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6 ROBOT TRANSPORTATION

6.1 OVERVIEW

This section provides information regarding crate specs, shipping, the FedEx® Freight shipping donation, and the drayage companies. Please make sure those persons responsible for building and shipping your team's robot crate understand and follow the guidelines for the processes.

Be sure to read the new section below, which describes the specific, federally regulated method of packaging your batteries.

6.2 NEW - BATTERY PACKAGING

Federal regulations require teams to follow the instructions below. If you do not follow them, your team's crate may not make it to the event(s). Read the five (5) numbered instructions below.

Each time you ship your robot:

1. You **MUST** ship batteries inside the original packaging
2. You **MUST** use the original Styrofoam protective cover with the plastic caps covering the battery terminals.
3. Secure the boxed batteries inside the robot crate in an upright position within DESIGNATED battery box slot. Refer to the sample shown below:



4. **ABSOLUTELY NO** batteries are to be mounted (connected or disconnected) in the robot!
5. The crate **MUST** be marked "**NONSPILLABLE BATTERY**" in 1" or larger letters on all four sides. The inner battery box **MUST** be marked "**NONSPILLABLE BATTERY**" in 1" or larger letters on 2 sides of the battery box.

6.3 CRATE INFORMATION

Build your crate so it is sturdy and falls within weight and height specifications. The Drayage Company determines if a crate meets the size and weight criteria and passes the information to FIRST.

If a crate exceeds specifications, FIRST will not guarantee its security or delivery to the site. The Drayage Company will round up to the next hundredweight if a crate exceeds 400 pounds and will charge accordingly. Refer to the website <http://www.usfirst.org/robotics/2005/rgevents.htm> EVENTS, Site Info. for specific event information..

6.3.1 Crate Specifications

All Crates must:

- Weigh 400 pounds or less in order to avoid drayage overage charges
- Be sturdily built to prevent damage to your equipment
- "Sit" on 2 pieces of 4" by 4" lumber, spaced at least 28" apart so it can be moved by a forklift.
- Have a footprint no greater than 4' by 4' and be no taller than 5'10" (70") high. This maximum includes the 4" by 4" lumber mentioned above.
- Be capable of being moved by a forklift

6.3.2 Crate Limit

FIRST asks that each team ship only one crate. Each team has equal pit station space. The Pit gets crowded. ***Teams cannot have more than two crates at any competition site.*** This keeps team costs down and keeps Pit aisles, entrances, and egresses clear and safe. **If you ship an extra crate, it must also meet the specifications stated above, and the team pays for all shipping and drayage costs for the additional crate.**

6.3.3 Crate Labeling

- Refer to the website, *Regional Events, Site Info* for the printable drayage address labels for the event(s) you will attend. These labels are mandatory for every crate. Fill in your team number; print four (4) for each event and attach to the sides of the crate.
- Tape the battery labels to each side of the crate
- Place a clear airbill sleeve on each side of your crate and insert the shipping labels. This will help your shipper. It also helps the Material Handling (Drayage) Company easily locate your crate at the warehouse and the competition site.
- Bring extra airbill sleeves, for shipping to the next event, in case yours get damaged during shipment.
- Bring your labels to the event for your outbound crate(s) shipment.

6.3.4 Crate Contents (Required)

Teams must include the robot and the two batteries. You must carefully and completely follow all of the instructions above listed in the "Battery Packaging" section. If the federal regulations are not followed, your robot may not make the event(s).

FIRST will allow you to keep **all** of your robot controls (Operator Interface, OI power supply, joysticks, etc.) and not ship it with your robot on Tuesday, 2/22/2005. This will allow you to continue to work on your programming. If you decide not to ship it with your robot, **please remember to bring it to your initial competition.** FIRST does not have replacement controls.

NOTE: Do not pack all of the team's safety glasses in your crate. You will need some when you uncrate!

6.3.5 Crate Storage - Pit Stations Are Too Small

Pit space is very limited and the aisles in the Pit must be clear for safety sake as well as robot, spectator, and team movement. Your team members, chairs, and equipment must fit within the team's designated space during the competitions.

