



The Radio Amateur Satellite Corporation



Barry A. Baines WD4ASW
President

AMSAT

2012 Annual Meeting @ Orlando, FL

October 27, 2012



2013 AMSAT Board of Directors

2013	Barry Baines, WD4ASW	Westborough, MA
2013	Alan Biddle, WA4SCA	Franklin, TN
2013	Drew Glasbrenner, KO4MA	New Port Richey, FL
2013	Tony Monteiro, AA2TX	N. Andover, MA
2014	Tom Clark, K3IO	Clarksville, MD
2014	Lou McFadin, W5DID	Orlando, FL
2014	Gould Smith, WA4SXM	Knoxville, TN
Alternate	Mark Hammond, N8MH	Coats, NC
Alternate	Patrick Stoddard, WD9EWK	Scottsdale, AZ



Senior Leadership Team

President	Barry Baines, WD4ASW	Westborough, MA
Executive VP	OPEN	
VP Operations	Drew Glasbrenner, KO4MA	New Port Richey, FL
VP Engineering	Tony Monteiro, AA2TX	N. Andover, MA
VP User Services	Gould Smith, WA4SXM	Knoxville, TN
VP Marketing	OPEN	
VP Human Space Flight	Frank Bauer, KA3HDO	Silver Spring, MD
Secretary	Alan Biddle, WA4SCA	Franklin, TN
Treasurer	Keith Baker, KB1SF/VA3KSF	Corunna, ON
Manager	Martha Saragovitz	Silver Spring, MD



Overview

AMSAT's Mission Statement

As of 21-Feb-04

☐ **AMSAT designs, builds and operates experimental satellites and promotes space education.**

» Focus is on coverage and availability

☐ **Partnerships**

» NASA, ARISS – Human Space Flight

» Education: Foundations, Universities

» LEO satellite projects and education outreach

☐ **Technical and scientific innovation**

☐ **Training and development**

» Designers and Operators.



Overview

AMSAT's Vision Statement

As of 24 OCT 08

- ❑ Deploy **satellite systems**
 - » Wide area
 - » Continuous coverage
- ❑ Participation in **human space missions**
- ❑ Support a stream of **LEO satellites**
 - » Developed in cooperation with the educational community and other amateur satellite groups.



Overview

AMSAT's Vision Statement

To Summarize:

“Keep Amateur Radio in Space”



Summary of 2012 Accomplishments



- Fox Project is on schedule
- Engineering Team Development
- Evolving Partnerships for Launch Opportunities
- Dealing with ITAR-Legislative Interaction
- VP-Education Outreach Appointment
- Development of relationships on Education
- VP-Human Space Flight Appointment
- Implementation of new ARISS School Selection Process
- Re-establishment of AMSAT Store
- Steps taken to “revive” AMSAT Journal
- ANS is a World-class Distributor of Information



The Evolving Relationship with NASA Education

□ ARISS School Contact Selection Process

- » New proposal process for US implemented in Spring 2011
- » NASA 'Teaching From Space' actively engaged in evaluating school applications
- » Proposal for a specific six-month window for a school contact
- » Expectations on school education content/plan, including curriculum integration
- » Museums, special events have also been awarded contacts

□ New process took effect for contacts in 2012

- » 1 JAN- 30 JUN 12 was the first period for school contacts under this process/second period of 1 JUL-31 DEC 12 already selected
- » Proposals were submitted by 15 JUL 12 for 1 NOV-30 APR 2013 selection
- » 121 Inquiries/24 Organizations Submitted Proposals/11 were selected



The Evolving Relationship with NASA Education

- New process reflects new priorities
 - » ARISS is now more integrated into the NASA Education Portfolio
 - » Provides greater support/awareness for the program
 - » Instills more consistent standards for school proposal review
 - » Simplifies the horizon for when contacts are scheduled/conducted
- Changes also create more potential challenges
 - » Integrating amateur radio resources with schools
 - » Workload of volunteers-additional Technical Mentors needed
 - » May encourage more telebridge contacts than direct contacts
- Appointment of Frank Bauer, KA3HDO as AMSAT VP-Human Space Flight Projects
 - » Frank returns after 3-year “hiatus” following his retirement from NASA
 - » Frank is providing needed leadership/energy and proper focus on ARISS
 - NASA Education 2013 reorganization/budget reduction impacts



