General Information

GENERAL

This is a commercially available mobile facility designed to provide the convenience of a Mobile Surgery Unit (MSU) to communities in need of advanced medical equipment. This mobile facility consists of a one station operating room, a pre-operative area, a post-operative area, a nurse’s station, bathroom and vestibule and clean and soiled utility rooms installed with comprehensive telecommunications support in an expandable, self-contained mobile unit. This manual pertains to the mobile unit.
REPORTING SAFETY DEFECTS

The language specified in the National Highway Traffic Safety Administration (NHTSA) rule published in the Federal Register (49CFR575) November 27, 1989, is as follows:

"If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform NHTSA in addition to notifying MOBILE MEDICAL INTERNATIONAL CORPORATION."

"If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you and MOBILE MEDICAL INTERNATIONAL CORPORATION."

To contact NHTSA you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (in the Washington, DC area) or write to NHTSA, U.S. Department of Transportation, Washington, DC 20590. You may also obtain more information about motor vehicle safety from the Hotline.
ABOUT THE OPERATORS MANUAL

This operator's manual, as well as specific manuals for the major individual items provided by Mobile Medical International Corporation contained within the Mobile Surgery Unit™, are provided to aid in the operation and maintenance of the unit. Please take the time to read through the manuals thoroughly.

IMPORTANT: These manuals should be kept with the unit at all times in an easily accessible location.

This manual contains descriptions of various systems of this unit, operating instructions, and maintenance procedures. Some of this information was extracted from the specific manuals referenced above and is meant to provide a convenient overview for daily use. Refer to these manuals, as well as those provided in the accompanying Appendix, for detailed operating and maintenance procedures.
!WARNINGS!, CAUTIONS! and NOTES

Throughout this manual there are "!WARNINGS!", "CAUTIONS!", and "NOTES" that must be observed.

!WARNING! FAILURE TO OBSERVE A WARNING COULD CAUSE PERSONAL INJURY OR DEATH!

CAUTION! Improper action or failure to take action could cause damage to the unit or components.

NOTE: Provides additional information.

!WARNINGS! and CAUTIONS! are listed on pages 5-10 of this section of the manual and have been entered where applicable throughout the manual. Before performing step-by-step procedures, review the complete procedure, and be aware of the many warnings, cautions and notes referenced.
!WARNINGS! and CAUTIONS!
It is important that the below listed warnings, cautions and notes be read and understood before operating
the unit in order to prevent injury and/or damage.

!WARNING!
W1. **Hydraulic System**
The hydraulic system can cause extreme injury and even **DEATH!** if anyone is **TRAPPED BETWEEN**
**MOVING PARTS**. Only trained and authorized personnel should operate the hydraulic system. It is very
important that the person operating the control module is in constant communication with all other set-up
staff personnel and that a system of commands be used. Examples of commands used include “Wall
coming out”, and “Wall coming in”, the response to these commands should be “Clear” or “Stop.” Upon
calling for a “Stop” the controller should respond with “All Stop” and should remove his hand from the
control buttons. Prior to opening or closing any hydraulic system, visually inspect the area for any
obstruction or unsafe condition and at all times control the access of people in the area. A detailed safety
and obstruction inspection should be performed on the inside of the unit to ensure that nothing will be
crushed.

!WARNING!
W2. **Tractor / Coupling**
**NEVER** permit anyone to stand behind the tractor or unit when coupling!
Back tractor toward unit so that the kingpin is centered as closely
as possible to the throat of the fifth wheel.

!WARNING!
W3. **Shorelines and Generator Lines**
Shorelines and generator lines are heavy! Use proper lifting techniques to avoid injury.

!WARNING!
W4. **Patient Station Closing Procedure**
Care must be exercised to avoid pinching fingers or hands between the work surface and the cabinet.

!WARNING!
W5. **Lifting Hazard-Air Lock and Drop-in Floor Panels Install and Breakdown Procedure**
Use proper lifting techniques when lifting panels to avoid injury and to prevent the panels from falling out
of your hands and doing damage.

