

# Section III

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Marketing and Public Relations

## Events

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As a team, we typically attend a variety of events including parades, expos, and open houses along with hosting two major fundraisers throughout the year. While we only bring a single car to some of these outreach opportunities, we always attend on behalf of everyone in the program. We usually have around nine events that we attend or host, but this last year we were unable to attend any. This section will document events our team attended during the time from early 2019 to early 2020. During this timeframe, we were still able to attend six events, and most importantly host our two fundraisers. There is no true distinction between events that are for marketing and events for public relations. We keep both ideas in mind at all events, as we believe that there could always be a business, an individual, or a parent that could see us and want to sponsor us or there is a student or future student that would want to the program or a similar program someday. The events we attended or hosted are listed below along with what type of event they are.

### Parades

Palo Parade

### Expos

Marion Fly-In  
Breakfast  
Kennedy Club Fair  
Open Minds Open  
Doors STEM Expo

### Open Houses

Kennedy Fall Open  
House  
Kennedy Class of  
2024 Incoming  
Freshmen  
Orientation

### Fundraisers

Fall Dinner  
Hawkeye Downs  
(Concessions)

The three events that will be discussed in this car's book are the Kennedy Fall Open House, Fall Dinner, and Incoming Freshmen Orientation. Information for the other events can be found in the books for the other cars in our program (Kennedy Cars 984 and 983).

## Kennedy Fall Open House

The annual Kennedy Fall Open House is an opportunity parents, students, and future students to learn about programs and activities within our school and community with a focus on STEM and the trades. This is a very useful recruitment and sponsorship outreach event. The open house is held very early in the school year meaning it is within our school's 'grace period' for rearranging schedules and dropping class. This makes it possible for students who hadn't known about our program before to get their schedules reworked to the class that first semester. This is preferable as having too much time between when a student decided they want to join the class and when they have an opportunity to sign up for it they can lead to the student forgetting what exactly the program is and lose interest. On the sponsor requisition side, this event is attended by a lot of local construction and electrician companies looking to interest students in perusing a trade after high school. Companies like this have sponsored us in the past and this is a great opportunity for us to talk to them about our program and for them to see our display. Most sponsors don't have the opportunity to see our cars in person and talk to us face to face since a lot of communication with sponsors is over the phone or through e-mail. At this event the 985's team was being represented by past crew chief Colin Flannigan. They were able to talking to both prospective members and sponsors and had a lot of fun showing off our cars.



## Fall Dinner

Our program's major fundraising and promotional event is our annual fall dinner. We spend about a week converting our school's shop into a restaurant, with a taco dinner buffet in the front of the shop, and seating for around seventy-five people in the back. Putting on the event is a full team effort; all students in the program participate in setup, distribution of the food, or clean up. Past crew chief Colin manned the taco shells and tortillas while Ross Finneman, the 985's assistant crew chief at the time, bussed tables and refilled drinks throughout the night, answering any questions an attendee had about our cars. Additionally, current driver Elizabeth Severson helped with setting up the shop for the event. We were very lucky to have a multitude of sponsors who donate door prizes to our dinner, which we handed out to our guests after they were done eating. Our fall dinner serves as a team bonding event, a sponsor recognition and appreciation night, as well as a way to get the families of our students involved in the program. Sponsors also attended this event to see how the money they donate is used as we have all cars on display. The connection between the parents of the program, our sponsors, the students, and our advisor is of utmost importance to keep the program running. Through this event we raised seven hundred dollars in meal sales, gained two sponsorships, and had dozens of t-shirt and hoodie orders placed. This year's dinner was held on October 26th, 2019.



## Kennedy Class of 2024 Incoming Freshmen Orientation

Every year Kennedy High School hosts an “Incoming Freshmen Night” for students who are currently in eighth grade and their parent to explore different classes and activities they could take or do during their high school career. This event runs in fifteen-minute ‘classes’ with five-minute passing times. Even though electric car at Kennedy is a regular class offered during the school-day, we do not host a ‘class’ during this event. Instead, we set up in the school’s main foyer at the entrance with other the activities for parents and student to see as they come on or during the passing times. We used the old 983 as our display car for this event as this event is held in the middle of our construction season and no current car was ‘display ready’; also a part of our display was our normal trophy and trifold set-up we use at most expos and open houses. The 985 was being represented by its past crew chief Colin Flannigan at this event. Throughout the night he answered student’s and parent’s questions, mainly regarding the program’s status as both a class and an extracurricular. His pitch seemed to be very successful as we had four students tell us they were going to sign up for the class next year.



