chocks (if required) when M-series dolly is parked,

7.2.2.1.2. Remove all jewelry and identification tags.

7.2.2.2. Personal protective equipment and other items.

7.2.2.2.1. Safety steel-toed boots must be worn.

7.2.2.2.2. Gloves will be worn during cargo loading and unloading.

7.2.2.2.3. First aid kit.

7.2.2.2.4. Reflective belt during hours of reduced visibility or on the flightline.

7.2.2.2.5. Inclement weather gear, if applicable.

7.2.2.2.6. Hearing/eye protection, if applicable.

7.2.2.3. Ensure trainee wears seat belts.

7.2.2.4. Properly adjust driver's seat and all mirrors (if available).

7.2.2.5. M-series dolly safety items/procedures.

7.2.3. Explain driving techniques.

7.2.4. Establish a course are that will allow the following procedures to be evaluated:

7.2.4.1. Conduct operator maintenance (have trainee explain items being inspected). **Note:** Allow trainee to use **Attachment 2** as a guide while performing inspection.

7.2.4.1.1. Pre-inspection.

7.2.4.1.2. During-inspection.

7.2.4.2. Trainee will explain M-series dolly control operations for:

7.2.4.2.1. Starting the engine.

7.2.4.2.2. Shutting down the engine.

7.2.4.2.3. Operating the hydraulic control valve.

7.2.4.3. Attaching dolly to shelter.

7.2.4.4. Raising/lifting dolly set with shelter.

7.2.4.5. Leveling shelter.

7.2.4.6. Coupling dolly set with shelter to towing vehicle.

7.2.4.7. Explain and demonstrate the items that need to be checked prior to towing.

7.2.4.8. Towing dolly set with shelter.

7.2.4.8.1. Turning.

7.2.4.8.2. Stopping.

7.2.4.8.3. Parking.

7.2.4.8.4. Backing. Always use a spotter when backing.

7.2.4.9. Uncoupling dolly set from towing vehicle.

7.2.4.10. Detaching dolly set from shelter.

7.2.4.11. Lowering empty dolly set to the ground.

7.2.4.12. Perform after-operation inspection.

7.2.4.12.1. Ensure vehicle cleaned.

7.2.4.12.2. Cargo straps and chains are properly stowed.

7.2.4.12.3. Refueled.

7.2.4.12.4. Following manufacturer's shut-down procedures.

7.2.4.12.5. Park.

7.2.4.12.6. Perform a walk-around inspection.

7.2.4.12.7. Report any discrepancies found on AF Form 1800.

7.2.5. Ensure the driver is aware of driving situations. Conduct evaluation as described above and in **Attachment 3**.

7.2.6. Conduct after-action reviews with the trainee.

7.2.7. Trainee is not allowed any instructor assists to pass performance evaluation.

7.2.8. Evaluation checklist provided in **Attachment 3**.

7.2.9. Retraining; retrain No-Go's.

7.2.9.1. Re-demonstrate "No-Go" items.

7.2.9.2. Have trainee re-perform until they show proficiency in operating, critique weaknesses as observed.

7.2.9.3. Re-evaluate.

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References
AFI 24-301, *Ground Transportation, 1 November 2018*
AFMAN 24-306, *Operation of Air Force Government Motor Vehicles*, X January 2017
AFPAM 90-803, *Risk Management (RM) Guidelines and Tools*, 11 February 2013

Adopted Forms
AF Form 171, *Request for Driver's Training and Addition to U.S. Government Drivers*, 1 November 2018
AF Form 847, *Request for Change of Publication*, 9 September 2009
AF Form 1800, *Operator's Inspection Guide and Trouble Report*

Abbreviations and Acronyms
AF—Air Force
AFI—Air Force Instruction
AFIMSC—Air Force Installation Mission Support Center
AFMAN—Air Force Manual
AFQTP—Air Force Qualification Training Plan
DD—Department of Defense
IAW—In Accordance With
ISO—International Standard Organization
KPH—Kilometers per Hour
MPH—Miles per Hour
PSI—Pounds per Square Inch
RM—Operational Risk Management
SF—Standard Form
TO—Technical Order
VCNCO—Vehicle Control Non Commissioned Officer
VCO—Vehicle Control Officer

