The Radio Amateur Satellite Corporation

Drew Glasbrenner, KO4MA
Vice President, Operations
AMSAT-NA Highlights

- Organizational Changes
- Office Relocation
- Regulatory Concerns
- Organizational Concerns
- Upcoming Events
  » AMSAT 32nd Space Symposium @ BWI (AMSAT’s 45 Anniversary)
First Four Months of 2014

- G. Gould Smith, WA4SXM Retires
  - VP-User Services
  - BoD Member
  - Author of numerous books since 1990
  - “Getting Started in Amateur Radio Satellites” continues to be updated by AMSAT
  - Project Manager for SuitSat-2/ARISSat-1
  - Field Operations/Dayton Hamvention
First Four Months of 2014

- Tony Monteiro, AA2TX (SK)
  - VP-Engineering
    - Rebuilt the Engineering Team
    - Developed AMSAT’s Spacecraft Strategy
  - AMSAT BoD Member
  - Prolific Author
    - Symposium Proceedings, Presenter
    - AMSAT Journal
  - Prolific Operator (Satellite DXCC)
  - Hardware/Software Designer
  - Education Outreach
  - Memorial Service on 26 APR 14
  - “May you rest with the stars”
AMSAT Office Relocation

- Problems with elevators, heating, cleanliness, non-responsive owner
- New location search started in February (move in June)
- Notified in late March of need to vacate by 30 APR
- Office was closed 25 APR – 2 MAY
- Moved to a refurbished building
- Martha is now “settled in”
- Note new business number:
  301-822-4376
  WATS number unchanged:
  (888) 322-6728
## 2014 AMSAT Board of Directors

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Call Sign</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Tom Clark</td>
<td>K3IO</td>
<td>Clarksville, MD</td>
</tr>
<tr>
<td>2014</td>
<td>Lou McFadin</td>
<td>W5DID</td>
<td>Orlando, FL</td>
</tr>
<tr>
<td>2014</td>
<td>JoAnne Maenpaa</td>
<td>K9JKM</td>
<td>Carpentersville, IL*</td>
</tr>
<tr>
<td>2014</td>
<td>Steve Coy</td>
<td>K8UD</td>
<td>Beavercreek, OH**</td>
</tr>
<tr>
<td>2015</td>
<td>Barry Baines</td>
<td>WD4ASW</td>
<td>Westborough, MA</td>
</tr>
<tr>
<td>2015</td>
<td>Alan Biddle</td>
<td>WA4SCA</td>
<td>Franklin, TN</td>
</tr>
<tr>
<td>2015</td>
<td>Mark Hammond</td>
<td>N8MH</td>
<td>Coats, NC</td>
</tr>
</tbody>
</table>

*Alternate filling the position formerly held by Gould Smith, WA4SXM.  
Upcoming election is for a normal two-year term.

**Alternate filling the position formerly held by Tony Monteiro, AA2TX.  
Upcoming election is to fulfill the unexpired term of the former director.
Eight Candidates to fill:
  » 3 two-year terms (Normal election cycle)
  » 1 one-year term (Fill the remainder of the AA2TX’s term)
  » The fifth and sixth place finishers are made Alternates

Ballots must be delivered to the AMSAT office in Kensington, MD by September 15, 2014
<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Barry Baines, WD4ASW</td>
<td>Westborough, MA</td>
</tr>
<tr>
<td>Executive VP</td>
<td>OPEN</td>
<td></td>
</tr>
<tr>
<td>VP Operations</td>
<td>Drew Glasbrenner, KO4MA</td>
<td>New Port Richey, FL</td>
</tr>
<tr>
<td>VP Engineering</td>
<td>Jerry Buxton, N0JY</td>
<td>Granbury, TX</td>
</tr>
<tr>
<td>VP User Services</td>
<td>OPEN (formerly Gould Smith, WA4SXM)</td>
<td></td>
</tr>
<tr>
<td>VP Marketing</td>
<td>OPEN</td>
<td></td>
</tr>
<tr>
<td>VP Human Space Flight</td>
<td>Frank Bauer, KA3HDO</td>
<td>Silver Spring, MD</td>
</tr>
<tr>
<td>Secretary</td>
<td>Alan Biddle, WA4SCA</td>
<td>Franklin, TN</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Keith Baker, KB1SF/VA3KSF</td>
<td>Corunna, ON</td>
</tr>
<tr>
<td>Manager</td>
<td>Martha Saragovitz</td>
<td>Silver Spring, MD</td>
</tr>
</tbody>
</table>
Overview