Education Outreach

- Appointment of Mark Hammond, N8MH as VP-Educational Relations
 - » Reflects need for AMSAT to focus on education as justification for launches/placement of amateur equipment in space
 - » Mark is establishing relationships with ARRL and NASA Education
 - » Establishing an education team within AMSAT
 - » First steps in an evolutionary process of supporting STEM
- Finding new opportunities to bring space communications to the classroom
 - » Collaboration with ARRL Education's Teacher Institute Process
 - » Working with educators to develop teacher materials
 - » Using ARISSat-1 telemetry archives as an educational tool
 - » Finding new mechanisms for demonstrating communications (MAREA)



The Regulatory Environment

ITAR (International Traffic in Arms Regulations) continues to create significant constraints

- » Communication satellites specifically placed under ITAR by Congress
- » Inability to work with other AMSAT organizations
- » AMSAT is a 'different animal' in the area of space technology
- » University concerns about ITAR
- » AMSAT is working hard to place all technology development in the 'public domain'

2012 AMSAT Symposium Proceedings serves as a print outlet for discussing Fox-1 engineering development

- » 155 pages of published material so that presentations may be made
- » Highlights the significant development work accomplished
- » Allows public discussion (foreign nationals)



Coming to Grips with ITAR

AMSAT

is a

“Munitions Supplier”



The Regulatory Environment

□ Recent Developments are Encouraging

- » H.R. 3288 submitted in November 2011 proposes moving “commercial satellites” (non-military) to Dept. of Commerce Export Arms Regulations (EAR)
- » Appointment of Peter Portanova, WB2OQQ as AMSAT’s Congressional Liaison
 - AMSAT has taken steps to bring awareness of ITAR’s impacts
 - During 2012, AMSAT has met with various groups in Washington
 - Growing recognition that amateur radio/university/education satellites should be withdrawn from ITAR (Dept. of State) and placed under EAR (Dept. of Commerce)
- » DoD/DoS Report to Congress “Section 1248 of the National Defense Authorization Act for FY 2010 (Public Law 111-84)” released on 18 April
 - Risk Assessment of United States Space Export Control Policy



“1248 Report Recommendations”

- The Departments recommended that the following items are more appropriately designated as dual-use items on the Commerce Control List (CCL) and controlled under the Export Administration Regulations (EAR):
 - » Satellites that do not contain technologies unique to military applications or critical for maintaining a military edge;
 - » Communications satellites (COMSATs) that do not contain classified components;
 - » Remote sensing satellites with performance parameters below certain thresholds; and
 - » Systems, subsystems, parts and components associated with those satellites.



The Regulatory Environment Next Steps

- “1248” is good news for AMSAT
- EAR allows for technical interaction with foreign nationals
 - » Allows information exchanges that took place prior to ITAR/collaboration with foreign nationals
 - » Removes ITAR accounting/reporting requirements
 - » Export rules would still apply for physical export of materials



Peter Portanova, WB20QQ &
Rep. Peter King (R-NY)



The Regulatory Environment Next Steps

- Movement in the House:
 - » The House Armed Services Committee included an amendment to the National Defense Authorization Act (NDAA) to give power to the President to shift satellites from ITAR to Commerce Control List-CCL (“space export control reform”)
 - » House approved NDAA in May 2012
 - » No action by the Senate on NDAA



Peter Portanova, WB20QQ &
Rep. Peter King (R-NY)



The Regulatory Environment

Next Steps

- Senate Bill S.3211 proposed by Sen. Michael Bennet (D-CO) introduced 6 JUN 12
 - » “Safeguarding United States Satellite Leadership Act of 2012”

- AMSAT will continue to closely monitor developments/coordinate actions with university and commercial satellite organizations



Another Fox Launch Opportunity: CubeSat Launch Initiative - 2012



- NASA announced 4th ELaNA Program in August
- Proposals due Nov 12, 2012
- Vanderbilt University and AMSAT are working together on a proposal
- RadFxSat* is a 1U CubeSat
- Based on *Fox-1* bus (flight spare)
- Science payload provided by Vanderbilt
- Education Outreach