Attachment 2

M-SERIES DOLLY INSPECTION GUIDE

GENERAL

STEP 1. VEHICLE OVERVIEW

☐ Paperwork
- AF Form 1800
- Discrepancy Correction Complete (VM Annotation)

☐ Vehicle Approach
- Damage
- Vehicle Leaning
- Fresh Leakage of Fluids
- Hazards Surrounding Vehicle

INTERNAL

STEP 2. HYDRAULIC CONTROLS

☐ Safe Start
☐ Hydraulic Controls
☐ Gauges (Towing Vehicle)
- Oil Pressure Gauge
- Air Pressure Gauge
- Temperature Gauge (Coolant/Engine Oil)

☐ **2B** – Lights/Reflectors/Reflector Tape Condition (Front/Sides/Rear)

(Towing Vehicle – Dash Indicators for :)
- Left Turn Signal
- Right Turn Signal
- Four-Way Emergency Flashers
- Clearance Lights

(Towing Vehicle and Dolly – Reflective Clean & Functional Light & Reflector Checks Include :)
- Headlights
- Taillights
- Turn Signals
- Four-Way Flashers
- Brake Lights
- Red Reflectors & Amber Reflectors
- Reflective Tape Condition

☐ Brakes
- Parking Brake Check
- Hydraulic Brake Check
- Air Brake Check (if equipped)
- Service Brake Check

STEP 3. WALK-AROUND INSPECTION

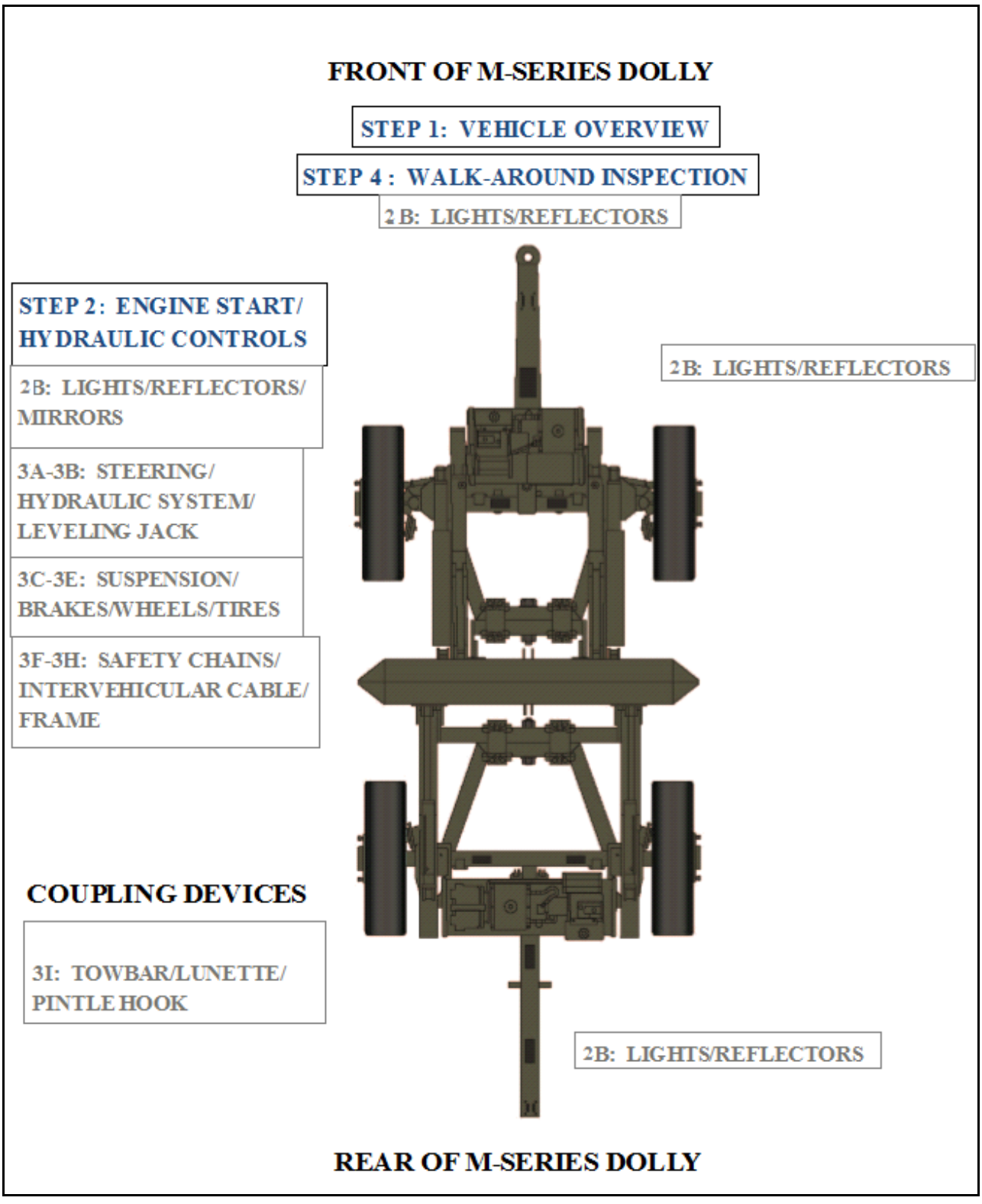
☐ **3A** – Hydraulic System/Leveling Jack
☐ **3B** - Suspension
- Springs/Air/Torque
- Mounts
- Shock Absorbers

