



The National Search and Rescue Committee

Suite 3106 • 2100 2nd Street SW • Washington DC 20593-0001
Phone: (202) 372-2075 Facsimile: (202) 372-2912

Department of Homeland
Security

Department of Defense

Department of Interior

Department of Commerce

Department of Transportation

Federal Communications
Commission

National Aeronautics and
Space Administration

MINUTES

Regular Session 02-09
July 23, 2009
U. S. Coast Guard Headquarters
Washington, DC 20593-0001

INTRODUCTION

The meeting convened with CAPT David McBride, USCG, as Acting Chair.

CAPT McBride welcomed everyone and noted that the current Committee Chair is RADM Timothy Riker (USCG).

During his introductory remarks, CAPT McBride noted with appreciation the contributions that CDR Matt Neidzwiecki (OSD/DPMO) had made to the Committee's work as the Department of Defense (DOD) Member; CDR Neidzwiecki is nearing the end of his current military assignment.

CAPT McBride also welcomed a visiting representative of the Canadian National SAR Secretariat (NSS: www.nss.gc.ca/), Mr. Graham Newbold.

CAPT McBride briefly mentioned a number of activities involving the Coast Guard:

- The United States is working on an Arctic Memorandum of Understanding (MOU) with other involved nations;
- The Coast Guard and other Agencies are seeking FY12 funding for the Distress Alerting Satellite System (DASS); and
- The maritime search planning software SAROPS is being introduced to other nations with training being provided to Malta and Mexico.

MINUTES

The Committee **approved** the minutes of the February 19, 2009, meeting.

MEMBER AGENCIES

a. Department of Commerce

Mr. Ajay Mehta (NOAA) said that NOAA is working with the Department of State (DOS) on arrangements to send SARSAT distress alerts directly to Cuba these are currently handled by liaison between Cuba and Rescue Coordination Center (RCC) Miami. A diplomatic note to Cuba is being prepared that will propose how this new arrangement could be handled. Some *expected* highlights of the upcoming October Cospas-Sarsat Council meetings are that:

National Search And Rescue Committee

- The Council will sign an agreement with EUMETSAT on the new middle Earth Orbit SAR (MEOSAR) system that will include DASS;
- The Council will agree to develop a MEOSAR implementation timeline that will account for implementation of new beacons for MEOSAR and an international MEOSAR proof-of-concept phase (Europe has said that it can have a fully operational MEOSAR system by 2013, but Cospas-Sarsat cannot be ready to adopt it that soon); and
- Plans will be finalized on how to replace the Head of the Cospas-Sarsat Secretariat (Mr. Daniel Leveque), who is expected to retire at the beginning of 2012 (interested candidates from the United State, France, Canada and Russia will be considered).

Mr. Mehta reported that a NOAA Independent Review Team had assessed the National Oceanic and Atmospheric Administration (NOAA) Search and Rescue Satellite-aided Tracking (SARSAT) Registration Database and developed numerous recommendations to an incident involving the loss of six lives aboard the vessel Lady Bird where the beacon used had registration problems. NOAA needs to involve the other SARSAT Agencies in reviewing the IRT recommendations.

The new memorandum of agreement (MOA) among the partner SARSAT Agencies still needs to be signed by the National Aeronautics and Space Administration (NASA) and the Air Force.

b. National Aeronautics and Space Administration

Mr. Dave Affens (NASA) reported that NASA, which supports the Committee's research and development (R&D) needs, has been struggling for funds for this purpose. The NASA SAR Mission Office has moved under the Astronaut Safety Program, which is a Program that is clearly part of NASA's mission, so the funding situation may improve.

The Secretary mentioned an upcoming meeting with NASA (August 4th) to discuss potential use of emergency position-indicating radio beacons (EPIRBs) aboard NASA's new space shuttle.

c. Department of Interior

Mr. Dean Ross (NPS) reported that the National Park Service (NPS) Reference Manual 59 on SAR is out for final comment, and will be available to post on the NSARC website when released. Also, the Park Service is continuing to test satellite communications and tracking equipment used by park visitors and potentially by rangers to assess capabilities and limitations of various systems and equipment.

Mr. Bob Markle (RTCM) invited the NPS to participate in the Radio Technical Commission on Maritime Services' (RTCM's) Special Committee on Satellite Emergency Notification Devices (SEND) and share the results of its work. Mr. Newbold added that Canadian SAR authorities would also be interested in the results of the Park Service tests.

