Business Plan & Executive Summary

October 1, 2017- September 30, 2018

— Aquidneck Island Robotics —

FRC Team #78

FTC Team #121

FLL Team # 9898

FLL Team #11702

FLL Team #26149

FLL Team #33825

FLL Jr Team #5046

FLL Jr Team #12463

FLL Jr Team #12464

Executive Summary: Aquidneck Island Robotics, Inc.

"Teaching Through Competitive Robotics"

Mission Statement:

To give K-12 students from all schools the opportunity to participate in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

Who we are:

Aquidneck Island Robotics (AIR) is a year-round, non-profit 4-H organization based out of Newport County, RI. AIR's mission is *"Teaching Through Competitive Robotics,"* while incorporating the 4-H mentality of *"Learn by Doing."* AIR was formed through collaboration of experienced FIRST mentors, youth members from other previous FIRST teams, and numerous local and corporate sponsors, all dedicated to making an impact on their communities and inspiring an appreciation for science, technology, engineering, and math (STEM). Committed to the development and sustainment of FIRST robotics programs, AIR is the umbrella organization which supports three FIRST Lego League Junior (FLL Jr) teams, four FIRST Lego League (FLL) teams, one FIRST Tech Challenge (FTC) team, and one FIRST Robotics Competition (FRC) team.

Founding Dates:

- Aquidneck Island Robotics 4-H Club: Established May 2008

Founders and Their Functions:

- Richard Blight: AIR Secretary; FRC team coach; 18-year FIRST veteran
- Michael DeSousa: AIR FTC Advisor; RI FTC Technical Director and Lead Coach; 15-year FIRST veteran

Current Membership:

- AIR: Total membership is 256 which includes 97 students; 29 active alumni; 35 adult mentors; and 5 AIR Board of Director members

Location of AIR and AIR Sponsors:

- **Location**
  - *Team Location:* Naval Undersea Warfare Center (NUWC) Division Newport, Aquidneck Island, Newport County, RI
  - *Business Meeting Location:* Educational Outreach Center, Naval Undersea Warfare Center (NUWC) Division Newport, Newport, RI
  - *Build Meeting Locations:*
    - Building 80, NUWC, Newport, RI
    - Sandywoods Community Center, Tiverton, RI
    - Tiverton Public Library, Tiverton, RI
- **Schools**
  - Student participants from schools throughout RI and Southern MA, including home-schools. AIR currently represents 33 different schools.

- **2017-2018 Sponsors**
  - Bank Newport
  - Gary Gabriel
  - CVS Health Foundation
  - MVL Law, LLC
  - NAPA Auto Parts
  - Naval Undersea Warfare Center Division Newport
  - Nordson EFD
  - Purvis Systems
  - Rite-Solutions, Inc.
  - Toray Plastics (America), Inc.
  - Waters Corporation

What AIR Does:

- Design and build competitive robots for all four *FIRST* platforms.
- Promote STEM through the year-round AIR outreach campaigns and mentoring group participation within the organization.
- Provide volunteers for NUWC Educational Outreach Programs (SeaPerch Engineering Club, Undersea Technology Apprentice Program, Undersea Camp, Science Club, LEGO Club, Take a Child/Future Engineer to Work Days, FTC/FRC Outreach)
- Run robot demonstrations at fairs, sporting events, sponsor events, and business expos
- Host competitions including: a RI FLL JR Expo, a RI FLL qualifier and FRC District qualifier.
- Organize community outreach events and actively recruit members within several community organizations.
- Act as a FIRST role model (NXT Training Sessions, FLL Scrimmages, FIRST Coach Training Sessions, FIRST event volunteers, FRC public broadcast, other FRC/FTC team assistance, new FTC team start-up help, material donations, RI FTC Training Sessions)
- Provide students with opportunities to grow (hands-on work with engineers, homework help, resume critiquing, college guidance, letters of recommendation, scholarship submittal assistance, Capstone Design Project guidance, NUWC internship & new-hire opportunities, and company tours & workshops)

Relationships and information regarding current sponsors

- **Main sponsor: NUWC**
  - Educational Partnership Agreement – Allows NUWC to share engineers, scientists, tools, facilities, and funding with AIR
  - Offers internship opportunities, workshops, and company tours
  - AIR members assist the NUWC Educational Outreach Program (EOP)
- **Other sponsors**
  - AIR interacts with these sponsors, and others, by giving demonstrations at company events and attending workshops

