

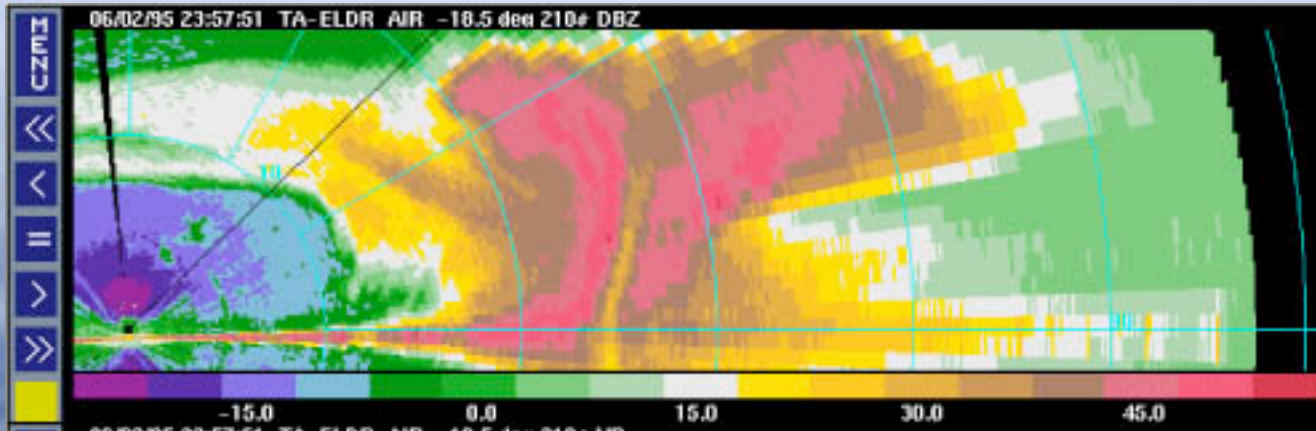
# Scientific Committee for Oceanographic Aircraft Research



**RVOC Meeting  
Rhode Island  
20 April 2010**



## SCOAR MEMBERS as of April 2010



Daniel Schwartz University of Washington

John Bane University of North Carolina

James Hain Associated Scientists at Woods Hole

Steven Ramp Monterey Bay Aquarium Research Institute

Tbd: Open Position...

Richard Zimmerman Old Dominion University

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

Haflidi Jonsson, (ex-officio) CIRPAS, Naval Postgraduate School

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

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



# **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.

# 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



# FACILITIES:

- ◆ Marina Facility
  - ◆ 3500 ft runway - manned operations only
  - ◆ 30,000 sq ft maintenance hangar
  - ◆ Instrumentation and Calibration Laboratory
  - ◆ Maintenance and Payload integration shops
  - ◆ Offices

