

Fall 2002 Simple Machines Robotics Competition

Hogg Middle School

Minding The 3 R's:

December 7, 2002

Protecting Connecticut's Coastal Resources Through Response, Remediation, and Restoration

LEGOnauts, welcome to LEGO Centauri. Wow, that was a long journey from Earth. Now we must put our exploration team into action. Unfortunately, our transporters were damaged in the landing; therefore we need a team to develop a robot that will help transport 30 LEGOnauts from the LANDING ZONE to the EXPLORATION ZONE. Is anyone here ready to step up to the challenge?

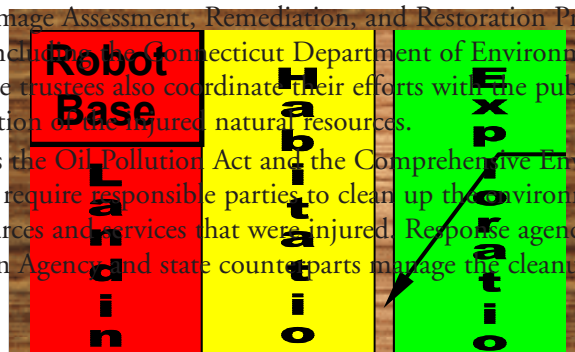
Oil spills and releases of hazardous substances from waste sites can cause many negative and long-term impacts to coastal natural resources. When oil or hazardous substances are released into the environment, wildlife species, fisheries, and habitat may suffer harm, beaches may be closed, and navigation may be curtailed. Dealing with harmful effects from these releases is a challenging undertaking, but federal trustee agencies, including the National Oceanic and Atmospheric Administration (NOAA), are available to assist Connecticut residents.

- The team must be ready to execute the mission on December 7, 2002 at Hogg Middle School.
- The equipment available for a team to build a robot or robots is 3 LEGO Motorized Simple Machines Kits.
- The following diagram presents the environment which will be encountered.

"NOAA's trustee authority directs us to work on behalf of the public to provide ecological and recreational compensation for the lost use of natural resources following a release of oil or other hazardous substances," explains Ken Finkelstein, an environmental scientist with NOAA.

In Connecticut, NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) tackles spills and waste sites with co-trustees including the Connecticut Department of Environmental Protection (DEP) and the U.S. Department of Interior. The trustees also coordinate their efforts with the public and responsible parties to ensure the protection and restoration of the injured natural resources.

State and federal laws such as the Oil Pollution Act and the Comprehensive Environmental Response, Compensation, and Liability Act require responsible parties to clean up the environment after a spill or release, and also to restore those natural resources and services that were injured. Response agencies like the U. S. Coast Guard and the Environmental Protection Agency and state counterparts manage the cleanup. Natural resource








continued next page



S. Gephard, CT DEP

- The following diagram presents where the LEGOnauts will be in the LANDING ZONE.

<h2>Minding The 3 R's: Protecting Connecticut's Coastal Resources Through Response, Remediation, and Restoration</h2>	<h3>LEGOonauts at Base</h3>  <p>Anthony Dvorskas</p>		<h3>Dual Transporter</h3> 
<h3>Robot Base</h3> <p>Oil spills and releases of hazardous substances from waste sites can cause many negative and long-term impacts to coastal natural resources. When oil or hazardous substances are released into the environment, wildlife species, fisheries, and habitat may suffer harm, beaches may be closed, and navigation may be curtailed. Dealing with harmful effects from these releases is a challenging undertaking, but federal trustee agencies, including the National Oceanic and Atmospheric Administration (NOAA), are available to assist Connecticut residents.</p> <p>Trustees are stewards of the public's natural resources, designated by Congress and charged with protecting and restoring natural resources in the event of an oil spill or release of hazardous substances. NOAA is a trustee for coastal resources such as estuarine and anadromous fish and their habitats, including wetlands, mudflats, and coastal streams.</p>	<h3>Robot Base</h3>		
<p>"NOAA's trustee authority directs us to work on behalf of the public to provide ecological and recreation compensation for the lost use of natural resources following a release of oil or other hazardous substances," explains Ken Finkelstein, an environmental scientist with NOAA.</p> <p>In Connecticut, NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) tackles spills and waste sites with co-trustees including the Connecticut Department of Environmental Protection (DEP) and the U.S. Department of Interior. The trustees also coordinate their efforts with the public and responsible parties to ensure the protection and restoration of the injured natural resources.</p>	<h3>Robot Base</h3>		<h3>Lift Transporter</h3> 
<h3>Quad Transporter</h3> 	<h3>Robot Base</h3>	<p>State and federal laws such as the Oil Pollution Act and the Comprehensive Environmental Response, Compensation, and Liability Act require responsible parties to clean up the environment after a spill or release, and also to restore those natural resources and services that were injured. Response agencies like the U. S. Coast Guard and the Environmental Protection Agency and state counterparts manage the cleanup. Natural resource</p>	<p>continued next page</p>
		<h3>Mass Transporter</h3>	<p>ters</p> <p>S. Gephard, CT DEP</p>

