

AGENDA

“The Importance of Military Organisations In Stratospheric Ozone and Climate Protection”

Hotel President World Trade Centre
Boulevard du Roi Albert II Brussels, Belgium

February 6-8, 2001

Financially Supported by
Multilateral Fund for the Implementation of the Montreal Protocol

Jointly Organised by
United Nations Environment Programme
United States Environmental Protection Agency and
United States Department of Defense

With Additional Support by
Australia Department of Defence
Center for International Environmental Law
Climate Institute
Department of National Defence Canada
Environment Australia
Environment Canada
Institute for Defense Analyses
International Cooperative for Environmental Leadership
U.K. Ministry of Defence
U.K. Department of Environment, Transport and the Regions

Information and Registration is on the UNEP web site:
<http://www.uneptie.org/ozat/military/home.htm>

The Importance of Military Organisations In Stratospheric Ozone and Climate Protection Brussels Belgium February 6-8

Workshop Agenda February 6

- 0700 Registration and Coffee in Lobby
- Fabiola Plenary Hall
- 0900 Welcome: “Climate Change and Ozone Depletion,” Dr. Stephen O. Andersen, U.S. Environmental Protection Agency (EPA)
“The Challenges of Article 5(1) Countries in Achieving Compliance with the Montreal Protocol,” Dr. Heinrich W. Kraus, Chairman, The Multilateral Fund of the Montreal Protocol (and Federal Ministry of Environment--Germany)
“Environment and the Military: UNEP’s Perspective,” Rajendra Shende, United Nations Environment Programme (UNEP)
- 0930 “Public Demands for Military Leadership,” Durwood Zaelke, Center for International Environmental Law (CIEL)
- 0950 “The Significance of Climate and Ozone Layer Protection to Environmental Security,” Gary Vest, U.S. Department of Defense (DoD)
- 1010 “The Importance of Fuel Efficiency to Warfighting—Findings of the Defense Science Board,” Lieutenant General Jerome Granrud, U.S. Army (Ret)
- 1030 “A Warfighter’s Perspective on Global Climate Change,” Rear Admiral Larry C. Baucom
- 1050 Refreshment in Lobby
- 1120 “The First and Next Decade of the Montreal Protocol and Lessons for Climate Protection,” K. Madhava Sarma, India
- 1140 “Climate Change Policy in Canada: Action Now,” Neil MacLeod, Natural Resources Canada
- 1200 “The Netherlands’ Strategy to Satisfy the Montreal Protocol in Naval Operations,” Anton L.C. Janssen, Royal Netherlands Navy
- 1220 “The Developing Country Perspective of Military ODS Phaseout,” Hassen Hannachi, Ministère de l’Environnement et de l’Amenagement du

Territoire, Tunisia

1240 Discussion

Brussels Dining Room

1300 Lunch "The New EC Regulation on Ozone-Depleting Substances and Implications for Military Forces," Peter Horrocks, European Commission

1430 Concurrent 1 Halon Banking, Montreal Protocol Essential Use Exemptions, Facility Energy Efficiency, Vessel Refrigeration

Ozone Session Breakout: Halon Banking—Fabiola Hall

Chair and Rapporteur, Ron Sibley, U.S. Defense Logistics Agency (DLA)

Garry Cranny "Halon Recovery, Recycle, and Destruction"
Australian National Halon Bank

Ron Sibley "Halon Banking for Mission-Critical Essential Uses"
U.S. DLA

Janina Szpilman "Danish Defence Halon Banking"
Danish Royal Air Force

Rajendra Shende "The New UNEP On-Line Halon Trading Website"

Ozone Session Breakout: Montreal Protocol Essential Use Exemptions—Paula Room

Chair and Rapporteur: Dr. Stephen O. Andersen, U.S. EPA Climate Protection Partnership Div.