***Site of June, 2010 SCOAR Meeting...***





# THE AIRCRAFT FLEET



**UV 18-A Twin Otter**



**Pelican (2)**



**Predator (3)**



# ***CIRPAS* Twin Otter**

Center for Interdisciplinary Remotely-Piloted  
Aircraft Studies



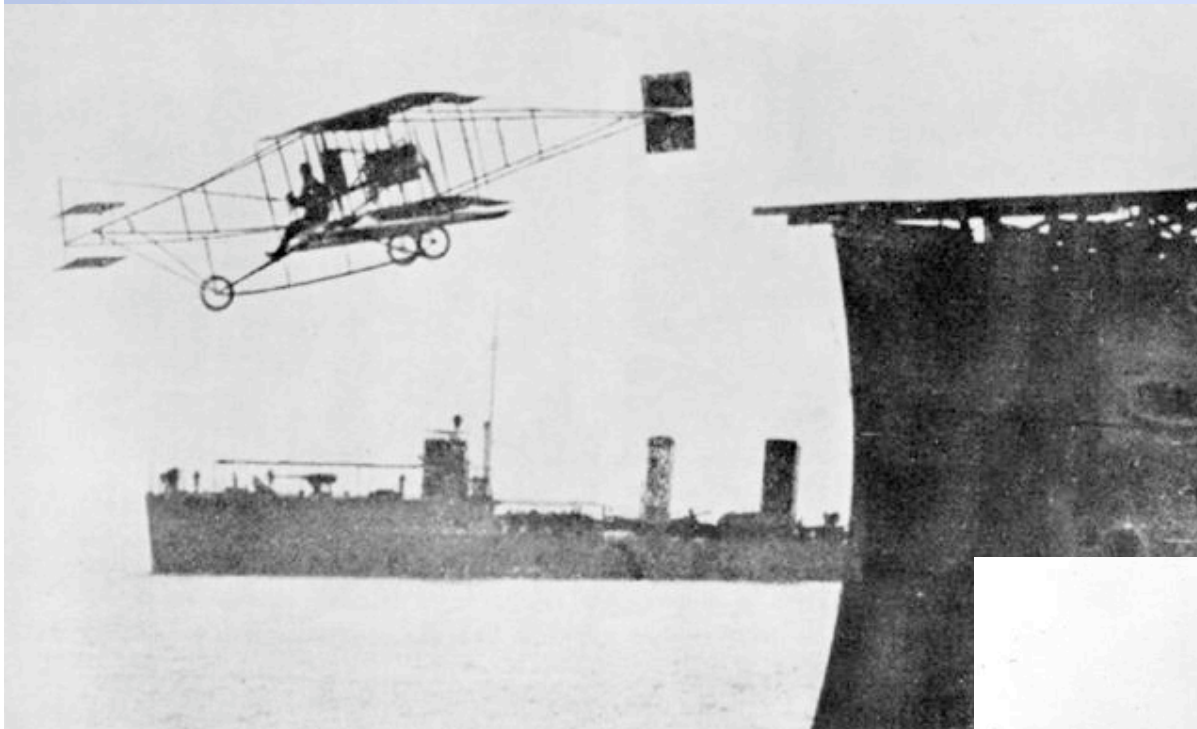