AMSAT’s Vision Statement

To Summarize:

“Keep Amateur Radio in Space”
2014 Challenges/Expectations
“A View to the Future”

- Focus on Fox-1 Engineering/Fox-1 Follow-On
- ARISS: Program Challenged by NASA Budget Impacts
- ITAR: Revised Rules/Transition to EAR
- Cubesat Licensing: Experimental vs. Amateur Satellite Service
- Education Outreach: Space Communications in the Classroom
- ‘IT Future”: Website, Mail Services
- Building awareness/support for AMSAT
- 2014 AMSAT Space Symposium/ Annual Meeting @ BWI
  » AMSAT’s 45th Anniversary
- Enhance the management team
Coming to Grips with Export Control

AMSAT is a “Munitions Supplier”
The Regulatory Environment-ITAR

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’

AMSAT Symposium Proceedings in 2012 & 2013 serve as an print outlet for discussing Fox-1 engineering development
- Highlights the significant development work accomplished
- Allows public discussion (foreign nationals)
The Regulatory Environment - ITAR

- DDTC/BIS Initial Rules Proposals released 23 May 13 (following Dayton)
- AMSAT Submitted Comments 8 JUL 13
  - Confirm Amateur Radio removed from USML
  - Separate amateur radio and education satellites from commercial satellites
  - Exempt amateur radio satellites from “deemed exports” requirements when interacting with amateurs of nations identified in the “License Exemption STA Country List”
- “Interim Final Rules” released by DDTC/DoS and BIS/DoC on 13 May 14
  - AMSAT requests summarily rejected

Peter Portanova, W2JV & Rep. Peter King (R-NY)
● “Deemed Exports” concept retained
  » Any technical exchange of covered items, even if takes place within the US
  » Includes e-mail, telcon, face-to-face conversations, etc.
  » “Export License” required
  » BIS is still evaluating implementation process
  » Process to gain permission to collaborate with foreign nationals should be easier

● Transition from ITAR to EAR for Category XV now expected to take place on 10 NOV 15
  » Until then, we remain under ITAR stipulations
The Regulatory Environment-Satellite Licensing

- FCC Released “Public Notice” on 15 MAR 13
  - “Guidance on Obtaining Licenses for Small Satellites”
  - Explains requirements for experimental license (Part 5)
  - Explains requirements for amateur radio satellite license (Part 97)
  - FCC has asked the IARU Satellite Advisor to coordinate experimental licenses issued in the amateur radio satellite bands
  - IARU Satellite Advisor has only publicly committed to coordinate through ELaNA-4 launches, though presumption is that coordination will be extended to all experimental satellites
  - At the 2013 AMSAT Space Symposium, IARU announced that effective 1 JUL 14, IARU would no longer coordinate experimental licensees in the Two Meter band.
The Regulatory Environment-Satellite Licensing

- **IARU Satellite Advisor Response**
  - Concerned whether it is appropriate for IARU to coordinate non-amateur satellites
  - Prefers to have separate frequencies for these satellites outside of amateur radio frequencies

- **AMSAT**
  - Working with ARRL to investigate long-term solutions
  - Recognizes significant positive impact of university CubeSat programs
    - Affording launch opportunities as NASA and other government policies encourage development of university satellite programs
    - Encouraging students and staff to embrace amateur radio through obtaining new licensees and establishing amateur radio ground stations
    - Providing the potential for more amateur radio communications satellites as the Fox-1 design is made operational, allowing both scientific payloads and amateur radio operations to be supported through a robust and dependable RF design
ARRL, AMSAT and NSF endorse the use of the Amateur Satellite Service by non-commercial, university CubeSats. Use of the Amateur Satellite Service is mutually beneficial to the radio amateur and university communities since:

- It helps provide more satellites that amateur radio operators can use
- It enables universities to engage the world-wide amateur radio community in gathering telemetry information from their satellites
- It promotes awareness of amateur radio to university students and licensing of new operators as well as helping to develop the next generation of amateur satellite builders
ARRL, AMSAT and NSF endorse the use of the Amateur Satellite Service by non-commercial, university CubeSats. Use of the Amateur Satellite Service is mutually beneficial to the radio amateur and university communities since:

- It provides a natural opening for cooperation between amateur radio volunteers who can provide communications expertise and universities which often have limited knowledge in this area

- It helps develop the future workforce in Science, Technology, Engineering and Math (STEM) fields
ARRL, AMSAT and NSF endorse the use of the Amateur Satellite Service by non-commercial, university CubeSats. Use of the Amateur Satellite Service is mutually beneficial to the radio amateur and university communities.

- As long as a university's CubeSat is for educational and scientific (i.e. non-commercial) purposes, we do not believe operators of these satellites are in violation of the pecuniary interest rules for transmitting in the amateur bands. This would include students and faculty who are employed by the university since any time spent transmitting to a ham-radio satellite would clearly be incidental to their job much like other classroom teachers using amateur radio as an educational tool.
AMSAT & ARRL Met with FCC on 14 JAN 14 in Washington

- ARRL’s Dave Sumner; AMSAT’s Tony Monteiro & Barry Baines
- FCC Wireless Bureau (Amateur Radio)
- FCC International Bureau (Satellite Licensing)
- FCC Office of Technology (Experimental Licensing)
- Applicability of Experimental Licensing vs. Amateur Radio Satellite Licensing

AMSAT discussed the history of placing scientific payloads/experiments on amateur spacecraft (UO-9/11/14, WO-18, AO-40, Fox-1, Fox-1B)

FCC expressed concerns that university satellites are operating under amateur radio licensing solely for forwarding telemetry to their ground station as a “convenience” with no amateur radio community involvement

AMSAT intends to write a “white paper” to help universities and the cubesat community understand the applicability of both approaches.
AMSAT Electronic Services

- **AMSAT Server**
  
  Full migration to the AMSAT site in Michigan had been completed.
  Pass Prediction page is now running on our site with updated graphics and links.
  Pass Prediction page now automatically adds new satellites.
  ARISS support has transitioned to the new server
  Server has withstood “hacker” attacks well and security is being further improved to minimize performance issues.

- **AMSAT Mail Services**

  Migration of Mail Services from UCSD to AMSAT’s commercially provided server has been completed
AMSAT Organizational/Financial Trends
Membership

- Membership Trends (US and Foreign)
  » Dec 2013 - 3145
  » Dec 2012 - 3698
  » Nov 2011 - 3385
  » Nov 2010 - 3660
  » Nov 2009 - 3646
  » Nov 2008 - 3501

- Flat/Declining AMSAT membership is a concern
  » Economy?
  » Aging amateur population?
  » “Relative“ lack of satellites?
  » Lagging interest in AMSAT?
  » Impact of Social Media/Internet: Do younger amateurs “join“ organizations?
AMSAT Organizational/Financial Trends

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

- Overall membership decline has major impact on providing operating funds to keep the organization running
  - A loss of 500 annually renewing/new members = $22K
  - Net income (not including non-specified donations) approx. $207K
  - Total cost of operations (not including satellite projects) approx. $294K
  - Need 1,978 additional members @ $44.00/year to break even
  - Operating losses covered by reserves, non-designated donations

- Projected operating deficit in 2014

- 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
How can AMSAT Members Help?

- Recruit individuals to become members/rebuild the ‘base’
  - Member’s “word of mouth” is the most effective recruiting tool available
- Recognize that satellite projects are multi-year projects that require financial support each year
  - Capital campaign programs provide specific funds for satellite projects
- Donate to our capital campaign for Project Fox and future opportunities in 2014 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-identify a need and work to resolve it
Upcoming Events:
32nd AMSAT Space Symposium

- Keep the dates: 10-12 OCT 14
- Location: Doubletree Inn by Hilton Baltimore-BWI Hotel
  - AMSAT Code: RAS ($99.00/night)
  - Free Parking and WiFi
  - Breakfast Buffet Coupons: $10.00
- Symposium Chair: Frank Bauer, KA3HDO
- Symposium Registration Mailed to the Membership
  - Register online at the AMSAT Store
- Help us celebrate AMSAT’s 45th Anniversary