Mr. Ross said that the Assistant Secretary for Indian Affairs had authorized establishment of four 22-person Tribal Response Teams to deal with cultural issues and emergencies, mostly in isolated areas; the goal is to have these teams operational by August 2010.

The NPS will have a SAR line item in its FY11 budget for the first time.

NPS had completed its 8th international SAR liaison effort; SAR is a high priority for some of the nations involved. During these meetings, the NPS discussed the work of NSARC and other national interagency efforts. Albania adapted some of the *National Response Framework* (NRF) Emergency Support Functions for its use.

The NPS had experienced a recent fatality in a fire, which had prompted a stand-down for a national investigation concerning the incident.

National Search And Rescue Committee

d. Department of Transportation

Mr. Eugene Jiggitts (FAA) indicated that during a recent visit to the North American Aerospace Defense Command (NORAD), the U.S. Northern Command (USNORTHCOM) had inquired about use of the FAA's sensor-rich unmanned aerial vehicles (UAVs) for SAR, and requested an FAA liaison contact to coordinate such use.

Mr. Russ Levin (USCG) pointed out that UAV's could potentially provide relay of VHF Channel 16 communications so that Coast Guard aircraft would not need to be dispatched.

Mr. Dave Edwards (USCG) added that the International Civil Aviation Organization (ICAO) is also looking into use of UAVs and stressed that the United States should be involved in that work. Mr. Dave Fuhrmann (USAF) indicated that the Air Force has been involved with ICAO on UAVs, and that UAVs are also used to support firefighting.

COL Scott Winegar (NGB) asked how UAV image acquisitions will be integrated and coordinated. Mr. Fuhrmann replied that the 1st Air Force coordinates requests for UAV data.

The FAA is trying to find out who would like to use its UAVs and needs to develop rules of engagement and how to handle aircraft separation, which is complicated by the diversity in sizes of UAVs.

The Secretary inquired about the status of the FAA response to the National Transportation Safety Board (NTSB) on its recommended carriage of 406 MHz emergency locator transmitters (ELTs), and the FAA's associated cost-benefit analysis. CAPT McBride emphasized that the Committee would like to see the response so it can supplement it from the SAR perspective. Mr. Jiggitts said that a draft reply had been completed.

e. Department of Defense

Mr. Fuhrmann reported that the Economy Act concerns related to the SARSAT MOA that was holding up Air Force transfer of SARSAT funds to NOAA had been resolved, but that it remained uncertain when the Air Force would sign the MOA.

The Air Force RCC is taking bids on development of non-proprietary software to provide the functionality comparable to SARMaster, to make it easier and more affordable to share data with State SAR authorities and others; Google Earth or NASA's Worldwind applications might be considered for incorporation into the new application. Mr. Cole Brown (NASAR/MD State Police) stated that States want and need this functionality, and that they use SARMaster even with its limited database access.

CDR Neidzwiecki stated that USNORTHCOM had been interested in taking over the Secretary of the Air Force's civil SAR role of SAR Coordinator; this chain-of-command issue was expected to be decided soon, and is not expected to impact day-to-day conduct of DOD's responsibilities under the *National Search and Rescue Plan* (NSP). He added that he had received most of the review inputs from within DOD on the updated *Catastrophic Incident SAR Addendum*, and he is trying to expedite the DOD clearance.

The Air Combat Command is finalizing funding requirements to cover the Air Force share of the DASS satellite equipment integration and other costs. CDR Neidzwiecki was expecting an Air Force letter to be sent to the Interagency Forum for Operational Requirement (IFOR) to help obtain formal IFOR approval to put DASS equipment aboard the Global Positioning System (GPS) satellites so the United States can accept Canada's offer to provide the DASS equipment. The IFOR needed Air Force and Coast Guard letters stating that they intend to request FY12 funding for DASS. Canada needs a reply by the end of August when its fiscal year ends.

Ambassador Ray will be leaving as head of the Defense Prisoner of WAR/Missing Persons Office (DPMO) at the end of July; no replacement had been named.

