

MAGIC

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Atmospheric System Research Science Team Meeting

Arlington, VA

Monday, March 12, 2012, 3:15-5:15 pm

# Leg0: It Wasn't Really a Party







# Leg0

Overview

*Horizon Spirit*

Loading and unloading containers

Life at sea

Weather balloon launches

Meteorological system

Soot

MAGIC pending topics

Acknowledgements



# Leg0: Overview

Leg0 was on the Horizon *Spirit* under the direction of Captain Walt Rankin

Leg00a\*: Los Angeles to Honolulu, Feb. 10, 2012 - Feb. 15, 2012

Leg00b\*: Honolulu to Los Angeles, Feb. 16, 2012 - Feb. 23, 2012

MAGIC participants: Brad Orr, Mike Reynolds, Ernie Lewis

## Goals

- Become familiar with ship, personnel, routines, and life at sea

- Evaluate weather balloon launch conditions

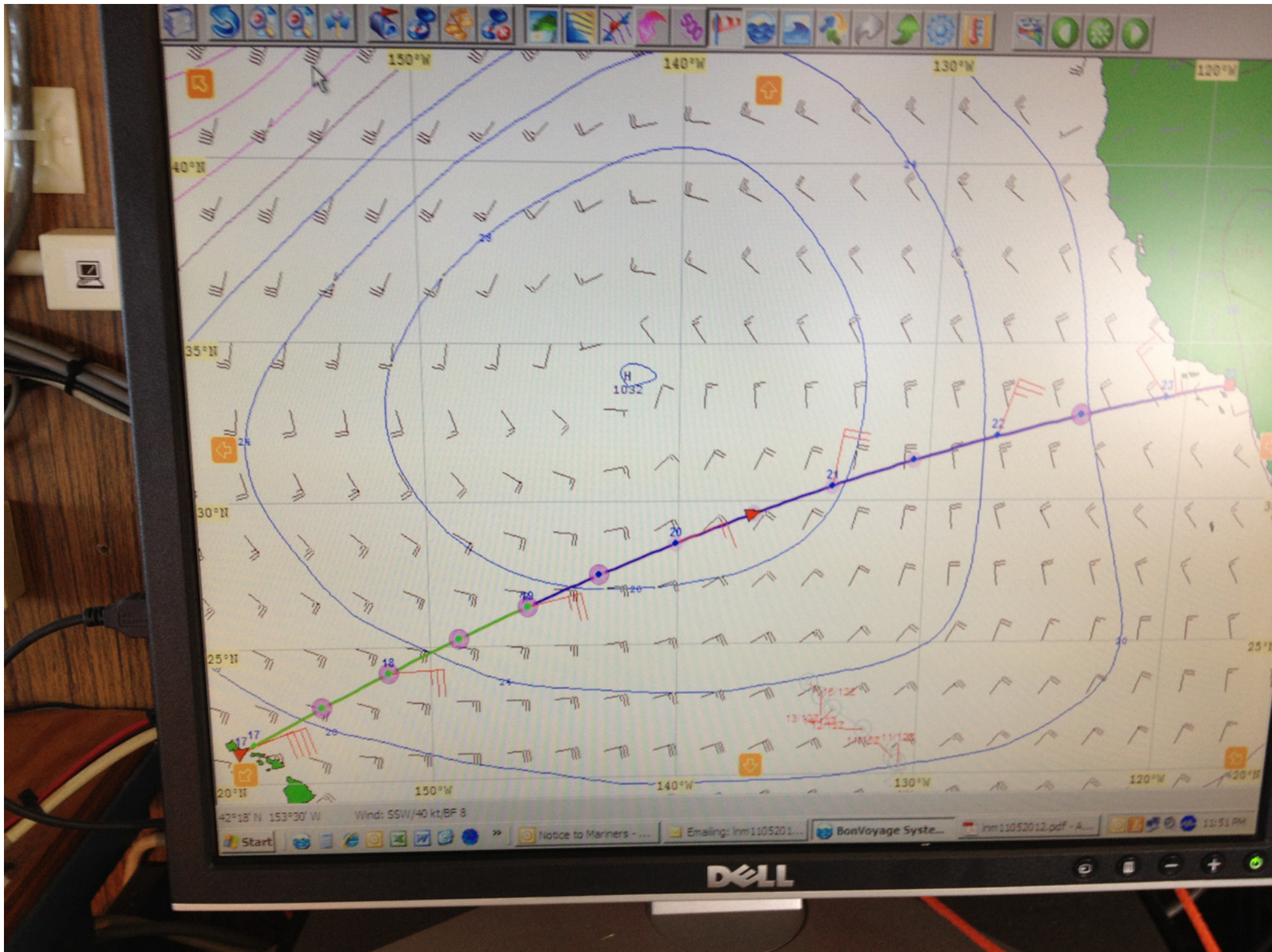
- Measure ship motion (accelerations, rotations)

