U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

1200 New Jersey Ave, S.E.
Washington, D.C. 20590

MAY 06 2013

Ms. Heidi I. Barranco-Fisher
OBO/CFSM/FAC/PS, Room 1202
1701 North Fort Myer Drive
Arlington, VA 22219

Reference No.: 13-0053

Dear Ms. Barranco-Fisher:

This is in response to your February 21, 2013 email to the Approvals and Permits Division of the Office of Hazardous Materials Safety requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the transportation of Trichlorofluoromethane (R-11 refrigerant).

You present a scenario where the Environmental Security Protection System Team within the U.S. Department of State is transporting cylinders used for testing filtration systems installed in U.S. Department of State diplomatic buildings. Each cylinder contains four (4) pounds of R-11 refrigerant. The cylinders are packaged separately in aluminum carrying cases and transported by highway or carried aboard passenger aircraft as checked baggage. You ask whether the transportation of the R-11 refrigerant is regulated or prohibited under the HMR or the International Civil Aviation Organization, Technical Instructions for the Safe Transportation of Dangerous Goods by Air (ICAO-TI).

Trichlorofluoromethane (R-11 refrigerant) in the quantity and package described is not regulated and not prohibited under the HMR or ICAO-TI for transportation by air or highway.

Trichlorofluoromethane (R-11refrigerant) is not regulated as a hazardous material under the HMR or the ICAO-TI for transportation by air or highway unless it meets one or more of the following conditions: It is listed in the HMR § 172.101 hazardous materials table, or Table 3-1 (Dangerous Goods List) of the ICAO-TI; it meets the HMR or ICAO-TI definition of one or more hazard classes (in this instance, a gas); or it meets the HMR definition of a hazardous substance.

(1) Neither trichlorofluoromethane or R-11 refrigerant is listed in the HMR § 172.101 hazardous materials table, or Table 3-1 (Dangerous Goods List) of the ICAO-TI.

(2) The HMR § 171.8 definition of a hazardous substance, is a material that is listed in appendix A to HMR § 172.101 (the hazardous substances table) and is in a quantity in one package which equals or exceeds the reportable quantity (RQ).

Trichlorofluoromethane is listed in the hazardous substances table as trichloromonofluoromethane with an RQ of 5,000 pounds. The quantity of trichlorofluoromethane being transported in each package (4 pounds) is less than 5,000 pounds. The material as packaged does not meet the HMR § 171.8 definition of a hazardous substance.

(3) The HMR § 171.8 and ICAO-TI 2;2.1.1 definition of a gas is a material which has a vapor pressure greater than 300 kPa (43.5 psia) at 50 °C (122 °F) or is completely gaseous at 20 °C (68 °F) at a standard pressure of 101.3 kPa (14.7 psia).

The material safety data sheet for R-11 refrigerant provides a boiling point of 74.5 °F and a vapor pressure of 12.8 psia at 68 °F. Additional information obtained from the supplier of the R-11 refrigerant provides a vapor pressure of 35.7 psia at 125 °F. Since the boiling point of the R-11 refrigerant is 74.5 °F it would not be completely gaseous at 68 °F. Further, the vapor pressure of the R-11 refrigerant is 35.7 psia at 125 °F which is less than 43.5 psia at 122 °F. Therefore, R-11 refrigerant does not meet the HMR § 171.8 and ICAO-TI 2;2.1.1 definition of a gas.

I trust this satisfies your inquiry. Please contact us if we can be of further assistance.

Sincerely,

Delmer Billings
Senior Regulatory Advisor
Standards and Rulemaking Division

Babich
§107.105(c)
§171.1
Applicability
13-0053

Drakeford, Carolyn (PHMSA)

From: INFOCNTR (PHMSA)
Sent: Friday, February 22, 2013 2:07 PM
To: Drakeford, Carolyn (PHMSA)
Subject: FW: Special Permit to Transport R-11 Refrigerant aboard passenger aircraft
Attachments: RE Special Permit to Transport R-11 Refrigerant aboard passenger aircraft; Attachment A - Mobile Test Kit.pdf; Attachment B - R11 MSDS.pdf; Attachment C - Refrigerant Temperature Pressure Chart.pdf; Attachment D - Robinair Cylinder.pdf

Hi Carolyn,

We received the following request for a formal letter of interpretation.

Thanks,
Victoria

From: Barranco-Fisher, Heidi I [mailto:Barranco-FisherHI@state.gov]
Sent: Thursday, February 21, 2013 12:19 PM
To: INFOCNTR (PHMSA)
Cc: LaValle, Diane (PHMSA); ESPS
Subject: FW: Special Permit to Transport R-11 Refrigerant aboard passenger aircraft

Hi Mike –

As discussed a few ago, we, the US Department of State, are requesting a Formal Letter of Interpretation to transport R-11 Refrigerant aboard passenger aircraft. The details on the quantity, conveyance, and why we need to transport are detailed below and attached.