National Search And Rescue Committee

CDR Neidzwiecki expressed appreciation and praise to the Committee for its hard work and accomplishments during his tenure as DOD's Member.

f. Department of Homeland Security

Mr. Dean Scott (FEMA) stated that, with the new Administration, the Federal Emergency Management Agency (FEMA) has a lot of new people, including the new Administrator Craig Fugate, and that the Agency has aggressive plans for favorable change. This includes more focus on initial response rather than follow-on activities. Partly due to the CISAR work of NSARC, FEMA is looking at expanding Federal SAR capabilities, pending resolution of funding issues.

The Secretary suggested using DOT's \$5.8 M/human life saved to help show the benefit of additional resources.

Mr. Scott said that FEMA's participation in the State SAR Coordinators meeting before the NASAR Conference in May was very beneficial, and noted that there were and are wide misunderstandings about State roles and about Emergency Support Function 9 (ESF #9), Search and Rescue.

ESF #9, the first NRF Annex to be revised, has been signed off; the procedure used will be the pattern for updating other Annexes. The changes to ESF #9 are substantial and beneficial.

Mr. Scott noted that State and local adoption and use of the Committee's CISAR Addendum had been high, and the Section on geo-referencing has proven to be particularly valuable.

The Secretary said the DASS had been briefed to high levels within the Coast Guard.

The Coast Guard has two SAR-related blogs that are updated regularly (www.amver.com and www.uscgsar-onscene.blogspot.com), and is working on version 2.0 of the software for Amver, a worldwide ship-reporting system for SAR. Also, the maritime search planning software SAROPS is being rolled out to Greece, Vietnam, and other nations that want it. The Coast Guard is developing guidance for ESF #9, particularly for flooding scenarios, on how to carry out 'Primary Agency' and 'Lead Primary Agency' responsibilities.

In response to questions from Mr. Markle and Mr. Mehta, the Secretary said that the Coast Guard is developing software to enable use of Long-range Identification and Tracking (LRIT) data for SAR; LRIT is a worldwide system sponsored by the International Maritime Organization (IMO) to track ships at sea for national security purposes. Ships must report to LRIT at least every six hours. The Coast Guard is also gearing up to use Automatic Identification System (AIS) data from ships and other types of vessels. Mr. Edwards added that AIS is a line-of-sight maritime system, but that the United States and other nations have been looking at possibly relaying AIS data via satellite, which is challenging.

Mr. Affens mentioned a website (www.sailwx.info/shiptrack) that provides ship locations based on data from the World Meteorological Organization's Volunteer Observing Ship (VOS) Program, which Mr. Edwards thought is based on use of the Iridium satellite communications system.

g. Federal Communications Commission

There were no activities reported from the FCC. However, Mr. Darryl Smith (FCC) introduced himself, referred to SAR training he had received, and indicated that he is looking forward to serving as the new FCC Member of the Committee.

WORKING GROUPS

a. Research and Development

Mr. Affens advised that the R&D Working Group reviews technologies that might potentially be useful for SAR. The Committee used the R&D Group initially for developing DASS based on recommendations of a Canadian study on what type of system would be best to replace the existing

National Search And Rescue Committee

Cospas-Sarsat satellite constellations. NASA completed a national proof-of-concept using repeaters on nine GPS satellites and a ground station (MEOLUT) at the Goddard Space Flight Center. NASA's funding for DASS is currently exhausted. Nations operating MEOLUTs need to work on exchanging data and on common frequency measurement methods.

Mr. Roy Dreibelbis (CSC/NASA) reported on software being developed by NASA to help identify high probability areas for finding aircraft that disappear from radar coverage and cannot transmit their locations. This software is based on NASA's Worldwind application, which is similar to Google Earth, but with more capabilities. The program helps to visualize what might have happened to an aircraft. AMES Research Center, which manages Worldwind, has developed version 6.0 which displays terrain contours in addition to weather. The AFRCC is experimenting with the program. Statistical data from 169 actual aircraft cases was used to refine probabilities.

Mr. Affens solicited ideas for topics to cover at the next meeting of the Group.

b. Correspondence

The Secretary reviewed progress on publications the Group had or was working on as follows:

- ESF #9 is being finalized;
- The CISAR Addendum, 2.0, is about 50% bigger, and is due out in August pending DOD finishing its review;
- The Air Force, FEMA, and the NPS are helping the Group to finish the draft Inland SAR Addendum, and hope to nearly finish the draft in August;
- The *Legal Addendum* is undergoing final legal review; and
- The *National Search and Rescue Manual* (NSM) is about 50-60% finished.

