Naval Pacific Meteorology and Oceanography Center/Joint Typhoon Warning Center

William Little

31 Aug 2004

Regional METOC Centers

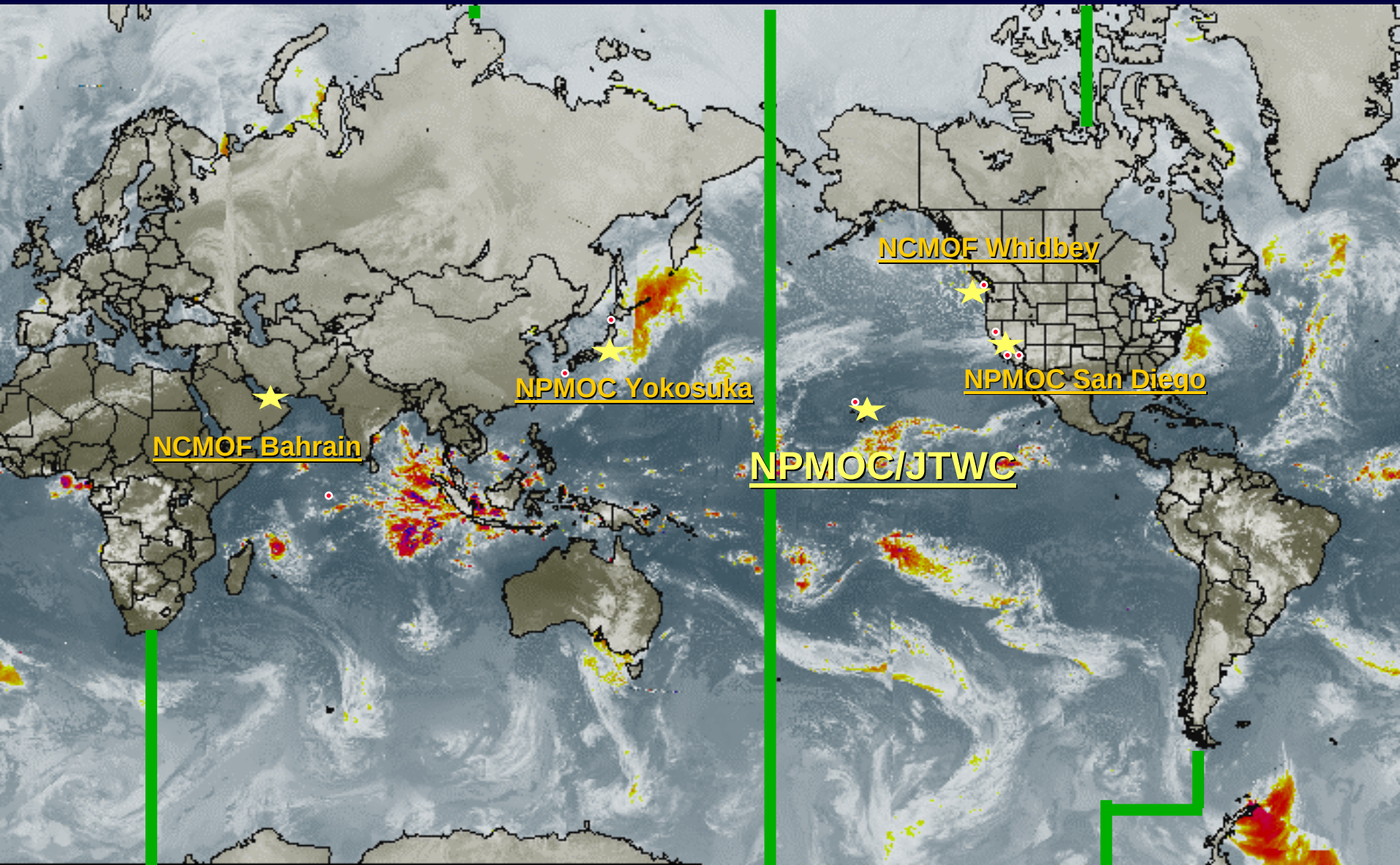
Facilities and Detachments

OA Divisions - afloat

Mobile Environmental Teams - MET

Downsizing and centralizing

METOC Support Across the Pacific



The Mission:

Keep the Fleet Safe and Ready to Fight

Observe, Analyze, Forecast, and Deliver the Right METOC Products at the Right Time