- Measure meteorological conditions; evaluate met system

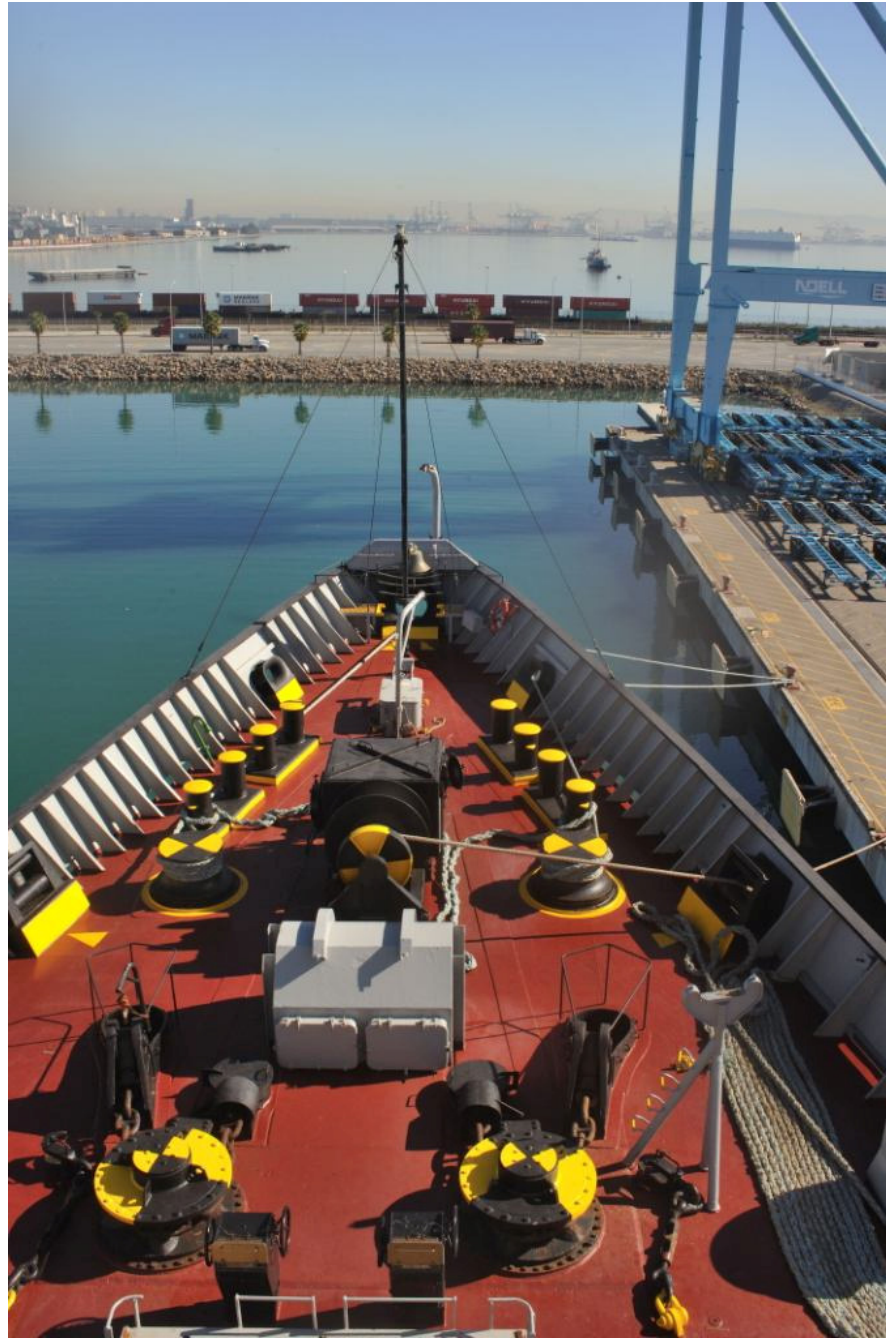
Outcome: **success!**

A cruise report is being produced.

\*Westbound cruises will be named Legxxa, and eastbound Legxxb







Ports of Los Angeles (foreground) and Long Beach (background)



# *Horizon Spirit*





HORIZON SPIRIT

NERA

Satcom B-7000

RESTRICTED AREA





















































































# Loading and Unloading





S.W.L under hook 70 LT x 64 m  
S.W.L under hook 90 LT x 45 m  
S.W.L under spreader 60 LT x 64 m







NOELL

S.W.L under hook 70 LT x 64 m  
S.W.L under hook 90 LT x 45 m  
S.W.L under spreader 60 LT x 64 m

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S.W.L under hook 70 LT x 64 m  
S.W.L under hook 90 LT x 45 m  
S.W.L under spreader 60 LT x 64 m

















45

HRZU 450803

SLX

SEA U8 117780



















# Life at Sea

Living conditions

Security

Safety

