Suffolk County
Fire, Rescue & Emergency Services
OPERATIONAL OVERVIEW

Medical Ambulance Bus (MAB)

Major Emergency Response Vehicle Operation (MERV)

Questions email joel.vetter@suffolkcountyny.gov

Introduction

- This course is designed to familiarize personnel in operational aspect of the MAB / MERV. The MERV is a multi-functional tool that an EMS agency can use to address multiple scenarios involving both patients and responders. This course is not intended to train MERV drivers. A standardized Emergency Vehicle Driver (EVD) course is suitable for this purpose, using the MERV for all practical exercises.
- The content of this presentation will refer to certain equipment that may be an installed option on the vehicle delivered to Suffolk County Fire, Rescue and Emergency Services (FRES) and not standard equipment on all MABs. A comprehensive training program should address all installed equipment on the vehicle(s) to be utilized by participants.
- The roles discussed within this presentation represent the methodology implemented by Suffolk County FRES based on local experience and the experience of others using MABs or like vehicles.

Introduction

- The course should focus heavily towards "hands on" instruction, demonstration, and evaluation to ensure that personnel have a mastery with the operation of all equipment. This "hands on" instructional component should focus heavily on operator and patient safety. As the MERV is often not a daily use piece of equipment, periodic refresher and review is essential to maintaining competency and safety.

Objectives

- Participants should complete the course with a "bumper to bumper" base of knowledge about the installed equipment
- Personnel should understand the expectations for each defined role on the MAB / MERV
- Personnel should be able to identify emergency practices for Fires, Medical Emergencies and hazardous conditions.

Specifications

2013 Thomas / Freightliner EFX, Commercial Chassis

Length:	41'8"
Width:	96"
Height:	11'8"
GRVW:	36,000lbs
Engine:	Cummins ISB 6.7 L, 260 hp
Transmission:	Allison, Automatic
Generator:	Cummins, 20 KW / 1GPH
Fuel Tank	100 Gallons (shared) / 8-10 MPG
DEF Tank	5 Gallons / 1500 HWY
Oxygen System:	30 "D" Cylinders

The Vehicle

- **TIRES**

Front Size: 275/70R22.5 Pressure: **125psi**

Rear Size: 255/70R22.5 Pressure: **120psi**

- **FLUIDS**

Transmission : Trans-Synd

Engine oil: 15W40 CJ4

Engine Coolant: Alliance 50/50 mix recommended

Power steering: Dextron III

Access Doors

- The primary front access door has been retrofitted with an "RV" style door latch, replacing the original actuated bus door.
- When in transit, confirm that the door is securely shut and locked from the interior.
- The rear door can only be opened from inside the vehicle.
- The door should be locked whenever the vehicle is in motion, using both the lever latch and the bolt.

Up To 24 Stretchered Patients

7 Neonate Islets – 12 Wheel Chairs

Crew of 3-4 Medical Attendants

Roles and Responsibilities

- There are three primary roles for personnel operating the MERV. These include the Loadmaster, the Operator, and the Transport Medical Personnel. Each role has some defined responsibilities, during both normal operations and under emergency conditions.

Primary Roles for the Loadmaster

1. Captain Of the Ship

- The Crew, Operator, and Bus are your responsibility
- Decide the tasking associated with the mission
- Delegate to maintain situational awareness
- Communicate (Verbal and Radio)
- Direct if an emergency arises
- Liaison with others in the command structure

2. Crew Safety Officer (With the Operator)
- Maintain a safe, operational atmosphere

3. "Pre-Flight" Preparation of Cabin
- Power Systems Readiness
- Communications / Technology Systems
- Radio
- Data
- Navigation
- Medical Readiness
- Equipment
- Supplies
- Crew Items

Primary Roles for the Loadmaster

4. Mission Documentation
- ICS – 214 "Activity Maintenance Log"
- Interface with Command Structure
- Radio Communications during transit and at scene

5. Assist Operator with Safe Operations

6. Lead on Patient Safety
- Staging
- Movement
- Loading
- Care

Primary Roles for the Operator

1. Mans the Wheel
- Safe operation of the vehicle from mission start to termination
- Monitor all mechanical systems for proper working order
- Operate all functions controlled in the Operators position

