

RV Safety Alarms Education Test

Carbon Monoxide Alarms

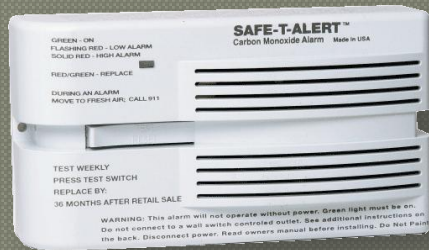
by

MTI Industries, Inc.

SAFE  ALERT™

RV Safety Alarms Education Test

This Educational Test is designed to improve the knowledge of RV technicians as to the history and performance of safety alarms installed in RV's.



Section: Carbon Monoxide Alarms

There are many potential sources of Carbon Monoxide Gas on RV's.

Engine exhaust, generator exhaust, gas stoves, grills, gas appliances, heaters, gas lanterns and even RV's parked near by.

CO Alarm Educational Test

Question #1

When were Carbon Monoxide Alarms first required to be installed in new RV's with "gasoline motors, gasoline generators and units gasoline generator ready" by the RVIA?

- A. 1993
- B. 1996
- C. 2000
- D. 2005

CO Alarm Educational Test

Question #1

When were CO Alarms first required to be installed in new RV's with "gasoline motors, gasoline generators and units gasoline generator ready" by the RVIA?

- A. 1993 – All new motorized RVs - Class A, B & C are required to have a CO Alarm installed as of Oct. 1993
- B. 1996
- C. 2000
- D. 2005 – All new RV's are required to have a CO Alarm installed as of Jan. 1, 2005 per the RVIA

CO Alarm Educational Test

Question #2

Approximately how many RV's were manufactured without CO Alarms, between January 1985 and January 2005 – prior to the requirement to have a CO Alarm installed in all RV's.

- A. 2.0 Million
- B. 2.5 Million
- C. 3.0 Million
- D. 4.1 Million

CO Alarm Educational Test

Question #2

Approximately how many RV's were manufactured without CO Alarms, between January 1985 and January 2005 – prior to the requirement to have a CO Alarm installed in all RV's.

- A. 2.0 Million
- B. 2.5 Million
- C. 3.0 Million
- D. 4.1 Million – A majority of these RV's are still in use but did not have a CO Alarm installed when first sold. CO Alarms should be installed during Service.

CO Alarm Educational Test

Question #3

What is the service life of Safe-T-Alert CO Alarms installed in RV's?

- A. 1 Year
- B. 5 Years
- C. 10 Years
- D. Until they quit working.

CO Alarm Educational Test

Question #3

What is the service life of Safe-T-Alert CO Alarms installed in RV's?

- A. 1 Year
- B. 5 Years – check the date code on Safe-T-Alert CO Alarms during service and replace all alarms over 5 years old.**
- C. 10 Years
- D. Until they quit working.

CO Alarm Educational Test

Question #4

Approximately how many motorized RV's were manufactured between October 1993 and December 2008? The original CO Alarms installed in these motorized RV's have reached the end of their service life and need to be replaced.

- A. 500,000
- B. 675,000
- C. 750,000
- D. 2,100,000

CO Alarm Educational Test

Question #4

Approximately how many motorized RV's were manufactured between October 1993 and December 2008? The original CO Alarms installed in these motorized RV's have reached the end of their service life and need to be replaced.

- A. 500,000
- B. 675,000
- C. 750,000
- D. 2,100,000— when servicing check the date code or replace by date on all RV's built prior to 2009.

CO Alarm Educational Test

Question #5

All CO Alarms installed on RVIA approved RV's have passed the RV requirement for compliance with ANSI / UL STD 2034.

- A. Yes
- B. No

CO Alarm Educational Test

Question #5

All CO Alarms installed on RVIA approved RV's have passed the RV requirement for compliance with ANSI / UL STD 2034.

A. Yes

B. No – Some RVIA approved CO Alarms are listed to the Canadian Standard CSA 6.19-2001. Only CO Alarms that have been listed to “UL 2034 – RV use” are marked suitable for Use in Recreational Vehicles and are tested at extreme temperatures.

CO Alarm Educational Test

Question #6

In what month of 2009 did CCI Controls, a long time manufacturer of CO detectors cease operations?