Courtesy (common sense)





# Living conditions

All sheets, towels, etc. provided.

Food is plentiful and good.

There are DVDs in the crew lounge.

Email is limited.

There is a weight room.

WEDNESDAY

HORIZON  
E S SM

# Horizon Sprit

Master Walt Rankin

VOYAGE # 189    ENROUTE LONG BEACH    WEDNESDAY    FEBRUARY 22, 2012

## BREAKFAST

ASSORTED CHILLED JUICES  
HOT OATMEAL CEREAL

CHILLED MORNING FRUIT  
ASSORTED COLD CEREAL

CRISP BACON  
CREAMED SCALLOPS OF BEEF ON TOAST POINTS

EGGS OR EGG BEATERS TO ORDER \*\*\*\*\* FRIED \*\*\*\*\* POACH \*\*\*\*\* SCRAMBLED  
OMELETS \*\*\*\*\* CHEESE \*\*\*\*\* GREEN PEPPER \*\*\*\*\* MUSHROOM \*\* HAM \*\*\*\*\* MUSHROOM  
BUTTERMILK    PANCAKES    WITH MAPLE SYRUP OR HONEY

BAKERS DANISH AND PASTRY

HASH BROWN POTATO'S

STEAMED RICE

COFFEE

TEA

Kool-Aid

FRESH MILK

## LUNCHEON

BEEF VEGETABLE AND CABBAGE SOUP

BAKED WAHOO FISH WITH, LEMON BUTTER HERB SAUCE, GROUND GARLIC, WHOLE LEMON,  
BUTTER, CHOPPED PARSLEY, ONION, FRESH GINGER

