Let’s Get Rolling

6/25/2020
MCI / NFI Parts Team

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Agenda

• Update on MCI cleaning toolkit and customer feedback

• NFI Parts: Clean & Protect product discussion

• Moving from storage to in-service tips
Update and Information on Toolkit for Cleaning and Other resources
Motorcoach operators now:
- Have been preparing their business for recovery
- Some glimmers of hope as states re-open and schools and other activities announced.
- Utilizing tools and resources from ABA and UMA to help focus their recovery actions and customer engagement.
- Many will need to continued support from Federal programs and key activities such as schools trips and sports.
- Doing anything to help build customer confidence in riding the coach.
FAQ

What disinfectant should I use:  (See prior webinar for details)
• Preferred: L-Lactic Acid, Hypochlorous Acid
• Avoid: Bleach or Ammonia

Can you provide an overview of the HVAC system and filtration?
• Generally the virus spreads person to person through respiratory droplets at close contact (within 6’) or by touching surfaces which have been contaminated by droplets
• Respiratory droplets are heavy and will fall to the floor after being expelled due to gravity. NOT Airborne, floating through HVAC systems
• Droplets are also quite large in diameter, which means will be captured at a high % by standard MERV 5 or higher HVAC filter media (MCI = min MERV 5)
  • Change filters every 3 months as a rule of thumb
• The fresh air inside an MCI motorcoach is replaced every 10 minutes (6 times each hour)
• Is filtered approximately every 2 minutes. (30 x per hour)
• The HVAC system automatically optimizes fresh air

What are the top ways to prevent the transmission of the virus?
• 1. Physical distancing, including the use of masks
• 2. Regularly cleaning and disinfecting surfaces
FAQ

What products are people adding to their coaches/fleets:
• Disinfecting fogger
• Driver barriers, especially in scheduled service
• Upgraded MERV filters
• UV-C anti-microbial lighting system in HVAC

Have you explored other solutions?
• Continuous systems: Photo Catalytic Oxidation (PCO) Hydrogen Peroxide – also UV + Catalyst.
• FAR-UV

Are we being heard on the Hill?
Activity on the Hill

Communication of our Needs

- Thousands of letters and meetings by operators
- MCI over 500 letters and 11 meetings with legislators in business location.
- 18 Advocacy (Lobby firms) providing guidance to the associations
- Coordinated media campaign for the DC rally

The ask of Congress is unified and consistently being heard:

- $10 billion in grants for the motorcoach industry; similar to the Air Carrier Worker Support program.
- $5 billion in forgivable loans; carving out a portion of the Treasury’s $500 billion loan program to specifically benefit motorcoach operators.
- We have also successfully advocated on recently passed legislation that amends the Paycheck Protection Program to increase the covered period and allow for additional non-payroll expenses to be eligible (24 weeks or year end usage and 60% to payroll).
- Every meeting we’ve had indicates the message of the industry is being heard and understood

What’s next?

- “Strategic Pause” to determine needs of various industries
- The Senate will likely work on its next COVID-19 package in early July, with the possibility of passing a bill before August.
- Continued outreach to congressional offices and committees
- Monitor and advocate on COVID-19 relief package developments as the Senate deliberates in July

All of the activity is to make sure our ASK is heard
### Cleaning & Disinfecting Resources

#### Coach Disinfecting Protocol

**Version 1.0 May 22, 2020**

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</table>

**Checklist before boarding a coach - Utilize a “Clean-in / Clean-Out” philosophy**

- Are the latest company and regulatory agency guidelines being followed? ✓ ✓ ✓ CDC, Health Canada, WHO, state/provincial & federal governments
- Have hands been washed thoroughly? ✓ ✓ ✓ Always wash hands before entering and after exiting a coach
- Have garbage containers been emptied and other items removed as necessary? optional ✓ ✓ ✓的手卫生 ✓ ✓ ✓
- Has the coach interior been cleaned? optional ✓ ✓ ✓ Disinfecting is only effective on clean surfaces.
- Are all the required cleaning and/or disinfecting materials on-hand (soap & water/disinfectant/rags/mop/bucket)? ✓ ✓ ✓ Never dry sweep a coach.
- Confirm if disinfecting will be completed by hand or by fogging. If fogging, is a machine available? ✓ ✓ ✓ Fogging process is recommended for all Schedule C disinfecting.
- Confirm contact time of any disinfectant used? ✓ ✓ ✓ Ensure that minimum contact time is met. Leave surfaces “wet”
- Is all required PPE on hand (safety glasses, respirator, mask, gloves)? ✓ ✓ ✓ Confirm proper PPE is being used for the specific disinfectant