☐ **3C** – Brakes
- Slack Adjustors & Pushrods
- Brake Chambers
- Brake Hoses/Lines
- Drum Brake
- Brake Linings

☐ **3D** – Wheels
- Rims
- Tires
- Hub Oil Seals/Axle Seals
- Lug Nuts

☐ **3E** – Safety Chains
☐ **3F** – Intervehicular Cable
☐ **3G** – Frame
FRONT/REAR OF VEHICLE
☐ **3H** – Coupling Device(s)

Figure A2.1. M-Series Dolly Inspection Guide.



Attachment 3

PERFORMANCE TEST

A3.1. Desired Learning Outcome.

A3.1.1. Understand the safety precautions to be followed pre-, during-, and post-operation of the M-series dolly.

A3.1.2. Understand the purpose of the M-series dolly and their role in the mission.

A3.1.3. Know the proper operator maintenance procedures of the M-series dolly, IAW applicable technical orders and use of AF Form 1800.

A3.1.4. Safely and proficiently operate the M-series dolly.

A3.2. Instructions. Before beginning the performance test, the trainer will brief the trainee on the scenario the trainee will need to accomplish. He/she will be given additional directions and instructions as needed to proceed through the scenario.

A3.3. Scoring.

A3.3.1. The trainer examiner will be scoring on M-series dolly operations and also the general safe driving practices. The examiner will give directions and instructions to the trainee in sufficient time for to execute a driving maneuver. He/she will not be asked to drive in an unsafe manner.

A3.3.2. The examiner will be making various marks on the performance test checklist. This does not necessarily mean the trainee have done anything wrong. It is in the best interest to concentrate on the operation of the M-series dolly. The trainer will explain the test results to the trainee at the conclusion of the performance test.

A3.3.3. Tasks being graded are listed on the following page; the trainee will be required to successfully pass all items.

A3.3.4. The instructor will stop the test at any time safe M-series dolly operations are not being followed or as deemed necessary for safety concerns.

Figure A3.1. Performance Test Checklist:

PERFORMANCE TEST			
Trainees Name:		**Date:**	
Event	**Go**	**No Go**	**Notes**
1. PRE, DURING, AND POST- OPERATION INSPECTION			
1.1. Operator has required Personal Protective Equipment.			
1.2. Follows general pattern of pre-trip checklist.			
1.3. Performs brake component check			
1.4. Signs AF Form 1800 to signify accomplishment of complete inspection.			
1.5. Cleans windshield, windows, mirrors, lights and reflectors			
1.6. Continues during operations inspection checks.			
1.7. Knows use of jacks, tools, emergency devices, tire chains, fire extinguishers, etc.			
1.8. Performs post trip inspection and reports malfunctions to Vehicle Management.			
Event	**Go**	**No Go**	**Notes**
2. TOWING PROCEDURES AND ON-ROAD TEST			
2.1. Dolly, shelter and towing vehicle set-up/break down.			
Attaching dolly to shelter.			
Raising/lifting dolly set with shelter.			
Leveling shelter.			
Coupling dolly set with shelter to towing vehicle.			
Uncoupling dolly set from towing vehicle.			
Detaching dolly set from shelter.			
Lowering empty dolly set to the ground.			
2.2. General - safety belt is used; obeys all traffic signs, signals, and laws; completes test without an accident or moving violation.			
2.3. Stopping - decelerates smoothly, brakes evenly.			

Event	Go	No Go	Notes
3. KNOWLEDGE OF VEHICLE AND USE OF CONTROLS			
3.1. Engine:			
Uses proper starting procedures			
Allows proper warm-up.			
Understands all gauges.			
Uses proper shutdown procedures.			
3.2. Hydraulic system. Proper operation of the hydraulic control valve.			
Event:	**Go**	**No Go**	**Notes**
4. BACKING/PARKING (TOWING VEHICLE W/DOLLY):			
4.1. Backing			
Positions towing vehicle and dolly properly.			
Inspects towing vehicle and dolly before backing.			
Posts spotter before backing and uses spotters properly.			
Uses mirrors properly.			
Avoids blind side backing.			
Controls speed.			
4.2. Parking.			
Checks traffic position before parking.			
Secures towing vehicle and dolly properly.			
Parks legally and safely.			
Pulls completely off pavement when possible.			
Knows proper use of emergency warning devices.			
Uses emergency warning devices.			

Event:	Go	No Go	Notes
5. SHELTER SECUREMENT (If not accomplished, have trainee explain the procedure):			
5.1. Checks to ensure M-series dolly is not overloaded and within legal limits.			
CERTIFIER COMMENTS:			

Attachment 4

SEVEN-STEP INSPECTION PROCESS

Figure A4.1. Seven-Step Inspection Process.

Seven-Step Inspection Process	
Step	**Procedure**
1. Vehicle Overview	• Review the AF Form 1800. o Ensure any discrepancy has been corrected. o Vehicle Management annotated the discrepancy was completed. o Approaching the vehicle. ▪ Damage or vehicle leaning to one side. ▪ Fresh leakage of fluids. ▪ Hazards around vehicle.
5. Do Walk-Around Inspection	• General. o Turn-on parking, clearance, side-marker, and identification lights. o Turn-on right turn signal, and start walk-around inspection. o Walk around and inspect. ▪ Clean all lights, reflectors, and glass as while doing the walk-around inspection. • Left front side. • Left front wheel. o Condition of wheel and rim--missing, bent, broken studs, clamps, lugs, or any signs of misalignment. o Condition of tires--properly inflated, valve stem and cap OK, no serious cuts, bulges, or tread wear. o Hub oil level OK, no leaks. Left front suspension. o Condition of spring, spring hangers, shackles, o U-bolts. o Shock absorber condition. • Left front brake. o Condition of brake drum or disc. o Condition of hoses. • Front.

	o Condition of front axle. Condition of steering system. o No loose, worn, bent, damaged or missing parts. o Must grab steering mechanism to test for looseness. o Check for damage and clean if dirty. o Lights and reflectors. o Parking, clearance, and identification lights clean, operating, and proper color (amber at front). o Reflectors clean and proper color (amber at front). o Right front turn signal light clean, operating, and proper color (amber or white on signals facing forward). • Right side o Right front: check all items as done on left front. o Fuel tank(s). o Securely mounted, not damaged, or leaking. Fuel crossover line secure. o Frame and cross members--no bends or cracks. o Air-lines and electrical wiring--secured against snagging, rubbing, wearing. o Spare tire carrier or rack not damaged (if so equipped). o Spare tire and/or wheel securely mounted in rack. o Spare tire and wheel adequate (proper size, properly inflated). o Cargo securement o Cargo properly blocked, braced, tied, chained, etc. Header board adequate, secure (if required). o If oversize, all required signs (flags, lamps, and reflectors) safely and properly mounted and all required permits in driver's possession. o Curbside cargo compartment doors in good condition, securely closed, latched/locked and required security seals in place.