6.3.6 Shipping and Drayage Definitions

Shipping	In this case, the term "shipping" refers to the transportation of your crate: a. To the Drayage (material handling) Company b. From the Drayage Company to the next event's Drayage Company c. Home after your last event
Bill of Lading	Otherwise known as a Material Handling Form. This is a receipt your carrier issues, promising delivery of the merchandise/items listed.
Ship Deadline	The robot crate must leave the team's possession, either by delivering or shipping to the material handling facility. This deadline helps ensure that teams have equal work time on robots.
At Drayage Deadline	The latest date and time you can have your robot delivered to the drayage warehouse facility. Note: This deadline helps that the machines arrive at the drayage facility in time for delivery to the competition site.
Drayage Companies	Temporary warehousing companies that take in, store, deliver, and document movement of event materials. In our case, the Drayage Company receives and documents team crate weight and arrival time, then stores them until delivery to the event site Pit Stations on Wednesday before the event.

6.4 SHIPPING YOUR ROBOT

You will be shipping your robot to a Drayage Company because event sites do not accept or store team robots, crates, or toolboxes. This company stores the robots and brings them to the event site.

If you ship two crates, both must adhere to specifications and deadlines.

Teams are responsible for paying for *ALL* shipping charges at the time of shipment. Refer to the FedEx[®] section below for specific information about free, donated shipping to ONE Regional and the Championship.

6.4.1 Shipping to Your Initial Event

- Locate drayage information for your event(s) on the usfirst.org website, *Event section, Site Information*.
- Print, read, and save all sections relating to your events, especially the drayage sections.
- Obtain the best shipping rate to the Drayage Company for your first event, if you are not using the complimentary FedEx[®] ship.
Note: You will need the total weight of your crate and its contents for an accurate estimate.
- Make shipping arrangements well before the ship deadline.
- Obtain Bill of Lading from your carrier.

6.4.1.1 Crate Shipment Deadline and Requirement

ALL team crates must leave the team's hands by February 22, 2005, 5p.m. local time. This date and time applies whether you ship your crate(s) or drive it to the drayage facility.

a. If you ship your robot, obtain written proof from your shipper that shows the date and time that the shipper took possession of your crate.

b. If you drive your robot to the Drayage Facility, ask for written proof that shows the date and time you delivered your crate(s). Read below:

6.4.1.2 NEW Drayage Site Delivery Vehicle Stipulation

IF YOUR TEAM DECIDES TO DELIVER ITS ROBOT CRATE TO DRAYAGE, THE DELIVERY TRUCK MUST HAVE A FORTY-EIGHT INCH (48") **VEHICLE BED HEIGHT**. THIS HEIGHT STIPULATION ENSURES THAT THE VEHICLE IS TALL ENOUGH FOR A COMMERCIAL LOADING DOCK.

DRAYAGE PERSONNEL ARE NOT ALLOWED TO UNLOAD PERSONALLY OWNED VEHICLES. **YOU WILL BE TURNED AWAY AT THE WAREHOUSE IF THIS VEHICLE REQUIREMENT IS NOT MET! NO EXCEPTIONS.**

6.4.2 Robots Must Ship from Event to Event

Teams cannot take their robots home between events. Robots must ship from event to event, either:

- a. Through Midwest Conference Services and its designated carrier. **OR**
- b. Through the FedEx complimentary shipping. *Bring the pre-printed airbills with you.*
 - Remember to print and bring shipping labels to each event in which you compete. *Event, Site Information* section(s) on the website
 - There is no on-site pickup at the events. Crates will return to the Drayage Company and ship from its warehouse on Monday.

6.4.3 Back-to-Back Events

Contact the Drayage Company(s) well before both competitions to see if it can/will extend the crate arrival deadline. You *must* use the MCS designated shipper, and you cannot use FedEx in this case, because FedEx does not pick up at events on Saturdays. Your robot will not make the competition on time if you ship FedEx. It is your responsibility to make all arrangements to have your robot ship and arrive on time. Make your arrangements early!

6.4.4 Customs

Teams shipping to the Canadian Regional and international teams shipping into the U.S. should research requirements for customs well in advance. FIRST strongly recommends using a Customs Broker.

6.4.5 Delivery Deadlines

Each event has an "at drayage" deadline. Refer above to "Definitions." Make sure your shipper is aware of the deadline so you will meet it. Find the crate arrival deadline for each event by referring to the website *Events section, Site Info*.

6.4.5.1 Verify / Document your Robot Shipment

FIRST requires every team to document the shipment of its robot, first event only. All crates must ship from event to event thereafter. *Teams will disqualify themselves* from competition for failure to observe and document the adherence to the rules and deadlines. Please follow the instructions below.