2. Crew Safety Officer (With the Loadmaster)
- Maintain a safe, operational atmosphere

Primary Roles for the Operator

3. "Pre-Trip" Inspection of the Vehicle
- Mechanical systems, including brakes, tires
- Ensure all compartment doors secured
- All shorelines disconnected from vehicle
- Fuel at full capacity

4. Deployment of the Vehicle
- In as level as the situation will permit
- Avoiding potential hazards
- Managing the leveling of the vehicle
- Direct the assembly and attachment of the ramp

Primary Roles for the Operator

5. Oversee Patient Placement
- Coordinate with Loadmaster on patient placement within the vehicle based on size and acuity
- Oversee placement of patients in berths
- Ensure that all stretchers are securely locked into place

Primary Roles for the Transporting Medical Personnel (TMP)

1. Mission-Appropriate Inventory
- Based on the mission, ensure that proper caches of equipment are loaded prior to departure
- Configure interior of vehicle based on the mission
- Check levels on oxygen system
- Ensure proper readiness of portable medical equipment

2. Patient Preparation
- Assist Loadmaster with triage of patients
- Facilitate transfer of patients to MERV stretchers outside of vehicle
- Reassess patients after loading onto vehicle

TMP

3. Patient Care

- Monitor condition of assigned patients, providing care and comfort measures during transport
- Complete proper documentation of care provided

4. Vehicle Readiness

- Under direction of Operator, assist in returning vehicle to established level of readiness after the mission

On-Board Emergencies

Must now "STOP THE BUS"

- ANY type of Fire
- Environmental Event/Fumes (incl. alarms)
- Emergent Patient Care Issue (including crew)
- Loss of On-Board Power and/or Oxygen
- Vehicle Accident involving MAB
- Vehicle Breakdown – Tires, Belts, etc.

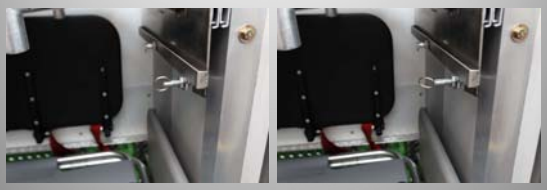
"WE HAVE AN ON-BOARD EMERGENCY"

3 Patient Sliding Stretcher Stack

Stretcher Slid Out

Slide Pin

Pin Positions

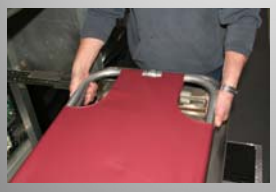


Pull Stretcher with Both Hands

Stretcher will lift out once slid in the "out" position

Hand Placement

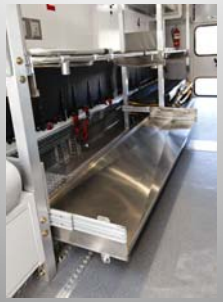
Correct



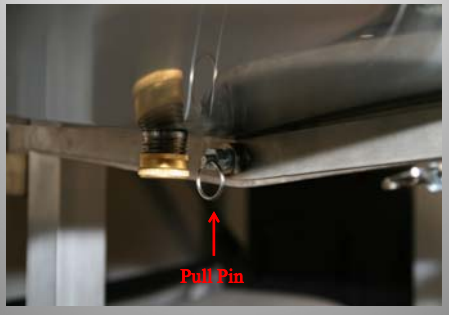
Incorrect

Flip Seats

Fluid Collection Trays



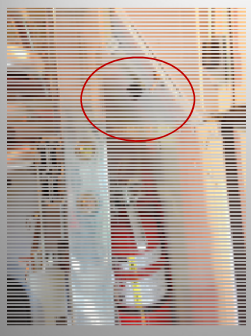
Fluid Tray Release Pins



Fluid Tray Removal

Rolling Cots

Rolling Cot Release



Plenty of Room in the aisle for Patient Transfer

110/220V

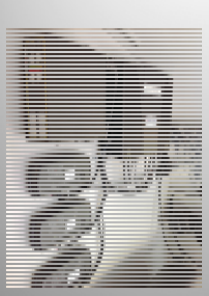
- Rooftop AC/Heat Units
- Electrical Outlets (Interior & Exterior)
- Baseboard Heaters
- Oxygen Manifold
- Oxygen Pressure Alarm
- Interior Electrical Outlets
- Exterior Electrical Outlets

12V

- Interior Lighting
- Emergency Lighting
- Suction Pumps
- Flashlights
- 12V Outlets

