

### **Environmental Update**

# Tom Cortina Halon Alternatives Research Corporation

IASFPWG Meeting
October 30, 2014
Atlantic City, New Jersey





- International Dates for Halon Replacement
  - European Union
  - ICAO
- Climate Change
  - Science/International Negotiations
  - HFCs EPA, Montreal Protocol, EU F-gas Regulation, Japan, Australia Carbon Tax



# Halon Replacement Dates

	Requirement	Lavatory	Handheld	Engine/AP U	Cargo
New Design	EC Cutoff Date	2011	2014	2014	2018
	ICAO New Design	2014	2016	2014	None
Current Production	EC End Date (includes retrofit)	2020	2025	2040	2040
	ICAO New Production	2011	2016	None	None

- EC: European Commission Regulation 744/2010 dates published August 2010 effective December 31 of stated year; information on Montreal Protocol, EC Regulation & alternative agents in "Book 2" incorporated into EASA CS-25 Amendment 12, July 2012.
- ICAO: International Civil Aviation Organization halon replacement "resolution" (A37-9) adopted at ICAO General Assembly Meeting on October 6, 2010. Amendments to Annexes 6 & 8 adopted in June 2011. Effective December 31 of stated year.





# Climate Change - Science

- The scientific basis for climate change has not changed, and if anything is growing stronger
- The most recent science assessment (IPCC 5<sup>th</sup> Assessment Report) concludes:
  - Higher level of confidence that global warming is man-made and starting to affect weather events, such as flooding, drought, heat waves and wildfires
  - "Many of these changes would persist for centuries"
  - "Limiting climate change would require substantial and sustained reductions of CO<sub>2</sub> emissions."





# Climate Change - Science

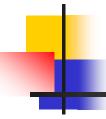
- US National Climate Assessment
  - "The cumulative weight of the scientific evidence...confirms that climate change is affecting the American people now, and .... will affect our future and that of future generations."
  - "Multiple lines of independent evidence confirm that human activities are the primary cause of the global warming of the past 50 years."





- Negotiations are continuing under the Durban Platform, which calls for a new climate change treaty to be signed by 2015 and begin by 2020
- Final treaty to be agreed and signed at COP 21 in Paris November 30 – December 11, 2015
- Developed countries focused on mitigation (reducing emissions) with nationally defined contributions applicable to all countries
- Developing countries focused on adaptation assistance and financing





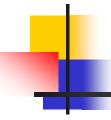
- EPA SNAP Program
  - President's Climate Action Plan directs EPA to use its authority under the SNAP program
    - "to encourage private-sector investment in low-emissions technology by identifying and approving climate-friendly chemicals
    - while prohibiting certain uses of the most harmful chemical alternatives"





- EPA SNAP Program
  - EPA proposed rule and notice that list new low-GWP alternatives as acceptable (Powdered Aerosol D in occupied spaces)
  - EPA proposed rule published on August 6 that would de-list from SNAP certain high-GWP HFCs in specific end uses: consumer aerosols, foam blowing, commercial refrigeration, and auto air conditioning





- EPA SNAP Program
  - EPA is not proposing to change the SNAP status of any fire protection agents in this initial proposal
  - It should be noted that two of the agents that are being proposed to be delisted for consumer aerosols are HFC-227ea and HFC-125, so there is some potential for confusion

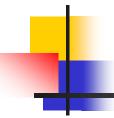




#### Montreal Protocol

- Amendments proposed in 2014 would add HFCs to MP and slowly phase down their production
- Key elements:
  - List 19-21 specified HFCs as new Annex F to MP (NA proposal does not include two HFOs)
  - Make available funding under Multilateral Fund for HFC phase down
  - Limit HFC-23 byproduct emissions
  - Require licensing of HFC imports and exports, and ban imports and exports to non-Parties





#### Montreal Protocol

Micronesia:

- 15% reduction in 2017 - 70% in 2029

- 30% in 2020 - 85% in 2032

- 45% in 2023 - 90% in 2035

- 55% in 2026

- Developed country baseline would be based on 2014-2016 annual production and consumption of HFCs and HCFCs (excluding HFC-23)
- Developing country baseline and phase down dates to be determined through negotiations by the Parties

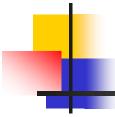




#### Montreal Protocol

- United States, Canada, Mexico:
- 10% reduction in 2018 70% in 2029
- 35% in 2023 85% in 2035
- Developing country phase down would begin 2 years later in 2020 with a production freeze and reach the 85% reduction level 10 years later in 2045
- Developed country baseline would be based on 2008-2010 annual production and consumption of HFCs and 85% of 2008-2010 annual production and consumption of HCFCs
- Developing country baseline would be based on 2011-2012 annual production and consumption of HFCs and 40% of 2011-2012 annual production and consumption of HCFCs