Summary of team growth:

- **2008-2009**:
  - 1 pilot FIRST Team (FTC Team #121)
  - 7 total members (5 students, 2 mentors)
  - 2 RI public high schools
  - 1 sponsor (BBN Technologies now a subsidy of Raytheon)
- **2017-2018**:
  - 9 FIRST Teams (1 FRC team, 1 FTC team, 4 FLL teams, 3 FLL Jr teams)
  - 256 total members (97 students, 35 mentors, 29 active alumni)
  - 33 RI and MA public and private schools, as well as home-schools
  - 14 sponsors & donors
  - Over $50,000 in grant applications
  - Largest 4-H club in RI

Summary of team's plans for growth:

- **Sponsorship:** AIR will continue to hold annual sponsorship drives to solicit new sponsors and maintain active communication with existing sponsors including team updates and media posting.
- **Grants:** AIR will continue to apply for grants in a wide range of funding criteria such as student subsidies; tools and equipment; and registration and entry fees.
- **Team:** Using an annual Outreach Plan, AIR will continue to recruit students and volunteers at all levels; FLL Jr/FLL will act as a "feeder system" for FTC and FRC programs.
- **FIRST:** AIR will assist additional FIRST teams; will continue to host and volunteer at events.
- **Community Outreach:** Using the Outreach Plan, AIR will work to increase awareness of its club as well as FIRST through demonstrations and presentations at many different venues such as sporting events, fairs, schools, businesses and community organizations. AIR will continue to interact with NUWC EOP and community.

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1. Aquidneck Island Robotics (AIR) Overview

1.1 Mission

Aquidneck Island Robotics (AIR) is a non-profit 4-H club dedicated to teaching local youth the excitement and importance of science, technology, engineering, and math (STEM) subjects through competitive robotics. The organization is devoted to supporting the development and sustainment of For Inspiration and Recognition of Science and Technology (FIRST) robotics programs and teams.

1.2 AIR's Partnership with 4-H

Organized nationally under the National 4-H Council, AIR operates locally with Rhode Island (RI) 4-H. RI 4-H is the youth educational outreach program of the Cooperative Extension in the University of Rhode Island's (URI) College of Environmental and Life Sciences. The program offers hands-on learning activities for young people, helping guide their way to a successful post-secondary education and career path. Self-directed study and a "Learn by Doing" mentality are the keys to the attraction and success of the 4-H program.

1.3 AIR's Partnership with NUWC (EPA)

The purpose of this Education Partnership Agreement is to aid in the education of the Aquidneck Island Robotics 4-H Club (AIR/4-H) students by providing a mechanism by which selected students can undertake research projects and by which students and mentors of AIR/4-H can benefit from the staff expertise, unique facilities and equipment related to Robotics available from NUWCDIVNPT through this Agreement. NUWCDIVNPT's contributions to this partnership will help to encourage student interest in the AIR Club applications of their individual disciplines; may benefit the laboratory in terms of advance training of future employees; and may benefit the country by exposing students to career opportunities in government research and development.

1.4 Club History

Founded in May of 2008 and based in Newport County, RI, AIR started with two volunteers and 5 student members: the minimum required to start a 4-H club. AIR began as a pilot FIRST Tech Challenge (FTC), formed by Mr. Richard Blight and Mr. Michael DeSousa: former FIRST Robotics Competition (FRC) students and mentors.

In 2017, nine years after being established, AIR now boasts over 256 total members: 35 adult mentors and 97 student participants from 33 schools, including home-schools, throughout RI and southeastern Massachusetts (MA). Our mentors have both technical and non-technical backgrounds and come from a variety of local businesses. Thanks to our dedicated mentors and community support, AIR can manage 9 robotics teams in the 2017-2018 season.

2. FIRST Overview

2.1 What Is FIRST?

FIRST is the non-profit organization which coordinates four tiers of robotics competitions. The vision of FIRST is "to transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology heroes."

