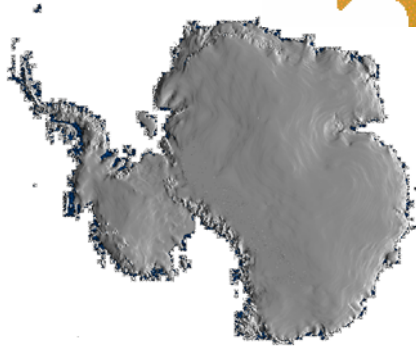




**Raytheon**

# UNITED STATES ANTARCTIC PROGRAM



## ARVOC Meeting 2006

Recommendations from  
ARVOC October 2005 meeting

**Jim Holik**

**14 June 2006**

**Raytheon**

**Polar Services**

*Customer Success is Our Mission*

Revised 8/19/03



# Recommendations from **Raytheon** ARVOC October 2005 meeting

---

- Item: ARSV Working Group - Rob was to nominate additional people to participate. **COMPLETE**
- Item: Food Quality: In an effort to improve food quality and 'hotel services' it was suggested that the vessel have a "hotel services" metric. **This is still a topic of discussion but RPSC will consider adding something like this to future contracts.**
- Item: Jim was to email passwords and user IDs to all ARVOC members so they could view out-briefs. **COMPLETE**
- Item: ARVOC is concerned about the timeline for the PRV. **RPSC is also concerned. We will discuss at the meeting**
- Item: ARVOC will talk to other members of the science community and to determine if there are additional items that should be added to the Lifecycle Report **The LCR for FY07 has not yet been compiled. Estimated due date is June 2006.**



## Recommendations from ARVOC October 2005 meeting

**Raytheon**

**Item:** There were several items relating to data sets being sent to Lamont (S. O'Hara). **At this point, data sets are being sent to Lamont as of last October, on/about.**

Currently, RPSC is sending data sets from each cruise to Lamont, specifically, the Marine Geology Data Management System (mgDMS). The RSPs will now contain the following information:

RPSC will send a copy of the complete dataset to the Marine Geology Data Management System (mgDMS) at Lamont Doherty Earth Observatory.

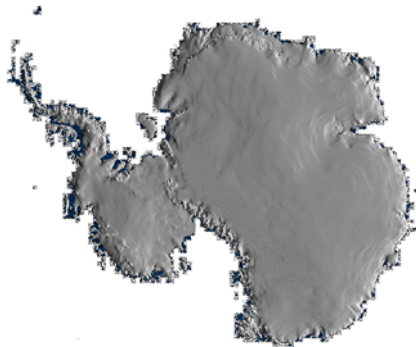
MgDMS will hold the data as proprietary for two years. After this period, mgDMS will contact the PI to ask if their data can be released. If the PI declines, mgDMS will note that they contacted the PI and that he/she was not willing to release the data. NSF will be informed of the PI's decision. MgDMS will never release the data without permission from either the PI or the NSF. For Antarctic mgDMS data, go to <http://www.marine-geo.org/antarctic/> and click **Data Link**.



## Recommendations from ARVOC October 2005 meeting

**Raytheon**

- 
- **Item: Attendee list, action items will be posted within 2 months of meeting; minutes within 4. Not complete. This is still in process.**
  - **Item: Rob asked that all members respond to his letter on the PRV, Jim Swift is spearheading this. Rob Dunbar/Jim Swift will speak to this later in the meeting.**
  - **Item: ARVOC members asked that they be kept informed of large equipment purchases. Unfortunately, this does not always happen. This meeting is better positioned in time to allow discussion before the submission of budgets to NSF**
  - **Item: ARVOC Charter will be reviewed and finalized. The charters for all of the Users Committees (MAUC, PAUC, SPAUC, ARVOC) have been re-written to make all the charters the same.**
  - **Item: ARVOC recommended RPSC find a cheaper, surer way to ship samples. Bob Kluckhohn will address**



**Raytheon**

**Polar Services**

*Customer Success is Our Mission*

**Raytheon**

# UNITED STATES ANTARCTIC PROGRAM

**ARVOC Meeting 2006**

**Major improvements over the past year**

**Jim Holik**

**14 June 2006**



# Electronics Upgrades

**Raytheon**

- **SeaSPY magnetometer (\$54K)**
  - New Overhauser Effect Sensor
  - Complete spare system and spares kit
  - Rated to 400m