GRILLED RUBEN SANDWICH ON RYE BREAD WITH CHIPS

ASSORTED COLD BAR

STEAMED RICE  
STEAMED SPINACH

FRENCH FRIES  
STEAMED CARROTS

BAKER'S CHOICE

COFFEE

TEA

Kool-Aid

FRESH MILK

## DINNER

SOUP DE' J OUR

GRILLED STRIP LOIN STEAKS TO ORDER WITH HOTEL GARLIC BUTTER  
BUFFALO CHICKEN WINGS SERVED WITH RANCH DRESSING

ASSORTED COLD SALAD BAR

STEAMED RICE  
BAKED ACORN SQUASH

BAKED POTATOES' W/ GARNISH  
BAKED ZUCCHINI W/ GARLIC BUTTER &  
PARMESAN CHEESE

BAKERS BREAD & CAKE

COFFEE

TEA

Kool-Aid

FRESH MILK











# Security

TWICs are necessary (<http://www.tsa.gov/twic>)

Bring passports also (but TWICs are more important).

Be careful around the port, especially at night.



# ATTACK INSTRUCTIONS

## FOR MERCHANT VESSELS IN PORT

### ATTACK WARNING SIGNAL



The Civil Defense Attack Warning Signal is a wavering tone of a siren or series of short blasts on horns or other devices lasting three to five minutes.

When this signal is given, IMMEDIATELY execute the following instructions.

**1. RADIO GUARD.** Set a radio guard on 500 or 2182 kilahertz (kilocycles) for dispersal instructions from the Coast Guard. Also, tune in a local AM, FM or TV broadcast station for Civil Defense bulletins. Do not operate your radio transmitters except in cases of actual distress.

### 2. VESSEL PROTECTION INSTRUCTIONS.

**a. Fire hoses.** Rig as many fire hoses as possible, preferably with fog/spray nozzles in such a manner that a protective blanket of spray can be maintained over the sections of the ship containing personnel and so that the running water will wash overboard any radioactive fallout striking the ship.

**b. Personnel.** Keep all personnel not needed to operate the ship below decks, away from steamlines, piping or other equipment under pressure and out of line of possible flying internal debris.

**c. BATTEN DOWN.** Secure all unnecessary blowers and close all external openings such as ventilators, hatches, doors and ports.

**3. DISPERSAL INSTRUCTIONS.** When directed by the Coast Guard, execute the merchant vessel dispersal instructions prescribed for the port where you are located. If the instructions tell your ship to disperse:

**a.** Get underway as soon as possible and carry out dispersal instructions.

**b.** After you get to the dispersal area, keep power on the engines so that you can move immediately to avoid fallout, if directed.

**c.** Stay in the dispersal area until you receive further instructions.

IF YOU ARE UNABLE TO GET UNDERWAY OR LOCAL INSTRUCTIONS TELL YOU TO REMAIN WHERE YOU ARE, TAKE THE FOLLOWING ACTION:

**a.** If you are at anchor, carry out vessel protection instructions.

**b.** If you are moored along side a wharf, secure all fires and operating machinery and then have all personnel evacuate the ship and take cover in accordance with Civil Defense instructions for the general public.

Note 1: When given to the Master, placards shall be posted in the pilothouse, engine room and in the seaman's, trimmen's, and steward's departments of every vessel in port. Previous editions are obsolete.

Note 2: The Civil Defense ALERT SIGNAL, a steady blast lasting 3 to 5 minutes, may be used by local authorities to alert you to danger from nuclear forces such as land-based and sea-based (Strategic) waves. Alert information will be furnished by local radio and television broadcasts.

CG-3224 (Rev. 7-67)

Department of Transportation  
U. S. Coast Guard  
CG-3224 (Rev. 7-67)

### HORIZON SPIRIT

- SS
- FIRE AND EMERGENCY
- ABANDON SHIP
- MAN OVERBOARD
- DISMISSAL

1. Entire crew shall familiarize themselves with these instructions.
2. Each crew member shall be provided with a copy of these instructions.
3. Entire crew shall be instructed in the use of these instructions.
4. Every person participating in the alert shall be instructed in the use of these instructions.
5. Emergency Board will assemble at the muster station.
6. Steward's department will assemble at the muster station.
7. Person discussing FIRE shall remain at the muster station.
8. Immediately upon the FIRE AND EMERGENCY signal, the crew shall assemble at the muster station.
9. Upon hearing the signal, "MAN OVERBOARD" the crew shall immediately clear the boat for the man overboard.
10. During periods of low visibility, all crew members shall remain at the muster station.