Ship with FedEx	Other Shipper
<ol style="list-style-type: none"> 1. At the top of the airbill, find the 12 digit tracking number. 2. Enter it in your team's "Kit and Kickoff" section of your TIMS record. 3. Save the airbill for tracking purposes and your records 	<ul style="list-style-type: none"> • Ensure that your receipt clearly shows the date and time the crate(s) left your team's hands. • Write your team number on the bill of lading/receipt. • Make a copy and retain for your records. • International teams will receive an e-mail telling them how to document the robot shipment. • U.S. teams: Send it to FIRST within 24 hours, to arrive within 4 days. Address the envelop as below, using all capital letters. You may need to send it USPS Priority Mail. <p style="text-align: center;">YOUR TEAM #, INITIAL EVENT TEAM WILL ATTEND TEAM SUPPORT</p> <p style="text-align: center;">FIRST 200 BEDFORD STREET MANCHESTER, NH 03101</p>

6.4.5.2 Track Your Shipment

The Drayage Company does not track crate FedEx shipments. Use your shipping company's website to do this.

6.5 FEDEX® FREIGHT SYSTEM (DONATED SHIPPING)

FedEx has again graciously agreed to partner with FIRST and donate some robot crate shipping, via the **FedEx Freight System**. Remember, this is a generous donation. Be grateful.

6.5.1 The Benefit and NEW Procedure

As a part of the Kit of Parts, each team will receive two (2) airbills from FedEx Freight Systems. FIRST will mail them to the shipping contact in February. The third airbill to be used for the shipment from the Championship will be a part of the Championship registration package.

The options below are the only options you can use.....no substitutions. Use the airbills for the following *only*:

1. FedEx Freight System will ship **ONE** crate to:
 - a. **ONE** Regional
 - b. The Championship
2. FedEx will also ship **ONE** crate back home:
 - a. After your final Regional if you are not competing in the Championship

OR

 - b. After the Championship if you compete in that event. If you need your robot soon after the Championship, you may want to use the MCS shipper. *Because of the crate volume of these donated shipments, it could take a month or so until you receive your crate.*

6.5.2 Consider the following

Which event will give your team the most value for this donation?

- FedEx does not pick up on Saturday. Is there enough time to make it from one event to the next Drayage warehouse?
- Complimentary shipments *do not* get high priority. Make sure there is enough time for this method of shipping. *This is especially true after the Championship.*

6.5.3 FedEx Important Notes

We cannot replace lost airbills.

- **Hand-written account numbers cannot be used for these donated shipments.**
- You cannot use FedEx when shipping to back-to-back events.
- FedEx will pay for one Regional ship only. You cannot substitute a second Regional shipment for the Championship shipping benefit.

Refer below for International shipments and shipments from Hawaii, Alaska, Puerto Rico.

6.5.4 FedEx Weight Limit

Crates *cannot* exceed 600 pounds.

REMEMBER: FIRST pays drayage costs for one crate up to 400 pounds *only*. Teams pay the drayage cost in excess of 400 pounds, rounded *up* to the next hundredweight.

6.5.5 Shipment Insurance

FedEx does *not* insure complimentary shipments. If you want to insure your crate and its contents, obtain insurance through a third party.

6.5.6 International / Unusual Shipments

Teams in the following locations will receive e-mails as the season approaches. Shipping from these areas, via FedEx, may require extra instruction.

Canada	Because FedEx Freight service is not offered within Canada, FedEx is not able to provide the donation of shipments within Canada. FedEx can only donate shipments that cross the Canadian/U.S. border or are within the U.S. Teams must obtain and use a FedEx International Airbill to ship across the Canadian/U.S. borders. This form is not provided in the FedEx packet. Use the provided airbills for shipments within the continental US.
Other International Shipments	Teams must obtain and use FedEx Freight International Airbills to ship to the U.S. and from the U.S. back home. These forms are not provided in the FedEx packet. Freight services are limited within England, Brazil, and Mexico. These shipments require "2 nd Day Air." Use the airbills provided in the FedEx packet for shipments within the continental U.S.
Alaska Hawaii Puerto Rico	FedEx Freight is not available in these areas. Teams must check the "Second Day Air" box on airbills. These shipments require "2 nd Day Air." Use the provided airbills for shipments within the continental U.S.

6.5.7 What to Do

In order to reduce the number of lost or missing airbills, FIRST will ship two airbills to teams during the second week of February. The team Shipping Contact will receive detailed instructions as part of this mailing.