During the 2017-2018 competition season, AIR has 9 robotics teams participating within the four FIRST competition tiers:

- FIRST Robotics Competition (FRC) – A unique varsity sport for the mind, designed to help high school students discover how interesting and rewarding the life of engineers and researchers can be.
- FIRST Tech Challenge (FTC) – A mid-level robotics competition for high school students.
- FIRST LEGO League (FLL) – An exciting and fun global robotics program that ignites an enthusiasm for discovery, science, and technology in children ages 9 to 14.
- FIRST LEGO League Jr. (FLL Jr) – Designed to introduce STEM concepts to children ages 6 to 10 while exciting them through a brand they know and love − LEGO

Within all four levels of competition, the game that the robot must play changes each year. Each team builds a new robot annually. In addition to the technical challenge of designing, building, and programming a robot, students must raise funds, design a team brand and identity, and hone teamwork skills. Students involved in AIR get as close to real world engineering as a student can experience. Our teams compete in state and regional competitions in hopes of earning a spot in the FIRST World Championship held every April. AIR FRC Team #78 (Air STRIKE) has attended the World Championship every year.

2.2 FIRST and 4-H Partnership

4-H believes that the United States (US) is falling dangerously behind other nations in developing its future workforce of science, engineering, and technology (SET) experts. The need for change is made clear on the 4-H SET website:

> *"America now faces a future of intense global competition with a startling shortage of scientists. Only 18 percent of US high school seniors are proficient in science. A mere 5 percent of current US college graduates earn science, engineering, or technology degrees compared to 66 percent in Japan and 59 percent in China. Couple these statistics with the fact that current scientists and engineers are retiring in record numbers, and it becomes clear that America faces a crisis in its ability to keep up with increasing demand for professionals trained in these fields."*

In April of 2009, FIRST and the National 4-H Council announced an alliance to reach new youth across the nation and expand existing 4-H robotics programs. The alliance is designed to foster more opportunities for youth to explore SET careers by providing them with hands-on, team-based experiences. Brought together by the shared pursuit of inspiring an appreciation of science and technology in young people throughout the nation, 4-H and FIRST will work together to promote scientific learning and the building of confidence and life skills among all K-12 youth.

2.3 FIRST Competitions

- **FIRST LEGO League Jr. (FLL Jr)**
  Our FLL Jr. teams meet throughout the Fall and present their projects at one of several Expos in the Spring. Guided by two or more adult Coaches, teams (up to 6 members, grades K-4) explore a real-world scientific problem such as food safety, recycling, energy, etc. Then they create a Show Me poster that illustrates their journey of discovery and introduces their team. They also construct a motorized model of what they learned using LEGO elements. In the process, teams learn about teamwork, the wonders of science and technology, and the FIRST LEGO League Jr. Core Values, which include respect, sharing, and critical thinking. At the close of each season, teams come together on a regional basis to share their Show Me poster and model, celebrate, and have fun!

- **FIRST LEGO League (FLL)**
  Each September, FIRST announces a new challenge to the $32{,}000^{+}$ FLL teams worldwide. The challenge is themed in a way to get participants thinking about how STEM solutions can help our communities. The teams, consisting of up to ten students each, work with AIR mentors to design, program, and build a robot from LEGO Robotics Kits. Every January, each of our teams competes in the RI FLL Championship. Besides building a robot, the FLL teams complete a research project related to the theme of the game. These themes have included “Helping the Elderly”, “Recycling” and “Clean Water”. The participating middle school students receive a great advantage over their peers in forward thinking, problem solving, and engineering.

- **FIRST TECH CHALLENGE (FTC)**
  AIR also competes in FTC, which is a technologically and financially accessible mid-level competition. High School students use LEGO Education Tectrix Robotics Kits to design, build, and program a robot. Each September FIRST releases a new, exciting FTC game. Students must track their progress in an engineering notebook to illustrate and present their learning experiences to judges at regional competitions. Students have approximately six months to perfect their entry before competing.

- **FIRST ROBOTICS COMPETITION (FRC)**
  Considered the “Super Bowl of Smarts,” FRC is the ultimate high school robotics competition. AIR fields an incredibly competitive team annually. Each January, FIRST unveils a game to the $3{,}200^{+}$ FRC teams worldwide. Teams are allowed only six weeks to design and build an approximately five-foot tall, 150-pound robot. A kit of parts is given to each team, consisting of a robotics control system, motors, and electrical components. After brainstorming and prototyping the design of their robot, teams add raw materials such as wood, aluminum, and steel to the kit of parts to construct a final robot.

Overall, FIRST reaches 460,000 students worldwide. Each level of competition allows AIR students to work alongside STEM professionals and learn vital problem solving, communication, and teamwork skills.