- EMERGENCY BOARD
- EMERGENCY BOARD
- AFTER MUSTER
- FIRE AND EMERGENCY
- MEN ON WATER
- ABANDON SHIP
- CHIEF ENGINEER
- IN THE EVENT OF COLLISION
- THE CHIEF ENGINEER
- WHEN NO MASTER IS AVAILABLE

ART. NO.	RATING
1	MASTER
2	CHIEF MATE
3	2 <sup>ND</sup> MATE
4	3 <sup>RD</sup> MATE
5	4 <sup>TH</sup> MATE
6	BOILER ROOM
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\*Not carried  
\*\*ALL STEWARDESS DEPT

CAPTAIN WALTER C. BARNES  
MASTER  
SS HORIZON SPIRIT

# Safety

Hard hat, steel-toed work boots required on deck during loading/unloading.

Soot makes the deck slippery.

Wind can be extreme.

Use extra caution when on deck alone or when near stern  
- LET SOMEONE KNOW WHEN GOING TO STERN.

Climbing ladder can be hazardous.

You will have to sign an HHA (hold harmless agreement).

Use common sense (not always so common!).



## SAFETY POLICY

ALL EMPLOYEES AND VISITORS ON BOARD THIS VESSEL ARE RESPONSIBLE FOR MAINTAINING A SAFE WORK PLACE. WE ARE COMMITTED THROUGH OUR ACTIONS AND COMMUNICATIONS TO WORK INJURY FREE AND IN ACCORDANCE WITH ESTABLISHED INDUSTRY SAFETY STANDARDS.

Material Safety Data Sheets **2011**

It is your responsibility and right to know every hazardous material and chemical that you handle. Refer to the Material Safety Data Sheet (MSDS) to learn about the hazards associated with handling a particular material, what personal protective equipment (PPE) is required, and first-aid needed for accidental exposure.

Another source of information is a chemical's labeling. Every chemical that is handled should be labeled with an NFPA diamond, HMIS label, or some sort of sign displaying its possible danger. MSDS also provide an in-depth background on a chemical's hazard and its levels of impact.



Got a SMARTCARD this month?  
Drop the card in the box to get your points!  
-OB- Enter it at [www.awardsofexcellence.com](http://www.awardsofexcellence.com)  
-OB- Call toll-free at 1 866 1 864-2533  
**You choose. You win.**

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Eyes & Mind on Task **2011**

Avoid complacency by pausing and thinking about the job at hand before you begin. Think about what might have changed since the last time you did the job. Spot potential hazards and develop a plan to do the job safely.

Get proper rest to avoid fatigue. Your state of mind - whether you're feeling fatigued, stressed, rushed, etc. - can cause dangerous accidents.



Working as a team? Take the time to be sure everyone understands how to do the job safely, and watch out for one another!

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Safety Drills **2010**

The more we practice something, the more efficient we are in an emergency. That's why drills are so important and should all be taken seriously.

During a drill, it is important to follow these steps:  
-stay calm  
-suit up  
-check your gear  
-stand where you are assigned  
-know your surroundings  
-watch out for your buddy  
-follow the directions from your leader



Got a SMARTCARD this month?  
Call 1 866 722-2543 next August 2010  
Quiz Number is 180112  
**You choose. You win.**

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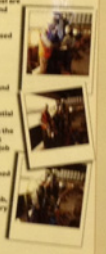
Work Permits **2011**

Certain jobs on the vessel are inherently hazardous and require work permits. For example:  
-Working in an enclosed space, tank, duct, or working aloft.

Do you have a concern or problem with a job assignment? Speak up and tell us about it!