!WARNING!
W6. **Power Sources**
Use care when working around any power sources. Ensure lock outs are in place before proceeding.
Failure to use caution may
result in **DEATH, SHOCK, FIRE, OR EQUIPMENT FAILURE AND/OR DAMAGE.**
WARNING!

W7. Electric-Shock Hazard
This unit is supplied with high electric voltage and current. This voltage and current could cause serious injury or DEATH! Always use care when working around the electrical system. Turn the POWER OFF AND LOCK OUT prior to performing any maintenance on the electrical equipment.

It is recommended that all initial electrical connections to the outside power source be done by a competent licensed electrician. BEFORE turning on any breakers or electrical equipment inside the unit, personnel MUST check the phase sequence meter located in the main power panel for proper hook-up.

When checking the circuit breakers, refer to the electrical system section of this manual. Circuit breakers are either automatic or manual re-set type. If circuit breakers continue to trip, have the electrical system serviced.

All circuits are tested and inspected in accordance with Underwriter's Laboratory and the National Electrical Code - National Fire Protection Association (N.F.P.A. # 70). No attempt should be made to alter the wiring system.

WARNING!

W8. Ground Rods Installation
This unit is supplied with high electric voltage and current. This voltage and current COULD CAUSE serious injury or DEATH! Always use care when working around the electrical system. To insure the provision of an adequate ground at all times the grounding rods MUST be installed before the generator is started or the shore-power is connected.

It is recommended that the safety ground is connected to approved metal rods driven into the earth at the designated width apart and to the designated depth as required by local code. As an alternate ground connection, an existing approved grounding location can be used if it meets the local code requirements. The safety ground MUST be maintained until the unit is shut down for movement to a new location. The last connection that should be removed is the safety ground.

WARNING!

W9. Fueling
Be careful when fueling. Clean up any spilled fuel IMMEDIATELY. Spilled fuel creates a hazardous fire condition which can result in SEVERE PERSONAL INJURY OR DEATH!
**WARNING!**

W10. **Refrigerant is used in the refrigeration equipment**

DEATH OR SERIOUS INJURY may result if personnel fail to observe safety precautions. Great care must be exercised to prevent liquid refrigerant, or refrigerant gas discharged under high pressure, from coming into contact with any part of the body. Extremely low temperature resulting from rapid expansion of liquid refrigerant or refrigerant gas discharged from under high pressure, can cause sudden and irreversible tissue damage through freezing.

All personnel must wear thermal protective gloves and a face shield or goggles when working in any situation where refrigerant contact with skin or eyes is possible. Application of excessive heat to any component in a charged system will cause extreme pressure that may result in a rupture, possibly explosive in nature.

Exposure of certain CFC (chlorofluorocarbon) and HCFC (halogenated chlorofluorocarbon) refrigerants to extreme heat or a very hot surface will cause a chemical reaction in the gas to form carbonyl chloride (phosgene), a highly poisonous and corrosive gas.

Generally, in their natural states, CFC and HCFC refrigerants are colorless, odorless vapors with no toxic characteristics, are heavier than air, and will disperse rapidly in a well-ventilated area. However, in an unventilated area, these refrigerants present a danger as an asphyxiate by displacing oxygen in the area.

**WARNING!**

W11. **Patient Lift Use**

Before operating the lift, personnel MUST HAVE READ AND BE FAMILIAR WITH the operating instructions.

**WARNING!**

W12. **Patient Lift Operation**

Use care when operating the lift! Ensure that no one is in or can come into the area where the lift will be operated!

**WARNING!**

W13. **Pinching Hazard**

Care must be exercised to avoid pinching fingers or hands between permanent surfaces and the cabinets.

**WARNING!**

W14. **Starting Aids**

DO NOT use ether as a cold weather starting aid.

The heat from the glow plugs may cause a sudden ignition of the ether vapor. This may result in PERSONAL INJURY or DAMAGE to the generator engine.
!WARNING!

