

**For Inspiration and Recognition of Science and Technology**

Granite State Regional  
Bag and Tag Primer

Bryan Lee

10 February 2011

“...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes....”

Dean Kamen, Founder



## Topic Overview

- » Provide an overview as to what is “Bag and Tag” and why it matters
- » How you’ll be impacted by role
  - FRC Team Lead or Member

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



# OVERVIEW

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



## FRC Teams and Shipping

- » In the past, FRC teams would ship their robot and parts to each competition. The robots would be put into storage (drayage) until it came time for the robot to be at an event for competition. Each FRC team had to ship on the same day so every team would have an equal amount of time to work on the robot. The act of shipping and physically storing the robot away from the teams provided a high level of assurance these rules were being satisfied.
- » The next three slides are taken from Bill Miller's Blog explaining how shipping works from FIRST's perspective.

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



## The 400lb Gorilla

- » **Here's why we have a 400lb limit for robot shipping:**
- » **Every year FedEx generously donates a total dollar amount that may be applied to FedEx services. FRC chooses to earmark this donation for robot shipment by teams to and from events. FRC pays for FedEx shipment of kits of parts to Kickoff locations; FRC pays for FedEx services utilized in the day to day operation of the organization; and FRC pays for all FedEx costs incurred by teams shipping robots after the total dollar amount of the FedEx donation is exceeded.**
- » **Every year FRC presents qualifying teams with FedEx bills of lading and requests teams comply with weight limits when shipping their robot to and from events. The goal is to share the FedEx donation among as many FRC teams as possible without exceeding the total dollar amount of the FedEx donation.**
- » **For the past three years (2008-2010) robot shipment by teams has exceeded the total dollar amount of the FedEx donation.**

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



## How “Shipping” Really Works

- » **Robots are not shipped to the venue. Venues don’t have the facilities, or the desire to store a bunch of robot crates in the weeks leading up to our event. Instead, robot crates are shipped to drayage warehouses. The drayage company delivers the robot crates to the venue the day FRC starts setting up for an event.**
- » **FRC earmarks the FedEx donation for use by teams shipping a robot from their location to the drayage site. If a robot crate exceeds the 400lb weight limit, that crate eats up the donation faster than a robot crate less than or equal to 400lb and eventually FRC has to foot the bill for shipments made after the dollar amount of the FedEx donation is exceeded. (Last year a team shipped a 1280lb crate using up more than three team’s weight allotment in a single shipment.)**
- » **FRC pays the drayage site to store the robot crates. FRC pays the drayage site a fee to deliver the robot crates based on the assumption the crates don’t exceed 400lb. If a robot crate exceeds the 400lb weight limit, FRC has granted the drayage company permission to charge the team for the overage. This fee only covers the additional costs to the drayage company. It is not applied to the shipment of the robot crate to the drayage facility from your location.**

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



## What Teams Can Do To Help

- » **Keep your robot crate at or under 400lb. This allows FRC to share the FedEx donation among as many FRC teams as possible without exceeding the total dollar amount of the FedEx donation.**
- » **If you know for sure that the items you want to ship to your event will exceed 400lb, you have several choices.**
  - **Reconsider the tools and supplies you plan to bring to the event and look for ways to come in at or under the weight limit.**
  - **Distribute the tools and supplies among the team members attending the event and have them hand carry the items to the event.**
  - **Build a second crate, load the extra weight into that crate, pay to ship that crate to the drayage site and pay the drayage company to store and deliver it.**

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes....”

Dean Kamen, Founder



## Bag and Tag Overview

- » The growth of FRC teams in Michigan made it such that large Regionals were not financially possible yet allowed for an alternative system to be tried out (successfully). The system is called Bag and Tag and is being rolled out to selected Regionals/Events ([Section 5](#) of the Manual)
- » Bag and Tag will not ever fully replace the current system, but has utility in many Events to reduce costs for FRC Teams as well as FIRST.
- » The robot is “bagged” by the FRC Team before the Ship Date (midnight, local time) and “tagged” with a non-reuseable numbered lock and then logged. This act completes the “ship” portion of the existing system. The bag robot can then be stored anywhere at the convenience of the team and brought directly to the Regional/Event. This is equivalent to the “storage” or “drayage” portion of the existing system. At the Event, the tag and log are inspected for compliance, at which point the Bag and Tag process is completed.

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



## Bag and Tag - Continued

- » Bag and Tag does not have the same level of assurance with regards to preventing teams from performing modifications to the robot after the Ship Date. It is much more of an honor system.
- » It does have much more flexibility to deal with out-of-the norm situations as well. Basically, changes are logged and reviewed at the Event. If a bagged robot is opened by Customs (expected for International teams), the act is noted in the log and re-tagged with a new numbered tag.

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes....”

Dean Kamen, Founder



# FOR FRC TEAMS

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



- Check to see if you are attending a Bag and Tag Event ([Section 5](#))
  - Note that if you're attending multiple events, you may have to both crate your robot *and* Bag and Tag it
- Before the ship date, make sure you have the two (2) bags and tags provided from FIRST in the Kit Of Parts
- Be sure to review the Robot Transportation Sections of the Manual ([Section 5](#))
- Print out a copy of the [Robot Lock Up Form](#). This is the form that you must present at the time the robot is received at the Regional for inspection and verification. Lack of a form or an improperly filled out form **will** delay your team from being allowed to unpack on Thursday of the Event.
- Fill out the form according to the [Overview](#) on FIRST website
- Issues at the event are to be brought to the Lead Robot Inspector

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



## Granite State Regional

- » Robots are to be brought to the Verizon Wireless Arena from 6-9PM on Wed. 3/2:
  - Loading dock on the South Side of VWA
  - Signs will be posted directing teams
- » Remember to bring your Robot Lock Up Form. Do not pack this form with the robot.
- » The robot will be moved to its assigned Pit location. Personnel will be on site to review the paperwork and certify the information on the Form matches the tags on the robot. The robot will NOT be un-bagged at this point, only the lock will be removed if the paperwork is in order. Material, spare parts, banners, signs, anything unrelated to the bagged robot will be **TURNED AWAY**. Do NOT bring them with you.
- » Unbagging or set up of your robot will occur during the designated time Thursday

“ ...to create a world where science and technology are celebrated....where young people dream of becoming science and technology heroes.... ”

Dean Kamen, Founder



## At/After the Event

- » If you have a missing form or one that is not filled out, work with the Lead Robot Inspector to resolve the issue and fill out a Non-Compliance Form. It is very important to note that until any non-compliance issues are resolved, the team is NOT permitted to work on the robot or go to practice rounds.
- » After the event is concluded, bag or bag and crate your robot as appropriate to go to your next event. Remember to mark your Lock Up Form accordingly.