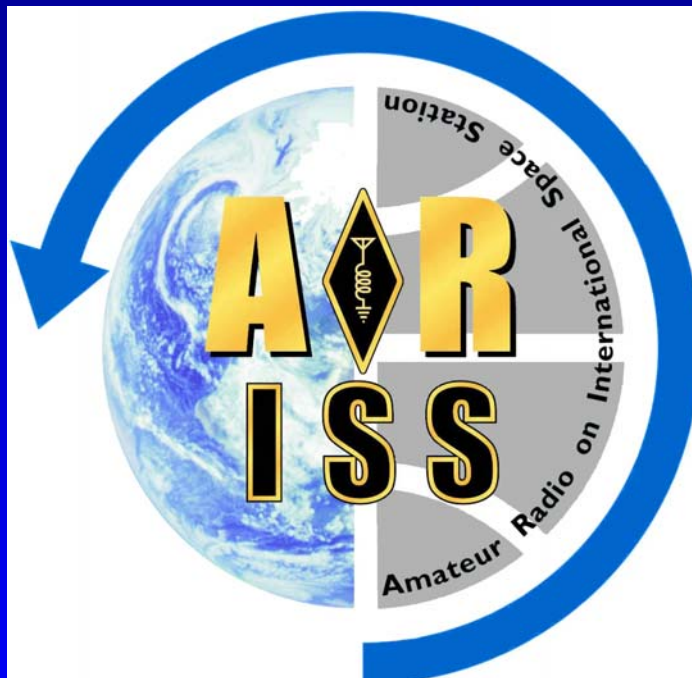# ARISS USA Report

22nd AMSAT Space Symposium
9 October 2004

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ARISS US Team Status

- US Team has undergone a significant reorganization over the past year
  - New roles and responsibilities defined to better serve the program
  - Some roles modified to ensure team backup
- Several new team members have been added
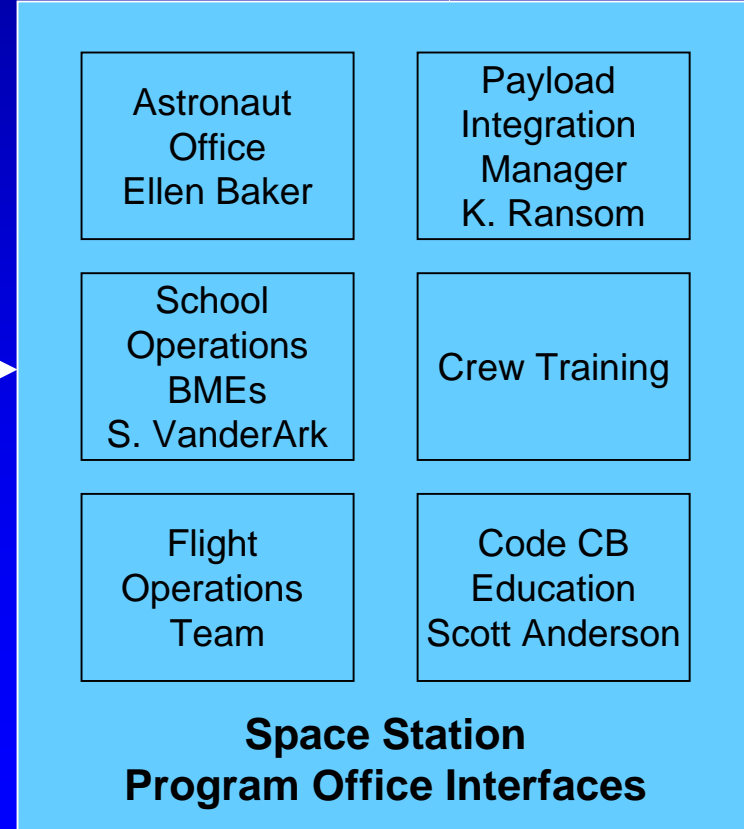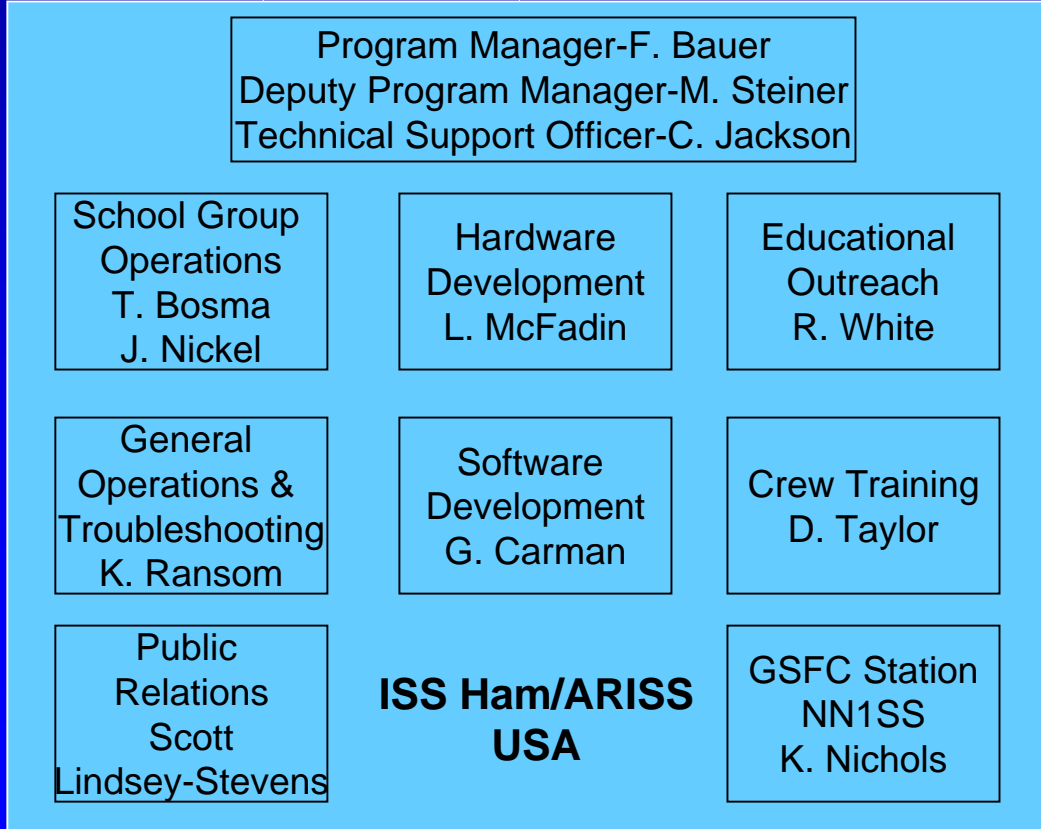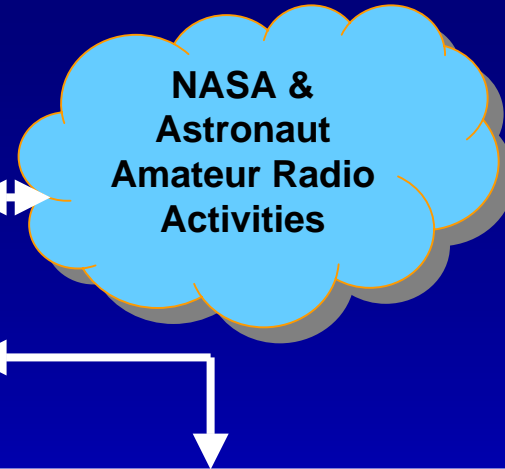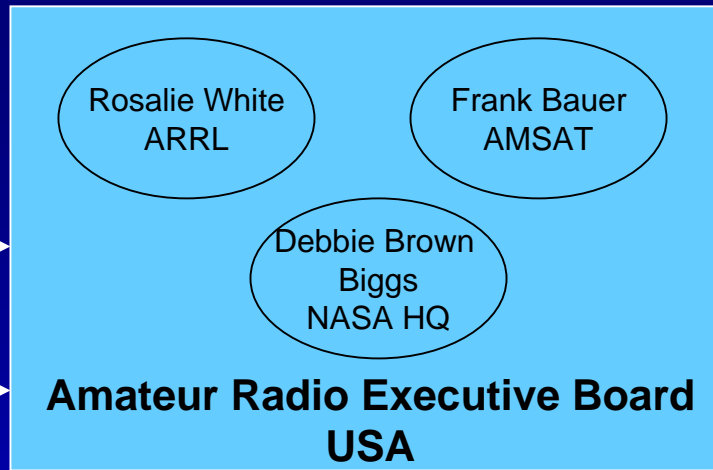- Several members no longer support the team

Key Personnel Changes

- Debbie Brown-Biggs replaced Pam Mountjoy (SK) as the new NASA education outreach coordinator

- Carlos Fontanot replaced Jeff Theall as the NASA ISS Program Office liaison

- Kenneth Ransom replaced Carolynn Conley as the ISS Ham technical manager at JSC

Key Appointments

- Mark Steiner, K3MS, serves as the ISS Ham, US Deputy Program Manager

- Scott Stevens, N3ASA, serves as the US team's Public Relations lead. He also serves as the US member to the PR committee