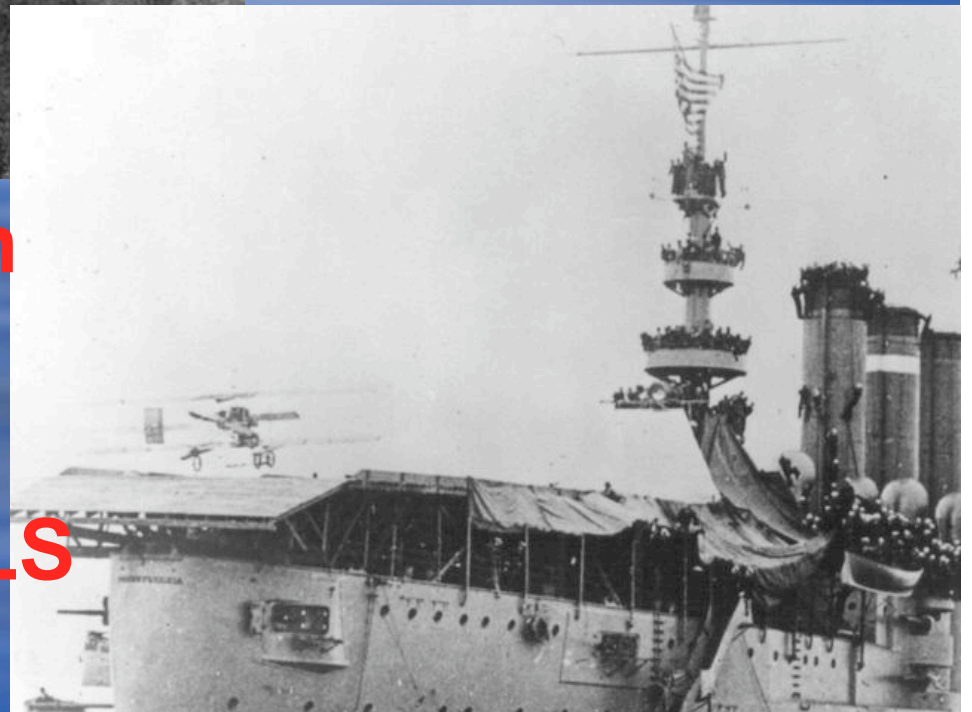


# ***A Century of Synergism: Maritime Air!***

**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





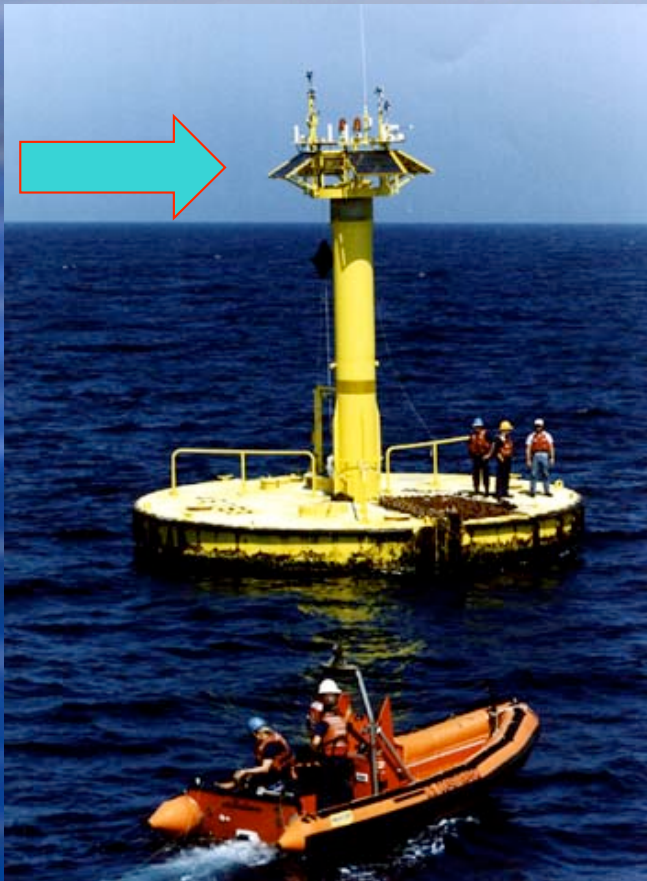
# Bering Sea launch and recovery of UAF Unmanned Aircraft