Communication is essential to safely accomplishing each job. When you sign the work permit, you accept responsibility to do the job safely.

Work permits are designed to keep us safe. They ensure that the person who is asked to do the job has the training necessary to do the job safely.



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Grinder Safety & Eye Protection **2011**

Here at Horton Lines, we take eye safety very seriously. Always wear eye protection and be sure it's the correct eye protection for the job.

Workers operating grinder equipment and those near them are constantly exposed to sparks, flying debris, and harmful rays of light that can damage unprotected eyes. If your hand is off, make sure your safety glasses are up. Look out for your buddies so they do the same!

Know the correct way to remove eye protection:  
-Band over and face the front  
-close your eyes, and remove eye protection - be sure to dust off your face before you open your eyes!



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**You choose. You win.**

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Fixed Ladder Safety **2011**

Always hold the handrail when climbing or descending stairs. Remember: 3 points of contact!

Never skip stairs or jump from them - even if you are in a hurry!

Watch out for your buddies! If you see someone practicing unsafe behavior on a fixed ladder, speak up and help them to proceed safely. We need each crewmember fit for duty so that we complete every voyage safely.



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-OB- Enter it at [www.awardsofexcellence.com](http://www.awardsofexcellence.com)  
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**You choose. You win.**

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# Courtesy

*We are guests in their home and their place of work!*

Both Horizon and the crew are in business to make money.

We are NOT there to convert, preach about global warming, etc.

We can't ask them to do our job.

No drugs or alcohol.

Be respectful of timing at meals, etc. (crew shifts).

Use common sense (not always so common!).

Remember, you are a professional and a representative of ARM!



# **ZERO TOLERANCE**

**THE HORIZON SPIRIT IS A ZERO TOLERANCE VESSEL FOR THE FOLLOWING:**

- 1. DRUG AND OR ALCOHOL ABUSE: ANYONE FOUND UNDER THE INFLUENCE OF DRUGS OR ALCOHOL IS SUBJECT TO IMMEDIATE DISMISSAL. ALSO CHANCES ARE THAT SEAMAN'S PAPERS WILL BE REVOKED.**
- 2. SEXUAL HARASSMENT: ANYONE FOUND GUILTY OF SEXUAL HARASSMENT WILL BE SUBJECT TO IMMEDIATE DISMISSAL.**
- 3. RACIAL AND OR GENDER DISCRIMINATION: ANYONE FOUND GUILTY OF EITHER OF THESE WILL ALSO BE SUBJECT TO IMMEDIATE DISMISSAL.**

**MASTER  
HORIZON SPIRIT**



# Weather Balloon Launches





# ARM's New Vegan Soudes









# Which Vegetables Worked Best?

20 balloons taken; 2 burst

6 potatoes

4 sweet potatoes

1 avocado - unripe is best

1 rutabaga - they get moldy

2 turnip

1 cayote squash - broke up when launching

3 acorn squash - 1 went into ocean

Squash had a surprisingly poor performance record!





















































































































