- A. January
- B. February
- C. March
- D. April

CO Alarm Educational Test

Question #6

In what month of 2009 did CCI Controls, a long time manufacturer of CO detectors cease operations?

- A. January
- B. February – Safe-T-Alert (MTI Industries) manufacturers replacement alarms for surface & flush mount CCI Controls detectors.**
- C. March
- D. April

CO Alarm Educational Test

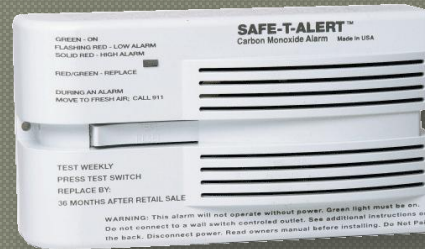
Replace:

CCI Controls CO Alarms

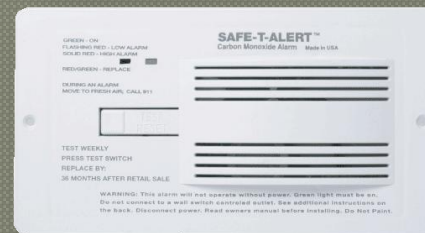


With:

Safe-T-Alert CO Alarms



60-541WT Surface Mount



60-542WT Flush Mount

CO Alarm Educational Test

Question #7

Carbon Monoxide Alarms must be installed high on the wall or ceiling?

- A. Yes
- B. No

CO Alarm Educational Test

Question #7

Carbon Monoxide Alarms must be installed high on the wall or ceiling?

- A. Yes
- B. No – NFPA 720-2009 states *“The location for effective performance is not generally dependent on mounting height. The density of carbon monoxide is similar to that of air at room temperature, and carbon monoxide generally mixes readily with air.”*

MTI has combination CO / LP Gas alarms that can replace old LP Gas Alarms to give RV’ers protection from both gases. Model 35-742 fits CCI LP Gas Leak Detector cutouts and also adds a CO detection to older RV’s



**Dual CO / LP Gas Alarm
Model 35-742**

CO Alarm Educational Test

Question #8

Battery Operated CO Alarms purchased at Home Depot or other big box stores are approved for RV use?

- A. Yes
- B. No

CO Alarm Educational Test

Question #8

Battery Operated CO Alarms purchased at Home Depot or other big box stores are approved for RV use?

- A. Yes
- B. No – normally CO Alarms sold at the big box stores like Home Depot or Lowes are only listed to residential standards. Residential alarms are not listed to work at extreme temperatures like RV listed units are. Only alarms marked approved for “Use in Recreational Vehicles” should be installed in RV’s.

CO Alarm Educational Test

Question #9

Pushing the test button on a CO Alarm only tests the circuit, not the sensor?

- A. Yes
- B. No

CO Alarm Educational Test

Question #9

Pushing the test button on a CO Alarm only tests the circuit, not the sensor?

A. Yes – Pushing the test button only checks the alarms circuit with a simulated electronic gas detection not the sensor.

The sensor is supervised by the circuit in case of fault. The best method to test the sensor is to use a can of Carbon Monoxide Gas which can be used to verify the sensor at the 400 ppm UL calibration test point. All CO Alarms under 5 years old should be tested with Carbon Monoxide Gas at least every six months.

B. No



CO Alarm Educational Test

Question #10

At low levels of CO (approximately 70 ppm) how long does a properly calibrated CO Alarm take to start sounding?

- A. 1-9 minutes
- B. 10-29 minutes
- C. 30-59 minutes
- D. 60-240 minutes

CO Alarm Educational Test

Question #10

At low levels of CO (approximately 70 ppm) how long does a properly calibrated CO Alarm take to start sounding?

- A. 1-9 minutes
- B. 10-29 minutes
- C. 30-59 minutes
- D. 60-240 minutes – Correct. A properly calibrated CO Alarm can go into alarm anywhere between 1 and 4 hours at low levels of Carbon Monoxide.

CO Alarm Educational Test

Question #11

At high levels of CO (above 400 ppm) how long does a properly calibrated CO Alarm take to start sounding?