# Flux Platforms for Fair to Moderate Weather

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



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

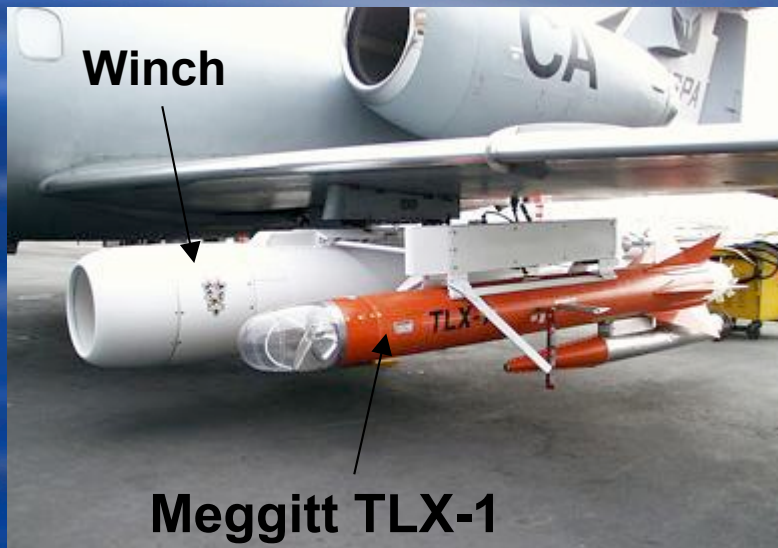


**More to come!**



# 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.

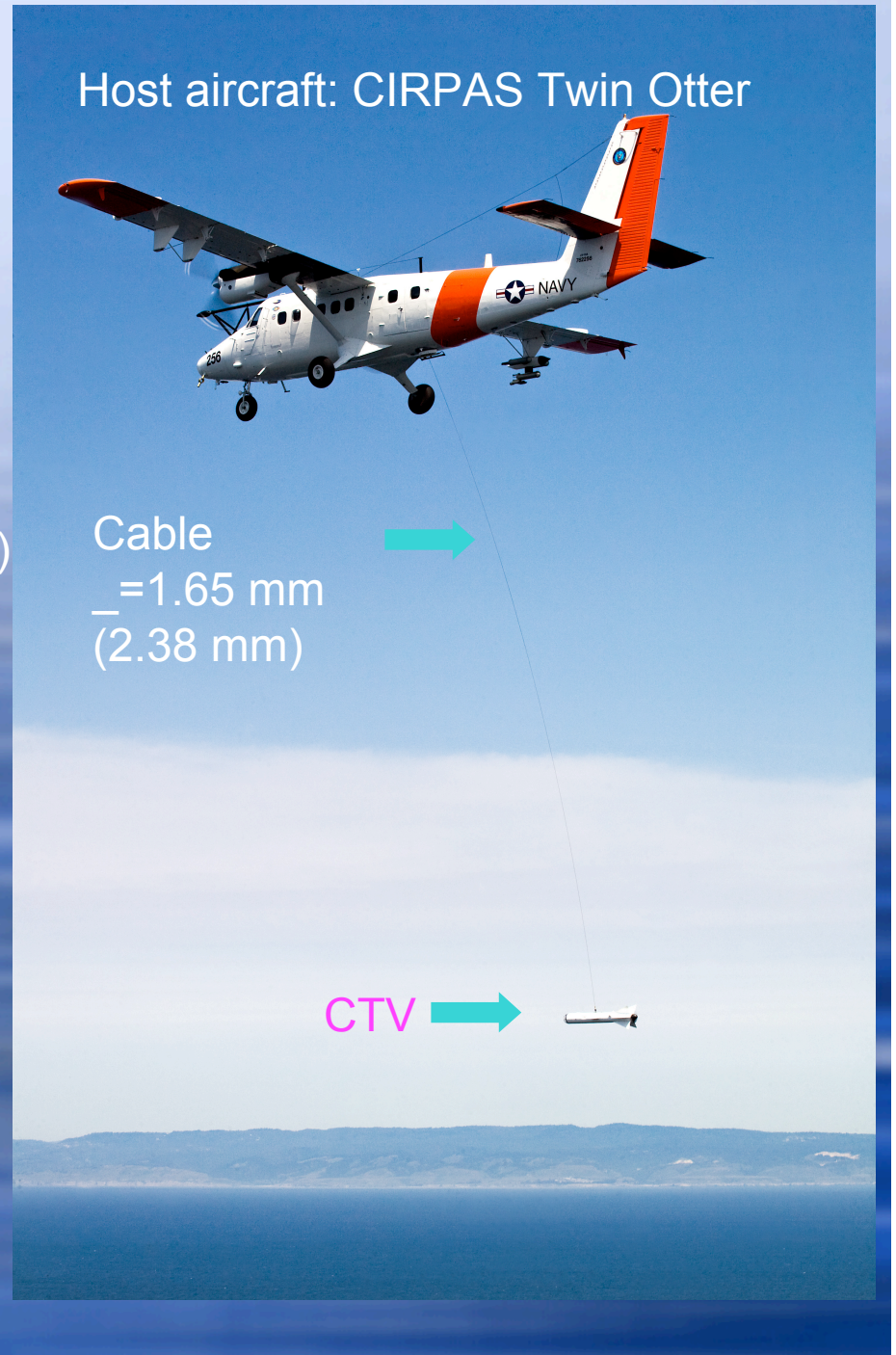


Host aircraft: CIRPAS Twin Otter



Cable  
= 1.65 mm  
(2.38 mm)

CTV





# Thank You!



National Science Foundation  
WHERE DISCOVERIES BEGIN



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CIRPAS: Center for Inter-Disciplinary Remotely Piloted Aircraft Studies  
NAVAL POSTGRADUATE SCHOOL

CIRPAS PUBLIC WEBSITE