**Stepwell Area - Focus on high touch surfaces, grab rails must be disinfected all around**

- Entrance door switch board ✓ ✓ ✓ ✓ Clean all around
- Entrance door grab rail ✓ ✓ ✓ ✓ Clean all around
- RH stepwell grab rail optional ✓ ✓ ✓ Clean all around
- Entrance door key(s) ✓ ✓ ✓ ✓ Clean all around
- Entrance door lock ✓ optional ✓ ✓ Clean all around
- Entrance door lock ✓ optional ✓ ✓ Clean all around
- Entrance door lock ✓ optional ✓ ✓ Clean all around

**Driver’s area - Focus on high touch surfaces, steering wheel, switches, controls**

- Steering wheel & switches ✓ ✓ ✓ ✓ Clean all around
- RH switch panel switches ✓ ✓ ✓ ✓ Clean all around

Resources on maintaining, cleaning and disinfecting are/will be accessible from MCI’s home page.
Customer Toolkit: 
Best Practices to Clean, Disinfect and Prevent SARS-CoV-2 Virus Spread
Strategy Decision Criteria

It's recommended to use decision criteria when evaluating the many different SAR-CoV-2 mitigation strategies:

✓ Does the strategy follow CDC, WHO or guidelines/recommendations from credible authorities or associations?
✓ Is the strategy safe for humans and animals?
✓ Is the system effective against mitigating/killing the virus?
✓ Will the system damage components in the vehicle?
✓ Is the system readily available?
✓ Is the system financially viable?
✓ Does it work well with operations?
✓ Will the system inspire passengers to ride?

Criteria will help guide us through the many options and alternative products and solutions.
This best practices guide for cleaning, disinfecting, and preventing contains:

**Section A: Cleaning, Disinfecting and Protecting**
1. Purpose & Objective
2. Guidance and recommendation
   - Included also summary of other protocols (seating, pre-check, barriers, filters) etc.
3. Checklist – printable and for customers also
4. Training on cleaning procedures
   - Driver
   - Mechanics/Showings
5. Material supply list

**Section B: Customer materials / Customer information sheet**
1. Customer handout PDF
   - Customer commitment statement sheet
   - Customer handout
2. Draft press release template
3. Customer email text with link to info
Toolkit – Section A2: Guidance and Recommendations

Reference Websites for Guidance

CDC  https://www.cdc.gov/
Link to understanding COVID
https://www.cdc.gov/coronavirus/2019-ncov/communication/guidance-list.html?Sort=Date%3A%3Adesc
Link to approved disinfectants
https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2

Link to approved disinfectants

APTA  https://www.apta.com/

IMG  https://www.imgcoach.com

ABA  https://www.buses.org/

UMA  https://www.uma.org/

OMCA  https://www.omca.com/
Developing a Pandemic Virus Service Restoration Checklist

Abstract: This white paper covers the development of a service restoration checklist for transit agencies impacted by a pandemic virus.

Keywords: Contingency Virus Response Plan, Continuity of Operations Plan, containment, COVID-19, essential service, pandemic virus, SARS-CoV-2, service reductions, service restoration, shutdown, transit agency.

Summary: Given the outreach and impacts of a pandemic virus, a Pandemic Virus Service Restoration Checklist (PVIRC) is intended to serve as a single reference to guide the development and restoration of transit service in the post-pandemic phase. The PVIRC will support the APTA Mobility Recovery & Restoration Task Force’s efforts as it develops further guidance.

Scope and purpose: This white paper is designed to aid transit agencies in the development of a Pandemic Virus Service Restoration Checklist after a pandemic virus has spread to the degree that it has impacted a transit agency’s ability to deliver normal service. It outlines the elements agencies might choose to include in their checklist and provides a format example. Transit agencies should determine the applicability of elements in this white paper based on their own systems and communities, and on their requirements, plans and policies. Transit agencies should note that in some cases, federal and/or state regulations govern portions of a transit agency’s operations, and those regulations take precedence over the best-practice guidance offered in this white paper.
Toolkit - Section A1: Objective

To provide tools and information that helps our motor coach operators:

✓ Implement Practices for cleaning and disinfecting motor coaches.