Center of Excellence

OTSR

ASW

JTWC

TAM

Mission, METOC, Limits

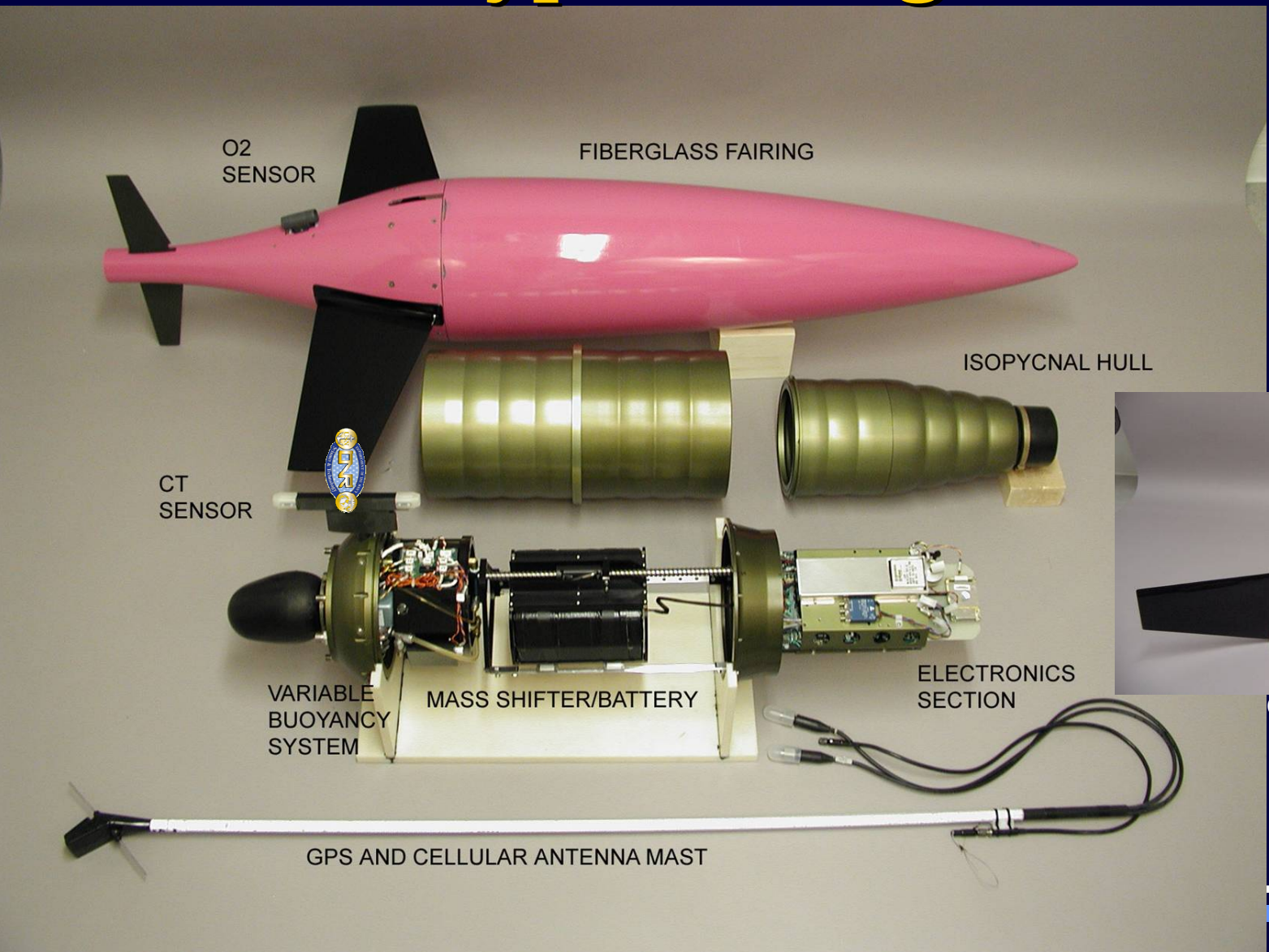
Accelerated Transaction Rates

Time Sensitive Missions
Time Critical Strike

Decision-makers - Warfighters

Timely METOC observations

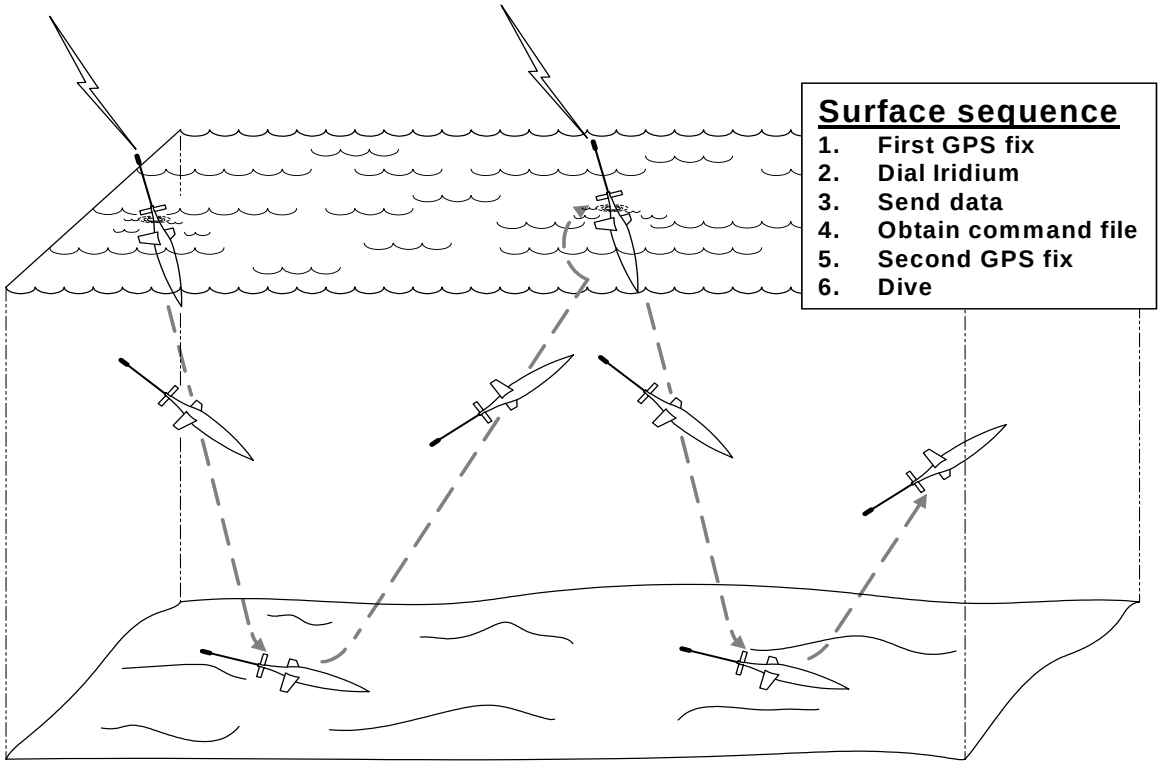
Typical Seaglider



3m nose to tail
55kg dry weight
No moving parts (outside)

Optical sensors

Basic Operation



Data thread integration into models

Shallow water - littorals < 100 fathoms

Remote Sensing

- **Bottom characteristics**
- **Sound velocity structure**
- **Ambient noise**
- **Wrecks**
- **Salinity**
- **Biologics**
- **Magnetics**
- **Wave pressure**

Mobile sensor??

Smart Seaweed??

SEAL Operations
Shallow water Oceanography.

Scale - six feet.

Submarine to Submersible to Swimmer to Shore. And return.

Underwater Currents and visibility.

Special Forces

- Currents
  - -- surface
  - -- subsurface
- Tides
- U/W Visibility
- Bioluminescence
- Bottom Composition
- Water Temperatures
- Sediment composition and magnetics

