

Update on the Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS)

Change in National Oceanographic Facility Designation

*Report to the UNOLS Council
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The Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) was established at the **Naval Postgraduate School (NPS)** in Monterey, California by the Office of Naval Research in 1996 to provide Manned and Unmanned Air Vehicle flight services to the scientific and engineering communities.

CIRPAS Twin Otter became an University National Oceanographic Laboratory System (UNOLS) National Facility in 2002, and the CIRPAS SPA-10 became an NSF National Facility in 2010.

In 2016, following an internal audit, changes at NPS lead to:

- Abolishment of Centers and Institutes
- Directorship only for tenured faculty
- 51% rule
- Enhanced review structure for proposals
- Activity must fit mission of the school
- Priority is Education of naval officers

CIRPAS was not compliant with those new requirements which lead to significant changes

After exploring various approach (e.g. partnership with NRL), it was decided to **divest** a large fraction of CIRPAS Assets:

Camp Roberts facility



MWRX-05x Mobile Storm Radar



Army Golden Knights
UV-18A

Storm Penetrating A-10



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Sentry Block 30 UAS



Predator (x3)



What is retained?

1. Twin Otter Research Aircraft (Now a Lab in the NPS department of Meteorology)
2. Supporting personnel
 1. Leadership: Haf Jonsson (now NPS Research Professor)
 2. Ground and air crew
 3. Instrumentation support (Roy Woods, now NPS Research Associate)
3. One half of the CIRPAS hangar
4. Calibration Laboratory
5. Instrumentation
 - a. Meteorological/Thermodynamical properties
 - b. Aerosol Physical Properties
 - c. Cloud Physical Properties
6. Pelican Predator Surrogate

The science capability of the research Twin Otter remains available to the science community.

Research Aircraft: Twin otter DH-6



- Research Capacity: 1500 lbs
- Research Power: 5600 W at 28 VDC, 4000W 110VAC 60 hz:
- Speed: 100-140 Kts
- Practical Ceiling: 18000 ft.

Marina Facility



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

In-house Instrumentation



Cabin: Nephelometer, Sootphotometer, CPCs, UFCPC, Data System Racks for 'Research' and 'Guest' Instruments. Satcom system

Nose: Temperature, Dew Point, Pressure (Static, Dynamic Sideslip Attack angle), GPS/INS, IR Temperature, Liquid Water Content, Aerosol Inlet



Wings: CAPS, FSSP, PCASP, CIP, PIP ...
Hard points and pods for 'research' or 'guest' instruments



“Mentored” Instrumentation

Coherent Wind LIDAR System

Mentor: Dr David Emmitt, Simpson Weather Associates

(CTV) Controlled Towed Vehicle

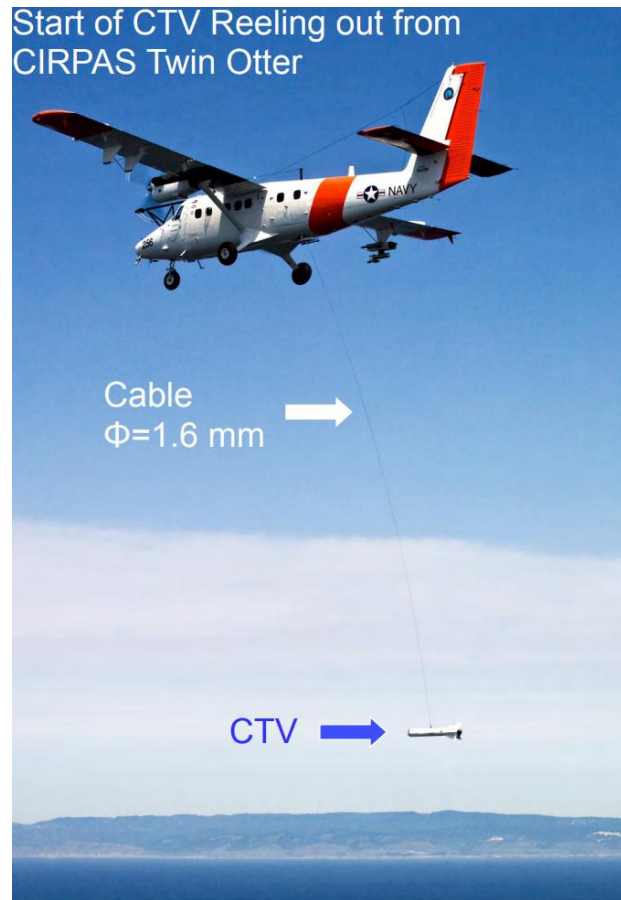
Mentor: Djamal Kehlief, UC Irvine

Stabilized Radiometer Platform

Mentor: Anthony Bucholz, NRL

ALE 47 Dispenser Pod

Chaff/Sonde Dispenser



2017:

1. Santa Ana: February – March, ONR, Qing Wang
2. Ice-Edge: April-May, ONR, Antony Bucholz & Haf Jonsson.
3. C-Harrier, NASA, Liane Guild
4. CASPER-WEST, ONR, Qing Wang

2018:

1. El –Chapo, June-July, ONR, John Seinfeld & Armin Sorooshian
2. C-17: September, Army, Keith Allen
3. Organized Structures, September, ONR, Dave Emmitt
4. C-Harrier, October, NASA, Liane Guild

Proposals have been submitted for 2019



The **NPS Twin Otter Research Facility** has requested to remain a National Oceanographic Facility, as defined in Annex II & VIII of the UNOLS charter. This will require revisions to the following sections:

Annex II Section 10:

“b. **The Center for Interdisciplinary Remotely-Piloted Aircraft Studies** is designated as a National Oceanographic Aircraft Facility under Annex II of the UNOLS Charter. The name of its Advisory Committee is the Scientific Committee for Oceanographic Aircraft Research (SCOAR) and its Chair serves as an ex-officio member of the UNOLS Council.”

Annex VIII:

c. Designated National Oceanographic Aircraft Facilities

The Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) is designated a National Oceanographic Aircraft Facility. The **CIRPAS** primary aircraft for oceanographic support includes the CIRPAS UV-18A 'Twin Otter.'

CIRPAS was designated as a National Oceanographic Aircraft Facility under Annex II of the UNOLS charter by vote of the UNOLS membership at Arlington, Va. on September 27, 2002.

Proposed revisions:

Annex II Section 10:

“b. [The Naval Postgraduate School \(NPS\) Twin Otter Research Facility](#) is designated as a National Oceanographic Aircraft Facility under Annex II of the UNOLS Charter. The name of its Advisory Committee is the Scientific Committee for Oceanographic Aircraft Research (SCOAR) and its Chair serves as an ex-officio member of the UNOLS Council.”

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[The Naval Postgraduate School \(NPS\) Twin Otter Research Facility](#) is designated a National Oceanographic Aircraft Facility. [Its](#) primary aircraft for oceanographic support includes the UV-18A 'Twin Otter.'

[The NPS Twin Otter Research Facility](#) originated from the [Center for Interdisciplinary Remotely-Piloted Aircraft Studies \(CIRPAS\)](#) originally designated as a National Oceanographic Aircraft Facility under Annex II of the UNOLS charter by vote of the UNOLS membership at Arlington, Va. on September 27, 2002.

- Revisit the Memorandum of Understanding (MoU) between NPS/CIRPAS and NSF, now obsolete, to facilitate the request process of the NPS Twin Otter Research Facility in NSF funded projects.

Multiple requests to NPS Twin Otter Research Facility to support NSF proposals have been made this year

- Develop a website and one-pager summarizing the unique capabilities of the research Twin Otter.