✓ Create customer confidence that motor coaches are a clean and safe mode of transportation.
Current CDC information regarding the SARS-CoV-2 virus includes the following:

- **The virus is thought to spread mainly from person-to-person.**
  - Between people who are in close contact with one another (within about 6 feet).
  - Through respiratory droplets produced when an infected person coughs, sneezes, or talks.
  - These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.
  - COVID-19 may be spread by people who are not showing symptoms.

- **The virus may be spread in other ways**
  - It may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. This is not thought to be the main way the virus spreads, but we are still learning more about how this virus spreads.

- The virus may remain viable on hard surfaces like plastic and steel for up to 5 days, but does not survive on other materials like fabric for more than a day.

- The virus is approximately .05 to .2 micrometers in diameter but is not airborne (transmitted freely in the air). It is believed to be transmitted through larger respiratory droplets, which are greater than 5 micrometers in diameter. Note - one “micrometer” (um), also known as a “micron”, is the same as 1,000 “nanometers” (nm). Not circulating freely through HVAC systems.

- Current guidance suggests operating HVAC systems on high, with as many fresh air exchanges as possible.
CDC Decision Tool for Cleaning and Disinfecting

GUIDANCE FOR CLEANING & DISINFECTING
PUBLIC SPACES, WORKPLACES, BUSINESSES, SCHOOLS, AND HOMES

1 DEVELOP YOUR PLAN
DETERMINE WHAT NEEDS TO BE CLEANED. Areas unoccupied for 7 or more days need only routine cleaning. Maintain existing cleaning practices for outdoor areas.

DETERMINE HOW AREAS WILL BE DISINFECTED. Consider the type of surface and how often the surface is touched. Prioritize disinfecting frequently touched surfaces.

CONSIDER THE RESOURCES AND EQUIPMENT NEEDED. Keep in mind the availability of cleaning products and personal protective equipment (PPE) appropriate for cleaners and disinfectants.

Follow guidance from state, tribal, local, and territorial authorities.

2 IMPLEMENT
CLEAN VISIBLY DIRTY SURFACES WITH SOAP AND WATER prior to disinfection.

USE THE APPROPRIATE CLEANING OR DISINFECTANT PRODUCT. Use an EPA-approved disinfectant against COVID-19, and read the label to make sure it meets your needs.

ALWAYS FOLLOW THE DIRECTIONS ON THE LABEL. The label will include safety information and application instructions. Keep disinfectants out of the reach of children.

3 MAINTAIN AND REVISE
CONTINUE ROUTINE CLEANING AND DISINFECTION. Continue or revise your plan based upon appropriate disinfectant and PPE availability. Dirty surfaces should be cleaned with soap and water prior to disinfection. Routinely disinfect frequently touched surfaces at least daily.

MAINTAIN SAFE PRACTICES such as frequent handwashing, using cloth face coverings, and staying home if you are sick.

CONTINUE PRACTICES THAT REDUCE THE POTENTIAL FOR EXPOSURE. Maintain social distancing, staying six feet away from others. Reduce sharing of common spaces and frequently touched objects.

Link to site: CDC Decision Tool for Cleaning and Disinfecting
Physical Distancing Seat Layouts

MCI has seat layouts available for D and J series coaches providing 6' of separation (approximately 12 passengers + driver).

Companies should look to guidance of local and state transit as other approaches can be utilized to increase capacity while maintaining separation.

- Utilize only window seats.
- Skip rows.
- Encourage physical separation within the coach (various methods including retractable belts).
- Wear face masks.

Our guidance would be to NOT remove seats to create physical distancing. Communication supporting high capacity are favored.
J-Coach HVAC & Air Distribution System Layout

- **Driver HVAC System** (Fresh + Recirculated Air)
- **Parcel Rack HVAC System** (Recirculated Air)
- **Main HVAC System** (Fresh + Recirculated Air)

**Approximate cabin interior volume = 2,300 ft³**
**Approximate baggage compartment volume = 430 ft³**

Complete fresh air exchange every 10 minutes (6x per hour)

+ Filtered air every 2 minutes (30x per hour)

= Clean air
Printable Documents and Checklists
Protocol

Coach Disinfecting Protocol

Introduction
This document outlines the procedure for cleaning and disinfecting coaches that are under MCI’s control, regardless of where they are physically located.

