

Scientific Committee for Oceanographic Aircraft Research (SCOAR)

Web/Telephone Conference Meeting

November 4, 2005

Executive Summary

The UNOLS Scientific Committee for Oceanographic Aircraft Research (SCOAR) held a one-day meeting using telephone and web conferencing through the UNOLS Office on November 4, 2005. Reports by Agency representatives and CIRPAS on the current status of research aircraft operations were presented.

Recommendations

Committee Action Items:

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I. [Meeting Agenda](#)

Proceeding of the meetings

Welcome and Introductions

The UNOLS Scientific Oceanographic Aircraft Committee (SCOAR) meeting was held via Web and telephone conference on Friday, November 12, 2004. At 0810 attendees began logging into the meeting. John Bane, SCOAR Chair, called the meeting to order. Introductions were made. Meeting participants were:

Cheryl Yuhas NASA

Eric Berkowitz - NOAA NMAO

Daniel Riemer - RSMAS

Steve Hartz - UAK

Charlie Flagg - SUNY

John Freitag - ONR

John Bane - UNC

Mike Prince - UNOLS

Dick Zimmerman - ODU (phone only)

Introductory remarks: John Bane proposed to the committee that one meeting per year be in person and

then one or more focused phone/internet meeting(s) of shorter duration and perhaps with fewer participants. There was consensus that having one in-person meeting and several short, targeted Internet meetings will work best. This will tend to keep the fire burning on issues that we are working on.

Accept the minutes of the April 2005 SCOAR Meeting

A motion was made and approved to accept the minutes of the April 2005 meeting.

The agenda will include the white paper, membership, community feedback and safety standards.

Agency Reports

UNOLS - Mike Prince

Fleet renewal - reviewed the different processes that are going on, including Regional and Ocean Class research vessels, the Alaska Region Research Vessel, a new 3-D seismic research vessel (*Marcus Langseth*) and the replacement Human-Occupied Vehicle (HOV). UNOLS has also formed a sub-committee to develop guidelines for addressing the American's with Disabilities Act (ADA) at the request of NSF. Bob Bluth was asked if CIRPAS had any guidelines that apply to aircraft. He said they did not.

CIRPAS - Bob Bluth

FY05 operations ended well. Missions for FY06 are still pending. A brief synopsis of potential projects was provided:

- In January, their new towed device is to be tested.
- In February and March NOAA/NCOS will conduct a test of a winds LIDAR system with a range of about fifteen miles, mounted in a turret out the emergency exit door. This instrument might have applications for the ocean, but it is not tested yet. It might also evolve to a new satellite instrument.
- June - RSMAS project, funding not determined yet (ONR).
- August - Steve Ramp (NPS) involved with the AESOP, ASAP programs with aircraft support along with several research vessels.
- Pollution project in Texas with CALTECH as PI using drop-windsonde devices.

Equipment updates:

- Cloud physics and aerosol instrumentation are in and being deployed.
- CIRPAS has a Synthetic Aperture Radar (SAR) system that is obsolete for its use on the UAV, but might be applicable to ocean science. It could fit in the downward looking port of the Twin Otter and give you physical properties of the ocean surface.

Alot of their instrumentation budget comes from SBIR. Their ONR budget will be about half of what they usually get. The white paper is an opportunity to advertise what the opportunities are for using instruments. The SAR and the towed platform are examples of instruments that could be highlighted. Short articles in UNOLS news and other venues could also inform folks of these capabilities.

ONR - John Freitag

ONR is still on a continuing resolution, but it looks like their funding will be similar to what it has been. The costs of operating the ships will be a big factor in determining his budget for other items such as FLIP and CIRPAS. His budget is right at the edge and any increase in costs or decrease in budget would

have a significant impact.

NOAA - Beth White

All mission goal teams are presenting their five-year goals for the 2008 to 2012 FY's.

They had an extremely busy hurricane year and had many flight hours on the P3 and other NOAA planes. They also used the Bell helicopter to help with logistics for NOAA personnel in the Gulf region. The crews and shore personnel for OREGON II and GORDON GUNTHER were severely impacted with many losing their homes. The fisheries lab in Pascagoula was destroyed by the hurricane. Computers, supplies, fuel, etc. had to be brought in to the ships so they could do channel clearing exercises. NOAA did receive some supplemental funding. They anticipate more follow up from Congress and others on this. Dr. McFadden and others have been dealing with the aftermath of Wilma.

Next year, which could be as busy as this year, NOAA has the Ozone depletion project over the Texas area during the Hurricane season. This will have an impact on the availability of P3's during hurricane season because the mobilize and demobilize time for air chemistry projects is significant.

They are looking at the possibility of a third P3. The unmanned aircraft (UAV) demo projects last year and other attempts to find funding for the development of these aircraft for NOAA uses. Plan to sell the Bell 206 and MD 212 helicopters and the amphibious aircraft in the west. They would use these funds to try to acquire an additional Twin Otter. Planning has become difficult.

NRL - George Salitsky (provided a brief written report)

They took delivery of a new King Air small research aircraft, similar to the one operated by the Univ. of Wyoming, although it does not have a dropsonde chute.

NASA/ICCAGRA - Cheryl Yuhas

Restructuring of the Earth Science directorate is complete. They have the same aircraft, as follows:

- P3B - undergoing final repair, operated with a new group of people, based out of Wallace, often in California. This was the first mission to Alaska for study of sea ice.
- DC8 - operated by the University of North Dakota, is now located there at Grand Forks Air Force base hanger. First mission is the stardust reentry mission and then they will be involved in the Texas air quality project. They might also be involved in the AMMA project off of Africa.
- Still have the ER2. Funding is at the subsistence level, just enough to keep it alive, so it costs more per project to fly it.
- WB57 will probably be updated.
- They have an ALTAIR UAV and will be purchasing a Predator B UAV that will be converted for aeronautical research.
- Procurement arrangements for twin otters, king airs and some other aircraft.