3. 2017-18 AIR Teams

To date, AIR manages nine FIRST robotics teams, all of which are competing in their respective 2017-2018 robotics competition season:

1. FRC Team #78
2. FTC Team #121
3. FLL Team #9898
4. FLL Team #11702
5. FLL Team #26149
6. FLL Team #33825
7. FLL Jr Team #5046
8. FLL Jr Team #12463
9. FLL Jr Team #12464

With teams participating in each level of FIRST, AIR gives students a unique opportunity. Students and mentors are encouraged to participate on multiple teams and flow between the several levels of FIRST. For instance, many FLL mentors also mentor our FTC and FRC teams. Likewise, more experienced FRC students can act as student leaders and mentor an FLL Jr or FLL team. As younger students become more experienced, they can also move up to the next level of FIRST very easily.

4. Club Goals

Our organization's primary goal is to teach local youth about STEM subjects through competitive robotics. Year after year, AIR students and mentors immerse themselves in exciting and challenging robotics competitions. An additional goal is to educate youth on the importance of planning, communication, and teamwork. AIR also strives to motivate and assist students in their pursuit of higher education. To meet these goals, AIR must successfully manage and operate our nine FIRST robotics teams. For successful team management, three components are required: student members, experienced mentors, and adequate funding.

AIR recruits students from across RI and southeastern MA. By attending and hosting various community events, AIR can spread our message and increase visibility throughout the region. In September of 2009, AIR hosted our first annual open house, attracting over 140 community members. Attendees could watch demonstrations of FLL, FTC, and FRC robots, as well as interact with AIR students and mentors. Since the excitement of robotics is difficult to explain, AIR students are encouraged to bring friends to meetings before they join the club.

Our experienced mentors come from a variety of different backgrounds and companies. Our most experienced mentors have over 16 years of FIRST experience, with all having some experience in youth mentoring programs. Parents of students, as well as adults from companies and organizations throughout the area continuously sign up to become AIR mentors, offering our organization their help and assistance. By realizing the importance of planning, effective communication, and teamwork, our mentors can lead successful teams.

By motivating our student members in their pursuit of higher education, AIR is helping them make a clear path from school to career. Students who participate in FIRST have a higher probability of attending college, pursuing graduate degrees, and majoring in science or engineering. These statistics are illustrated in the data provided by FIRST in Figure 1, FIRST Alumni College Statistics.

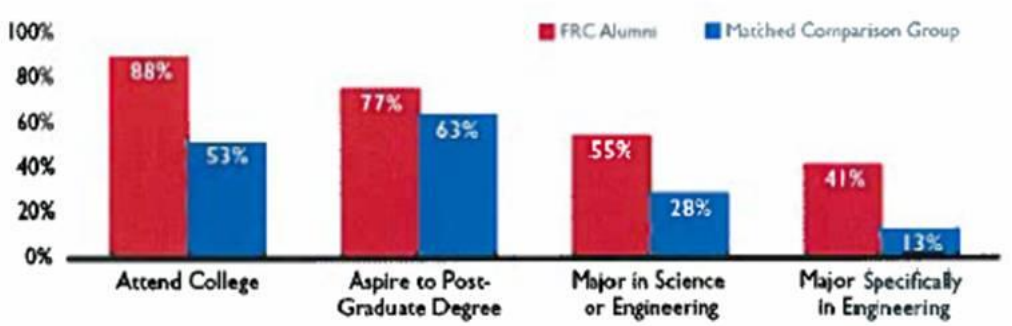

Figure 1 – FIRST Alumni College Statistics

FIRST participants also perform better at their grade level as well as gaining important life skills. A FIRST longitudinal study completed in 2017 is summarized in Figure 2:

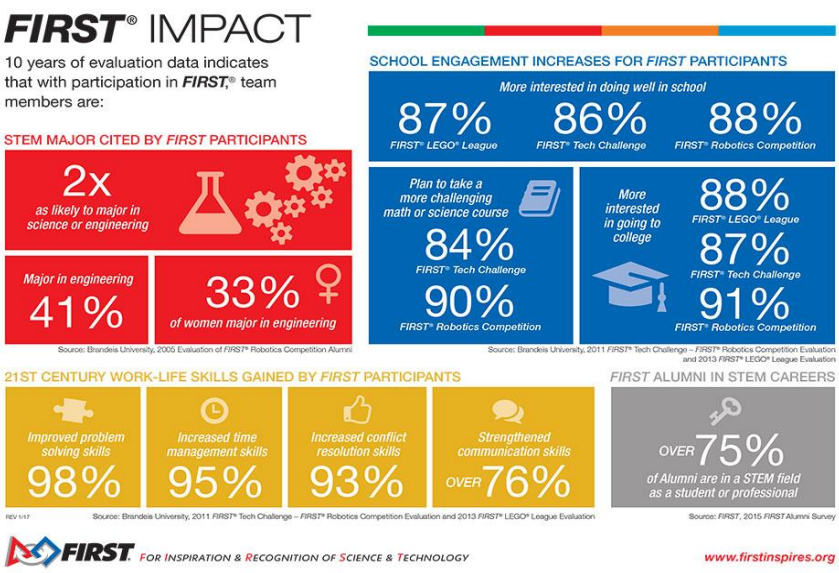

Figure 2: FIRST Impact on participants

AIR mentors are a great resource for students interested in a career in STEM fields. Most mentors are engineering or science professionals from local companies and are happy to answer any education or career-related questions students may have. By participating in FIRST, students have access to over $50 million in scholarships each year. Mentors work closely with students and can write letters of recommendation for their scholarship submissions.

Overall, AIR strives to:

- Enrich the minds of every youth member who joins the club and prepare them for a successful post-secondary school education and career.
- Assist youth members in earning FIRST and 4-H-related scholarships every year.
- Promote, encourage, and assist the creation of new FRC, FTC, FLL and FLL Jr teams throughout RI and MA
- Enlighten our communities about the rewards and benefits of STEM subjects through outreach programs.
- Reach out to our under-served community to encourage participation in FIRST by offering membership and travel scholarships to need-based students.
- Promote the mentorship and sponsorship of FIRST teams.
- Collaborate with and help other local and regional FLL Jr, FLL, FTC, and FRC teams.
- Host events where local robotics teams can compete.
- Give back to our communities through community service.
- Give back to the FIRST community by helping the program grow and achieve success.
- Act as an exemplary team and a model for other teams
- Earn technical awards and win competitive events through exceptional robot performance.

5. Beneficiaries of AIR

Participating in FIRST through AIR is a rewarding experience for the student members, adult volunteers, our local communities, and the states of RI and MA. Students involved gain a vast understanding of the path from school to their desired career. With our organization emphasizing science and technology, students learn about topics typically reserved for college and industry. The connections students make with each other, mentors, and sponsors last a lifetime. AIR also provides students with a meaningful, year-round activity not typically found within the extracurricular activities in local schools.

Members of FIRST teams often perform better in school. AIR mentors make themselves available to students for homework help and project assistance. By improving the grades of local students, schools will subsequently receive additional state and federal funding. Our communities are also becoming increasingly aware of our organization through our community outreach events.

6. AIR Organizational Structure

6.1 Club Bylaws

AIR operates according to the AIR bylaws, which have been adopted by the club. The Board of Directors (BOD), which consists of up to seven elected volunteers, oversees the entire organization. The BOD includes the Club Chairman, Vice Chairman, Treasurer, Secretary, and the three Program Coordinators as described in the AIR Bylaws.

6.2 Committees

AIR has the following permanent committees, each managed by a different coordinator:

1. FLL/FLL Jr. Committee
2. FTC Committee
3. FRC Committee
4. Outreach Committee
5. Recruitment & Retention Committee
6. Fundraising Committee
7. Travel Committee
8. Awards Committee

AIR also creates other special committees, managed by a coordinator, as the need arises.

6.3 Youth Member Officers

AIR has four youth member leadership positions that are elected by the club's youth members, as defined in the AIR Bylaws. These four positions include President, Vice President, Treasurer, and Secretary.

7. Club Sustainment

Since our establishment in 2008, AIR has strived to create a sustainable organization. Our BOD operates under the AIR Bylaws, a document created to handle the business administration of AIR. Day to day business is handled by the program coordinators with the assistance of AIR committees and their enacted plans such as The Outreach and Fundraising Plans. These documents detail all processes for our organization. Each year, as an organization, AIR learns how to perform tasks at lower cost and more efficiently.

Sustaining membership is a top priority for AIR. As previously stated, AIR recruits students and mentors through community events. By recruiting students in elementary and middle school, we can create a "farm league" for our high school teams. Once in college, students can continue being involved with AIR as a mentor. AIR has a close relationship with the URI engineering department and URI Robotics Club as well NUWC. The circle is complete when college graduates start careers nearby and mentor the next generation of students. Figure 3 illustrates the concept of this AIR membership Path.