- **Fugro DGPS system**
  - Purchased originally for Shaldril for the cost that was budgeted to rent a system
  - Usable on either ship
  - Future use will simply be the signal cost (\$6,250/month or \$250/day)
- **New ET Supervisors**



# Electronics Upgrades

**Raytheon**

- **VLF Antenna**
- New VLF antenna installed on the roof of the NBP Bridge
- NSF Project for studying wave physics in the Earth's ionosphere and magnetosphere.
- Generates 9.4 Terabytes of data per year



*Customer Success is Our Mission*

Revised 8/19/03

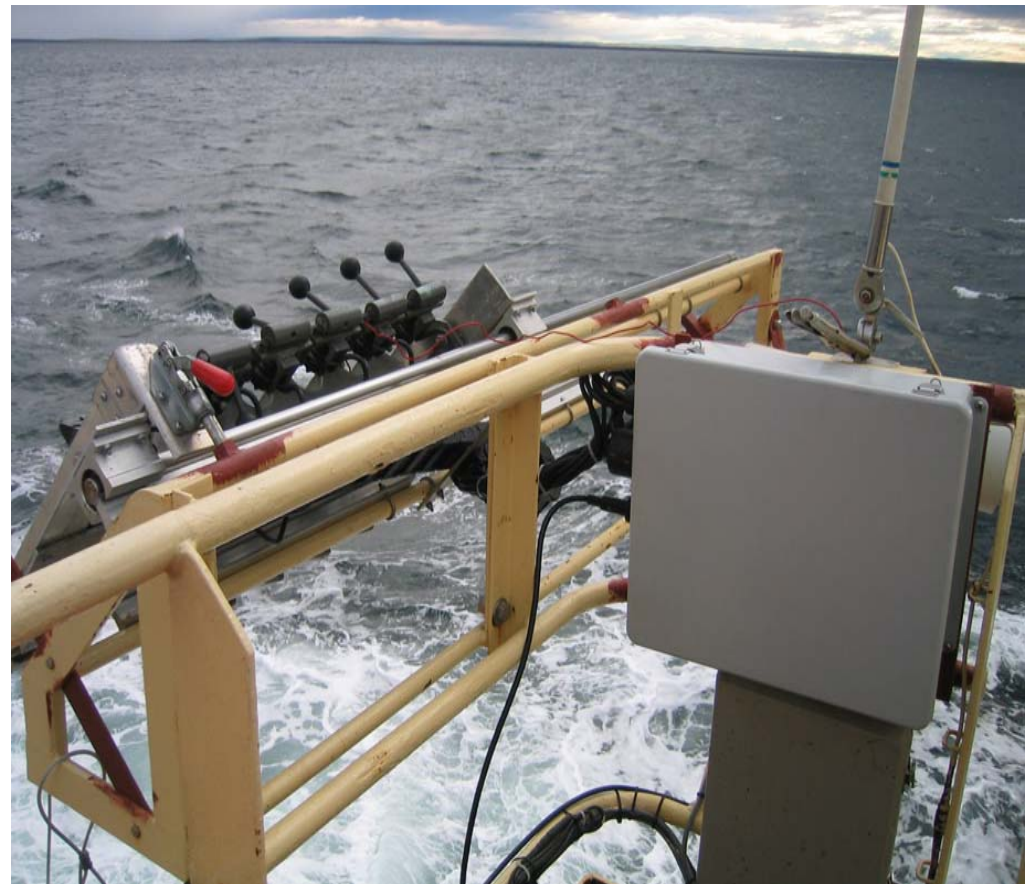


# Electronics Upgrades

**Raytheon**

## XBT Sliding Autolauncher

- New Slide Rail deployment system for the XBT Autolauncher
- moves Autolauncher system up to LMG 01 deck - no need to risk Drake waves to reload
- control system computer moved to upper Baltic computer rack



*Customer Success is Our Mission*

Revised 8/19/03





# ***Marine Technician*** **Equipment Upgrades**

**Raytheon**

- **Outboards for the Landing Craft upgraded to 90HP**
  - **The craft was underpowered with the previous outboards making it more difficult to operate and unsafe in certain conditions**



*Customer Success is Our Mission*

Revised 8/19/03



# ***Marine Technician*** **Equipment Upgrades**

**Raytheon**

- **NBP catwalk and LMG deck tuggers replaced**
  - The previous tuggers were very old, needed constant repair and became unsafe (brakes were not reliable)



*Customer Success is Our Mission*

Revised 8/19/03



# Marine Technician Equipment Upgrades

**Raytheon**

- **Trace Metal Tow Boom – Allows for towing up to 28' off Starboard (400 lb capacity)**