We understand that the R-11 in the quantity and pressure range we have described is not regulated; Hazardous Class 2.2 does not apply nor does Class 9.

The 120 day turn-around for the requested letter is of concern. The next embassy on schedule is US Embassy Rangoon, in mid April. Please let us know if your require additional information and what if anything we can do to assist in expediting our request.

Thanks,
Heidi

ESPS TEAM
Environmental Security Protection Systems (Chem-Bio)
703.875.4825
ESPS@STATE.GOV

Please note that this is a group email box. All who work on the ESPS program will be aware of this correspondence, which ensures transparency and a prompt reply!

From: Barranco-Fisher, Heidi I
Sent: Thursday, February 21, 2013 11:55 AM
To: 'diane.lavalle@dot.gov'
Cc: ESPS
Subject: RE: Special Permit to Transport R-11 Refrigerant aboard passenger aircraft

Diane –

Thanks for the contact information. I'm on the phone with them now, but the gentleman assisting is saying that this is an issue for the Special Permits office. I may be looping back to you.

Heidi

ESPS TEAM
Environmental Security Protection Systems (Chem-Bio)
703.875.4825
ESPS@STATE.GOV

Please note that this is a group email box. All who work on the ESPS program will be aware of this correspondence, which ensures transparency and a prompt reply!

From: diane.lavalle@dot.gov [mailto:diane.lavalle@dot.gov]
Sent: Thursday, February 21, 2013 11:23 AM
To: Barranco-Fisher, Heidi I
Subject: RE: Special Permit to Transport R-11 Refrigerant aboard passenger aircraft

Hi Heidi,
I briefly spoke with my contact at FAA, we pretty much agreed that TSA does what they want. I forgot to even mention that even if it gets through TSA, the airline can refuse the shipment.

The amount of R-11 that you are transporting is not regulated unless it is under pressure, as we discussed. The best suggestion I have for you is to get a letter of clarification from our Office of Hazardous Materials Standards. At least then you will have a piece of paper with DOT's position.

I'm going to give you the phone number for that Office, they will tell you how best to proceed. I believe it is a 6 week turnaround for a letter and a few days for an email. The number is 202-366-8553 or you can reach our Hazardous Materials Information Center at 800-467-4922, then press 1 (it's the same group).

I hope that helps.
Diane

From: Barranco-Fisher, Heidi I [mailto:Barranco-FisherHI@state.gov]
Sent: Thursday, February 21, 2013 9:49 AM
To: LaValle, Diane (PHMSA)
Cc: ESPS
Subject: RE: Special Permit to Transport R-11 Refrigerant aboard passenger aircraft

Good morning Diane,

I'm following up on our conversation of Wednesday. Any luck with FAA?

Attached is the information we received from TSA. TSA is more than willing to assist getting the R-11 through their security checkpoint. However, as TSA cautions, the airlines can still refuse. We have not reached out to the airlines (we fly all carriers) as of yet, and hesitate to do so until we can strengthen our argument with a clarification document from DOT.

In addition to transporting R-11 in passenger aircraft, we are needing to transport the same via ground to the US side of the border with Mexico. The US Consulate/Cuidad Juarez staff will retrieve from there. So, for ground transportation, would our scenario (given the substance, quantity, conveyance) be Class 2.2 or Class 9? The pressure range in the charging cylinder would be less than the limit of 29 psig (that is my read). We want to be fully compliant, but navigating the regs is more than heady.

We truly appreciate your guidance and assistance.

I am working from home today (yes...lucky me again). I will give a ring later today or if you can ring me at 410.627.2321 at your earliest convenience to discuss.

Again, many thanks,
Heidi

ESPS TEAM
Environmental Security Protection Systems (Chem-Bio)
703.875.4825
ESPS@STATE.GOV

Please note that this is a group email box. All who work on the ESPS program will be aware of this correspondence, which ensures transparency and a prompt reply!

From: diane.lavalle@dot.gov [mailto:diane.lavalle@dot.gov]
Sent: Tuesday, February 19, 2013 11:27 AM
To: Barranco-Fisher, Heidi I
Subject: FW: Special Permit to Transport R-11 Refrigerant aboard passenger aircraft

Hi Heidi,

This is not a complete application, I can't tell what you are requesting. I'm attaching a checklist for your use.

UN 3082 is not forbidden for transportation aboard passenger carrying aircraft. It seems that your problems are TSA related and not because it's a hazardous material. Call me if you would like to discuss.