Dr. Walter Brunner, Envico; "The Success of Technical Collaboration in the Russian Halon
Nicolai P. Kopylov, Phaseout"
Russia Fire Institute; and
Gary Taylor, Taylor/Wagner

Rick Golde, Thiokol "Progress and Remaining Challenges of Eliminating ODSs from
Propulsion Space Solid Rocket Motors"
Shuttle RSRM Program

LtCol Ronald Grundman, "Status in Eliminating Ozone-Depleting Substances from the Titan
Titan Launch Systems IV Solid Rocket Motor"

Dr. Janusz Kozakiewicz "Continuing Challenge in the Cleaning of Torpedoes Qualifying
Research Institute Poland for Essential ODS Solvent Use"
Darrel Staley, Boeing

Climate Session Breakout: Facility Energy Efficiency—Brugge/Liege Room

Chair and Rapporteur: Edward T. Morehouse, Institute for Defense Analyses

Bobby H. Starling, U.S. Army Corps of Engineers “Energy Savings Performance Contracts (ESPC)”

Bobbi Garrett, U. S. National Renewable Energy Laboratory (NREL) “Technical and Economic Feasibility of Remote Wind and Photovoltaic Electric Generation”

Ozone Session Breakout: Vessel Refrigeration—Waterloo Room

Chair and Rapporteur: Peter Mullenhard USN SEIC

Dominic Cusanelli, U.S. Navy “Stern Flaps and Bow Bulbs for Existing Vessels”

Cdr Brian Darch, UK Royal Navy “Replacement of Ozone Depleting Refrigerants in Ship-Borne Applications”

Gregory S. Toms, U.S. Navy “The U.S. Navy's CFC Refrigerant Elimination Program”

1600 Adjourn

1900 Groups Form for Dinner

Workshop Agenda February 7

Fabiola Plenary Hall

- 0830 Welcome Michael Graber, Secretariat for the Vienna Convention and the Montreal Protocol, (UNEP)
- 0840 “Integrating Ozone and Climate Protection in Military Components of National Environmental Strategies,” Milton Catelin, Director of Ozone Protection, Environment Australia
- 0900 “Civil Aviation Leadership on Climate Protection by the International Civil Aviation Organization (ICAO),” Stephen Seidel, U.S. EPA
- 0920 “Integrating Military Investments in Montreal Protocol Country Plans”
Rajendra Shende, UNEP DTIE and E. Thomas Morehouse, Institute for Defense Analyses
- “Financing Incremental Costs of Investments in Developing Countries to Phaseout of Ozone-Depleting Substances,” Andrew Reed, Secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol
- “Financing Mechanisms for Ozone and Climate Protection,” Alan Miller, Global Environment Facility (GEF)
- 1020 Refreshment in Lobby
- 1040 “Military Strategies to Reduce Greenhouse Gas Emissions—Are Lessons from the Montreal Protocol Being Applied to Climate Protection?”
Chaired by John Topping, Climate Institute
- Dr. Stephen O. Andersen, U.S. EPA
Dr. Joop Van Haasteren, Ministry of Environment, Netherlands
Dr. Heinrich W. Kraus, Ministry of Environment, Germany
Maria Nolan, Department of Environment, UK
Gary Vest, Department of Defense, USA
Rod Corey, Australian DoD
Ginger Stones, Department of National Defence Canada
- 1130 Concurrent 2: Alternatives to Halon Fire Protection, Aircraft Manufacture and Maintenance, Electronics Manufacture and Maintenance, Refrigeration and Air Conditioning

Ozone Session Breakout: Alternatives to Halon Fire Protection—Fabiola Hall

Chair and Rapporteur: Dr. Barbara Kucnerowicz-Polak, State Fire Service Headquarters, Poland

Dr. Barbara Kucnerowicz-Polak (State Fire Service Headquarters, Poland) “Halon Alternatives—An Important Component of Comprehensive Halon Management and Phaseout Strategy”

Bill Leach, U.S. Navy “Opportunity for Halon Alternatives in Military Equipment Sales”

Dr. David Liddy, U.K. MOD “Halon Uses and Alternatives for Military Applications in the UK Ministry of Defence”

Paul Rivers, 3M, USA "New Alternatives to Halon in Military Fire Protection"

Ozone Session Breakout: Aircraft Manufacture and Maintenance—Brugge/Liege Room

Chair and Rapporteur: Dr. Mohinder Malik, Materials and Process Technology, Lufthansa

Dr. Mohinder Malik Lufthansa “ODS-free Aircraft Maintenance”

Edward C. Cooper, U.S. Army Corps Christi Army Depot and David A. Koehler, AAPPSO “Alternatives to ODS Solvents in Aircraft Maintenance”

Christoph Matz Lufthansa “Maintenance of Ultra High-Strength Steel Parts of Aircraft Landing Gears and other Systems”

Glenn Welcher, Pratt & Whitney "Technical, Environmental and Economic Benefits of Aqueous Cleaning in Manufacturing/Maintenance of Gas Turbine Engines"