# Section IV

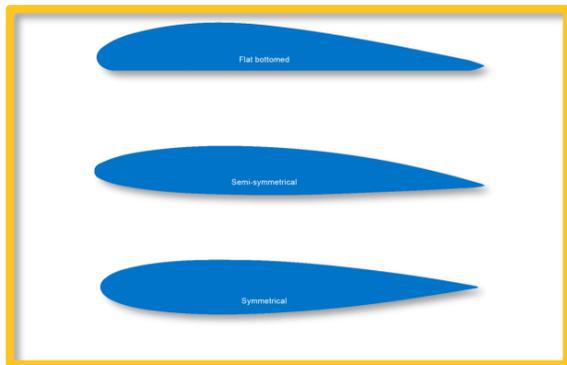
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Research, Design, and  
Pre-Planning

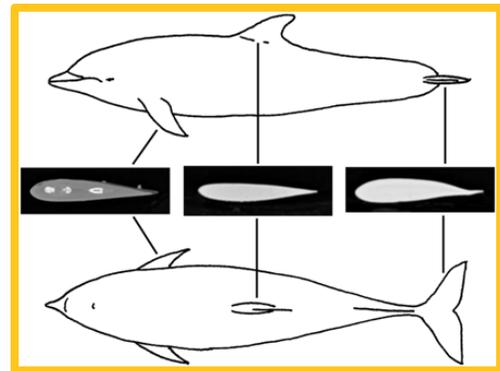
## Research Notes

The original inspiration for the 985 was the hydrodynamic shapes of whale and dolphin bodies. The 985's crewchief was amazed by how effortlessly dolphins swim through the water and decided to study the hydrodynamics behind the gracefulness of a dolphin. Here is an excerpt from his findings.

- **Fusiform shape! (teardrop)**
- **Aircraft wings: Semi symmetrical or flat-bottom would be best for drivers/car shape**
- **No lift is needed, so flatbottom not important (round bottom car?)**
- **Tapered pointed tail important to reduce drag**
- **Blunt, fat nose? Like the fusiform? Or Something more like a dolphin with a point rather than the bottom of the teardrop?**
- **"Shoulder" position (widest part) on a dolphin is around 30-40% of the way from nose**
- **Would a dorsal fin on a car help? Or would it create more turbulence?**
  1. Dorsal fins create turbulence off at the tip of the fin on dolphins and whales
  2. Dorsal fin function is balance
  3. Airplane "T" tails sometimes help with directing airflow