Scope
This procedure is applicable to MCI’s new and pre-owned coach inventory, as well as to customer coaches under temporary MCI control (e.g., coaches being serviced).

Overview and Regulatory Guidance
According to the CDC, the SARS-CoV-2 virus (the virus which causes the respiratory disease COVID-19) is highly contagious and is transmitted primarily in person-to-person contact with body fluids (e.g., blood, respiratory droplets), or via contact with contaminated surfaces or objects. The virus may be inactivated by:
1) Soap/detergent - scrub surfaces with soap/detergent for at least 30 seconds, for soft (porous) surfaces, use detergent and the safest method possible.
2) Alcohol-based sanitizer that is at least 60% alcohol on any surface with at least 70% alcohol for disinfecting surfaces.
3) Disinfectant - there are many different chemical compounds which can inactivate the SARS-CoV-2 virus. See: FTA’s List N: Disinfectants for Use Against SARS-CoV-2: https://www.epa.gov/pesticide-registration/list-n/fta-list-n-definition-for-use-disinfectants.

Definitions
Cleaning: The removal of gross dirt, soil, and impurities from surfaces. Cleaning does not kill germs, but by removing them, it lowers their numbers and therefore the risk of spreading bacteria and viruses.
Disinfecting: The process of using chemicals to kill bacteria and viruses on surfaces. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface after cleaning, it can further lower the risk of spreading infection. Surfaces must be clean for any disinfecting process to be effective.

Let Movement: Routine daily movement of coaches within MCI service centers or at off-site storage facilities. No direct customer interaction is permitted.

Customer Demo or Customer Delivery: This includes any in-person review and/or test drives of MCI coach inventory by non-MCI personnel. The customer demo may or may not take place on MCI’s premises. If off-site, the required coach disinfecting materials must be taken to the demo or delivery location.

Checklist

Available online for printing – MCIcoach.com
# Checklist Categories

## Coach Disinfecting Protocol

### Version 1.0 May 22, 2020

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### Checklist before boarding a coach - Utilize a "Clean-In / Clean-Out" philosophy

- **Stepwell Area** - Focus on high touch surfaces, grab rails must be disinfected all around
  - Driver's area - Focus on high touch surfaces, steering wheel, switches, controls
  - Passenger area - Focus on high touch areas, grab rails, seat accessories, seat belts
  - Lavatory - Focus on high touch areas, toilet seat/cover, door handle
- **Exterior** - Focus on high touch areas, entrance door keypad, baggage door handles, battery door & disconnect switch

### Driver protocol / tips

- **Post-coach-movement guidelines** - Ensuring that the coach is ready for the next use
[Insert customer name] cares about cleaning, disinfecting and protecting passenger and drivers

Follow best practices in cleaning and disinfecting

✓ Before every trip
✓ Focus on re-disinfecting high touch points after each loading and unloading
✓ Deep cleaned and disinfected daily or between each customer use.

Protect

✓ May require that passengers wear masks and will provide one if needed.
✓ Disinfectant hand gel and wipes available on the coach.
✓ Provide recommended physical distancing between passengers.
✓ Drivers may be wearing masks for their protection and in some cases, shields may be in place to provide physical distancing from passengers.
✓ Pre-boarding screening techniques.
✓ Reduced/no touch ticket handling, where applicable.
✓ Additional features may also be included in the coach designed to enhance air filtration and/or provide continuous disinfecting.
Motorcoach Cleaning, Disinfection, Distancing & Prevention

This Motorcoach

✓ Is Clean
  - Dirt and debris removed; floor mopped.
✓ + Disinfected:
  - After every use - critical touchpoints, doors, handrails
  - Daily - complete coach and all surfaces interior and exterior touch points
  - Weekly - interior fogging or deep cleaning with safe disinfectant

= Sanitized Coach

✓ Has a filtered HVAC system that allows fresh air circulation as advised by the CDC
✓ Is driven by a professional trained in proper distancing and sanitation techniques including face masks
✓ This vehicle is also equipped with added items to protect & prevent the spread of pathogens
  - Physically distanced seat layout
  - Driver barrier
  - Enhanced filtration system
  - Ultraviolet light disinfecting system
  - Ventilation fans

This company

- Applies consistent and compliant COVID-19 cleaning and disinfecting strategies
- Is following best practices for cleaning and disinfecting ALL of their vehicles to standards developed specifically for the motorcoach industry by following guidelines from CDC, WHO and other credible sources
- Has instituted systems and processes to ensure consistency in cleanliness and sanitation of vehicles
- Has trained their drivers, technicians and anyone using the vehicle on best practices.
- Drivers use new and improved social distancing techniques to engage customer.
- Has invested in addition equipment to further enhance the sanitary environment.

