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NPS Scientists Leave for Winter Research in the Arctic

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Science Report

From the Naval Postgraduate School

Public Affairs Office

U. S. Naval Postgraduate School

Monterey, CA 93943-5100

An advance look at the Postgraduate School's upcoming Arctic research experiment will be available in a press conference on Tuesday, March 3 at 11:00 a.m. The press session will take place in Dr. Ken Davidson's office on the 6th floor of Spanagel Hall.

A map of the campus showing Spanagel Hall is attached. For further information, contact: John Sanders, 646-2023.

FOR IMMEDIATE RELEASE

March 2, 1987

NPS Scientists Leave for Winter Research in the Arctic

On October 13, 1985, the Coast Guard icebreaker Polar Sea, on its way to Point Barrow, was hit by a sudden, unexpected and violent storm. Winds increased rapidly to 75 knots, the seas bolted from relatively calm conditions to an estimated 15 feet, and the ship's superstructure iced over.

Just five hours earlier the ship had been conducting helicopter recovery operations that require good weather conditions.

It's not unusual for Arctic weather to change quickly and dramatically, and the vulnerability of ships to Arctic ice and weather has long been recognized by mariners, noted meteorology Prof. Ken Davidson.

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Providing forecasts for the region is even more difficult than in the mid-latitudes because of the lack of observational data and a limited understanding of the interactions between the atmosphere, the ocean, and snow and ice packs.

That's why Prof. Davidson got involved in the Marginal Ice Zone Experiment (MIZEX), a cooperative international experiment funded by the Office of Naval Research.

U. S. researchers have been joined by scientific teams from West Germany, France, Denmark, Iceland, Finland, Norway, Switzerland, Ireland, Canada and the United Kingdom for experiments in the areas of acoustics, biology, ice dynamics, meteorology, oceanography and remote sensing. Prof. Davidson, chairman of the meteorological component of MIZEX, said, "There has not been, at one time, such a complete multidisciplinary project."

After spending six weeks in the marginal ice zone of the East Greenland Sea in 1984 for a summer experiment, he is currently preparing for the more turbulent winter studies to be conducted during March and April this year.

MIZEX '84 was a drifting experiment, focusing on the physical processes which occur with the change of seasons. A ship moored inside the icefield was designated as the center point in a "box" with sides approximately 100 nautical miles in length.

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Other ships were positioned around the center point, each monitoring conditions of the upper ocean, the atmospheric boundary layer and characteristics of the ice.

An array of transponders relayed data on ice deformation and every two to three days reconnaissance aircraft mapped the entire "moving box" with synthetic aperture radar and microwave cameras and sensors.

Said Prof. Davidson: "We wanted to study the melting and movement of the ice - the evolution and changing of the ice edge. The atmosphere and ocean control these changes, and the processes are simply not well understood."

The research objectives will change significantly for the upcoming winter MIZEX. Now, the major purpose of the experiment will be to examine the sometimes explosive weather systems called "polar lows."

The knowledge gained through MIZEX is crucial for the success of future allied tactical efforts in the marginal ice zone, especially in countering the surge in Soviet military operations in the Arctic.