Ozone/Climate Session Breakout: Electronics Manufacture and Maintenance—Paula Room

Chair and Rapporteur: Sally Rand U.S. EPA Global Programs Division

Jay Baker, Visteon “Superintegration(TM) for Energy Efficiency and Performance”

Sally Rand, U.S. EPA and Fabio Borri STMicroelectronics “The Semiconductor Climate Protection Partnership”

Ozone/Climate Session Breakout: Refrigeration and Air Conditioning—Waterloo Room
Chair and Rapporteur: Lambert Kuijpers, Co-Chair Montreal Protocol TEAP

- Dr. Stephen O. Andersen “The New Global Building Chiller Partnership”
U.S. EPA
- Rajendra Shende “Adapting Refrigerant Management Plans to Meet Military Needs”
UNEP DTIE
- Eugene Smithart, Trane “Energy Efficient Building Air Conditioning”
- John A. Manzione, U. S. “Green Refrigerant for Tactical Environmental Control Units”
Army Communications &
Electronics Command and
George H. Terrell, AAPPSO
U.S. Army

Brussels Dining Room
1300 Lunch

1400 Concurrent 3: Ship and Vehicle Fire Protection, Cleaning Oxygen and Precision
Systems,
Information Systems, Ozone and Climate Protection Policies

Ozone Session Breakout: Ship and Vehicle Fire Protection—Fabiola Hall
Chair and Rapporteur: Ronald S. Sheinson, U.S. Naval Research Laboratory

- Doug Barylski, Mary "Successful Shipboard Halon Replacements"
Hunstad, and Dr. Ronald
Sheinson, U.S. Navy and
Alexander Maranghides,
Geo-Centers
- Dr. Ronald S. Sheinson, "Development of Water Mist / Spray Shipboard Fire Protection
U. S. Naval Research Lab, Design Guidance"
Alexander Maranghides,
Geo-Centers, Michael
Edwards and Stephen
Watkins, UK MoD Navy
- Steven McCormick, U.S. “Halon Replacement Program for Army Ground Combat Vehicles”
Army Tank-Automotive
Armament Command and
David A. Koehler AAPPSO

Ozone Session Breakout: Cleaning Oxygen and Precision Systems—Brugge/Liege Room
Chair and Rapporteur: Thanavat Junchaya, UNEP Office of Asia and Pacific, Thailand

Neil Antin, U.S. Navy and Peter Mullenhard USN SEIC “Elimination of Ozone-Depleting Solvents from the Manufacture and Maintenance of Oxygen and Diver Life Support Systems”

William H. Persky Lockheed Martin “Designing Aerospace Vehicles to be ODS-Free”

Curtis Kimbel U.S. Navy “Navy Ultrasonic Cleaning System Eliminates the Requirement for CFC-113 For Cleaning Aircraft Oxygen Components”

Ozone/Climate Session Breakout: Information Systems--Paula Room
Chair and Rapporteur: Robert Holcolm, R.G. Holcolm and Associates

James Curlin UNEP “Using Information to Achieve Results under the Montreal Protocol”

Colonel David T. Peters U.S. Air Force Defense Environmental Information Exchange (DENIX)

Peter Mullenhard U.S. Navy SEIC “Publicly Available Military Environmental Information Systems”

Ozone/Climate Session Breakout: Ozone and Climate Protection Policies—Waterloo Room
Chair and Rapporteur: Roy Solomon, Booz Allen & Hamilton

Axel Michaelowa, Hamburg Institute of International Economics and Tobias Koch, Steinbeis Carbon Invest “Military emissions, armed conflict, border changes and the Kyoto Protocol”

Roy Solomon Booz Allen & Hamilton “Practical Approach to Making an Inventory of Greenhouse Gas emissions from Military Operations” (preview of Day 3 Track)

1530 Refreshments

1600 Concurrent 4: Aviation Fire Protection, Canada’s Ozone and Climate Change Program, HFE and Other Emerging Solvents, Perspective of Environmental Non-Governmental Organisations (NGOs)

Ozone Session Breakout: Aviation Fire Protection—Fabiola Hall
Chair and Rapporteur and Rapporteur: David A. Koehler, AAPPSSO

Forrest L. Baker, U.S.
Army OPEO for Aviation
and David A. Koehler,
AAPPSSO

“Halon Replacement in Army Aviation”

Bill Leach, U.S. Navy

“Successful Implementation of Halon Alternatives in Navy Aircraft.”