The Secretary added that the Coast Guard is leading the international effort to update the *International Aeronautical and Maritime Search and Rescue Manual* (IAMSAR Manual), and to establish an improved international amendment process for the Manual; the NSM, when complete, will be a supplement to the IAMSAR Manual.

PRESENTATIONS

a. Automatic Dependent Surveillance - Broadcast (ADS-B)

Mr. Jiggitts said that the FAA is using ADS-B to improve the air traffic control (ATC) system; the FAA expects to have its planned 794 ground stations operational by 2013. ADS-B will help ATC handle aircraft sequencing and separation, and will help ADS-B-equipped aircraft to see the same airspace picture that ATC will see and avoid collisions. This will improve safety and allow reduced separation. Being GPS-based, ADS-B is more accurate than radar and has a higher refresh rate. All aircraft, including aircraft on international flights into U.S. airspace, will have to have ADS-B for the system to work. About 10-11k aircraft talk to ATC on a daily basis.

There were several comments and questions that prompted Mr. Jiggitts to offer to arrange a presentation by an ADS-B expert to the R&D Working Group.

b. Satellite Emergency Notification Devices (SEND)

LCDR Kathy Niles (USCG) reported that SPOT, a commercial subscription communications system with GPS-based tracking and a 911 feature, is an example of a system that uses a SEND. SENDs will have varying degrees of tracking, messaging and alerting potential. New SPOT devices will have an "SOS" 911 button to alert a commercial center that locates the devices, checks their registration data, and relays alerts to responders.

National Search And Rescue Committee

LCDR Niles said that the Coast Guard is coordinating with SPOT on whom to call for SAR response.

RTCM has a Special Committee (S/C 128) that is developing a voluntary standard for SENDs, and refining the technical provisions. In response to a question from Mr. Mehta, Mr. Markle explained that RTCM's personal locator beacon (PLB) standard just applies to PLBs, while the SEND standard will apply to multi-function commercial services.

Mr. Edwards commented on plans to submit a paper to the ICAO-IMO Joint SAR Working Group introducing the "SEND" acronym and proposing that international guidance be developed for use of such devices for distress alerting.

Mr. Affens cautioned that without system monitoring and satellite testing such as used by Cospas-Sarsat, systems that support SENDs may not be as reliable.

LCDR Niles recommended that the Committee establish a SEND Working Group to consider relevant SAR responder issues, and suggested that the Coast Guard, NPS, AFRCC and others should participate. LCDR Niles offered to lead the Group.

After a brief discussion, the Committee **approved** establishment of an NSARC SEND Working Group.

RELEVANT MEETINGS and ACTIVITIES

a. National Association for Search and Rescue (NASAR)

Mr. Dan Hourihan, NASAR President, noted that the NASAR Conference was held in Little Rock, AR, and the preceding two-day State SAR Coordinators Meeting had been successful and thanked CAPT McBride for being the Conference keynote speaker. The next sessions of these meetings will be in May 2010 (likely the week following Memorial Day) in Panama City Beach, FL, to be hosted by General Morrow of the 1st Air Force.

NASAR is a 10,000 member non-profit land SAR organization whose current focus is developing training for best practices and improving the quality and delivery of its curriculum.

An associated NASAR Council had been created, to which Mr. Brown had been elected Chair. Mr. Brown plans the State SAR Coordinators Meetings;

Mr. Scott has become the next official NSARC representative to fill the Committee's standing liaison position on the NASAR Board of Directors.

Mr. Hourihan had discussed SAR at the National Sheriffs' Association (NSA) meeting in June, and plans have been made for the NSARC Secretary to give a presentation on CISAR at the NSA's next meeting.

b. National and International Activities

Mr. Dave Edwards (USCG) provided information on selected recent and upcoming activities as discussed below.

- (June 09 and ongoing) – Response to the Air France aircraft disaster in the Atlantic had become a recovery effort; the U.S. Southern Command (USSOUTHCOM) had been involved in initial SAR response and the Coast Guard had been using SAROPS to help locate the "Black Box";
- (April 09) – Coast Guard Headquarters and National SAR School staff had conducted IMO-sponsored SAR training in Italy. Attendees were from several developing nations;
- (May 09) – SAR Meeting for North America, Caribbean and South America, held in Costa Rica: as requested by FAA, USCG led US delegation to this western hemisphere SAR meeting

National Search And Rescue Committee

organized by the International Civil Aviation Organization (ICAO). NOAA and SOUTHCAM also presented;