AirBills:

- Fill out and place the airbill in a plastic sleeve and attach it on your crate. Make sure you follow all crate labeling instructions. Refer above to "Crate Labeling" section.
- Keep a copy of the airbill for tracking purposes. Put it in a safe place.
- *There will be NO airbill replacements.* Airbills with a handwritten account number will not be accepted for these free shipments.

Pickup:

- To arrange a pickup, call 24-48 hours in advance to schedule by calling FedEx Freight Services at **800-332-0807**. **REMEMBER:** You will need the account number from the pre-printed air-bill.
- **NEW INFORMATION:** Ask for Freight Services. Emphasize that it is a heavy weight shipment and provide the type of shipment for the area you will be shipping to/from. See table below.

Area	Type of Shipment
Continental U.S.	F3
Alaska	F2
Puerto Rico	F2
Canada	IP
Brazil	I2

- Allow 3-5 days for shipment movements.

6.6 TRACK YOUR CRATE

Plases do NOT call Midwest Conference Services to track your crate if you shipped FedEx. MCS schedules pickup on the Monday following the event and does not track shipments.

To Track FedEx:

Track your crate to ensure on-time crate delivery to the event: Find the FedEx Customer Service Center at the FedEx website www.fedex.com, to track crate shipments. You can also call at 800 Go FedEx, (800) 463-3339. All tracking requires your airbill tracking number.

MCS Carriers:

If you need assistance, call MCS.

6.7 DRAYAGE (MATERIAL HANDLING)

Every team has to ship its competition crate(s) to the designated drayage site for each event it attends.

NOTE: See above "Shipping and Drayage Definitions" for Drayage Company definition.

1. Midwest Conference Services (MCS) is the designated Drayage Company for all events with the exception of the SBPLI Long Island Regional.
2. Teams are not permitted, under any circumstances, to drive or ship crates to competition sites.
3. If a crate is labeled improperly, or if it does not meet required specifications, the drayage facility may refuse it.
4. Well ahead of shipping time, check the Drayage Company's rates for overweight (overage) costs for your event. The drayage rate for 2005 has changed. Refer to all related sections below.
5. Refer to the website *Event Section, Site Info* for relevant drayage information for all events in which your team will compete.

6.7.1 Drayage Contact Information for Midwest Conference Services (MCS)

For the name, address, and contact information for the Drayage Company for each event your team will attend, refer to the website, *Event Section, Site Info*. You can ask the MCS representatives questions relevant to drayage particulars and deadlines.

Phone: 630-351-3976

Fax: 630-351-4118

Check out the MCS website, www.mcsexpo.com, for a rate calculator for your drayage cost estimate for additional crate or weight overage for Regional Events or the Championship.

6.7.2 The Drayage Company: Functions and Services

FIRST contracts with a Drayage Company for each event to provide the following services:

- Document crate arrivals to its facility. (If a crate does not arrive by the specified deadline, teams can initiate tracking activities with the shipper it used, using the tracking or pro number on the shipping document.)
- Store team crates at its warehouse until the event.
- Transport team crates to the competition site and correct Pit Stations on the specified date.

- Remove and store teams' empty crates during the event.
Note: There will be no access to crates once they are removed from the Pit. Keep any necessary equipment at your Pit Station.
- Return empty crates to team Pit stations after competition on Saturday.
- Transport crates from Pit stations back to its warehouse after the competition.
- Load crates on designated trucks. The drayage company will only load their own trucks.

6.7.3 The MCS On-site Drayage Manager

The MCS events will have qualified service representatives to help teams with drayage questions and problems. Do not hesitate to go to the MCS booth at the events to ask about the process or any concerns you may have regarding drayage.

6.7.4 Why Must Teams Use The Drayage Company?

1. To provide FIRST with a system to monitor on-time crate arrival
3. To provide robot storage prior to the event
4. To ensure on-time crate delivery to team Pit stations at the competition sites
5. To provide a staging location for outbound shipments and protect staff and teams from crowded load-in and load-out situations
6. To comply with venue contracts that prohibit the acceptance of shipments on site

6.7.5 Early Uncrating Procedure at Events

Limited Pit Opening: For the convenience of the teams and to help ensure safety in the Pit, three persons from each team will be allowed to enter at 7:45a.m at the Regionals and 7:30 a.m. at the Championship Event to uncrate their robot. These persons cannot work on the robot.