# Meteorological System









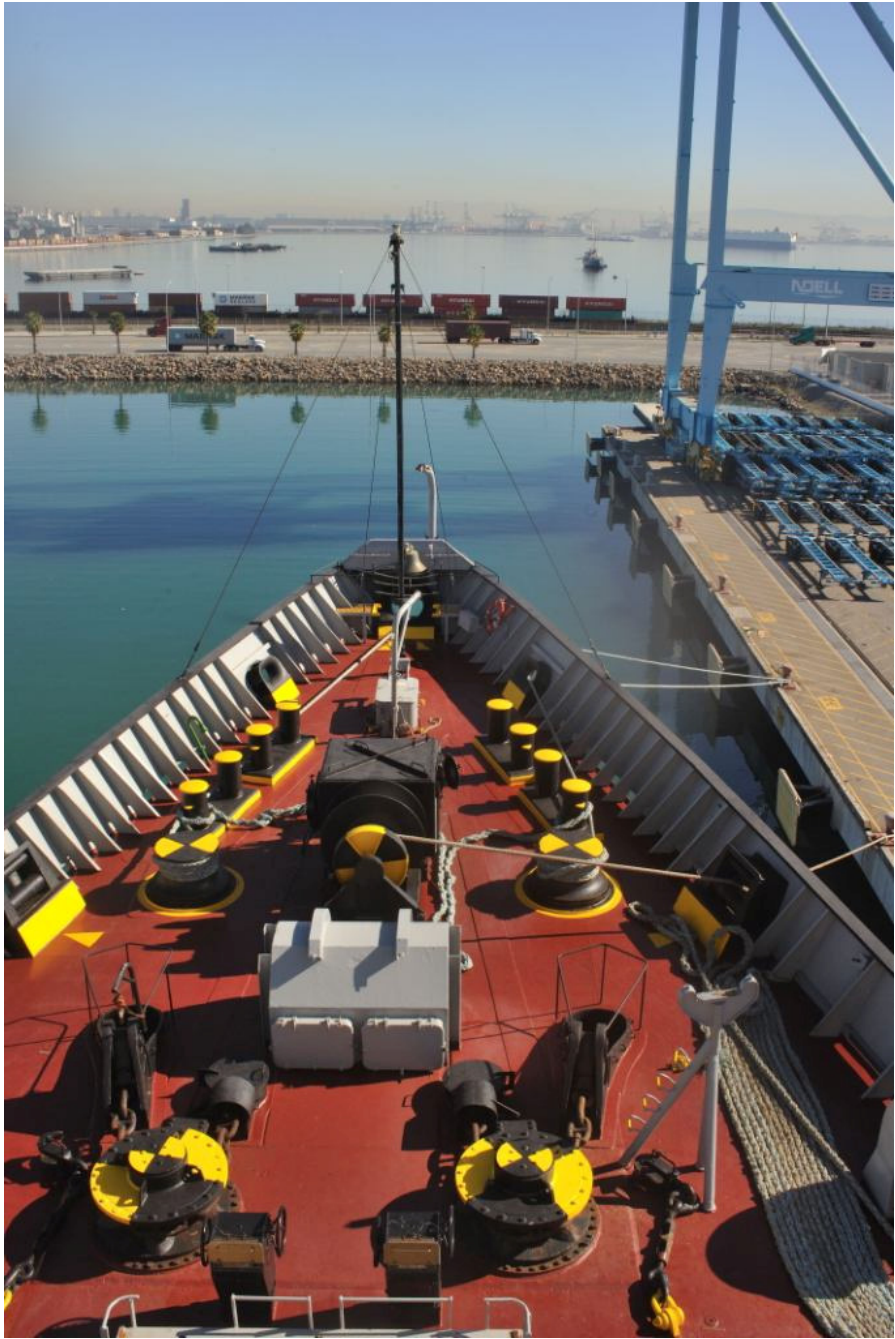












# Soot (and smoking and salt)

















# MAGIC - Pending Topics

Status/timeline of radars, stable table, other instrumentation

Calibration plans

Marine hardening (vibration, fatigue, salt)

Backup plans for instrument failure (vibration, fatigue, salt)

Communications from ship to shore (internet, bandwidth, cost, etc.)

Data availability (possibly different for different instruments)

Get your TWIC (<http://www.tsa.gov/twic>)





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# Acknowledgements

Tim Martin (ANL): preparation of the SeaNav system

Jeremiah Reynolds (RMR Co.): assistance with installation and takedown

Barry Pettyjohn and crew (Dockside Machine): loading/unloading equipment

Mike Bohlman and Don Watters (Horizon): their support for MAGIC

Captain Rankin and the crew of the *Spirit*. their hospitality

The logo for Horizon Lines, featuring a stylized red and black wave icon to the left of the text "HORIZON LINES" in a bold, black, sans-serif font.

**HORIZON LINES**