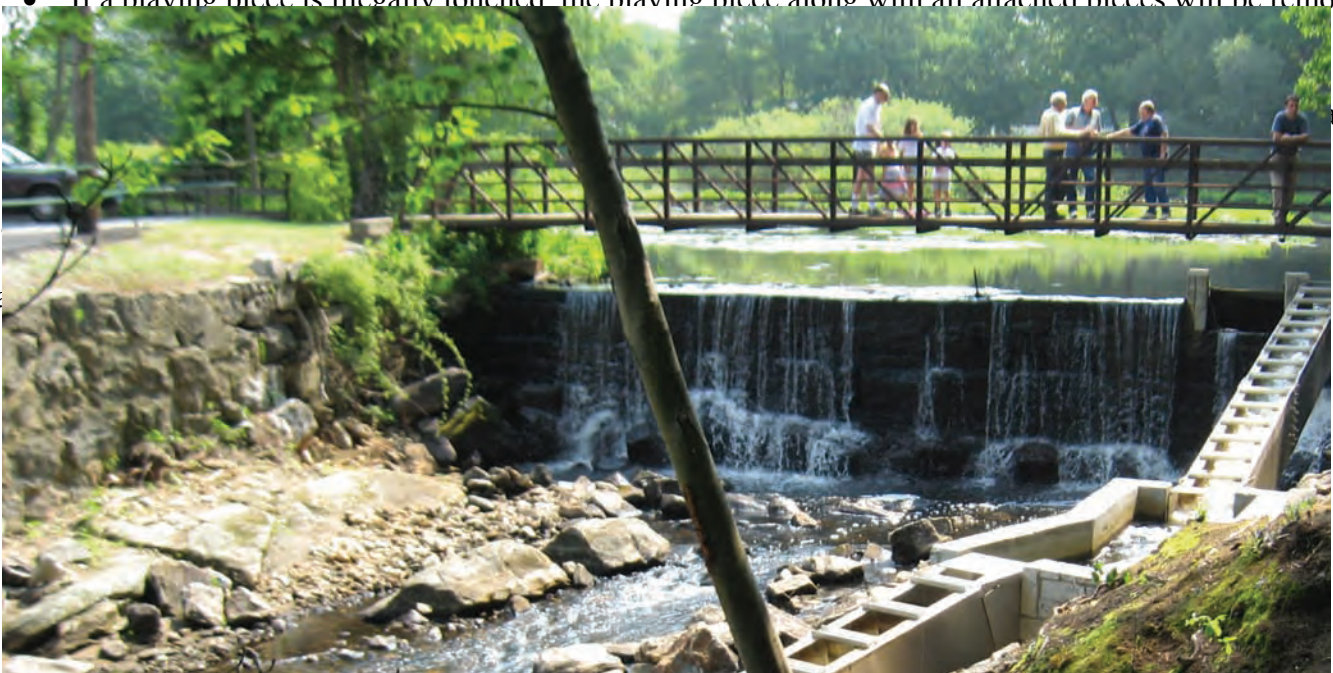
Wrack Lines 8:1 Spring/Summer 2008

- The team has 2 minutes to complete the mission.
- The team scores 5 points for transporting a LEGOnaut to the EXPLORATION ZONE.
- The team scores 2 points for transporting a LEGOnaut to the HABITATION ZONE.
- The team's score is determined at the end of the 2-minute mission.

Minding The 3 R's: Protecting Connecticut's Coastal Resources Through Response, Remediation, and Restoration

- A LEGOnaut counts if any part of the LEGOnaut is breaking the plane of the zone.
- The mountain is considered part of the HABITATION ZONE.
- The black line between the HABITATION ZONE and LANDING ZONE is considered part of the HABITATION ZONE. *Anthony Dvarskas*
- On spills and releases of hazardous substances from waste sites can cause many negative and long-term impacts to coastal resources. If hazardous substances are released into the water, they can harm fish, wildlife, and shellfisheries, and can also affect the economy and public health. Dealing with harmful effects from these releases is a challenging task, but federal statutes act to protect the environment, including the National Oceanic and Atmospheric Administration (NOAA), are available to help Connecticut residents.
- The robot shall not have any elastic stored energy (i.e. stretched rubber band) when the mission begins or when the robot is returned to base but elastic stored energy can be generated from activating a motor.
- The ROBOT BASE is the 12' x 16' boundary extended vertically (i.e. the robot can not hang over the line at the beginning of the mission).
- The team can touch their robot without penalty when the robot is partially inside the ROBOT BASE
- "NOAA's trustee authority directs us to work on behalf of the public to provide ecological and recreational compensation for the lost use of natural resources following a release of oil or other hazardous substances," explains Ken Finkelstein, an environmental scientist with NOAA.
- The black line indicating the ROBOT BASE is NOT part of the ROBOT BASE.
- A penalty of 5 points will be assessed if a team touches their robot that is outside of the ROBOT BASE.
- In Connecticut, NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) tackles spills and waste sites with co-trustees including the Connecticut Department of Environmental Protection (DEP) and the U.S. Department of Interior. The DEP and NOAA coordinate their efforts with the public and responsible parties to ensure the protection of the environment and the improvement of the coastal resources.
- If a robot is touched, the robot must be returned to the ROBOT BASE to continue the mission.
- The controller and wire can ONLY be used to provide electrical power to robot motors (i.e. it can not be used to drag the robot, coral LEGOnauts, etc.)
- If a controller or wire are used illegally (judges call), the team will be required to immediately place the robot back in the ROBOT BASE to continue the mission.
- Response agencies like the U. S. Coast Guard and the Environmental Protection Agency and state counterparts manage the cleanup. (Natural Resources, etc.)
- A team may touch any playing piece (Lift Transporter, Mass Transporter, LEGOnaut, etc.) COMPLETELY inside the ROBOT BASE without penalty.
- If a playing piece is illegally touched, the playing piece along with all attached pieces will be removed

continued next page



S. Gephard, CT DEP