Ozone/Climate Session Breakout: HFE and Other Emerging Solvents--Waterloo
Chair and Rapporteur: Dr. John Stemniski, Consultant

Patrice Rollet
Promosol France
Bruno Costes, Airbus

“Aircraft Manufacturing without ODS Solvents”

Dr. John Stemniski
Consultant

"Emerging Substitutes for ODS Solvents”

Peter Breloer
3M EBC Belgium

"HFE Alternatives to ODS Solvents in Electronics and Aerospace"

Ozone/Climate Session: Canada’s Ozone and Climate Change Program—Paula Room
Chair and Rapporteur: Ginger Stones, National Defence Canada

Ginger Stones
Department of National
Defence Canada

“Implementing Greenhouse Gas Reductions in the Canadian
Department of National Defence”

Alex Cavadias
Environment Canada

“Canada’s National Ozone Protection Program”

Holmer Berthiaume
Protection Department of
National Defence Canada

“The Canadian Department of National Defence’s Ozone
Strategy”

Ozone/Climate Session: Perspectives of Environmental NGOs—Brugge/Liege Room

Chair and Rapporteur: Stephen Seidel

Beatrice Schell, European Federation for Transport
And Environment, Brussels “Environmental NGO Views on Aviation Emissions”

John Topping, The Climate Institute “The Sustainable Energy Demonstration in St. Lucia”

Durwood Zaelke, Center For International Environmental Law “The New Reality of Global Environmental Law”

1730 Discussion: Draft Consensus Findings

1900 UNEP Reception in Lobby

WORKSHOP AGENDA FEBRUARY 8: BREAKOUT SESSION 1
Round Table on Ozone Protection Action Plans for Military in Developing countries.

Paula Room

Rajendra Shende (UNEP TIE) and Edward T. Morehouse (IDA) will co-chair this session. Under the Montreal Protocol, qualifying Countries with Economies in Transition and developing countries qualify for financing of the incremental cost of eliminating dependence on ozone-depleting substances. This “hands-on” session will show participants how to plan for the elimination of ozone-depleting substances and how to apply for financing.

- 0900 Welcome and Objectives
James Curlin, United Nations Environment Programme (UNEP)

- 0930 Overview of a UNEP Guidebook on Phasing Out ODS in Military Organisations
Edward T. Morehouse, Institute for Defense Analyses, USA

- 1000 Discussion

- 1015 Engaging Military in National Phase out through Ozone Units.
Rajendra Shende, United Nations Environment Programme (UNEP)

- 1045 Refreshments in Hall

- 1115 Military Involvement in Country Programmes
Bahrain, Jordan, and Oman

- 1145 Discussion

- 1200 Lunch in Brussels Dining Room

- 1300 Military Involvement in Country Programmes (Continued)
UAE, China (Invited), Saudi Arabia (Invited), Lebanon (Invited)

- 1345 Indian Case Study on Action Plans
H. S. Kaprwan, Defence Institute for Fire Research (DIFR), India

- 1415 Questions and Answer Panel Discussion

- 1445 Roundtable Discussion
Action Plan for Military Phaseout Programmes-Next steps and Follow-up.
Rajendra Shende, United Nations Environment Programme (UNEP)

- 1545 Conclusion, Edward T. Morehouse, Institute for Defense Analyses, U.S.
- 16:00 Refreshments in Lobby
- 16:15 Agreement on Workshop Report—Fabiola Hall

WORKSHOP AGENDA FEBRUARY 8: BREAKOUT SESSION 2
ACCOUNTING FOR GREENHOUSE GAS EMISSIONS FROM MULTILATERAL OPERATIONS
Fabiola Hall