Master Battery Shut Off Switch

SMART TRUCK

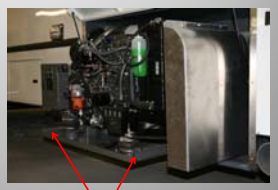


- In-Motion Tech Link
  - Internet and 4G VOIP
- Intercom and Wireless head set x4
- 11 Wireless Vital Signs Monitors (WVSM)
- Assets Tracking
- Temp Reporting
- 2 Toughbook CF19

20KW Martin Generator

Slides Out for Maintenance

Generator Slide Pin



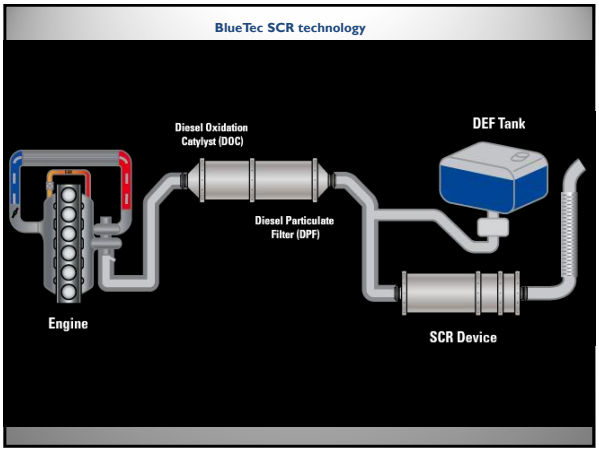
Pin Location

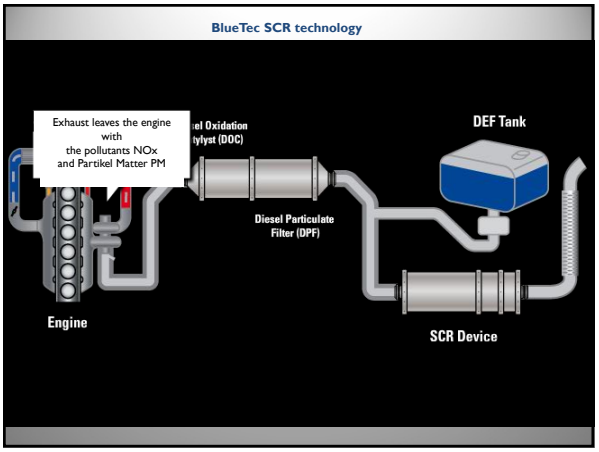
100 amp breaker

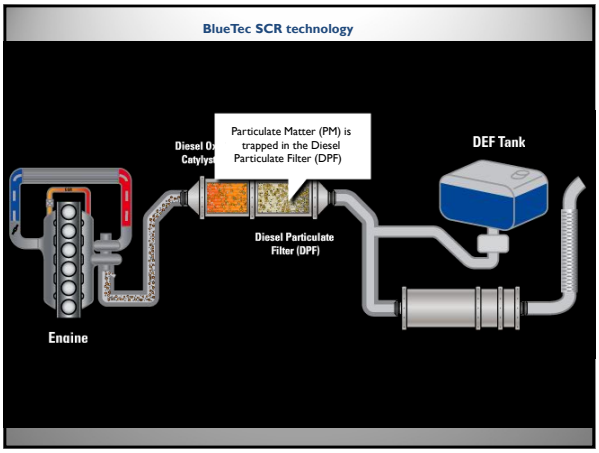
Generator / Bus Fuel Door

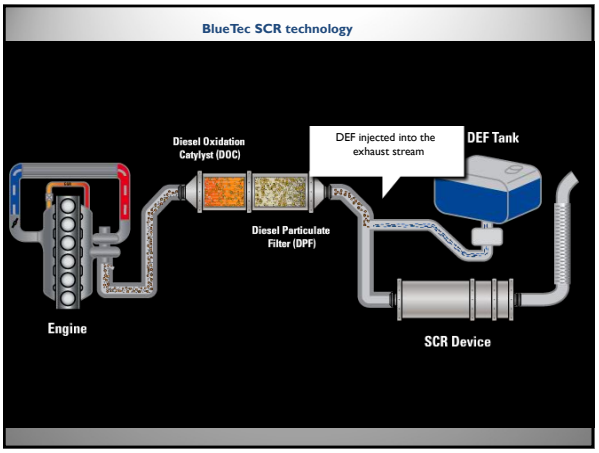
Charger Shoreline / Air Inlet

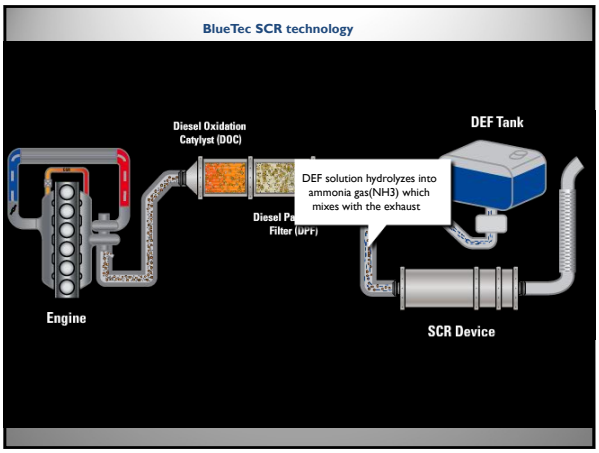
Regeneration