Underwater communications

Amphibious Warfare

- Surf Zone
  - Remote Sensing
    - Wave Heights
    - Breaker Heights
    - Currents
    - ** Behind the reef.
- Beach Trafficability
- LIDAR
- Forecasts and Models


08/06/03 MAN
09:03:34
16
AUTO
I-FLT
SKY: CLR
VIS: 6 BR
BREAKER HT: 2FT
BREAKER PD: 10SEC
30% SPILLING
70% PLUNGING
20
25
2 LINES
10 SEC PERIOD
SPILLING
PLUNGING
350
5
10
33:07:28N
ACPT 117:19:34W
1035
0
INS STATE
ALIGNING
IGL

Surface Warfare

- Common Operational Picture (METOC)
  - AUV
  - Ice Edge
  - Marine Mammals
- Automatic sensing
  - Acoustics
  - Radar Ducts
- Wave Heights Sensor
- Man Overboard
- Illuminator

Oceanography

- Data Management/Delivery
- Theater Sensing Strategy
- Forecast Uncertainty
- Visualization
  - -- Three dimensional
  - -- Geospatial Info Systems

Same area different time

UNCLAS Imagery from FEDERATION OF AMERICAN SCIENTISTS

Hawaii Ocean Lab

- Instrumentation
  - Water-borne
  - Satellite-based
  - Shore-mounted
- Video
- Laser
- Multispectral
- Hyperspectral

Questions?