- A. Less than 1 minute
- B. 1-4 minutes
- C. 4-15 minutes
- D. 16-30 minutes

CO Alarm Educational Test

Question #11

At high levels of CO (above 400 ppm) how long does a properly calibrated CO Alarm take to start sounding?

- A. Less than 1 minute
- B. 1-4 minutes
- C. 4-15 minutes – Correct. The alarm can sound anywhere between 4 and 15 minutes and still be in calibration. When testing with CO Gas be sure the alarm is warmed up prior to starting the test.
- D. 16-30 minutes

CO Alarm Educational Test

Question #12

Which is an initial symptom of low to moderate CO poisoning?

- A. Headache
- B. Fatigue
- C. Shortness of breath
- D. Nausea
- E. Dizziness
- F. All of the above

CO Alarm Educational Test

Question #12

Which is an initial symptom of low to moderate CO poisoning?

- A. Headache
- B. Fatigue
- C. Shortness of breath
- D. Nausea
- E. Dizziness
- F. All of the above. The initial symptoms of low to moderate CO poisoning are similar to the flu (but without the fever).
Source CPSC Document #466

CO Alarm Educational Test

Question #13

Combination Smoke / Carbon Monoxide Alarms use separate battery sources to power the two different sensors.

- A. Yes
- B. No

CO Alarm Educational Test

Question #13

Combination Smoke / Carbon Monoxide Alarms use separate battery sources to power the two different sensors.

- A. Yes
- B. No – RV listed combination Smoke / CO Alarms use a single battery source to power both sensors. If the battery source is removed or loses its power the RV'er will be without protection from both Carbon Monoxide and smoke until a replacement battery is installed.

CO Alarm Educational Test

Question #14

Because Carbon Monoxide is invisible and a odorless tasteless gas CO Alarms must be installed in the separate bedroom / sleeping area of the RV.

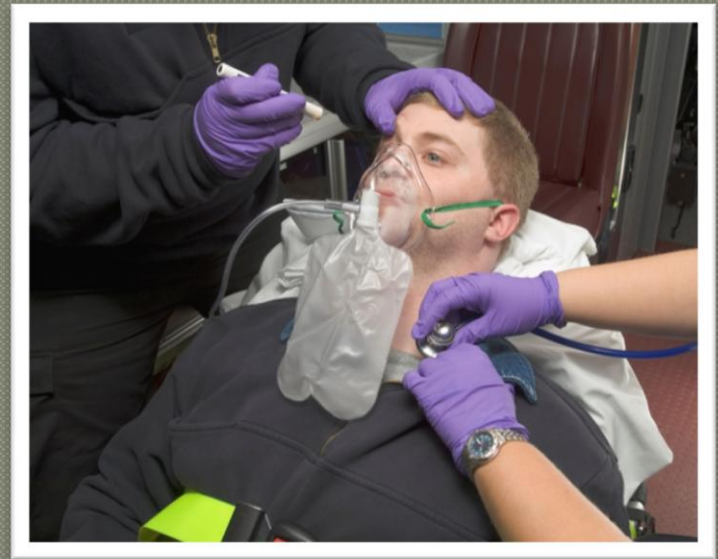
- A. Yes
- B. No

CO Alarm Educational Test

Question #14

Because Carbon Monoxide is invisible and a odorless tasteless gas CO Alarms must be installed in the separate bedroom / sleeping area of the RV.

- A. Yes
- B. No – The National Fire Protection Association (NFPA) recommends CO Alarms be installed outside each sleeping area of a home. In RV's CO alarms and combination CO / LP Gas Alarms are installed near the gas appliances, if the RV'er wants additional protection a second CO Alarm can be installed in the separate sleeping area.



CO Alarm Educational Test

Question #15

All Carbon Monoxide Alarms use the same audible horn pattern?

- A. Yes
- B. No

CO Alarm Educational Test

Question #15

All Carbon Monoxide Alarms use the same audible horn pattern?

A. Yes – Since October 1, 1998 all CO alarms are required to have a T-4 (temporal) horn pattern.

The audible portion of the alarm signal shall be 4 cycles of 100 milliseconds on/100 milliseconds off, then 5 seconds off.