#### Montreal Protocol

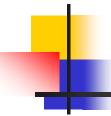
- Amendments will be discussed at MOP
- Fifth straight year that HFC phase down amendments are being considered
- Continued opposition from countries such as India, Brazil, Saudi Arabia, Venezuela
- Have not allowed formation of a contact group to begin formal negotiations
- Amendments not likely to pass this year





- European Union F-gas Regulation
  - (EU) No 517/2014 adopted April 16, Official Journal May 20, applicable January 1, 2015
    - Gradual phase down in amount of bulk HFCs (GWP weighted) produced or imported in EU beginning with a freeze in 2015, reaching 79% reduction by 2030
    - Product bans, including: Fire protection systems and extinguishers that contain HFC-23 – January 1, 2016
    - No allocation fee for rights to produce/import





- EU F-gas Containment Provisions
  - Intentional release of F-gases is prohibited
  - Requires training and certification for persons installing, servicing, maintaining, repairing or decommissioning fire protection systems
  - Requires the recovery of fire protection systems and extinguishers
  - Requires labeling of fire protection systems with name (now) and quantity in weight and CO<sub>2</sub> equivalents (January 1, 2017)





- EU F-gas Allocation Provisions
  - By October 31 the EC will determine for each producer/importer a "reference value" based on annual averages in 2009 to 2012
  - Producers and importers intending to market HFCs in the EU in 2015 needed to register and submit their applications for 2015 HFC production/import quotas by July 1, 2014
  - Additional registration requirements for companies that haven't previously reported





- EU F-gas Allocation Provisions
  - An allocation is not needed to import fire protection equipment pre-charged with HFCs
  - Under Article 14 an allocation will be needed beginning in 2017 for refrigeration, air conditioning, and heat pump equipment precharged with HFCs, but not fire protection equipment





- EU F-gas Reporting Provisions
  - Companies are required to report any import of fire protection equipment (systems and extinguishers) containing more than 100 tons of CO2 equivalent HFCs
  - Report for 2014 imports due March 31, 2015
  - 100 tons of CO2 equivalent =

```
HFC-227ea = 68 \text{ pounds} HFC-125 = 63 \text{ pounds} HFC-236fa = 22 \text{ pounds} HFC-23 = 15 \text{ pounds}
```





- Japan HFC Policy
  - Act for Rationalized Use and Proper Management of Fluorocarbons takes effect on April 1, 2015
  - Producers/importers of HFCs will be required to develop phase-down plans
  - Examples of targets:
    - Room air conditioning products GWP of 750 by 2018
    - Cold storage warehouses GWP of 100 by 2019
    - Commercial air conditioning products for stores and offices – GWP of 740 by 2020





- Australia Carbon Tax
  - Legislation to repeal the Australia carbon tax and the equivalent tax on synthetic greenhouse gases was approved on July 17, 2014 and is effective as of July 1, 2014
  - After July 1 the tax on HFCs does not apply
  - All tax liabilities incurred up to June 30, 2014 must be met in full
  - ACCC will monitor expected price reductions across all sectors with power to take action



# Tom Cortina Halon Alternatives Research Corporation

IASFPWG Meeting
October 30, 2014
Atlantic City, New Jersey





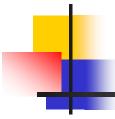
- On July 2, 2013 the FAA chartered a Halon Replacement Aviation Rulemaking Committee
- Halon ARC Members
  - Airframe Manufacturers
  - Equipment Manufacturers
  - Aviation Trade Associations
  - Fire Protection Trade Associations
  - Government





- Objectives and Tasks
  - Committee will address the safety, environmental, and economic issues that affect the transition from halon to alternative agents
  - Review will take into account the timelines that have already been incorporated into ICAO Annexes, as well as those under review by other civil aviation authorities
  - Recommendation Report Halon ARC will submit a report detailing recommendations as described above in early November 2014





- Factors to Consider
  - International standards
  - Status of alternative agents
  - Status of existing halon reserves
  - Feasible timelines for implementation of alternatives
  - Airworthiness approval issues
  - Environmental and economic issues





- ARC did not begin work until November 2013
- Charter was extended to February 2015
- ARC met seven times between November 2013 and October 2014
- ARC report is almost complete and will be submitted to FAA in early November