	• Right rear. o Condition of wheels and rims--no missing, bent, or broken spacers, studs, clamps, or lugs. o Condition of tires--properly inflated, valve stems and caps OK, no serious cuts, bulges, tread wear, tires not rubbing each other, and nothing stuck between them. o Tires same type, o Tires evenly matched (same sizes). Wheel bearing/seals not leaking. o Suspension. o Condition of spring(s), spring hangers, shackles, and U-bolts. o Axle secure. o Powered axle(s) not leaking lube (gear oil). Condition of torque rod arms, bushings. o Condition of shock absorber(s). o If retractable axle equipped, check condition of lift mechanism. If air powered, check for leaks. o Condition of air ride components. o Brakes. o Brake adjustment. o Condition of brake drum(s) or discs. o Condition of hoses--look for any wear due to rubbing. o Lights and reflectors. o Side-marker lights clean, operating, and proper color (red at rear, others amber). o Side-marker reflectors clean and proper color (red at rear, others amber). • Rear. o Lights and reflectors. o Rear clearance and identification lights clean, operating, and proper color (red at rear). o Reflectors clean and proper color (red at rear). o Taillights clean, operating, and proper color (red at rear).

	o Right rear turn signal operating, and proper color (red, yellow, or amber at rear). o Blackout lights. Clean and operating. o License plate(s) present, clean, and secured. o Splash guards present, not damaged, properly fastened, not dragging on ground, or rubbing tires. o Cargo secure o Cargo properly blocked, braced, tied, chained, etc. Tailboards up and properly secured. o Canvas or tarp (if required) properly secured to prevent tearing, billowing, or blocking of either the rearview mirrors or rear lights. o If over-length, or over-width, make sure all signs and/or additional lights/flags are safely and properly mounted and all required permits are in driver's possession. o Rear doors securely closed, latched/locked. • Left side. o Check all items as done on right side, plus: o Battery (batteries) (if not mounted in engine compartment). o Battery box (boxes) securely mounted to vehicle. Box has secure cover. o Battery (batteries) secured against movement. Battery (batteries) not broken or leaking. o Fluid in battery (batteries) at proper level (except maintenance-free type). o Cell caps present and securely tightened (except maintenance-free type). o Vents in cell caps free of foreign material (except maintenance-free type).

6. Check Signal Lights	• Get in and turn-off all lights. • Turn-on stop lights (apply dolly hand brake or have a helper put on the brake pedal). • Turn-on left turn signal lights. • Get out and check lights. • Left front turn signal light clean, operating and proper color (amber or white on signals facing the front). • Left rear turn signal light and both stop lights clean operating, and proper color (red, yellow, or amber). • Get in vehicle. o Turn-off lights not needed for driving. o Check for all required papers, trip manifests, permits, etc. o Secure all loose articles (they might interfere with operation of the controls or hit the operator in a crash).
7. Start the Engine and Check Test for Hydraulic Leaks	• Test for hydraulic leaks. o If the vehicle has hydraulic brakes, pump the brake pedal three times. o Then apply firm pressure to the pedal and hold for five seconds. o The pedal should not move. If it does, there may be a leak or other problem. • Brake system. • Test parking brake. o Fasten safety belt. o Set parking brake. o Gently pull forward against parking brake to make sure the parking brake holds. o If it doesn't hold vehicle, it is faulty; get it fixed. • Test service brake stopping action. o Go about 5 miles per hour. o Push brake pedal firmly. o "Pulling" to one side or the other can mean brake trouble. o Any unusual brake pedal "feel" or delayed stopping action can mean trouble.

	o If the trainee finds anything unsafe during the Vehicle inspection, get it fixed. Federal and state laws forbid operating an unsafe vehicle. o Tires. o Cargo, cargo covers. Lights, etc. o If the trainee sees, hears, smells, or feels anything that might mean trouble, he/she should check it out. • Safety inspection. • Document any discrepancy on AF Form 1800. Sign-off AF Form 1800 to signify accomplishment of inspection.