For years motorcoaches have provided safe critical transportation as part of our nation’s infrastructure and as a connector to many of life actives and events … from work, to vacation. Now, more than ever we need to earn the trust of our passengers and inspire the confidence to ride in safety - now with extra focus on cleaning and disinfecting processes. Our promise to you is:
[Your Company Name]

Our **Extreme Clean Commitment:**

*Cleaning, Disinfecting, Distancing and Protection*

---

**Ride Safe**

- Every motor coach is thoroughly cleaned and then disinfected before and after each use as follows:
  - Removal of all dirt and debris, flooring mopped
  - Special focus on disinfecting high touch points such as entrance area handrails, parcel rack handrails and door latches, and window release bars, plus
    - Passenger seat headrests, armrests, seat belts and seat accessories
    - All surfaces in the restroom, including door handles
    - All surfaces within the driver’s area
- Onboard air quality is optimized as follows:
  - Cabin air completely exchanged with fresh, outside air approximately every 10 minutes
  - HVAC system filters recirculated air with MERV 7 or higher rated filter media, removing respiratory droplets
- We help everyone stay safely distanced:
  - Physically distanced seating applies, though members of the same household may sit together
  - Your driver is trained in social distancing protocols and will practice these techniques throughout your travel experience

---

**Ride Smart**

- Hand sanitizers provided on board
- Passengers are encouraged to wear a face covering; it’s required for our drivers
- Maintain physical distancing as you enter and exit the coach
- PLEASE do not travel if you’re sick – we can always help you another time

---

**Ride With Confidence**

- We consistently comply with guidance as provided by our industry associations, as well as the CDC, WHO and local governments
- Our drivers, technicians and staff have been trained in best practices, including those related to baggage handling
- Our additional investments in intensified cleaning and protection help ensure a sanitary environment

---

We are going the extra mile to keep our coaches **clean** and **safe** for you based on current federal guidelines.

---

[Your Company Logo]
Customizable e-Blast and Press Release

E-mail subject line: As [COMPANY NAME] restarts our business, here's how we’re keeping you safe

Dear [CUSTOMER NAME],

For decades, motor coaches have provided safe, critical transportation as part of our nation's infrastructure. Our business is about connecting people to many of life’s important activities and events. Whether it’s taking commuters to work, groups on vacation trips, or sports and school teams to games, the safety of our passengers has always been our top priority.

Now, more than ever, we want you to know about our intensified cleaning, disinfecting, distancing and prevention practices to support the health and wellbeing of passengers. We’re calling it our Extreme Clean Commitment.

For us, that means more intensive cleaning where every motor coach is thoroughly cleaned and then disinfected before and after each trip:

- With special focus on disinfecting high touch points such as entrance area handrails, parcel rack handrails and door latches, and window release bars, plus passenger seat headrests, armrests, seat belts and seat accessories, and all driver area and restroom surfaces, including door handles
- An emphasis on optimal air quality as cabin air is completely exchanged with fresh, outside air approximately every 10 minutes
  - [If you have invested in additional products, this paragraph presents suggest wording.] Additional products and equipment that optimize passenger and driver protection
- Operating procedures include physical distancing on entry and exit and seat spacing for every trip

Learn more about our Extreme Clean Commitment by clicking here. (link to Extreme Clean Commitment guide)

We are eager to get back on the road and provide you with on-time, comfortable and safe service anywhere you and your groups need to go.

We thank you for your past business and are standing by to plan your next trip. Just reply to this email and we’ll get rolling.

Sincerely,

[TEAM MEMBERS and COMPANY NAME here]
NFI Parts: Clean & Protect
NFI Parts – Clean and Protect

NFI Parts has defined four principle SARS-CoV-2 virus mitigation strategies and has launched an informational white paper at www.nfi.parts.