W15. **Engine Exhaust (Carbon Monoxide is Deadly!)**

Carbon monoxide is an odorless, colorless gas, formed by incomplete combustion of hydrocarbon fuels. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal. Some of the symptoms or signs of carbon monoxide are:

- DIZZINESS
- INTENSE HEADACHE
- WEAKNESS & SLEEPINESS
- VOMITING
- MUSCULAR TWITCHING
- THROBBING IN TEMPLES

!WARNING!

W16. **REFRIGERANT UNDER PRESSURE is used in the operation of this equipment.**

Death on contact or severe injury may result if you fail to observe safety precautions. Never use a heating torch on any part that contains refrigerant. Do not let liquid refrigerant touch you and do not inhale refrigerant gas.

!WARNING!

W17. **DANGEROUS CHEMICAL, Refrigerant R407-C HCFC is used in this equipment.**

!WARNING!

W18. **DANGEROUS CHEMICAL, Refrigerant R22 HCFC is used in this equipment.**
CAUTION!
C1. Procedures Used During Transport:
Prior to moving the unit, perform the pre-transport checks and a thorough walk around inspection of the Mobile Surgery Unit. Refer to Section 3, Pages 38 and 39.

CAUTION!
C2. Raising Unit off Fifth Wheel
DO NOT raise the unit off the fifth wheel until the jacks have sufficient unit weight to support the unit, then slide the fifth wheel out of the pin.

CAUTION!
C3. Fifth Wheel
ALWAYS make sure the unit is picked up by the fifth wheel! A unit kingpin that is too high enters the fifth wheel incorrectly. Damage to the kingpin, cargo, or fifth wheel can occur by running a kingpin up the fifth wheel plate.

CAUTION!
C4. Varying Conditions
Varying conditions such as lubrication, temperature, ice, snow, and mud could all affect a secure couple! A visual check must always be made to ensure that the coupling is secure!

CAUTION!
C5. Judgment of Coupling
NEVER judge a coupling by sound alone!

CAUTION!
C6. Parking the Unit
The unit should not be parked over underground utility lines OR parked beneath utility lines.

CAUTION!
C7. Surface Weight Capacity
Be cognizant of the load-bearing capacity of the parking surface with regard to underground parking, buildings or other sub-structures.

CAUTION!
C8. Equipment Securing
All equipment inside the unit MUST BE SECURED to prevent movement during transportation. Movement may damage equipment.
CAUTION!

C9. Wall Slide Tubes and Tracks
The maintenance of these areas in accordance with procedures in Section 3 Page 22 Paragraph 12 is very important to ensure problem-free operation. Ensure that the wall slide tubes and tracks are clear of debris and that the rollers are operating properly.

CAUTION!

C10. Electrical connections to outside power sources
ALL initial electrical connections to outside power sources and any electrical system service should be completed by a competent licensed electrician.

CAUTION!

C11. Phase Agreement Check
Failure to perform a phase agreement check each time the unit is connected to a new source may result in equipment damage.

CAUTION!

C12. Belly Box Lights or Emergency Light Packs
DO NOT leave belly box lights on for extended periods of time. Ensure all emergency light battery packs are off or disconnected when unit is not connected to a power source.
When left on they could cause the batteries to run down or fail.

CAUTION!

C13. UPS Battery Pack
The UPS battery pack is meant to supply short term back-up power to allow uninterrupted completion of work-in-progress scans in case of a power failure. Use of the UPS system for any purpose other than emergency power may result in damage to the UPS system. Refer to the UPS System Operator’s Manual.
The UPS battery pack can pose an electric shock hazard if used improperly.

CAUTION!

C14. Patient Lift Switch
Do NOT keep the switch pushed after the lift stops moving. Holding the switch could DAMAGE the hydraulic system!

CAUTION!

C15. Landings
Use two people to position the landings and steps to avoid losing control of the landing.
CAUTION!
C16. **Leveling the Unit**
Prior to deploying expandable walls, it is very critical that you verify by checking the levels on the unit that the trailer body is in a level position from side to side and front to back.