- Mark Spencer supports Rosalie White as an educational outreach specialist

- David Taylor, W8AAS, serves as the US team's training coordinator

- Carol Jackson, Orbital, serves as the technical support officer to the ISS Ham team

Team Interactions

ARISS International

Amateur Radio Executive Board USA

- Rosalie White ARRL
- Frank Bauer AMSAT
- Debbie Brown Biggs NASA HQ

NASA & Astronaut Amateur Radio Activities

ISS Ham/ARISS USA

Program Manager-F. Bauer
Deputy Program Manager-M. Steiner
Technical Support Officer-C. Jackson

School Group Operations T. Bosma J. Nickel	Hardware Development L. McFadin	Educational Outreach R. White
General Operations & Troubleshooting K. Ransom	Software Development G. Carman	Crew Training D. Taylor
Public Relations Scott Lindsey-Stevens		GSFC Station NN1SS K. Nichols

Space Station Program Office Interfaces

Astronaut Office Ellen Baker	Payload Integration Manager K. Ransom
School Operations BMEs S. VanderArk	Crew Training
Flight Operations Team	Code CB Education Scott Anderson

US Team Support to Teleconferences

- US Team Supports Weekly Team teleconferences and periodic committee meetings and teleconferences

- Teleconferences include:
  - Ops team (Wed. night)
  - US team (Fri. afternoon)
  - ISS Ham Technical Team teleconference with Energia – (first and second Tuesday of the month)
  - ARISS international partners – (third Tuesday of the month)
  - ARISS International school group/education – (last Thursday of every other month)
  - ARISS Project Selection and Use---as required
  - ARRL/AMSAT Tag-up---several times a week as needed
  - Program Manager, Deputy Program Manager, Technical Support Officer, JSC Liaison Tag Up—Monday & Wednesday mornings

Planned Improvements to Improve Program Outreach

- Three types of outreach: Internal NASA, International Ham Radio Community & General Public
- Improvements planned include:
  - Weekly status reports to NASA and ham radio community---initiated
  - NASA Lithograph---available
  - Additional school lesson plans
  - School group collaboration through listserv and teleconferences
  - New NASA web site for ARISS---will provide ~2 billion hits per year (will supplement existing ARISS web site)
  - Periodic magazine-type articles on the NASA web site

Note: Some of the above will require additional support from NASA

Backup Slides

US Team Roles & Responsibilities

Amateur Radio Executive Board
- Frank H. Bauer, AMSAT Representative
- Rosalie White, ARRL Representative
- Debbie Brown Biggs, NASA HQ Code N
- Roles: Board of Directors Role---Provide Strategic Vision and High-level decision making on key initiatives pertaining to amateur radio outreach activities sponsored by NASA.

NASA HQ Code N (Educational Outreach) Representative
- Roles: Provides strategic vision. With a thorough understanding of the direction of the agency and the international partners, provides strategic alignment of the entire amateur radio program with the Code N and agency goals and objectives. Defines resources (human capital and funding) available for all amateur radio programs sponsored by NASA. Strategic interface to other agency enterprises and international partners.

ARRL
- Roles: Sets the goals and objectives for the Educational aspects of the amateur radio programs conducted by NASA. This includes the Amateur Radio on the International Space Station (ARISS) Program and other amateur radio events involving NASA. Works with NASA and AMSAT to develop a set of solid set of educational outreach programs that inspire the next generation of space explorers. Coordinates the development and distribution of educational lesson material, coordinates development of other education material (e.g. lithographs), supports NASA at educational conferences, teacher in-service meetings and ham radio conventions. Serves as the initial point of contact for distributing background handouts and web information to schools interested in ARISS and ARISS contacts. Interprets national and international laws and policies pertaining to amateur radio to optimally support the amateur radio programs sponsored by NASA. Provides public relations liaison support to the amateur radio community and to the general media. Participates in ARISS international educational outreach committee efforts and manages ARISS QSL card requests.

US Team Roles & Responsibilities (Continued)

AMSAT

- Roles: Provides technical and satellite expertise for the amateur radio programs conducted by NASA. Provides program management expertise on all amateur radio programs conducted by NASA. This includes the Amateur Radio on the International Space Station (ARISS) Program and other amateur radio events involving NASA. Provides leadership on flight hardware development, flight operations support, and crew training. Provides mentoring support to schools interested in bringing amateur radio in the classroom. Develops and maintains a ground station infrastructure that enables satellites and human spaceflight vehicles to more effectively communicate with ground-based radio amateurs and schools. Works with ARRL and NASA to develop a set of solid set of educational outreach programs that inspire the next generation.

