

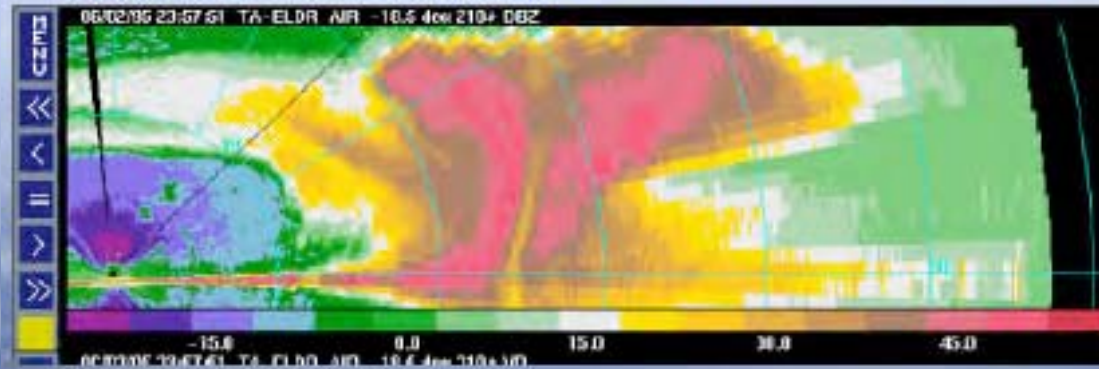
Scientific Committee for Oceanographic Aircraft Research



Meeting at CIRPAS
22, 23 June 2010



SCOAR MEMBERS as of June 2010



Daniel Schwartz University of Washington

James Hain Associated Scientists at Woods Hole

Steven Ramp Monterey Bay Aquarium Research Institute

Daniel Riemer University of Miami, RSMAS

Richard Zimmerman Old Dominion University

Bob Bluth, (ex-officio) CIRPAS, Naval Postgraduate School

Haflidi Jonsson, (ex-officio) CIRPAS, Naval Postgrad. School

Roy Woods, (ex-officio) CIRPAS, Naval Postgraduate School

Steven Hartz, RVTEC Rep (ex-officio) University of Alaska

Nick Shay, University of Miami RSMAS

Philip McGillivray, United States Coast Guard

SCOAR Activities 2009-2010

June 11, 2009: SCOAR Teleconference Meeting

Sept. 15-16, 2009: 2nd Annual Alaska UAS Interest Group

Nov. 9-10, 2009: ICCAGRA The Interagency Coordinating Committee for Airborne Geosciences Research and Applications. Tampa, Florida

Feb. 22-26, 2010: Ocean Sciences Meeting - SCOAR Town Hall Meeting. SCOAR-plus list created.

Ocean Technology & Infrastructure Needs for the next 20 Years -- Poster Session at Ocean Sciences Meeting

June, 22-23, 2010: SCOAR Meeting at CIRPAS.

Sept. 19-24, 2010: MTS/IEEE Oceans Meeting, Seattle
Call for Abstracts, early April 2010.

FACILITIES:

- ◆ **Thank You CIRPAS for hosting our meeting!**
- ◆ Marina Facility
 - ◆ 3500 ft runway - manned operations only
 - ◆ 30,000 sq ft maintenance hangar
 - ◆ Instrumentation and Calibration Laboratory
 - ◆ Maintenance and Payload integration shops
 - ◆ Offices



CIRPAS

- ◆ The Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) was established at the Naval Postgraduate School in Monterey, California by the Office of Naval Research in the Spring of 1996 to provide Manned and Unmanned Air Vehicle flight services to the scientific and engineering communities.
- ◆ CIRPAS became an University National Oceanographic Laboratory System (UNOLS) National Facility on 27 September 2002



THE AIRCRAFT FLEET



UV 18-A Twin Otter



Pelican (2)



Predator (3)