The principles are:

✓ Disinfecting
✓ Distancing
✓ Air Quality
✓ PPE (Personal Protective Equipment)

Further information can be found at www.nfi.parts/cleanandprotect
# NFI Parts – Four Clean and Protect Principles

<table>
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<th><strong>Distancing</strong></th>
<th><strong>Air Quality</strong></th>
<th><strong>PPE</strong></th>
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<tr>
<td>• Ensure Surfaces are clean before disinfecting</td>
<td>• Driver barriers</td>
<td>• Filtration with anti microbial technology</td>
<td>• Hand sanitizer dispensers</td>
</tr>
<tr>
<td>• Use a CDC approved disinfectant</td>
<td>• Ensure AS2 polycarbonate if in drivers view while operating</td>
<td>• UV-C lighting in HVAC system</td>
<td>• Masks for drivers</td>
</tr>
<tr>
<td>• Foggers can be used to apply disinfectant</td>
<td>• Many types exist</td>
<td>• Ventilated roof hatches to keep more air moving</td>
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</tr>
<tr>
<td></td>
<td>• Optional seat layouts to ensure 6’ of separation</td>
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</table>

Further information can be found at [www.nfi.parts/cleanandprotect](http://www.nfi.parts/cleanandprotect)
Driver and passenger safety is key to continuing service
NFI Parts is diligently working to provide solutions that will allow motor coach and transit bus customers to operate as safely as possible.

- Use your resources for a variety of product and support information

Further information can be found at www.nfi.parts/cleanandprotect
What is trending & popular

1. UV Light Kits
2. Antimicrobial Air Filters
3. Fogging Cleaning Machines

Further information can be found at www.nfi.parts/cleanandprotect
NFI Parts – Clean and Protect

Client awareness is important

NFI Parts designed a decal window cling – pick and choose the safety items you have invested to highlight

- Your RPM or CSR will be in contact with you:
  - Free with any Clean and Protect product PO

Further information can be found at www.nfi.parts/cleanandprotect
Extending or Reviving Coaches From Storage/Idle Period
Where is the file?

MCI PARKED OR IDLED VEHICLE MAINTENANCE AND READINESS CHECKLIST

For our customers establishing COVID-19 procedures throughout their operations, we offer the following maintenance checklist with timing suggestions.

We also encourage you to visit MCI’s homepage for essential COVID-19 updates and our regularly updated COVID-19 dashboard providing an overall status report on all MCI products and services during this time. If you follow social media, connect with MCI on Facebook, Twitter, Instagram and LinkedIn.

<table>
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<th>Weekly</th>
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<tr>
<td>Preparation</td>
<td>Ensure all PPE (Personal Protective Equipment) is worn prior to working on a coach. Staff should be informed of all mask, eye protection and glove equipment necessary before boarding or working on a coach. Begin work on newer vehicles first that require less maintenance time to ensure fastest fleet readiness. Establishing a cleaning, inspection and signoff protocol with tracking dates and staff notation, consider posting a GREEN sheet of paper in the front window to mark vehicles that have completed all necessary work. NOTE: Preventive Maintenance Schedules are found in Section 10 of the maintenance manual, online at MCI Active Publications; <a href="http://3parts.mcicoach.com/Manuals.aspx">http://3parts.mcicoach.com/Manuals.aspx</a> Daily fleet walk around recommended. For questions or guidance contact your MCI Technical Solution Manager or Technical Support at 800.241.2947. Note: MCI 24/7 Technical Support and Emergency Roadside Assistance 800.241.2947. Consult MCI service status during COVID-19 crisis at our website homepage <a href="https://www.mcicoach.com/AboutUs/covid-19-status.htm">https://www.mcicoach.com/AboutUs/covid-19-status.htm</a></td>
<td>x</td>
<td></td>
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Why is MCI sharing information about how these idled coaches are brought back into service?

- Coach damage while stored
  - Corrosion
  - “Critters”
  - Human Contact
- “Special Requirements” of re-activating some coach systems
- Are the fluids still OK??
- Emphasis of “Long Term Parking” effects on the coaches
Topics to Discuss

Amerex Fire Suppression
Diesel Fuel Quality
Diesel Exhaust Fluid (DEF)
Batteries & Jump Starting
Basic Coach Inspections
HVAC
Engine Manufacturer Recommendation
Tools required…

• NFI Part number of Amerex Alarm Module
  • 135582
Amerex Fire Suppression System

• **Long term storage/ parking coach**
  - Amerex equipped with rechargeable internal battery backup.
    - Fire suppression will remain active during storage period
    - Internal battery backup only designed for short periods of time
      - Will deplete if coach batteries are dead or disconnected