Secondary Mission (Education)



- Formal STEM education of university undergraduate and graduate students at Vanderbilt University
- Formal STEM education of high school teachers and students at Vanderbilt University
- Informal STEM education through public amateur radio participation



Searching for Launch Opportunities



- National Science Foundation (NSF) Grant Opportunity
 - » AMSAT has teamed with Auburn University and University of Alabama-Huntsville
 - » AMSAT to provide avionics for two 3U cubesats
 - » Auburn to provide spacecraft, antennas and spacecraft integration
 - » UoA-Huntsville to provide scientific payloads
 - » Proposal submitted 7 MAY 12
- Grant opportunities are not “guaranteed”
 - » Highly competitive
 - » Evolving partnerships with universities and private enterprise
- Submissions over the past year reflect efforts to collaborate with partners as well as develop affordable launch opportunities
 - » Focus reflects new skill set requirement (Grant Writing)



AMSAT Electronic Services



□ AMSAT Store

- » Taken down in May due to “concerns”
- » New Store initially placed online week of 13 AUG 12
- » Payments made using Paypal processing (includes charge cards)
- » Future updates/enhancements expected as “work in progress”
- » Re-establishment of Store a critical cash generator for AMSAT
- » Thanks to:
 - Joe Fitzgerald, KM1P
 - Alan Biddle, WA4SCA
 - Bruce Paige, KK5DO
 - Gould Smith, WA4SXM



Other AMSAT Items



- AMSAT Journal is significantly behind schedule
 - » Last issue released in July 2012 by retiring editor Ed Long, WA4SWJ
 - » New Editor: Doug Loughmiller, W5BL appointment announced at 2011 Symposium
 - » Major issues: Lack of articles/New personnel “learning curve”
 - » Doug is unable to complete the current issue (JAN-FEB 2012) in a timely manner
 - » New editor announced at 2012 BOD Meeting: JoAnne Maenpaa, K9JKM
 - » JoAnne will focus on completing work that Doug started
 - » Lack of timely publication has impacted membership
 - » US Postal Service 2nd Class Mail Permit at Risk



AMSAT Electronic Services



- Patrick Stoddard, WD9EWK will focus on “AMSAT’s IT Future”
 - »Review current capabilities/actions taken over past 24 months
 - »Evaluate Future Needs/Identify potential resources
 - »Make Recommendations on next steps
 - »Report Expected in January 2013



AMSAT Organizational/Financial Trends

Membership

□ Membership Trends

- » Current-3100
- » Nov 2011 - 3385
- » Nov 2010 - 3660
- » Nov 2009 - 3646
- » Nov 2008 – 3501

□ Declining AMSAT membership is a concern

- » Economy?
- » Aging amateur population?
- » Relative lack of satellites?
- » AMSAT JOURNAL problems?
- » Lagging interest in AMSAT?



AMSAT Organizational/Financial Trends

Current income from dues and other sources are not sufficient to cover day-to-day expenses

- Membership decline has major impact on providing operating funds to keep the organization running
- Projected operating deficit in 2013
- Growing the membership is critical to sustaining AMSAT
- AMSAT members are encouraged to recruit others to join AMSAT in order to increase cash flow to pay the bills



2013 Goals/Expectations

- Focus on Project Fox Engineering
- Prepare for Fox-1 Follow-On
- ITAR: Legislative Activity in 2013
- Continue to Enhance Educational Partnerships
- 'IT Future'
- Building awareness/support for AMSAT
 - » Reverse the membership trend
 - » Enhance websites
 - » Get the AMSAT JOURNAL back on publishing schedule
- Enhance the management team
 - » Find volunteers to fill key needs



How can AMSAT Members Help?

- Recruit individuals to become members/rebuild the 'base'
- Recognize that satellite projects are multi-year projects that require financial support each year
- Donate to our capital campaign for Project Fox and future opportunities in 2012 and beyond as you are able
- Use the existing satellites—rebuild interest in amateur radio in space
- Write articles for the AMSAT JOURNAL
- Volunteer your time and talent



Questions?