*Customer Success is Our Mission*

Revised 8/19/03



# Laboratory Equipment Upgrades

**Raytheon**

- 10' Milvan for LN2 plant



*Customer Success is Our Mission*

Revised 8/19/03



# Laboratory Equipment Upgrades

**Raytheon**

- 
- **20' milvan for lab storage**
    - Van is designed with shelving and cabinetry to store excess lab consumables, spare equipment, spare parts and longer lead-time items
    - Allows a mobile working stockroom for the labs
    - Will benefit science as it will potentially allow the vessels to have more consumable on hand
    - Will save \$\$ as we re-allocate overage supplies from previous cruises
    - In PA Now



# Lab Storage Vans

**Raytheon**



*Customer Success is Our Mission*

Revised 8/19/03



# Laboratory Equipment Upgrades

**Raytheon**

- **2ea 10' milvans for chemical storage onboard**
  - Within the last 2 years the vessel Captains have been unhappy with the storage of excess chems that do not fit in the haz lockers
  - The vans have mobile “haz lockers” with their own fire suppression systems
  - Vans are equipped with flexible shelving to meet the needs of various cruises
  - The vans have space for waste drums (~4)
  - USCG approved to ride on either ship on deck, in the helo hanger, or in the hold
  - Expected delivery date Oct/Nov 06



# Chem Vans

**Raytheon**



*Customer Success is Our Mission*

Revised 8/19/03





**Raytheon**

# Nutrient Analyzer

- **The New Lachat Nutrient Analyzer performed well for LMG06-01 and Jack Ditullio NBP06-01 and IVARS cruise.**



## **Work that remains:**

- Instrument is an LNSW hog. (15L/12hr Day)
- Phosphate channel chemistry needs more modifications and testing
- Design study of channels, wash water, and sampler waste water to reduce LNSW consumption
- Documentation. (i.e. Quick start manual & tips and tricks)



**Raytheon**

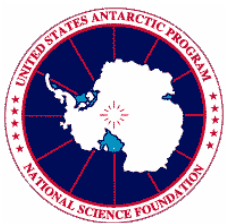
# USGS Fire Sale

---

- **RPSC was able to obtain the following suite of equipment for the price of shipping**
  - 2400-meter Teledyne multichannel streamer on large Winch,
  - Two (2) hydraulic davits
  - Crate of sonobuoys (Model 53B)
  - Geometrics 811 gradiometer/magnetometer system
  - Two (2) chain dredges
  - Six (6) 30-L Niskin bottles (General Oceanics)
  - Eleven (11) 12-L Go-Flo bottles (General Oceanics)
  - Eight (8) 5-L Niskin bottles (General Oceanics)
  - Two (2) edge rollers (Skookum)
  - Large throat block (Marco Seattle)
  - 24-Bottle rosette frame
  - Custom tow body
  - Custom vertical profiling frame
  - Indefinite quantity (6 to 10) 3.5 kHz transducers
  - Yagi antennas (Note: These are not sonobuoy frequency antennas).
  - Four Raytheon 12 kHz PTR sonars
  - XBT's.