They are trying to acquire the prototype Global Hawks. They are waiting for the Air Force to be ready to transfer them and then they would need a year to convert them.

They would be used for ORA validation, atmospheric chemistry and satellite validation. The WB57 has upper troposphere in-situ chemistry sensors, which makes it essential for validation of satellite data.

During the coming year, possible missions could include ORA validation, ice mapping, hurricane genesis, wildfire response missions, and UAV missions with NOAA including a demo with ALTAIR. An

aerosonde joint mission with NOAA flew into Hurricane Ophelia at 1000 feet, which gave an interesting data set, including temperature, pressure and wind sensors. Spent four hours in the hurricane and was the first successful mission of an unmanned vehicle into and out of a Hurricane or large tropical storm.

John Bane asked if the use of the aircraft operated by North Dakota National Suborbital Education and Research Center would still be coordinated through NASA. Cheryl said that if it involved a NASA mission, yes, otherwise it could be coordinated directly with N.D., with approval from NASA. N.D. will have a booth at AGU.

John Bane felt that the sense of the NASA presentation was more positive than previous meetings. Most all NASA aircraft are flying and there are procurement vehicles for others.

ICCAGRA - pretty much inactive, except the data standards group, which is working on inter-operability of data. John Bane and Cheryl felt that holding SCOAR and ICCAGRA meetings jointly is a good idea. John will coordinate with Cheryl.

Membership - four original members are finishing their first term. John Bane will work with these members to determine a set of staggered terms and then present that proposal to the committee. John also mentioned the possibility of someone else becoming chair. He will discuss this with the members.

White Paper

The group held a discussion of the purpose and how it is different from the articles recently published. This would be a starting point for an assessment of what the ocean sciences (and perhaps other communities) might need in terms of aircraft facilities. The paper would give an indication of what can be done with aircraft and stimulate interest and thinking about how scientists might use aircraft in the future. This would also encourage the use of aircraft. Establishing SCOAR and writing about it was step one. Everyone knows that UNOLS is the first step for use of ships in oceanography. Now, people can learn that UNOLS could be step one for using aircraft in ocean sciences.

The second step is to communicate with the community about how to use aircraft in the future. The White Paper and the workshop should look ahead at what we can do in the future.

Dick asked if UNOLS really was recognized as the first step for use of aircraft. UNOLS only serves as a clearinghouse for information on aircraft facilities and is only involved with one operator.

John Bane discussed the reasons why someone might go to an aircraft workshop. One would be the potential for allocating money for future projects. However, we won't have any money available. The other reason is to talk about what you have done with aircraft in your science. It is still not clear how you would motivate people to attend.

The committee discussed organizing an oral session, poster session and town hall meeting on aircraft uses in ocean science at the Ocean Sciences meeting in two years. SCOAR would plan a focused phone meeting early next year on finishing the white paper.

It was suggested that someone go through the abstracts for AGU and look for presentations or posters that include aircraft observations and compile a list of people for future use.

Charlie recommended that we keep the white paper as an evolving document that describes what has been done with aircraft. We should also keep a running list of projects using aircraft on the UNOLS SCOAR page. John wants the white paper to be a looking ahead document, but it has to start from what we are doing now.

Almost all examples we have now are physics based, so we need to add others such as LIDAR. Need to add examples of platforms, such as AEROSONDE and the flying rubber boat, need information on instruments with description of what they can do and perhaps a picture.

Dick thinks that the document needs to be provocative to excite interest. A question we might ask is that given that we can do all these exciting things with aircraft, why aren't we utilizing aircraft more routinely in ocean sciences.

Suggested Title - Why are you not using aircraft in your Ocean Science research?

SCOAR has a role in communicating with the community about the use of aircraft. Can we bring new users to aircraft operators such as CIRPAS?

Charlie thought the style should be made a little more positive to generate more interest.

He asked about a questionnaire, we could put together questions and use it to seek people interested in participating in an oral session or town hall meeting. We could also use this information to produce a report or paper on the need for aircraft facilities.

ICAP safety standards discussion.

Charlie has made some calls, but has not received any return calls. Charlie provided the website for the Aviation Safety Management division:

www.oas.gov/oassafety/office.htm There are many regulations for aircraft that are already being adhered to.

Bob Bluth thought that he could have the GFR (government flight representative) and the government air worthiness representative to the next meeting to help sort out what might be needed for scientists safety standards and perhaps what SCOAR might have to add to the federal regulations.

There was some discussion about the types of missions that might be undertaken and what precautions you might need to take for specific types of missions, including training requirements and equipment.

The GFR would be a good resource for explaining the extra steps that you might need to go through for safe operations for different types of operations.

Initially, we were going to write down everything that needed to be done, but now it seems we want to only add reasonable additional safety steps for science participants on the aircraft when UNOLS arranges for use of a facility. Further, we need to be sure that any facility that is designated as a NOAF in the future is adhering to all applicable safety and operational regulations.

NOAA recently went through a safety stand down for aircraft operations. They have instituted several Aviation Safety Standards with a page detailing this at:

<http://www.nmao.noaa.gov/aviationsafety/safety.html>

NOAA has some specific rules regarding the use of non-NOAA aircraft at:

<http://www.nmao.noaa.gov/aviationsafety/nonnoaa.html>

Next SCOAR meeting - suggestion that it happen at a ship operating institution.

Suggestions include Scripps, Monterey Bay area, or RSMAS. Discussion was held about where to have

the meeting, whether or not having a visit to a ship was important, or whether rather getting the ocean scientists a chance to learn about aircraft is more important.

Meeting was adjourned at 3:45.