Fusiform shapes of airplane wings



Dolphin body shape

## Sources

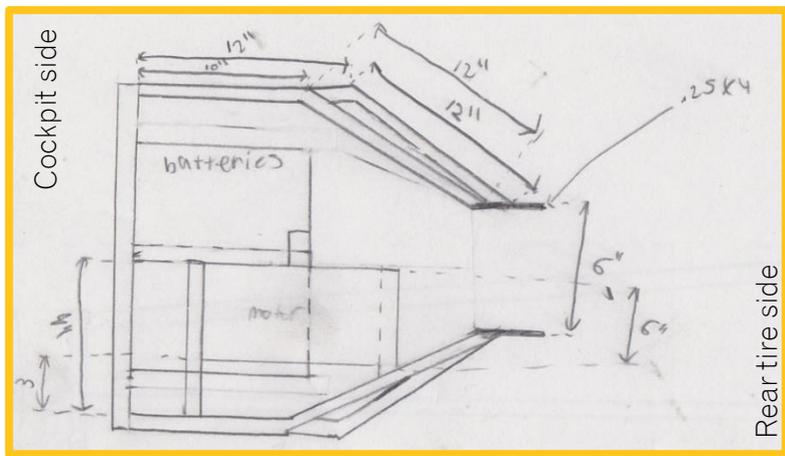
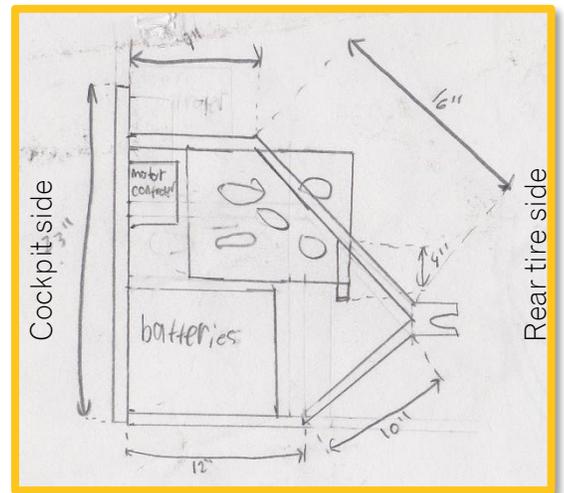
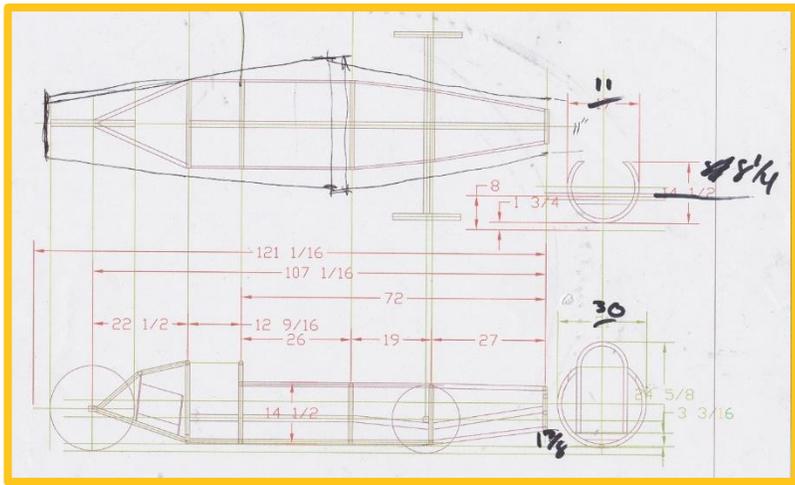
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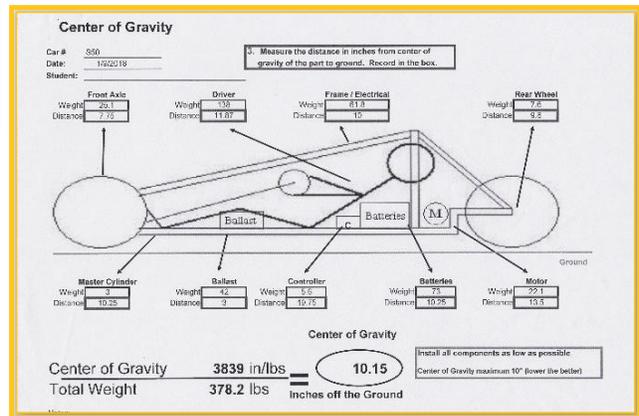
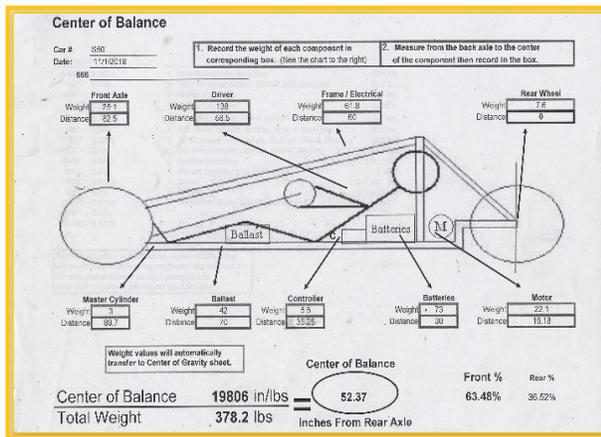
## Brainstorm Notes

Crew chief Colin largely planned the 985 around the design of the previous iteration, keeping in mind how large his driver was. On the top left, is a rough sketch in pen of this year's 985 car, over the frame of last year's 985. Modification to dimensions were made in sharpie. Overall, this year's 985 will be wider than the last iteration, taking on a more diamond shape to the body. On the bottom left is Colin's original plan for the inside of the tail. Typically, the tail houses our batteries, motor, and motor controller. This often proves to be a tight fit that requires extra planning. On right is a top view revised sketch of the tail.



# Center Calculations

The 985 car team have calculated both the center of balance and the center of gravity for the 985. The center of balance helps determine the cars ability to maneuver, as well as its probability of flipping over. The goal is to get the center of balance directly in the center between the front and rear axles. The 985's center of balance is 52.37 inches from the rear axle, which is significantly more towards the front axle. The center of gravity plays a large part in determining the whether the car will flip or not. If the center of gravity is above the center of the front wheels, it has a very high probability of flipping over. For this reason, we try and keep the center of gravity below 10 inches. The 985's center of gravity 10.15 inches off of the ground meaning that it has a high possibility of flipping if the driver is not careful.



# Intended Timeline

Below is the gantt chart for the 985's intended timeline.