*Customer Success is Our Mission*

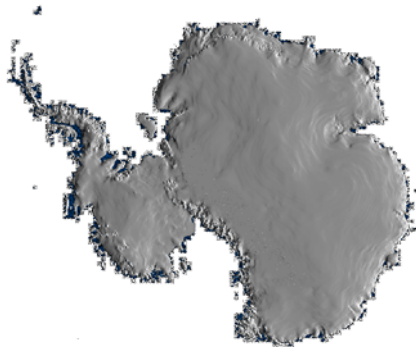
Revised 8/19/03



# USGS Stuff

**Raytheon**





**Raytheon**

**Polar Services**

*Customer Success is Our Mission*

**Raytheon**

# UNITED STATES ANTARCTIC PROGRAM

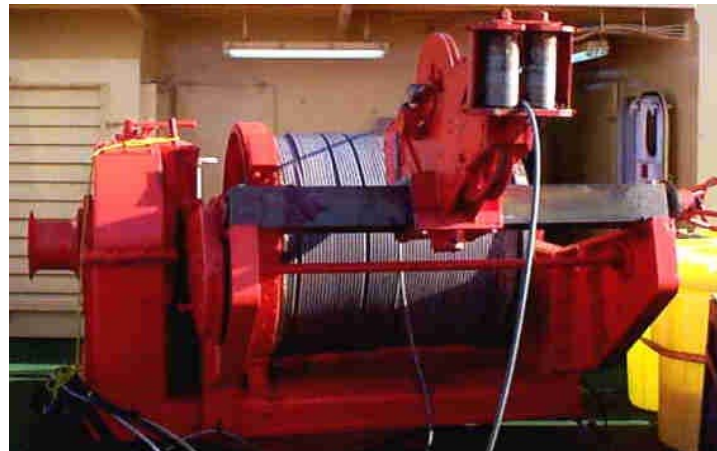
**ARVOC Meeting 2006  
FY 06 Funded Projects and FY07 Proposed  
Projects  
Jim Holik  
14 June 2006**



# FY06 Funded Projects (recap)

**Raytheon**

- **LMG DUSH-6 Winch Installation Study and Installation**
- **SHALDRIL**
- **New ARSV Contract**
- **Engineering Study – Replace NBP Sonar Acoustic Windows**
- **Engineering Study – Replace LMG Sonar Acoustic Windows**
- **PRIMO-Marine**