ISS Ham/ARISS U.S. Team
Program Manager—Frank Bauer

- Responsible for day-to-day leadership of ISS Ham team
- Sets strategic direction and vision for the team
- Helps resolve issues that surface from within the team
- Using resources provided by NASA, supports the following: development of safety data package/certification, hardware testing, & hardware development as coordinated with hardware manager
- Coordinates with ARRL team leadership on education initiatives
- Works with team to disseminate ARISS information to the general public through press releases, papers, and PAO events.

Deputy Program Manager—Mark Steiner

- Assists Program Manager (PM) in day-to-day leadership of ISS Ham team
- Works with PM to resolve issues that surface from within the team
- Provides direction to crew training manager on matters associated with crew training and crew on-board documentation
- Picks up on Program Manager's duties when he is absent

US Team Roles & Responsibilities (Continued)

<u>Technical Support Officer—Carol Jackson</u>

- Provides day-to-day technical support to the team, including communication dissemination within the team and to NASA HQ

- Set ups and attends the ISS Ham technical team teleconferences and ARISS teleconferences. Records and posts the ISS Ham technical team minutes and ensures that the entire International Team agrees to the technical and programmatic decisions embedded in these minutes

- Attends weekly meetings and teleconferences in an effort to gather technical, education and programmatic information for the weekly highlight reports for NASA HQ (also posted on ARISS Web site)

- Sets up and maintains a configuration management system on the government supplied VSDE web site to store ARISS/SAREX technical drawings, operations documents, training documents and debrief information.

- Develops and maintains a program schedule on the VSDE web site to help all better communicate and get the work done. This schedule will include launches, crew debriefs, training sessions, international meetings, teleconferences, hardware deliveries, and key member (Program Manager, Deputy Program Manager, etc) travel and vacation constraints.

- Provides support to the technical team during USA-sponsored ARISS Technical Team Meetings (Next one planned for October 2004)

- Provides Educational Outreach support to the ARISS team as directed by the ARRL & AMSAT representatives

- Works with the team to compile the list of questions for the crew debriefs

US Team Roles & Responsibilities (Continued)

Crew Training Leader—Dave Taylor

- Oversees the initial Astronaut licensing activities performed by our JSC astronaut licensing lead
- Responsible for the development of ISS Ham hardware/software/ops procedures for the astronauts
- Responsible for the development of the initial questionnaire to be distributed to the astronauts to determine the depth of training required
- Responsible for ensuring that the astronauts have completed their training certification
- Responsible for ensuring that the astronauts have completed their EVA training
- Interface to the JSC trainers
- Responsible for the development of ISS Ham training materials at JSC
- Interface w/ Energia training team
- Interface w/ GCTC training team
- Works with Crew interface Coordinator and JSC Training liaison to complete the onboard procedure generation and PV
- Works with Crew interface Coordinator and JSC Training liaison to ensure that the onboard procedures are maintained

US Team Roles & Responsibilities (Continued)

Flight Hardware Development Leader—Lou McFadin

- Responsible for the development and oversight of all flight hardware pertaining to amateur radio on the ISS
- Responsible for the development of ground-based flight equivalents of the hardware (GSFC, Orlando, Russia)
- Responsible for the development of training hardware (JSC, Energia, GCTC)
- Responsible for Phase I Hardware
  - Maintenance (radios, packet module)
  - Troubleshooting (Radios, packet module), and
  - Development (SSTV)
- Responsible for ensuring Antenna EVA's are adequately performed through coordination with our Russian team members
- Responsible for the development of U.S. portion of Phase II (Russian) hardware/software development (new radios, SSTV)
- Responsible for tracking development of Russian Phase II hardware, including safety certification and testing
- Responsible for Phase III and external hardware development
- Responsible for ensuring that the generation and maintenance of flight certification documentation is completed for each hardware development.

US Team Roles & Responsibilities (Continued)

Educational Outreach Leader—Rosalie White (lead), Mark Spencer (support)

- Responsible for the development of ARRL lesson plans, assist NASA with NASA lesson plans
- Responsible for assistance with the development of ARISS litho
- Responsible for disseminating information on ARISS, including lesson plans and litho
- Responsible for Web pages on ARISS, hosted by the ARRL
- Responsible for supporting teacher conventions/events, including presentations and booth set-up and staffing
- Responsible for monitoring Edcats data that is, or has not been, entered by the schools
- Works with Program Manager and ARISS International delegates to develop and maintain web page
- Responsible for ARISS QSL cards – printing and fulfilling requests
- Chairs ARISS international school group committee, moderates monthly meetings and composes minutes to have posted on the Web
- Accepts applications from US schools, assists schools in filling out application, reviews and then forwards applications to ARISS Ops Committee
- Responsible for disseminating information for garnering ARRL publicity on school contacts and ARISS developments, including speaking with reporters
- Responsible for updating ARRL Board on ARISS and ensuring their continued support for ARISS
- ARISS International Secretary-Treasurer, taking minutes at in-person meetings
- Responsible for disseminating hand-out materials on for grass-roots talks on ARISS
- Assist with papers on ARISS written for conferences