CAUTION!
C18. **Cranking the Starter**
Excessive cranking might overheat and **DAMAGE** the starter!
Do no engage the started for longer than 20 seconds and
Allow 2 minutes for the starter to cool down.

CAUTION!
C19. **Application of Volts to the Starting Circuit**
**DO NOT APPLY MORE THAN 12 VOLTS TO THE STARTING CIRCUIT AT ANY TIME!** Over voltage will destroy the glow plugs in 2 - 3 seconds. If it is necessary to use an additional power source, use a 12 volt battery connected in parallel.

CAUTION!
C20. **Stairs**
Use two people to lift and position stairs for both use and transport in order to avoid injury upon lifting or losing control. Take caution when stepping onto platform of the tractor as not to lose your balance. Area may be slick in cold climates. Always use handles to assist in mounting or exiting the rear of the tractor.

CAUTION!
C21. **Hydraulic Pumps**
Hydraulic pumps run consistently when any pump (power) switch is activated. Prolonged running of pumps can deplete 12 volt battery power which will cause you to not be able to raise or lower the unit. Turn off every pump (power) switch and the hydraulic red rotary switch when not moving the leveling, landing gears or stabilizer jacks.

CAUTION!
C22. **Brands of Oil**
Do not mix brands of oil! Each brand contains its own additives, additives of different brands could react and produce properties harmful to your engine.

CAUTION!
C23. **Expansion of Rear Expandable**
Release the expansion control switch as soon as the sound of the floor dropping is heard to avoid damage to expandable and walls.
**MSU MAJOR COMPONENT LISTING**

Each unit is provided with a set of manuals which is presented at delivery. The Mobile Medical International Corporation portion describes the major functions, procedures, and practices that should be used to operate the MSU unit. In addition, all technical literature received from original equipment manufacturers (OEMs) is included in the manual set. **BEFORE** this unit is put into service the warranty cards should be completed and mailed. This will ensure proper service and maintenance. **BE SURE TO KEEP ALL VENDOR LITERATURE!**

<table>
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<th>ITEM:</th>
<th>MANUFACTURER / MODEL:</th>
<th>SERIAL/PART NO:</th>
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<tr>
<td>53 x 8'8.6&quot; MSU UNIT</td>
<td>MOBILE MEDICAL INTERNATIONAL</td>
<td>1N9PU53249W202704</td>
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<td>Mobile Surgery Unit™</td>
<td>CORPORATION</td>
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UNIT DIMENSIONS AND WEIGHT

MOBILE MEDICAL INTERNATIONAL CORPORATION

Unit: Year / Model: 2009 (Shell Manufactured)  
Year / Model: 2009 (Unit Integrated)  
S/N: MSU 1017-NEF  
VIN: 1N9PU53249W202704

Tractor: Year / Model: (as applicable)

Date MSU Released From Mobile Medical International Corporation Factory: October 2009

MSU DIMENSIONS: Unit ONLY
LENGTH = 53
HEIGHT = 13' 6"
WIDTH = 8' 6"

TRACTOR DIMENSIONS: (as applicable)
LENGTH = --
HEIGHT = --
WIDTH = --

MSU WEIGHT AND CAPACITIES

ACTUAL SHIPPING WEIGHT: Unit ONLY
Trailer Axle Weight = 29,400 lbs.
Landing Gear Weight = 32,700 lbs.
TOTAL WEIGHT = 62,100 lbs.

ACTUAL SHIPPING WEIGHT: Tractor ONLY (as applicable)
Steer Axle Weight = -- lbs.
Drive Axle Weight = -- lbs.
TOTAL WEIGHT = -- lbs.

Total weight of complete Unit = ________ lbs. (as applicable)
### KEY LEGEND

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<th>DESCRIPTION</th>
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<tr>
<td>2AA</td>
<td>Emergency Exit Exterior Door</td>
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<td>3AA</td>
<td>Utility Room Door (Exterior)</td>
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<td>CH545</td>
<td>12 Volt / Communications Door</td>
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<td>C415A</td>
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<tr>
<td>CH751</td>
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<tr>
<td>SC10</td>
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