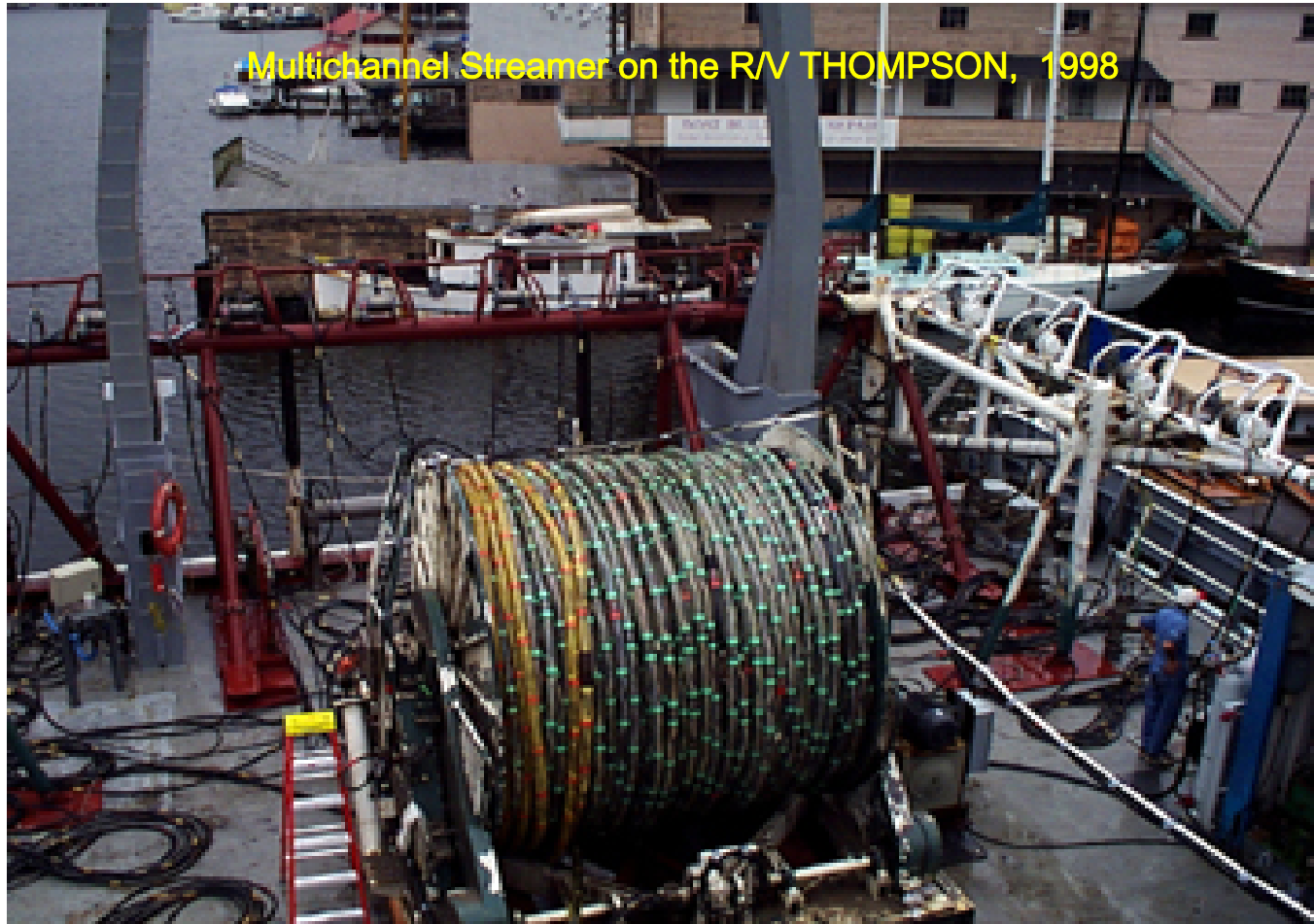
*Customer Success is Our Mission*

Revised 8/19/03



# New FY06 Project

**Raytheon**



*Customer Success is Our Mission*

Revised 8/19/03



# **New** FY06 Proposed Project

**Raytheon**

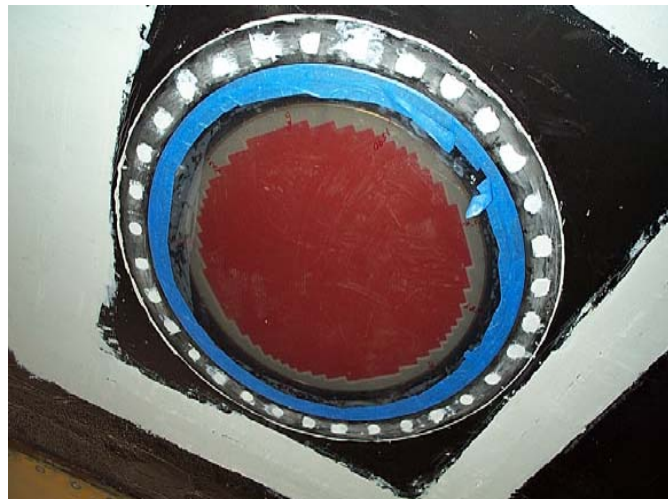
- **MCS Streamer and Winch**
  - MCS Streamer needed for NBP07-01
  - USAP MCS is old, and was tested and found inoperable and irreparable.
  - Market surveys found that a commercial procurement for a replacement streamer and winch would therefore range from \$824,821 to \$1,356,851.
  - January 2006, RPSC was alerted that USGS was disposing of their 2,400-meter oil-filled analog streamer and winch system. This streamer will need refurbishment has not been used since 1998.
  - Refurbishment of USGS streamer will cost 5 to 8 times *less* than commercial procurement and would once again give the USAP MCS capabilities.



# FY07 Proposed Projects

**Raytheon**

- **PRV**
- **New ARSV Contract**
- **Replace LMG Sonar Acoustic Windows**
- **Replace NBP Sonar Acoustic Windows**
- **LMG Zodiac Rack and Crane**



*Customer Success is Our Mission*

Revised 8/19/03





# LMG Zodiac Rack and Crane

**Raytheon**

FY07 Proposed Project

---

- **This project proposes to install a new Zodiac boat crane and rack system on the LMG.**
- **One of two existing methods for deployment and recovery is unsafe and, per U.S. Coast Guard regulations, is not allowed at sea. This restriction limits the LMG's capability to support cruises.**
- **This project would facilitate deployments at sea and improve overall safety.**



# Acoustic Window Replacement (LMG & NBP)

**Raytheon**

- **Seabeam Orange (polyurethane) was installed in most windows when the ships were built**
- **Zelux W (polycarbonate) was used for the new OS ADCP on both vessels in 2004 and also to replace the 3.5kHz transducer on the LMG.**

## **PROs of Zelux W:**

- **Zelux W does not attenuate the higher frequencies as much as the Seabeam Orange**

## **CONs of Zelux W:**

- **The windows have less flex and thus are more difficult to install**



# Acoustic Window Replacement (LMG & NBP)

**Raytheon**

<b>Vessel</b>	<b>Sonar</b>	<b>Current Window</b>	<b>Proposed Window</b>
LMG	3.5kHz	Seabeam Orange	Seabeam Orange
	OS ADCP	Zelux W	Zelux W
	150kHz ADCP	Seabeam Orange	Zelux W
	12 kHz	Seabeam Orange	Seabeam Orange
NBP	EK 500	Seabeam Orange	Zelux W
	150kHz ADCP	Seabeam Orange	Zelux W
	3.5kHz	Seabeam Orange	Seabeam Orange
	12 kHz	Seabeam Orange	Seabeam Orange



## Other FY 07 Projects

**Raytheon**

- 
- **Does ARVOC have ideas about other major endeavors that should be proposed as projects for 2007?**