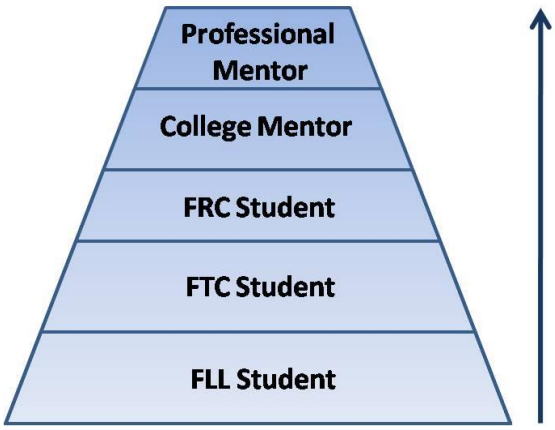

Figure 3 – AIR Membership Path

8. AIR Budget

Without proper funding, AIR would not be able to attain its goals. To attain funding, AIR will need to fundraise year-round and continually improve relationships with sponsors. The leadership of AIR will monitor our successes in sustainment. With annual growth in membership, fundraising, and community involvement, AIR will become an educational leader throughout RI and MA.

Being such a large organization, AIR is required to carefully monitor our annual level of funding versus our expected and actual budgets. AIR supervises the budgets of each its nine teams, as well as the overall budget of AIR as a club. In addition to the individual program budget, AIR's overall budget is $17,800. The total budget for the 2017-2018 season is $64,175.
The budget and scope of AIR does not allow the expenditure of resources to fund travel for non-need-based participants. The club's priority is to focus on the students and programs as a whole.

8.1 FRC Budget

FRC is the most expensive program in FIRST. Figure 6 shows a breakdown of a standard FRC season budget. While this illustrates the typical annual budget for our one FRC team, the actual budget varies slightly from year to year.

FRC	Amount ($)
Registration (Kit + 2 Events)	5000
Field Construction	500
Robot Parts	17000
Robot Shipping	3000
Non-Robot Materials	2500
New England Qualifier #3	1000
New England Championship*	4000
World Championship*	5000
TOTAL	38000

Figure 4 – Typical FRC Annual Budget (*Qualification Required).

8.2 FTC Budget

FTC is the second most expensive program in FIRST. The reduced cost may give the team the opportunity to attend more competitions. Figure 5 shows a breakdown of a standard FTC season budget for one team.

FTC	Amount ($)
Registration	275
Field Kit	300
Robot Parts	1500
Project Materials	500
RI Qualifier	100
RI State Championship*	150
East Super Regional*	500
World Championship*	1000
TOTAL	4325

Figure 5 – Typical FTC Annual Budget (*Qualification Required).

8.3 FLL Budget

FLL is the second least expensive program in FIRST. Figure 6 shows a breakdown of a standard FLL season budget for three teams, not including travel and personal costs.

FLL, 4 Teams	Amount ($)
Registration	925
Field Kit	300
Robot Parts	550
Tiverton Meeting Location	500
Project Materials	300
RI Qualifiers	600
RI State Championship*	600
World Championship*	625
TOTAL	4400

Figure 6 – Typical FLL Annual Budget.

8.4 FLL Jr Budget

FLL Jr is the least expensive of AIR programs. Figure 7 shows the typical annual budget of this feeder program.

JR FLL (3 teams)	Amount ($)
Registration	150
Robot Parts	150
Project Costs	150
Event Fee	150
TOTAL	600

Figure 7 – Typical FLL Jr Annual Budget.

9. Sources of Funding

Through continuous fundraising, AIR members feel a great sense of ownership of our club and their respective teams and robots. AIR funds our programs through sponsors, donors and grants, classic fundraisers, and membership dues. Additionally, AIR has developed a fundraising committee comprised of students and adult mentors to identify funding opportunities.

9.1 Grants & Sponsors

AIR is very thankful for the support of our sponsors, many of which not only provide AIR with funding and materials, but with mentors as well.

Organizational and corporate grants and sponsors are AIR's primary source of funding. Throughout the year, youth members and volunteers are encouraged to search for possible grants to submit to the AIR BOD. The BOD reserves the authority to either write and submit grants or assign the work to the Fundraising Committee. AIR participants also partake in an annual sponsor drive.