The Drayage Manager will be on hand to help during this limited opening. Teams should:

- Look for the MCS red label on your crate and contact the Drayage Manager *before opening the crate* if there are questions about the weight or crate damage. *Once the team opens a crate, it cannot protest a weight issue.*
- Notify the MCS Drayage Manager as soon as you have uncrated so MCS can remove the empty crate(s). This will help clear the aisles.

6.7.6 Drayage Company Regulations

All shipments must be prepaid: The Drayage Company will not accept Cash on Delivery (COD) shipments. Teams must take care of this with the carrier, in advance, prior to sending any shipment to drayage site/crate consolidation center.

All teams must pay for drayage in advance, prior to the competition. If a team refuses to pay for freight overages, Midwest Conference Services will refuse delivery of the team's crate until payment is reconciled at the drayage service desk. Once drayage receives payment, it will deliver the team's crate(s).

Overages Payments: MCS will accept credit card payment for drayage overages. (MasterCard, Visa, or American Express) If paying by school check, it must arrive at MCS before the team participates in the event.

Designated Shippers: Teams must use FedEx *or* the designated MCS shipper for crates shipping from event to event. Consider using your final FedEx Freight airbill to ship home from your last event if you do not need your robot right away. Remember, these are donated shipments. The final return can take a month, especially after the Championship.

Midwest Conference Services: When not using FedEx, teams must make on-site arrangements through the MCS desk via a Midwest house carrier. (This does not apply to the Long Island event.)

Loading: The material handlers are not allowed to, and will *not* load your crate onto your vehicle.

Freight Bills, Weight Receipts: Shipments received without freight bills or specified unit counts on receipts will be delivered to team tables without guarantee of piece count or condition. When receiving freight, the Drayage Company requires that drivers submit a *certified weight receipt*. The company reserves the right of refusal to unload shipments without one.

Bills of Lading: All shipments must have a Bill of Lading or Delivery receipt showing the following:

1. Number of items, weight, and description of merchandise
2. All Items labeled per Regional event specifications

Damage: The Drayage Company will not be responsible for damage to uncrated materials, improperly packed materials, any concealed damages, or loss or theft of materials after crates have been picked up for loading out of the competition site.

Weigh In for MCS: The Drayage Company will weigh team crates as they arrive at each of their facilities. MCS will place a red label on each crate with the team number and crate weight.

For larger pieces of freight, it will use the DIM weight system to determine actual weight. Call MCS if you do not understand the DIM system.

6.7.7 Immediate On-site Crate Weight Complaint Resolution

When the team members arrive at the Pit Station:

1. Refer to and read the label Midwest Conference Services placed on your crate.
2. If you have any question as to the accuracy of the weight or information on the label, *immediately* find a MCS representative and resolve the problem. Please see the Pit Manager if you cannot find the representative.
3. *Do not open the crate until you have resolved the problem.*

NOTE: If you open the crate, you relinquish any appeal rights.

6.7.8 Weight and Rates Structure

Rounding Up: Drayage Companies weigh by the hundredweight and round the weight up to the next hundred. Make a real effort to keep weight down to well below the hundred marks to allow for scale calibration differences. *Example:* If your crate weighs 401 pounds, your charge will be based on five hundred pounds and you will have to pay for a hundred pounds for that crate.

Refer to your event (Site Information) on the website for material handling rates.

6.7.9 Drayage Costs - FIRST

FIRST will pay for the Material Handling (drayage) cost of *ONE* crate, *within criteria limits:* for each team, for each competition in which it competes.

Refer to *Crate Information, Crate Size, and Weight Specifications* section for specifics.

6.7.10 Drayage Costs - Teams

The following will cost teams money:

1. Crate exceeding measurement or weight specifications
2. Any additional crate. Teams pay *entire* drayage cost of additional crates

Note: Each team must pay for any additional material-handling charges by the end of each competition.

6.7.11 Outbound Shipments from the Drayage Warehouse

The Drayage Company will bring FedEx crates back to its warehouse on Saturday after the competition. Crates will be available for outbound shipping from the warehouse on Monday, with the exception of the Championship.

- Make sure that your crate is still fit for travel.
- You must pre-pay for all outbound shipping charges..
- Fill out a Material Handling Form (Bill of Lading) for each event. These are available through the Drayage Company before the competition or at the event.
- At the event, remove the old shipping label. Attach the sleeved, pre-printed labels for the next event, to all sides of the crate...at a readable level.
- Make arrangements for the outbound shipment.
- If this is your last competition and you want to take your robot home, make arrangements prior to the competition.

Remember: *The Drayage Company will not load your crate onto your vehicle.*