- (June 09) – Asia-Pacific Regional Implementation Group – FAA delegation with USAF and USCG subject matter experts. USCG search planning methodology for 121.5 MHz distress beacons was adopted for regional use. Meeting reps were highly tuned in to the FAA observation that “any 121.5 alert now heard is from an actual distress beacon”;
- (July 09) – The Coast Guard attended a SAR MOU signing ceremony in Malta and delivered SAROPS software and training to Malta: the United States European Command (USEUCOM) has supported Malta’s efforts to include SAROPS in the curriculum of Malta’s regional training center;
- Upcoming: Polar issues: Active at both Poles. State Department, NOAA, National Science Foundation USCG heavily engaged in April 09 annual convening of the Antarctic Treaty Consultative meeting (held in Baltimore) – passenger ship SAR was major topic and has been expanded to include IMO initiatives. Draft regional SAR MOUs (crafted by USCG) are being reviewed by range of US agencies – draft Arctic MOU among the 8 states will be discussed at an international Arctic Task Force meeting planned for November 2009 in Washington, DC; the draft Antarctic SAR MOU (among the 5 states encircling Antarctica) might be discussed at the New Zealand-hosted meeting for Antarctic maritime safety in December 09.
- September, 16th session of the *ICAO/IMO Joint Working Group on SAR*. USCG and USAF/AFRCC are two of the total of 16 SAR experts on this Group which sets the stage for much of the SAR progress made by IMO and ICAO. USCG & USAF have major role in revamping the IAMSAR Manual – all 3 volumes are being reviewed but Volume III is on fast track since it is carried on vessels and aircraft.

Dr. Gustavo Bisbal (DOS) added that Ministers representing the eight Member States of the Arctic Council had approved the establishment of a Task Force, with all Arctic States likely participating, which is expected to convene later this year to develop and complete negotiation of an Arctic SAR MOU for the next Ministerial meeting in 2011. DOS and the Coast Guard are developing a concept paper to inform the U.S. Agencies interested in this effort. The anticipated product is a non-binding MOU that applies to the entire Arctic Region and provides for international aeronautical and maritime SAR cooperation.

c. Radio Technical Commission for Maritime Services (RTCM)

Mr. Markle commented on Special Committee 110’s work as follows:

- RTCM had petitioned the FCC to update its PLB authorization process by referencing RTCM’s new PLB standard, which improves the test method for the 406 MHz signal received by Cospas-Sarsat satellites and the 121.5 MHz homing signal;
- S/C 110 is continuing PLB performance testing of the reliability of position determination in beacons equipped with GPS processors (“location protocol” beacons), is considering use of a GPS simulator that models a narrow view of the sky to ensure the best possible beacon performance, and may complete this work in September;
- S/C 110 will resume work on performance standards for GPS processors in VHF handheld radios based on an FCC regulatory proposal for new marine VHF handheld radios to include a GPS processor; the radio would send a GPS location with distress alerts; the Coast Guard is considering a requirement to carry such radios on small commercial vessels without a fixed radio installation; a recent revision to the International Telecommunications Union (ITU) Digital Selective Calling (DSC) standard will help expedite this work;

National Search And Rescue Committee

- S/C 110 continues to support the work of Cospas-Sarsat through active participation and technical submissions to an Experts Working Group (EWG) and to Joint Committee (JC) meetings; the JC is considering technical issues related to next-generation beacons for the MEOSAR system; and
- S/C 110 is also looking at EPIRBs (not PLBs) possibly using an AIS message rather than a 121.5 MHz homing signal for locating; with the Coast Guard transitioning to homing on 406 MHz, the power used for the 121.5 MHz homing signal might be better used for transmitting an AIS message; this would make the EPIRB visible to commercial vessels, which are increasingly equipped with AIS; IMO has approved a new work item on this subject, which will be taken up next March.