• **Recommended restart of coach after extended idle period:**
  1. Install Alarm Test Module (Amerex P/N 21447, NFI P/N 135582) aka Squib simulator
     1. Note: If the coach has a two bottle system two test modules will be needed.
  2. With alarm test module installed, proceed with changing and/or charging the house batteries
  3. Perform the recommended Semi-Annual Maintenance (section 5.3 in the Amerex manual, *see note below*
  4. Alarm test module should remain installed for 24 hours while coach batteries are charged
     1. Time required for the Amerex back up batteries to fully charge
        1. Recommended to be replaced every two years. Replace if out of date.
  5. If after 24 hours, the “green light” ready is illuminated with no trouble or activation alarms on the “Alarm test module” the system can be placed in full service.
  6. This would be a perfect time to conduct all preventative maintenance required on Amerex system
     - New bottle – 5 years
     - New squib – 6 years
     - Temp sensor inspection

*Note: Reference Amerex Manuals P/N 19680 and 13980*
Diesel Fuel – Idled Coach Recommendations

• **Long term storage/parking coach**
  • Park coach in LOW RIDE
    • Prevent leaning of the coach in the event of a suspension leak.
  • Periodically check Fuel Pro for moisture
  • The time frame for this inspection will vary depending on:
    • Environment
      • Temperature
      • Humidity
      • Sun/shade
    • Quality of Fuel
      • Is the coach started regularly?
  • Fuel level in the tank
    • Full fuel tanks store better
  • Additives in the fuel
    • Fuel additives are not recommended
DEF Fluid – Idled Coach Recommendations

- **Storing / Idling coach:**
  - **Top off DEF tank**
    - Fill with pure DEF from sealed container or reliable bulk source
      - *(air IS the enemy)*
      - *"Stabil" is not an acceptable additive*
    - Excessive air space in tank aids in degradation of fluid quality
    - Tank is designed to expand and contract with thermal changes & freezing

- **Storage Conditions:**
  - DEF concentration and purity varies on variations and maximum stored temps
  - Below chart - Rule of thumb for life of DEF based on temperature
    - *(When in doubt, throw it out...)*
    - *Modifying tank with drain plug not covered under warranty*

<table>
<thead>
<tr>
<th>TEMPERATURE °F</th>
<th>TEMPERATURE °C</th>
<th>MINIMUM SHELF LIFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 50° F</td>
<td>&lt; 10° C</td>
<td>36 months</td>
</tr>
<tr>
<td>&lt; 77° F</td>
<td>&lt; 25° C</td>
<td>18 months</td>
</tr>
<tr>
<td>&lt; 86° F</td>
<td>&lt; 30° C</td>
<td>12 months</td>
</tr>
<tr>
<td>&lt; 95° F</td>
<td>&lt; 35° C</td>
<td>6 months</td>
</tr>
</tbody>
</table>
DEF fluid – Return to Service Recommendation

- Diesel Exhaust Fluid (DEF) – Recommendations placing coach into service after storage/Idle period
  - **Less than 1 year**
    - Visually inspect all after-treatment components for damage or leaks
    - Inspect DEF fluid for water like clarity & slight ammonia odor
    - Clean DEF tank cap following suggestions in MCI Service Bulletin 3077
    - Test fluid concentration with industry recommended procedure
    - Test drive coach on highway or perform SCR efficiency before service
      - Refractometer - DEF concentration tester
  - **Over 1 year**
    - Follow all recommendations for less than 1 year period above
    - Follow engine manufacturer after-treatment maintenance
    - Drain and properly discard DEF fluid from coach
      - Concentration may test good but fluid may have some degradation or contaminants that lead to SCR issues – Operators that experience extended storage say it’s cheap insurance!
    - Fill with pure DEF from sealed container or reliable bulk source
DEF fluid – Cleanup and Disposal

• **Cleanup and disposal of diesel emissions fluid**
  
  Because DEF is relatively clean and non-toxic, spills are not a cause for alarm. For relatively minor spills, simply cover the liquid with an absorptive material such as sand, to soak up the liquid. Then the sand can be scooped up and shoveled into a container for disposal via your standard disposal service.

  • DEF should not be sent down drains or into public water supplies, but small amounts will do no harm either – after all, it’s just water mixed with a urine byproduct. The main danger from sending DEF down a drain is the possibility of it corroding copper pipes along the line. If DEF is flushed down a drain, it should be followed by plenty of water.

