INDEPENDENT
ROUGH TERRAIN CENTER LLC

40 HR OPERATOR/OPERATOR MAINTENANCE TRAINING

The purpose of the Operator course is to give the student the basic knowledge of and the methods to safely operate the RT240V1-V3 RTCH in real world conditions.

- RT240 Technical Data & Features
- Safety requirements – operation & maintenance
- Operator TM review
- Operator troubleshooting and response to error codes

To make proper inspections and perform the maintenance and lubrication procedures to keep the vehicle fully mission capable by:

- Before, During & After operation PMCS
- Weekly/Monthly PMCS
- Periodic lubrication requirements

Provide the student with the operational skills and techniques to safely handle and manipulate 20 and 40 foot containers throughout a wide range mission driven scenarios.
Instruction to include:

- Joystick/controls/display screens
- Operational investigation of vehicle lockouts and operational characteristics
- Driving/steering modes, engagement and container positioning
- Container (20'&40') movement and placement
- Container (20'&40') stacking- 2&3 high
- 20' longitudinal handling, odd angle retrieval and placement
- Trailer loading/unloading.
- Forklift kit, Sling kit deployment/operation – if available

Introduce the student to the different transportation modes of the RT240. Perform the transport conversions in a safe and efficient manor to minimize the possibility of damage to the equipment.

- Self Deployment
- Truck, Rail, Marine & Air Transport

To make the student aware of and discuss the procedures or course of action involved with unusual situations.

- Slave starting, Towing & Emergency operation of the boom
- Operations in extreme heat, cold, mud, sandy/dusty, rocky, snow and ice conditions
- Fording procedures

Written and practical test is given to evaluate the effectiveness of the training. Certificate of completion is issued.

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40 HOUR FIELD LEVEL MAINTENANCE TRAINING

The purpose of the Field Level Maintenance course is to provide the student with the basic knowledge and skills to troubleshoot, repair and maintain the RT240V1-V3 RTCH.
Instruction begins with introductory information:

- RT240 Technical Data & Features
- RTCH Progressive Improvements
- Safety requirements – operation & maintenance

Training continues with an in-depth study of the various hydraulic subsystems. Each hydraulic subsystem is broken down and explained by animated presentation. Interconnection of the subsystems is explored along with the electrical functions of the electro-hydraulic controls. Diagnostic menu references to hydraulic components are introduced at this time. Each of the subsystem components "point to point" hose connections are located on the vehicle. Hydraulic system pressure testing ties the hydraulic system lesson together with the pressures involved with the systems learned.

- RTCH Hydraulic Systems
- Hydraulic Pressure Testing

RTCH mechanical operation is explained and then performed. The unit is converted to the air transport configuration. This allows the student to experience moving the cab to the transport position, boom support folding, boom floating and bogie wheel operation. During the air transport lesson, the student group will perform the procedure to remove and reinstall the load handling tophandler attachment.

- RTCH Air Transport Conversion – attention to safe boom support folding
- Tophandler removal & re-installation

A conceptual and practical overview is given for each of the major mechanical systems of the RTCH. Each system is explained by animated presentation, bringing the electrical control, ECU/ECM and diagnostic menu references together with the mechanical operation of each system. Practical facilitation of each lesson is performed on the vehicle; component location and operational checks. Electrical testing of components and system is introduced along with specific diagnostic menu references as well as any error codes that may be activated.

- Steering System
- Transmission System
- Engine System
- Overload Protection System
- Auxiliary Pump system

Each service level beginning with Operator through Field Level PMCS service points are located and reviewed in the appropriate technical manuals. A practical inspection is made of the overall vehicle condition along with the designated operator fluid checks. Manual lubrication points are located. Specific lubrication points are serviced as part of the practical lesson. The Autolube system is introduced by animated presentation. System components are located and manual activation and testing is

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performed. All of the Field Level PMCS inspection points, filter locations, draining and fill points are found. Specific information for intervals and servicing each point is explained.

- Operator Lubrication Responsibilities/Autolube System
- Operator PMCS/Field Level PMCS

On board diagnostics are an essential part to troubleshooting and repairing the RT240. The student will already have been introduced to the diagnostic menus in the previous lessons. This lesson will allow the student a practical view of all the diagnostic menus available on the RTCH by relating each screen with the explanation in the student guide while performing the specific functions.

- RTCH Diagnostic Menus

Three systems on the RTCH require calibration for specific reasons. Calibration will be covered for the steering, boom and tophandler and transmission, first by animated presentation and then by practical application on the RTCH. Discussion points include: importance of, components involved, safety to be observed and when to calibrate.

- RTCH Calibrations – Steering, Boom and Tophandler and Transmission

The RTCH electrical system consists of numerous subsystems, many with ECU/ECM connections and interactions. Up to this point, the student has been introduced to some of the electrical features and functions of the mechanical systems. The electrical lesson will cover the rules for reading the electrical diagrams, Can-Bus system functions, ECU connections and operational characteristics. Several animated circuit tracing exercises will give the student a good practical view of how to follow a circuit. Diagram to component locations on the vehicle are stressed. Relay location and operation is reviewed.