RTCM's new Special Committee (S/C 128) on the performance of SENDs, such as SPOT, met in May. The Coast Guard has asked RTCM to develop standards solely for the emergency notification and location functions of these devices. S/C 128 has started to describe the required characteristics of these devices.

d. **Global Maritime Distress and Safety System (GMDSS) Task Force**

CAPT Jack Fuecshel (USCG, retired) highlighted the following Task Force items from the May 7, 2009, meeting in St. Petersburg Beach, Florida, during the RTCM Annual Assembly:

- The Task Force agreed to Petition the FCC to amend its Rules to permit use of VHF handheld radios ashore in maritime areas; the FCC has since put out a Petition on this for public comment;
- The Task Force agreed to recommend to the FCC and Coast Guard the Task Force proposal for assignment of maritime mobile service identity (MMSI) numbers to handheld radios and to dependent craft of larger vessels;
- The Coast Guard indicated that a decision was still pending on whether to upgrade the coastal watch on 2182 kHz; a decision to discontinue MF operations would have implications for GMDSS implementation and require revised carriage requirements for safety equipment for regulated vessels; and
- The IMO Maritime Safety Committee approved requests from the United States and others to task COMSAR Subcommittee to review EPIRB specifications with a goal of incorporating AIS technology for on-scene locating, and to identify elements of the GMDSS which should be upgraded or dropped as part of a larger goal of GMDSS modernization.

Mr. Russ Levin (USCG) said that about five alternatives are being considered for the 2182 kHz watch, and that a recommendation would be made to the Coast Guard Commandant.

RTCM has a contract with the Coast Guard to support the Task Force, and reports of the meetings have a distribution of about 2,000, including to State Boating Law Administrators.

The next Task Force meeting was scheduled for August 6, 2009, at RTCM Headquarters in Arlington, VA.

e. **Civil Air Patrol (CAP)**

Mr. John Swain (CAP) reported that two CAP aircraft had been equipped with full-motion video.

During September, a representative of Skywatch CAP in the UK will be in the States for a month to visit locations of SAR interest around the Country.

Congress had approved FY10 funds for CAP to purchase additional aircraft.

National Search And Rescue Committee

CAP had conducted surveillance missions for certain events in Canada, and is discussing additional use of CAP with Canada, the FAA and DOS.

f. **National Institute for Urban Search and Rescue (NIUSR)**

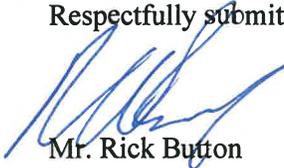
Mr. Dan Lemon provided information on a leadership workshop on community resilience scheduled for October 19-24 at the El Capitan outdoor resort near Santa Barbara, CA, and encouraged attendance. The event will focus on technology breakthroughs and caring for communities under stress, and will include a one-day course on the tactical science of readiness and response for disasters and unexpected emergencies. Distinguished leaders from organizations such as Mindtel, Cisco, the City of Goleta, CA, San Diego State University, National Defense University, and INSTEDD will be participating. More information is available at www.niusr.org.

NEXT MEETINGS

The next regular session of the Committee was scheduled for December 3, 2009.

While closing the meeting, the Chair commented on rapidly growing use of social networking media as a potential new aspect of distress alerting and SAR communications. Mr. Hourihan agreed that the current generation of Americans communicates differently, and that this is a definite issue for SAR.

Respectfully submitted:



Mr. Rick Button
Secretary

Approved:



CAPT David McBride
Acting Chair, National SAR Committee

Date: November 23, 2009

Encl: (1) List of Participants

National Search And Rescue Committee

National Search and Rescue Committee (NSARC)

Regular Session 2-09

July 23, 2009

LIST OF PARTICIPANTS

Names		Affiliations
AFFENS	Dave	NOAA
BISBAL	Gustavo	State Dept
BROWN	Cole	MD State Police
BUTTON	Rick	USCG
DREIBELBIS	Roy	CSC
EDWARDS	Dave	USCG
FOSTER	Willie	USCG
FUECHSEL	Jack	GMDSS
FURHMANN	Dave	AFRCC
HOURIHAN	Dan	NASAR
JIGGITS	Eugene	FAA
LEMON	Dan	SAR Consulting, Inc.
LEVIN	Russ	USCG
MARKLE	Bob	RTCM
MCBRIDE	David, CAPT	USCG
MEHTA	Ajay	NOAA
NEIDZWIECKI	Matt, CDR	OSD/DPMO
NEWBOLD	Graham	Canada NSS
NILES	Kathy, LCDR	USCG
ROSS	Dean	NPS
SCHUDA	Paul, Dr.	CAP
SCOTT	Dean	FEMA
SMITH	Darryl	FCC
SWAIN	John	CAP
THEODORAKOS	George	NASA/MEI
WHITE	James	FAA
WINEGAR	Scott, COL	NGB