Example - Beep.Beep.Beep.Beep. 5 seconds off

Beep.Beep.Beep.Beep. 5 seconds off (Repeated)

Immediately replace any CO alarm that does not have this audible horn pattern when tested. The alarm is over 5 years old.

B. No

CO Alarm Educational Test

Question #16

Dealers need to verify the CO alarm is operational prior to selling a used RV?

A. Yes

B. No

CO Alarm Educational Test

Question #16

Dealers need to verify the CO alarm is operational prior to selling a used RV?

- A. Yes – Used RV's should be sold with CO alarms that meet the latest safety standards and testing. Checking the date code, testing the alarm with CO gas and replacing alarms that are over five (5) years old should be part of the inspection / maintenance process prior to selling a used RV.
- B. No

CO Alarm Educational Test

Review of Service Opportunities

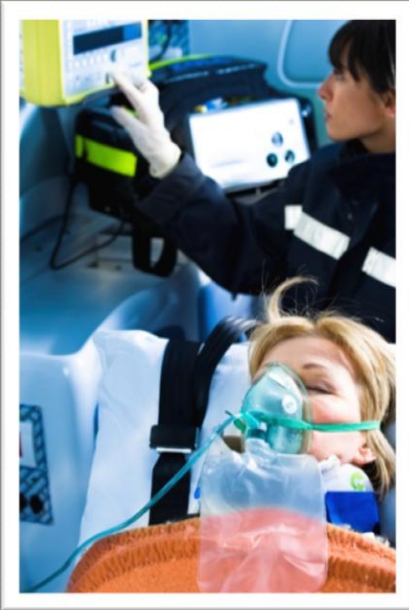
- Over 4.1 million RV's built prior to 2005 may still be on the road without protection from CO. CO alarms should be installed during service.
- Another 2.1 million plus RV's built from 1993 to January 2008 could have CO alarms over 5 year old that should be replaced. Check date codes during service.
- Test alarms under 5 years old with Safe-T-Alert Detectagas (CO test gas in a can)

CO Alarm Educational Test

Review of Service Opportunities

- CCI Controls has recently discontinued operations. MTI Industries / Safe-T-Alert brand CO alarms can be used as direct replacements.
- Combination alarms can be used to upgrade both CO & LP Gas detection in one 12 volt wired in alarm. Combination CO / Smoke alarms can be easily disabled by removing a single battery.

Keep your customers safe and increase sales in your service department.



Check the date codes on safety alarms during routine maintenance. Replace if alarms are over 5 years old and increase your parts and labor sales.

Carbon Monoxide Alarms



Flush Mount
Model:
65-542-WT (White)



Surface Mount
Model:
65-541-WT (White)

SAFE T ALERT™
The RVers Choice

For more information contact MTI Industries:
(800) 383-0269

info@mtiindustries.com



Do your RV's safety
need to be replaced?

The useful life of Propane alarms is 5 years. Smoke alarms have a 10 year useful life.

Have a safe T.R.I.P.!

TEST and inspect the Propane, CO and Smoke alarms installed in your RV every week and replace malfunctioning alarms.

REPLACE all Propane and CO alarms that are 5 years old or older and Smoke alarms that are 10 years old or older.

INSTALL Propane alarms listed to UL 1484 RV and CO alarms listed to UL 2034 RV.

PREVENT accidents by teaching family and friends about the operation of the alarms. Never ignore a sounding alarm.

PROPANE & CO
Replace any F
• Alarm is
• Alarm fa

SMOKE ALARM
Replace the S
• Alarm is
• Alarm fa

Have you rented or sold a RV with expired LP & CO alarms?

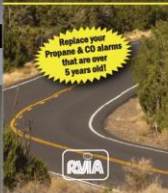
Check alarm date codes on your vehicles' LP & CO alarms. Replace any that are 5 years old or older.



The RVers choice for safety alarms!

Propane Alarms
Carbon Monoxide Alarms
Dual Propane/CO Alarms
Smoke & Fire Alarms

www.Safe-T-Alert.com
info@MTIIndustries.com
1-800-383-0269



Sales tools available from MTI Industries for your use include:

- Point-of-Purchase safety center allows customer to “test drive” the product with attention getting displays

- Product brochures, flyers and posters

- MTI advertises in online and print industry publications

- Visit our dealer website for new materials: www.mtidealer.com