  • For large quantities of DEF, or in cases where the DEF has been contaminated, you should contact your local environmental regulatory board for advice.
Coach Batteries

Batteries are the 4th highest fleet maintenance cost in our industry. Items to keep in mind:

- **A battery is naturally in a constant state of discharge.**
  - A new battery “on the shelf” will slowly discharge to 50% charge in 6 months at 75 degrees. Faster discharging in higher temps

- **Alternators make horrible battery chargers!**
  - Only a small percentage of power produced is used to replenish the battery system, and lessens at low idle speeds.

- **Quick visual indicators of potential issues:**
  - Dirty or moisture covered batteries/ surface discharge.
  - Cracked, bulging and distorted casings.
  - Tight corrosion free connections is what you want.
  - Correct electrolyte levels and concentration.

Refer to Chapter 7 of MCI maintenance manuals for scheduled and troubleshooting battery/ charging system maintenance.
Battery Condition - Testing, Charging & Jumpstarting

- **Battery Condition**
  - State of charge, clean physical appearance and terminal connections are critical before attempting to start or boost/jump start engine.
  - Test voltage on each battery individually with multi-meter
    - 12.4V is threshold between charging and replacing the battery
  - Inspect physical appearance, terminal connections and securement
  - Jump / Boost Cart Starting
    - Coach electronics could be damaged
    - Follow procedure in Section 7 of MCI Maintenance Manual
  - Important suggestions from customers
    - Take the time and deal with dead or discharged batteries properly!
      1. Jump or boost starting should be avoided below ~10.5 volts
        - ** Totally dead batteries can not be rejuvenated**
        - ** Damage may occur to shop battery charger**
      2. Coaches with the Onboard Inverter/ battery charger will not work with batteries below ~10.5 volts
      3. Section 7 of any recent MCI Maintenance Manual provides battery evaluation and testing methods

- **Keep master disconnect off until battery conditions are corrected.**
Basic Coach Inspections

• 30 Day/45 Day inspections are still required, even though the coach isn’t being operated.
  • Tire pressure
    • Tire condition
  • Cooling system
    • Belts
    • Hoses
    • Hose clamps
    • Coolant integrity
  • Air system leaks
  • Interior/exterior lighting
  • Suspension components
    • Move suspension
      • High ride
      • Low ride
      • Kneel
      • Etc
  • Test driving the coach is a necessity recommended by a Maintenance Professional
    • Wheel Seals Drying up.

DON’T FORGET ABOUT RODENT/ INSECT DAMAGE THAT MIGHT HAVE OCCURRED WHILE COACH WAS PARKED
HVAC

• Experienced operators with parked coaches have found HVAC issues after extended park time.
  • Refrigerant levels
  • A/C Compressor Seal
  • Refrigerant Hoses

• Operating HVAC during engine run times is crucial
  • Provides lubrication to compressor seal
  • Blower motors operated
    • How are the motor brushes??
Engine Manufacturer Recommendation

- Maximum time of not running the engine
  - 1 month
  - Every 2 weeks is preferred
- Run the engine, bringing to operating temperature
  - Road testing preferred
- Performing a stationary regen???
  - Benefit to engine reaching operating temperature
Additional Information/ Training

- MCI Academy
- LMS Training Courses
- Online Manuals/Schematics/ Wall Charts
How else can we help?

ERSA & Tech Call Center
We are there to help
1-800-241-2947
Training

www.mciacademy.com
Learning Management System

- Over 18,000 User Accounts
- Over 600 courses for technicians and drivers
- Over 150k courses completed
- Over 40k courses completed since COVID-19
- COVID-19 Courses available
  - 07.601.2 Amerex Fire Suppression Systems – Qualification
  - W07.101 Basic Electrical
  - W10.101 Preventive Maintenance
  - W08.303 2016 EPA Engines
  - 19.111 Clean. Disinfect. Protect Webinar
Motor Coach Operator Training

• 4 Certificates available
• Consists of 115 lessons
• @33 hours of training
• Certificates earned as of June 23, 2020:
  • MCO3 – 589
  • MCO2 – 447
  • MCO1 – 387
  • Master - 343
• New FMCSA Driver Curriculum
  • 10 modules – 23 courses – 11.5 hours
Q & A