Diane LaValle
202-366-4369

From: Barranco-Fisher, Heidi I [mailto:Barranco-FisherHI@state.gov]
Sent: Friday, February 15, 2013 4:08 PM
To: Special Permits (PHMSA); Herzog, Kenneth (PHMSA); 'erland.hawkins@dhs.gov'
Cc: ESPS
Subject: Special Permit to Transport R-11 Refrigerant aboard passenger aircraft

Kenny / Erland,

As discussed via telephone earlier this week, our team provides support to the Environmental Security Protection System Team (ESPS) within the US Department of State, Overseas Buildings Operations. We are seeking your assistance in providing us with a waiver to transport Refrigerant R-11 aboard passenger aircraft.

Background:

The Environmental Security Protection Systems (ESPS aka Chem-Bio) are installed in DoS diplomatic buildings to reduce risk to occupants in the event of an internal or external chemical, biological, or radiological incident. It provides continuous life and safety protection.

The enhanced filtration system requires testing with refrigerant R-11 to ensure 99.99% of the airstream passes through the specialized filters that inactivate chemical, biological, and radiological threat agents.

Since June 2012, we have tested the filter installations at 10 diplomatic posts using a $35,000 mobile test kit (Attachment A). The installation/testing technician travels with the mobile test kit, checking it in as baggage. Upon his return through Miami from his last trip to Managua, and although the charging cylinder was empty with only a film coat of residue, this key piece of instrumentation was seized by the airport authorities/TSA. Unfortunately, we have been unable to retrieve it and are resigned to write it off as a loss. Granted the seized instrument was worth $330, (which is expensive in our line of work), but we are more concerned with future travel and us not being able to test and validate immediately after installation.

We schedule our installs to do two or three diplomatic posts back-to-back (the last trip was Kingston, Panama, and lastly Managua). Should any of the instruments be held up at any point during the install sequence we will not be able to test. This would mean that we would have to arrange for possible re-purchasing of long-lead time instruments, cargo airfreight the instruments to the diplomatic posts, and incur the travel and per diem cost of a second trip for the installer/tester. The disruption to the schedule and additional costs would be a very significant setback in us timely servicing these life safety systems.

As noted above, the halide gas used to test is Refrigerant R-11, trichloromonofluoromethane (Attachment B). This refrigerant is increasing difficult to obtain worldwide as it is no longer manufactured. Until recently, our standard procedure had been to travel with the charging cylinder empty, relying on the diplomatic post to provide the required R-11. Unfortunately, our next destination, US Embassy Algiers, was unable to timely confirm that they had sourced R-11 prior to our scheduled departure. On Friday, February 8, our installer/tester, unaware of R-11 transport restrictions, attempted to check-in the mobile test kit with the charging cylinder filled with R-11. Upon learning that the charging cylinder was filled with R-11, the TSA agent inspecting the mobile kit confiscated the charging cylinder. The installer/tester consulted with several authorities from TSA and United Airlines and was advised that all refrigerants were banned from passenger flights; cargo would be the only way to transport. The installer/tester aborted travel and retrieved the charging cylinder.

Request:

A special permit/waiver be issued that will allow our installer/tester to transport the charging cylinder filled with four pounds of R-11 as checked-in baggage on commercial passenger flights.

1. Attachment A: Photograph of Mobile Test Kit
2. Attachment B: Material Safety Data Sheet (MSDS) R-11, trichloromonofluoromethane, UN3082
3. Attachment C: Refrigerant Temperature/Pressure Table

Pressure ranges for the R-11 in the charging cylinder would be as follows:			
Range	**Temperature**	**Pressure**	**Remark**
Low	-60°F	14.42 PSIG	airplane cruising altitude of 30,000
Fill	75°F	0.07 PSIG	sea level as liquefied gas/super saturated liquid
High	150°F	37.71 PSIG	tarmac in Saudi Arabia averages 122°F

4. Attachment D: Charging Cylinder Product Data

Robinair Dial-A-Charge, Harmonized Code 7613000000

49 CFR 107.105:

107.105 (c)(1)	The Reportable Quantity for Refrigerant R-11, trichloromonofluoromethane, UN3082 is 5,000 lbs. A specific regulation in the CFR restricting the transport of 4 lbs of liquefied gas was not found.
107.105 (c)(2)	Passenger aircraft
107.105 (c)(3)	Four lbs of R-11, in liquefied gas state would be transported in the Robinair 43678B Dial-A-Charge cylinder, which is stored in a foam padded aluminum carry case. See Attachments A and D.
107.105 (c)(4)	16 commercial passenger flights per year, indefinitely
107.105 (c)(5)	R-11 cannot be sourced locally. There are no other modes of transportation available.
107.105 (c)(6)	Emergency processing is requested. R-11 is needed to test life safety systems in diplomatic posts worldwide.
107.105 (c)(7)	4 lbs of R-11 in each shipment.
107.105 (c)(8)	See 107.105 (c)(3)
107.105 (c)(9)	N/A
107.105 (c)(10)	See 107.105 (c)(4)
107.105 (c)(11)	N/A
107.105 (c)(12)	See 107.105 (c)(6)
107.105 (c)(13)	N/A
107.105 (c)(14)	US Department of State contract personnel will be acting as the shipper; various commercial airlines will be the carrier