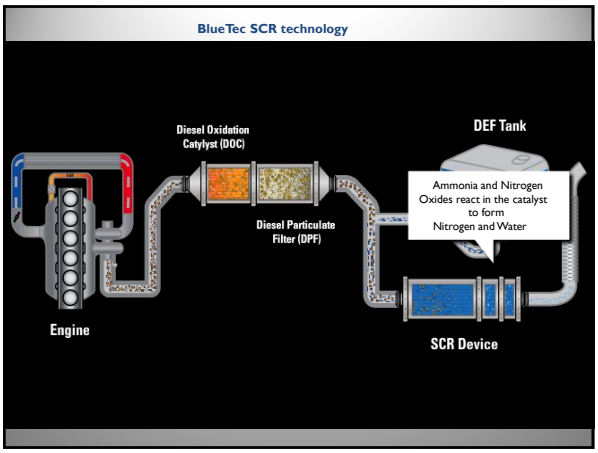


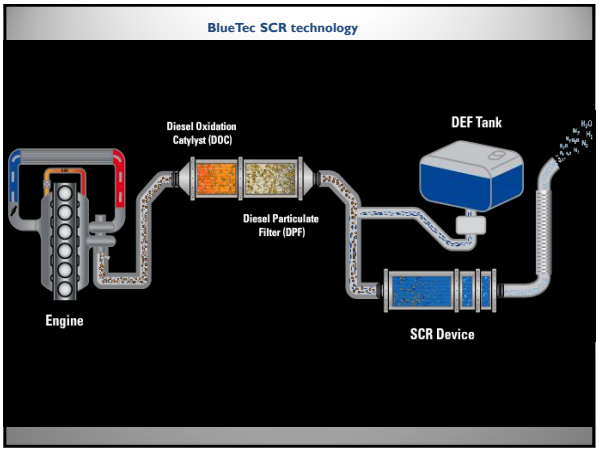




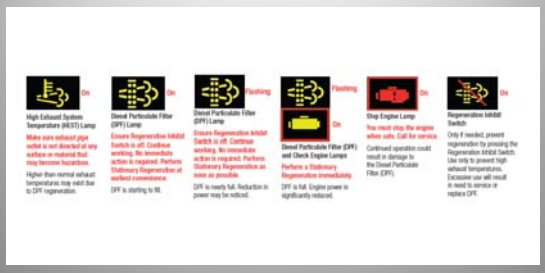








Regeneration



110 / 220 Breaker Panel

A/C only powered from generator

Shore Power Switch

"Safety Dividing Guard Installed"

Switch Positions

Fully labeled 12V Breaker Panel with resettable fuses

Chassis 12V Panel

Main Battery Bank
Winch Battery Bank

Air Outlet

Pigtail Cheater

Battery Level Indicator (x2)
Vehicle and Generator Batteries

Ground Lights x3 sides

Scene Lights x4

Sirens & Horns

Carbon Monoxide Alarm
&
Portable 4 gas metering

110/220 Outlets

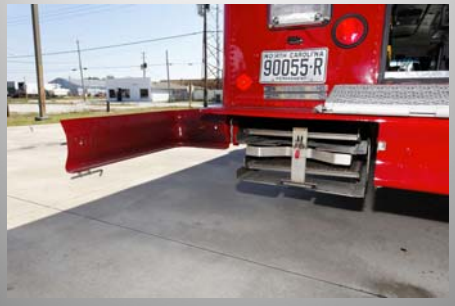
Fire Extinguishers (2)