- RTCH Electrical System & Diagrams

Troubleshooting is performed on the RTCH from the conceptual and practical knowledge learned from the previous instruction. Methods to use in the troubleshooting practical portion are discussed before the student groups encounter various induced faults on the RTCH.

- Troubleshooting Methods
- Troubleshooting Practical

Written test is given to evaluate the effectiveness of the training. Certificate of completion is issued.

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80 HOUR FIELD LEVEL MAINTENANCE TRAINING

The purpose of the Field Level Maintenance course is to provide the student with the basic knowledge and skills to troubleshoot, repair and maintain the RT240V1-V3 RTCH.
Instruction begins with introductory information:

- RT240 Technical Data & Features
- RTCH Progressive Improvements
- Operational Demonstration
- Safety requirements – operation & maintenance
- Operator Technical Manual – structure & features

Provide the student with the basic operational skills to be able to perform the required maintenance and repair tasks. Instruction to include:

- Before, During & After operation PMCS practical/discussion
- Joystick/controls/display screens
- Operational investigation of vehicle lockouts and operational characteristics
- Driving/steering modes, engagement and container positioning
- Container (20') movement, placement and disengagement

RTCH mechanical operation is explained and then performed. The unit is converted to the air transport configuration. This allows the student to experience moving the cab to the transport position, boom support folding, boom floating, and bogie wheel operation. During the air transport lesson, the student group will perform the procedure to remove and reinstall the load handling tophandler attachment.

- RTCH Air Transport Conversion – attention to safe boom support folding
- Tophandler removal & re-installation

The Maintenance Technical Manuals will be investigated for information pertaining to RTCH servicing, technical specifications, troubleshooting/repair procedures, diagnostic menus, calibration, error code tables, electrical and hydraulic diagrams.

- Maintenance Technical Manuals

A conceptual and practical overview is given for each of the major mechanical systems of the RTCH. Each system is explained by animated presentation, bringing the electrical control, ECU/ECM and diagnostic menu references together with the mechanical operation of each system. Practical facilitation of each lesson is performed on the vehicle; component location and operational checks. Electrical testing of components and system is introduced along with specific diagnostic menu references as well as any error codes that may be activated.

- Steering System
- Transmission System
- Engine System
- Overload Protection System
- Auxiliary Pump system
- Air Conditioning System

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- Tophandler System

Training continues with an in-depth study of the various hydraulic subsystems. Each hydraulic subsystem is broken down and explained by animated presentation. Interconnection of the subsystems is explored along with the electrical functions of the electro-hydraulic controls. Diagnostic menu references to hydraulic components are introduced at this time. Each of the subsystem components "point to point" hose connections are located on the vehicle. Hydraulic system pressure testing ties the hydraulic system lesson together with the pressures involved with the systems learned.

- RTCH Hydraulic Systems
- Hydraulic Pressure Testing

Each service level beginning with Operator through Field Level PMCS service points are located and reviewed in the appropriate technical manuals. A practical inspection is made of the overall vehicle condition along with the designated operator fluid checks. Manual lubrication points are located. Specific lubrication points are serviced as part of the practical lesson. The Autolube system is introduced by animated presentation. System components are located and manual activation and testing is performed. All of the Field Level PMCS inspection points, filter locations, draining and fill points are found. Specific information for intervals and servicing each point is explained.

- Operator Lubrication Responsibilities/Autolube System
- Operator PMCS/Field Level PMCS

On board diagnostics are an essential part to troubleshooting and repairing the RT240. The student will already have been introduced to the diagnostic menus in the previous lessons. This lesson will allow the student a practical view of all the diagnostic menus available on the RTCH by relating each screen with the explanation in the student guide while performing the specific functions.

- RTCH Diagnostic Menus

Three systems on the RTCH require calibration for specific reasons. Calibration will be covered for the steering, boom and tophandler and transmission, first by animated presentation and then by practical application on the RTCH. Discussion points include: importance of, components involved, safety to be observed and when to calibrate.

- RTCH Calibrations – Steering, Boom and Tophandler and Transmission

The RTCH electrical system consists of numerous subsystems, many with ECU/ECM connections and interactions. Up to this point, the student has been introduced to some of the electrical features and functions of the mechanical systems. The electrical lesson will cover the rules for reading the electrical diagrams, Can-Bus system functions, ECU connections and operational characteristics. Several animated circuit tracing exercises will give the student a good practical view of how to follow a circuit. Diagram to component locations on the vehicle are stressed. Relay location and operation is reviewed.

- RTCH Electrical System & Diagrams

Troubleshooting is performed on the RTCH from the conceptual and practical knowledge learned from the previous instruction. Methods to use in the troubleshooting practical portion are discussed before the student groups encounter various induced faults on the RTCH.

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- Troubleshooting Methods
- Troubleshooting Practical

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