- 0900 Welcome and Introduction
- Rear Admiral Larry C. Baucom, U.S. Navy
Director, Environmental Protection, Safety and Occupational Health Division
- 0915 Opening Remarks
- Gary D. Vest
Principal Assistant Deputy Undersecretary of Defense (Environmental Security)
- 0930 Background and Issue Overview—Part I: Climate Change Protocol
- Colonel William D. (Dan) Benton, U.S. Air Force
Office of the Secretary of Defense, Office of General Counsel
- 1000 Question and Answer Session
- 1015 Background and Issue Overview—Part II: National Inventories Overview
- Wiley Barbour
Chief, U.S. Greenhouse Gas Emissions Inventory
Office of Policy, U.S. Environmental Protection Agency
- 1045 Refreshments in Lobby
- 1115 Presentation of papers by United States
- Roy Salomon
Senior Associate, Booz Allen & Hamilton
- 1200 Question and Answer Session
- 1215 Lunch in Brussels Dining Room
- 1330 Discussion and Next Steps
- Gail Bruss
Program Manager, Global Climate Change Program
U.S. Navy
- 1545 Summary: Conclusions and Recommendations
- Gail Bruss
Program Manager, Global Climate Change Program
U.S. Navy
- 16:00 Refreshments in Lobby
- 16:15 Agreement on Workshop Report—Fabiola Hall

WORKSHOP AGENDA FOR FEBRUARY 8: BREAKOUT SESSION 3
GUIDANCE FOR POLICY MAKERS
ON ESSENTIAL ODS AND HIGH-GWP MILITARY APPLICATIONS

Brugge/Liege Room

Dr. Thomas Batchelor (EC), Andrew Kreider (U.S. EPA) and Sally Rand (U.S. EPA) will co-chair this session. Under the Montreal Protocol, Parties are allowed to use ozone-depleting substances produced before the production phaseout and available from banks and recycling. Participants will generate an elaborated list and justification for the use of ozone-depleting substances in mission-critical essential applications and a second list of applications where environmentally superior alternatives are not available for military applications.

1000 Refreshments in Lobby

1015 Welcome and Introduction

- Dr. Thomas A. Batchelor, Ozone Layer Team Administrator, European Commission
- Sally Rand and Andrew Kreider, U.S. EPA Global Programs Division

1030 Military Applications of ODSs without Acceptable Alternatives

- Critical halon applications
 - Where evacuation is not an option
 - Special flammable and explosive situations
- Critical solvent applications
 - Solid rocket motors
 - Laboratory and analytical uses
 - Biological and chemical decontamination

1215 Lunch in Brussels Dining Room

1330 Military Applications of ODSs without Acceptable Alternatives

- Critical refrigerant applications
 - Legacy systems with limited space and access
 - Infrequently used systems with minor emissions
- Products made with ODS feedstocks and process agents
 - Kevlar™ bullet-proof and ballistic shields
 - Tyvek™ protective clothing
- Miscellaneous applications

1430 Military Applications of High-GWP Greenhouse Gases

- Cleaning
- Fire and Explosion Suppression
- Electronics and Optical Equipment
- Speciality Materials

1500 Summary: Conclusions and Recommendations

14:00 Refreshments in Lobby

16:15 Agreement on Workshop Report—Fabiola Hall

WORKSHOP AGENDA FOR FEBRUARY 8: BREAKOUT SESSION 4
THE HISTORY OF MILITARY LEADERSHIP IN OZONE PROTECTION

Waterloo Room

K. Madhava Sarma and Dr. Stephen O. Andersen will co-chair this session. They have been selected by the United Nations Environment Programme to write the official history of the Montreal Protocol. This working group will discuss the available record of military technical and policy leadership and will recommend additional source materials to document that record.

1000 Refreshments in Lobby

1015 Welcome, Introductions, and overview

1045 Madhava K. Sarma, Ozone Secretariat and Dr. Stephen O. Andersen, Co-Authors of the Official United Nations History of Ozone Layer Protection (scheduled for publication in 2002)

1115 Strategy for Documenting Military Leadership

- Historic timelines
- Significant coalition, regional, and national military policy on ODSs
- Participation of military experts in negotiations and technical assessments

1215 Lunch in Brussels Dining Room

1330 Outline of Leadership in Halon Management

- Halting testing and training and reducing accidental discharge
- Halon recovery, recycle, and banking
- “Mission-Critical Essential Use”
- Multinational cooperation (R&D, management, banking, trading)

1415 Outline of Leadership in Solvent Alternatives

- Shift from prescriptive to performance standards
- Changing military standards and specifications
- Approving alternatives and substitutes
- Cleaning innovation by military organisations
- Controlled and prohibited uses

1500 Outline of Leadership in Military-Specific Refrigeration and Air Conditioning

- Flammability and acoustic requirements for critical military applications
- Retrofit of shipboard refrigeration and air conditioning
- Refrigerant management for legacy systems

Rapid implementation of new technology

16:00 Refreshments in Lobby

16:15 Agreement on Workshop Report—Fabiola Hall