Grants and sponsorships vary in size and come from many different private and public companies and organizations. This money is often earmarked in the grant requirements for registration and/or a specific FIRST program or project. Money awarded from grants cannot be expected to subsidize non-need-based student travel expenses. AIR receives approximately $30,000 through grants and sponsors annually.

In 2010, AIR signed an EPA with our main sponsor, NUWC. Through this EPA, NUWC provides AIR with funding, engineers, scientists, tools, workshops, outreach centers, materials, and technical resources. In return, AIR assists NUWC with the organization's award-winning Educational Outreach Program. AIR and NUWC have formed a unique relationship that is also very beneficial to our students. Many AIR students have the opportunity to intern at NUWC with the potential to become a future new-hire. AIR is able to provide NUWC with tech-savvy students who are dedicated to STEM subjects.

Other sponsors, including Rite-Solutions Inc. CVS Health, Nordson EFD, Toray Plastics (America), Inc. and Waters Corporation provide AIR with engineers and other volunteers. Companies such as Igus offer workshops for AIR students, focusing on the use of the company's products in the field of robotics. Several companies also offer company tours for AIR students.

9.2 Classic Fundraisers

With a large group of energetic and devoted students, AIR strives to conduct at least one fundraiser every month of the year. The AIR Fundraising Committee operates year-round and is run by an appointed coordinator, as described in the AIR Bylaws. All club fundraisers are conducted with the understanding that the specific fundraiser will benefit the AIR general fund, a specific program level (i.e. FRC, FTC, FLL/FLL Jr) or capital expense.
The Fundraising Committee, in conjunction with the AIR BOD, does its best to organize and execute team fundraisers to fill shortfalls in the AIR general fund, a specific program level, or capital expense. All youth members and volunteers are requested to participate in team fundraisers. By conducting classic fundraisers, AIR participants raised over $10,000 to be put towards the 2016-2017 season and plan to raise over $20,350 for the 2017-2018 season.

Although fundraisers may vary year to year, past fundraisers have included:

- Annual Calendar Raffle
- AIR Golf Tournament
- Basket Raffles
- Applebee's Dining to Donate Night
- Chili's Gives Back Night
- Hex Bug Sales
- Newport Gulls 50/50 Raffle
- Car Washes
- Bake Sales
- Strikes for AIR Bowling Tournament
- Trip Raffle
- Yard Sales

9.3 Membership Dues

Student members are required to pay yearly membership dues ranging from $50 to $150 depending on the program. For this small fee, members receive a team shirt, basic medical insurance, and membership to the National 4-H Council. Profit from dues allows the club to purchase supplies for administration and fundraisers and outreach. A scholarship is offered for need-based participants to cover membership dues.

10. Community Outreach

Year-round, AIR strives to help and give back to all its local schools and communities. Involvement in our community outreach events is requested for all AIR students and adult members.

Most recently, AIR has partnered with NUWC to assist in the organization's Educational Outreach Program (EOP). AIR has participated in the NUWC EOP by providing volunteers for programs such as:

- SeaPerch Engineering Club
- FTC Outreach
- Undersea Technology Apprentice Program (UTAP)
- Undersea Camp
- Science Club
- LEGO Club
- Take a Child to Work Day
- Take a Future Engineer to Work Day
- Child & Family Holiday Giving

AIR also increases the club's and FIRST's visibility, while giving back to the community, by organizing robotics booths and demonstrations at such events as:

- Norman Bird Sanctuary Harvest Fair
- Eastern Rhode Island 4-H County Fair
- RI Chamber of Commerce Fair
- Newport Business Exposition
- Raytheon "Engineer's Week"
- Pell School STEM Fair
- Greenlight 4 Girls Event
- Aquidneck Island Mentoring
- Raytheon "Our People" Week
- Raytheon "Mission Assurance"
- Raytheon American Society of Mechanical Engineers Recognition Night
- Newport Gulls Baseball Game
- Tennis Hall of Fame Tennis Tournament

11. FIRST Outreach

In addition to making an impact in our community, AIR members also strive to make a difference within FIRST. Over the past years, AIR has:

- Provided volunteers at FRC, FTC, and FLL events in RI, MA, NH, DE, CT, and MO
- Held a FLL qualifier in conjunction with a local FTC team
- Organized Public Broadcast FRC Kickoffs
- Seen current and previous mentors assist other teams in RI, MA, NH, NJ, and TX
- Organized an informational FTC Session for RI coaches
- Released weekly design videos to assist teams in robot design
- Provided FTC and FRC training sessions to RI teams
- Provided technical assistance to FTC and FRC teams
    - Two Cranston East FTC teams
    - One Woonsocket FTC team
    - Two Providence FTC teams
    - One New Bedford FTC team
    - One Dartmouth FRC team
- Helped start an FTC team in New Bedford, MA and Newport, RI
- Invited local teams to practice at our playing fields
- Held public FLL student presentation nights
- Donated materials, parts, and playing mats to other teams
- Helped introduce FLL and FTC into local school curriculums
- Run offseason robotics projects
- Held safety training sessions
- Spread the word and ideals of FIRST
- Communicated the messages of FIRST to political figures

12. Student Opportunity

Above all, it is important that student members of AIR have the opportunity to take positive experiences out of their time in the organization. Through AIR, students are given the opportunity to learn new skills that they can use to better their futures. Student participants in AIR are able to take advantage of the following opportunities:

- Work hands-on with real engineers, scientists, and machinists
- Receive homework help
- Receive college decision guidance
- Receive resume preparation assistance
- Receive career path advice
- Receive letters of recommendation from professional engineers
- Receive scholarship application and submittal assistance
- Gain access to FIRST and 4-H scholarships
- Receive college High School Capstone Design Project guidance
- Gain internship and new-hire opportunities within NUWC
- Work with students from the URI Robotics Club
- Learn the effects of community outreach first hand

- Partake in company tours
- Take part in multiple sub-teams and committees
- Participate in skill-building workshops
- Learn new skills
- Improve your public speaking
- Become a team player
- Learn to think innovatively
- Understand the engineering process
- Learn how to safely handle tools and machinery
- Create a professional network
- Become a leader
- Have fun!

13. Communications

AIR knows the importance of keeping our members up to date with all club details. Therefore, we ensure open communication through a variety of avenues.

13.1 Email

The AIR BOD often sends emails to the entire organization, team leaders often send emails to an entire team, and club members often send emails to each other. Email is AIR's primary and most important form of communication. Club members are required to check and respond to their email regularly.

Board of Directors email: contact@air4h.org

13.2 Website

The AIR website is a great resource for information. Here, you will find the specific team meeting schedules, event schedules, club meeting agendas, club meeting minutes, and all the forms required for involvement in AIR. In addition, the website has links to official FIRST information, team photos, and other informative news and websites. The AIR website is also a place to look for last minute updates such as meeting cancelations due to inclement weather.

http://www.air4h.org

13.3 Phone

The AIR BOD and specific team leaders are the only club members with access to the club roster with telephone numbers. They may call youth members and parents/guardians with important information of last minute changes if email is not quick enough.

13.4 Facebook

AIR stays current with the social networking sites and posts relevant information on Facebook. Youth members and parents/guardians may choose to follow AIR on these sites. These, however, are not a substitute for following emails or the website.

http://www.facebook.com/air4h
www.facebook.com/frc78

14. Resources

The FIRST robotics programs can be very in-depth and overwhelming, especially for new participants. AIR wants youth members, their parents/guardians, and the community to have the ability to learn as much as possible about these programs. Veteran AIR members are always willing to introduce and educate youth members and their parents/guardians on the FIRST robotics programs. While the veteran AIR members are great sources of knowledge, there are also other resources available.

14.1 FIRST website

The FIRST website is the best place to learn more about the robotics programs, their goals, and FIRST history. It is also where program-specific information, such as the competition manuals, updates, competition venues and dates, and other team information can be found.

http://www.firstinspires.org

14.2 Chief Delphi Forums

The forums on this website have become the communication point for all FIRST students and adults. Specifically, the FRC forums have the most members and topics, but information on FLL and FTC is also available. Here, members of the FIRST community from around the world share ideas, show photos, and chit-chat about robots, teams, and competitions. AIR members are encouraged to join and share their thoughts. However, AIR members are asked to act and speak graciously, as they will be representing their specific team and AIR.

http://www.chiefdelphi.com

14.3 The Blue Alliance (TBA)

TBA is a scouting database for FRC teams. Here, with only a simple search of a team number, data and video of the past five years can be found for nearly any team and robot. This is a great website if you would like to learn and watch the results of other competitions happening around the world.

http://www.thebluealliance.net