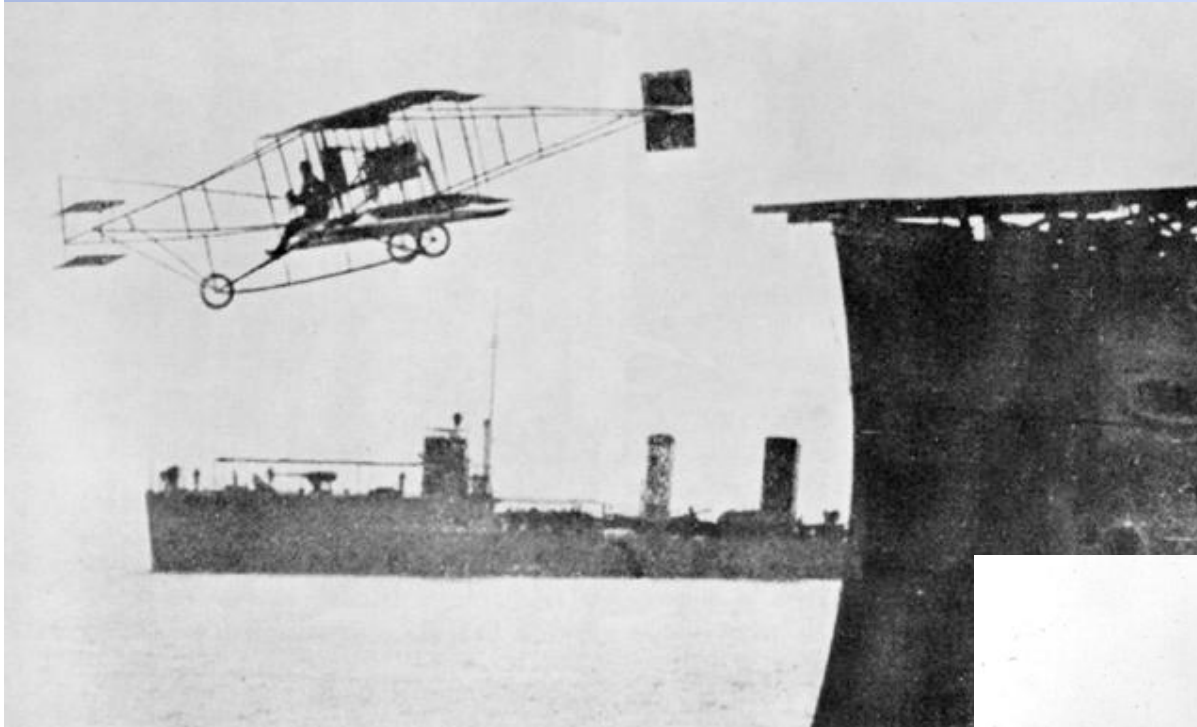
CIRPAS Twin Otter

Center for Interdisciplinary Remotely-Piloted
Aircraft Studies



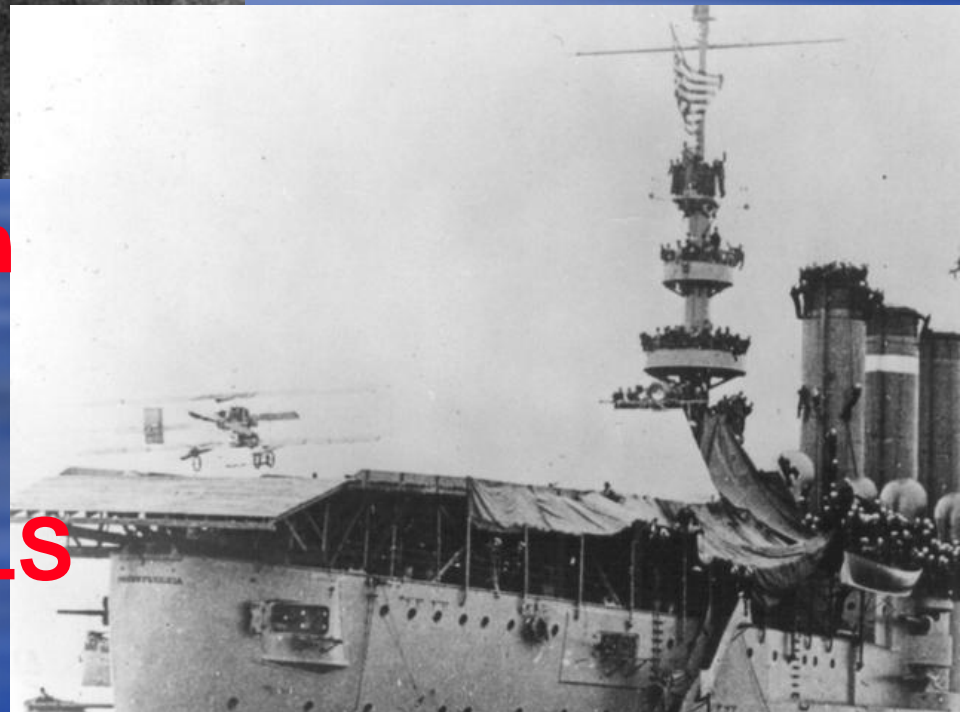


A Century of Synergism: Maritime Air!



Eugene Ely. Nov 1910

**Highlights of the Ocean
Sciences Town Hall
Meeting - Portland, OR.
Presentations on UNOLS
Website...**



Autonomous Aircraft, Scripps, NOAA PMEL, UAF Adv.Ceramic Res. MANTA & launcher



Air (C-130)-deployable Coyote



Courtesy, USCG

MMS U.Michigan Flying Fish Self-relocating ATON Buoy used off Alaskan North Slope



Bering Sea launch and recovery of UAF Unmanned Aircraft



What about a hybrid? UAS and Manned Aircraft...



More to come!

Flux Platforms for Fair to Moderate Weather

Buoy: 10m
Ship: 14m
Aircraft: >33m



Choice of platform in Inhospitable Ocean Environment

1. Buoy – few, fixed-point, motion
2. Ship – slow, motion, flow distortions
3. Aircraft – mobile, low altitude limit
4. Unmanned Aerial Systems (UASs, ex-UAVs) – small payload, underpowered)
5. Modify existing towed target drone technology for controlled height over the sea while tow aircraft is safely above.



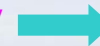
Host aircraft: CIRPAS Twin Otter



Cable
 $\Phi = 1.65 \text{ mm}$
(2.38 mm)



CTV



*What has changed since SCOAR
Was Established?:....*

*UAS are proving to be capable tools in
multiple military and civil applications*

Sensors are smaller, more capable.

*Regulatory issues have replaced
platform limitations as the primary
operational challenge.*

*Funding Agencies are likely to face
Budgetary pressure as deficits explode.*

Opportunities for Air Platforms?

Sun Tzu: “Timing is Everything!”

(Council Slides)

*Where do we want SCOAR to go from
Here?*

Re-visiting the Terms of Reference