US Team Roles & Responsibilities (Continued)

School Group Operations Leader—Tim Bosma & John Nickel

- Responsible for the school contacts preparation team (mentoring, school assessment and scheduling, media, MSNBC, ops web page)
- Responsible for the scheduling school group events
- Leads Wednesday Operations Teleconferences
- Telebridge system maintenance and use (ground stations, MCI, moderator, scheduling)
- Responsible for the scheduling special events (Field Day, Scout Jamborees, Cosmonautics Day, etc.)
- Works with Program Manager and JSC Interfaces to develop an emergency communications system
- Liaison between JSC BME's (Steve VanderArk lead) and ARISS

School Group Flight Operations/Psych. Support—Steve VanderArk

- Responsible for coordinating with flight operations leader to ensure that the school group operations team gets timely, accurate operations data (wake-sleep schedule, EVAs, Shuttle Launches, other constraints) so that the ISS Ham operations team can make informed decisions on school group scheduling that are right the first time.
- Works with BME and flight operations team to get school groups scheduled.
- Responsible for providing immediate (within 24 hours) feedback on proposed contacts
- Provide 14 days notice for approved contacts and keep these commitments

US Team Roles & Responsibilities (Continued)

General Operations Leader—Kenneth Ransom & Frank Bauer
- Responsible for the general operations planning
- Responsible for working with the School Ops coordinator to schedule key events (Field Day, K6DUE commemorative, etc)
- Supports troubleshooting of ISS Ham-related operations issues (in concert with hardware and software leader)
- Works with PR leader to communicate operations information to the general public

Public Relations Leader—Scott Lindsey-Stevens
- Coordinate release of US team's public relations information
- Develops and promotes key display items and handouts that furthers the communication of the ARISS program with the general public
- Coordinates with Public Relations personnel in the media to promote ARISS activities
- Works as a conduit to solicit school group contact information from the schools and mentors to be used for information to the press and general public
- Supports US team in the dissemination of ISS Ham information to the general ham radio community
- Coordinates with other ARISS Region Public Relations leaders in the release of ARISS-related information to the general public
- Representative to the ARISS PR committee
- Works with educational outreach leader to further program educational goals through media-type capabilities like Echolink and IRLP

US Team Roles & Responsibilities (Continued)

Payload Integration Manager—Kenneth Ransom

- Responsible for working with the ISS Ham (international) team to complete the installation, set-up and checkout of the Phase 1 hardware
    - Including getting the Computer GFE required to fully utilize the Packet system and SSTV system
    - Enabling the manifest of the SSTV system
    - Completing the tests in Russia so ISS Ham can use the Phase 1 equipment in the Service Module with the new antennas
- Responsible for working with the ISS Ham (international) team to develop, certify, manifest, set-up, and checkout the Phase 2 equipment
- Responsible for working with the ISS Ham (international) team to develop, certify, manifest, set-up, and checkout the externally mounted ISS Ham equipment
- Responsible for supporting the teleconferences and meetings with the Russian team.
- Responsible for keeping the team informed of issues or concerns regarding ISS ham or the ISS program.
- Responsible for interfacing with the JSC team to get ISS Ham-specific photos that have been taken by the crew and the cadre of ground photographers

Roles & Responsibilities (Continued)

<u>Crew Interface Coordinator—Kenneth Ransom</u>

- Responsible for setting up and participating in crew debriefs.
- Responsible for providing a friendly, team-building interface to the crew and the Astronaut office through morale-building e-mails, pictures and press releases of ISS Ham successes.
- Responsible for providing obtaining morale-building items (autographs, etc) to inspire the ISS Ham volunteers and school groups.

<u>Education Interface from JSC Education Office—Scott Anderson</u>

- Coordinates with ARRL, AMSAT and ARISS education team on all astronaut-specific amateur radio programs within NASA.
- Works with amateur radio executive board and ARRL to develop NASA lesson plans.
- Provides key interface between ARRL, AMSAT and NASA Aerospace Education Specialists to support educational initiatives pertaining to amateur radio.
- Understands and participates as a full member of the ARISS to provide day-to-day direction and guidance to the team on educational initiatives.