12V Outlets

Ramp Deployed

Dump Valve

Ramp Stored Behind Rear Bumper



Ramp Receiver Assembly

Ramp Sections Slide Out

Align Pins To Assemble Ramp

Ramp Locking Pins

Attaching Ramp


Handrail Storage and Attachment


Folding Handrail


Flip Door

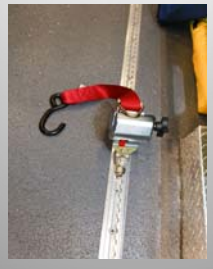
Proper Loading Procedure
Separate Hands On Session

On-Board Emergencies
Separate Hands On Session

Wheelchair Tie-Down


Wheelchair Tie-Down

Sure-Lock Track



IV Hangers


Escape Hatches / Exhaust Fans

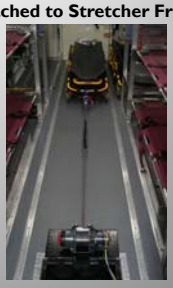

Bariatric Winch

Storage Position **Operation Position**


Winch Operation

Rope Extended

Attached to Stretcher Frame

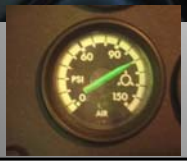


Wireless Remote

Rear/Side – View Cameras
Full color, IR w/ Sound

Awning

Driver's Area



Additional

- ~240 Bottles of Water
- Immobilization for 20
- Smart Triage for 80
- Triage Tarps
- Rehab Air Management Tarps
- Electrical support
- Mobile Fit Testing

Other Uses

The MERV is a functional tool for more than just multiple patient transportation. Other examples of use could include:

•Patient triage on a multiple patient, low acuity event – such as a carbon monoxide exposure in an apartment building, hotel, or school

•Responder rehabilitation at incident scenes. Allows removal of personnel from the scene with good lighting and climate control (both warm and cool)

•Personnel staging point, such as during searches or law enforcement events. Provides quiet location for briefings, debriefings, or team planning

•Cooling station – at large outdoor events during hot seasons (can reduce transports significantly)

Call Out Procedures

- The Major Emergency Response Vehicle (MERV), will be staffed with a minimum of one FRES "Operator" and one County Employee to function as "Operator / Load Specialist", additional staffing will be determined by the Commissioner, or his designee.

- Emergency Response requests to the FRES Communication Center 24 hrs. at 631.852.4815.
- Upon receipt of a request for the MERV, the following information should be obtained:
  - Requesting agency and Point of Contact (POC).
  - Who the OIC is.
  - Location of the Command Post.
  - Nature of the alarm and mission being requested to provide.
  - Will they provide Medical Support Staff or are they requesting a task force response.
  - Special routes or staging/reporting locations the MERV needs to take to access the incident.
  - Do you request the Mobile Command Post or other County resources to respond?

- The on duty ESD II shall page:
  - The administrative staff group and MERV Qualified paging group with the notifications.
  - Duty Officer to call in.
  - On-Duty FRES staff shall call in and accept the assignment within two (2) minutes.
  - The MERV Task Force Agency group with the "ALERT" notifications. The duty supervisor shall use the **MERV Task Force Response Procedure** to fill the Operational needs of the mission.

Pre-Planned Events/Drills

- All requests for pre-planned events/drills shall be forwarded to the ESD III in writing. Pre-planned events/drills shall be staffed with a minimum of 1 FRES staff member, and others as authorized by the Commissioner. Staffing for the MERV shall be determined by the MERV rotational list in the Supervisor's Manual.

WRAP UP

The MERV is a dynamic tool for use in a variety of situations for an EMS agency to meet multiple needs. While it is another emergency vehicle in the fleet, it is one that requires specialized training for key personnel to ensure a safe, efficient operation. This presentation was designed as a keystone to that training. It requires personnel to regularly utilize the vehicle in order to remain proficient in all aspects of the vehicle. The first rule to using the MERV should always be SAFETY. Whether responding, loading, or providing care while moving, the safety of the personnel and patients is priority.