



U.S. Department  
of Transportation

**Pipeline and  
Hazardous Materials Safety  
Administration**

400 Seventh Street, S.W.  
Washington, D.C. 20590

MAR 10 2005

Mr. Russell Zavadil  
Quality Manager  
Essex Aerospace and Defense  
8007 Chivvis Drive  
St. Louis, MO 63213

Ref. No. 05-0045

Dear Mr. Zavadil:

This is in response to your request for a clarification on the applicability of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to an oxygen converter that will be mounted onboard ambulances and other emergency response vehicles. You state the converter stores 10 or 25 liters of liquid oxygen that it converts into breathing gas for patients. The vehicles will be operated by Federal, state or local government personnel.

The transport of hazardous materials in government vehicles operated by government personnel solely for non-commercial purposes are not subject to the HMR. However, if the purpose is commercial, or if the government entity offers hazardous materials for transportation to commercial carriers, then the HMR would apply.

I hope this information is helpful. If you need further assistance, please do not hesitate to contact us.

Sincerely,

Hattie L. Mitchell  
Chief, Regulatory Review and Reinvention  
Office of Hazardous Materials Standards



050045

171.1

**Mitchell, Hattie <PHMSA>**

Mitchell  
§17B.1.  
Applicability  
05-0045

**From:** Russell Zavadil [RZAVADIL@essexind.com]  
**Sent:** Tuesday, November 09, 2004 5:08 PM  
**To:** Mitchell, Hattie  
**Subject:** RE: Transport of Compressed gas onboard an ambulance - highway

Dear Hattie,  
I truly appreciate your help and quick response to my questions, I understand you must have these requests of clarification quite often.  
The letter you sent to me was clear and I understood the precedence.

However the letter speaks mainly to compressed gases of nitric oxide and nitrogen mixtures but does not mention Liquid Oxygen.

I was hopeful that I could gain some clarification as to something more similar to our product.

A simple letter would suffice stating that your position as discussed this afternoon.

The product is a 10 liter and 25 liter Liquid Oxygen converter which stores LOX and turns it into breathing gas for patients. This is mounted as a permanent appliance into the ambulance.

Taking into account your schedule I understand this may take several days.

Any help you could give would be greatly appreciated.

Hattie all of my contact information is below, if you have any questions please contact me at anytime.

Best Regards, Russ

Russell Zavadil  
Quality Manager  
Essex Aerospace and Defense  
E007 Chivvis Dr.  
St. Louis Mo 63213  
Phone Info  
314 832-8077 X316 Cryogenics  
314 644-3000 X311 Manufacturing  
rzavadil@essexind.com

-----Original Message-----

**From:** Mitchell, Hattie [mailto:hattie.mitchell@RSPA.dot.gov]  
**Sent:** Tuesday, November 09, 2004 3:50 PM  
**To:** Russell Zavadil  
**Subject:** FW: Transport of Compressed gas onboard an ambulance - highway

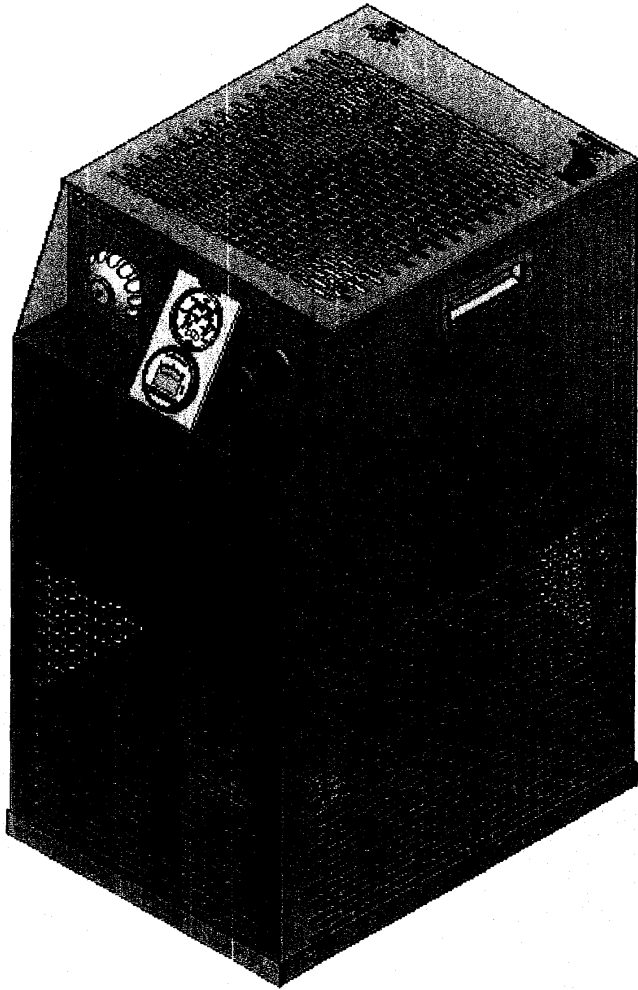
-----Original Message-----

**From:** Mitchell, Hattie  
**Sent:** Tuesday, November 09, 2004 4:38 PM  
**To:** Russ Zavadil (RZavadil@EssexInd.com)  
**Subject:** Transport of Compressed gas onboard an ambulance - highway

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<<000172.url>>

<http://dms.dot.gov/rspa/jul00/000172.pdf>



### Characteristics

Capacity

Service

Delivery Rate

Temperature:

- Operating
- Delivery
- Non-Operating (Storage)

Humidity:

- Operating
- Storage (in shipping container)

Relief Valve Settings:

- System
- Safety

Rupture Disc Burst Pressure

Optimal Time To Performance After Filling

### Performance

25 Liters of LOX – PN 10C-0043  
8.5 Liters of LOX – PN 10C-004C

Up to 100 LPM at 50 PSIG

32°F to 120°F (0°C to 49°C)  
Within 20°F of Ambient  
-40°F to 158°F (-40°C to 70°C)

Up to 95%  
Up to 100%

285 PSIG  
400 PSIG  
750 PSIG at 72°F (22°C)

minutes