Point of Contact:

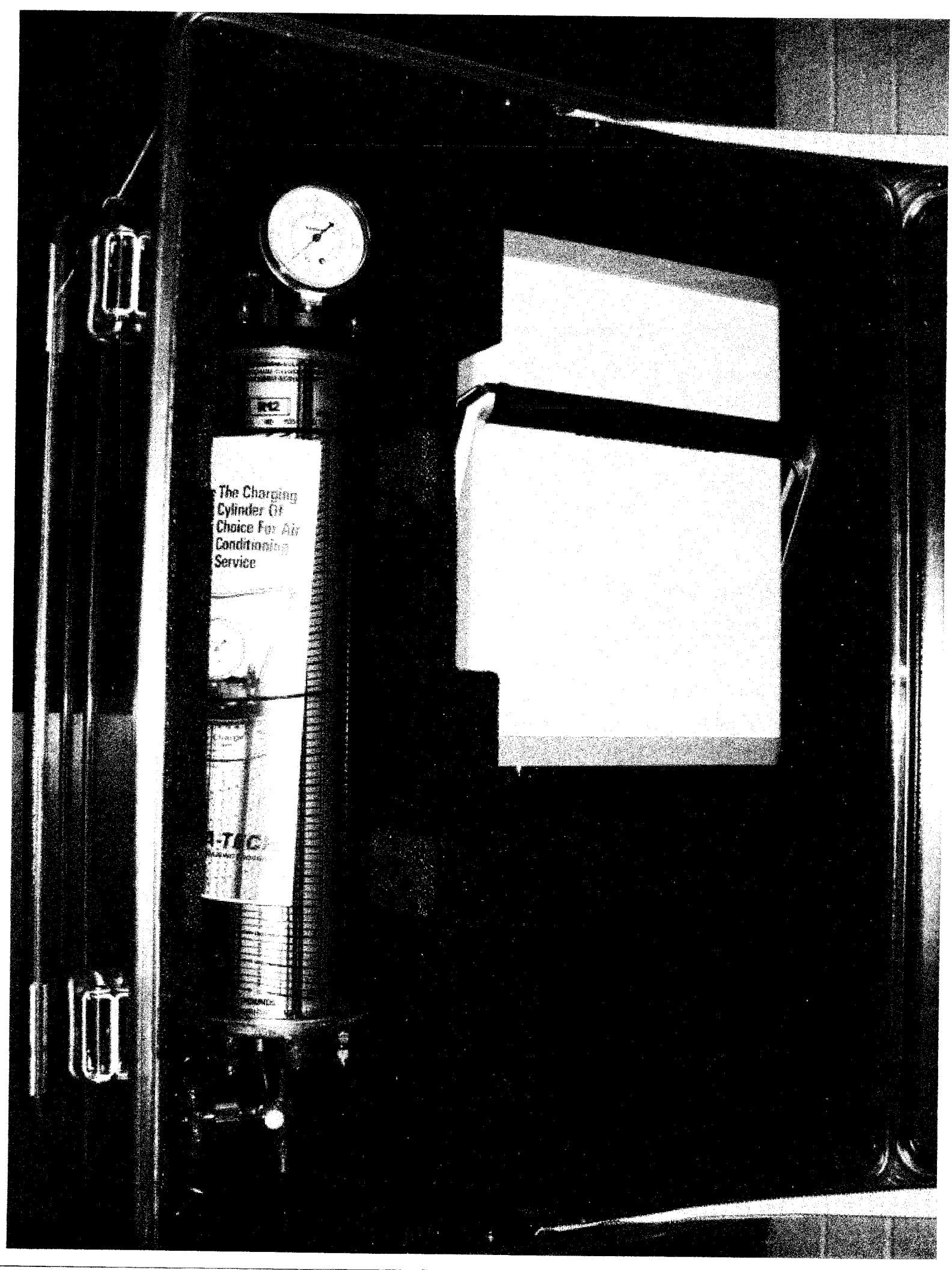
Heidi Barranco-Fisher / Contractor
OBO/CFSM/FAC/PS, Room 1202
1701 North Fort Myer Drive
Arlington, VA 22219
703.875.4825
barranco-fisherhi@state.gov

We trust that the above and attached will facilitate your prompt review of our request. Please do not hesitate to contact us via telephone at 703.875.4825 or email ESPS@state.gov, should additional information be required.

Many thanks,

Heidi

This email is UNCLASSIFIED.


The Charging
Cylinder Of
Choice For Air
Conditioning
Service