

Space Notes

A new section in the Journal is introduced in this issue. “Space Notes” excerpts professional articles of interest to Space professionals. The section will attempt to present a broad spectrum of newsworthy items, with references to the full article for those who wish to read further. *Suggestions and submissions for this section are solicited, and should be forwarded to the Managing Editor at richard.burks@arspace.army.mil.*

IFF Systems Needed To Complement Blue Force Tracking, Officials Say

By Nick Jonson, Aerospace Daily, October 22, 2003

More Blue Force tracking units will have to be deployed with ground forces for the system to be completely effective, a panel of military leaders told members of Congress Oct. 20. Vehicles equipped with Blue Force tracking systems also need to have a complementary identification friend or foe (IFF) system to guard against friendly fire, the officials said. Testifying before the House Armed Services’ subcommittee on Terrorism, Unconventional Threats & Capabilities, Army Lt. Gen. William Wallace said the Blue Force tracking system “performed very well” in Iraq. But due to the number of systems deployed, battle commanders could only “see” the location of units, not individual vehicles, Wallace said. If a system malfunctioned, determining the unit’s location and identity could be difficult, he said.

U.S. General Sees Space as Future Battlefield

By Tabassum Zakaria, New Orleans, MSNBC.com, October 16, 2003

Space may become a war zone in the not-too-distant future, a senior U.S. military officer said Wednesday, hours after China became only the third country after the United States and former Soviet Union to put a man in Space. “In my view it will not be long before Space becomes a battleground,” Lt. Gen. Edward Anderson, deputy commander of U.S. Northern Command, said in response to a question at a geospatial intelligence conference here. The United States operates spy satellites in Space. Earlier in the day, Rich Haver, former special assistant for intelligence to Defense Secretary Donald Rumsfeld, said he expected battles in Space within the next two decades. “I believe Space is the place we will fight in the next 20 years,” said Haver, now vice president for intelligence strategy at Northrop Grumman Mission Systems. “There are executive orders that say we don’t want to do that. There’s been a long-standing U.S. policy to try to keep Space a peaceful place, but ... we have in Space assets absolutely essential to the conduct of our military operations, absolutely essential to our national security. They have been there for many years,” he said. Responding to a question about the implications of China sending a man into Space this week, Haver said: “I think the Chinese are telling us they’re there, and I think if we ever wind up in a confrontation again with any one of the major powers who has a Space capability we will find Space is a battleground.” Haver added that he was not implying that China was the next great competitor or enemy of the United States.

Plan For Space-Based Radar To Ensure Joint Commanders Have Access

By Anne Plummer, Inside the Army, October 27, 2003

The Pentagon’s plan to build a Space-Based Radar system is on track to ensure theater commanders will have access to the future satellite constellation when they need it, defense officials tell Inside the Army. SBR is envisioned as the first Space-based intelligence, surveillance, and reconnaissance (ISR) system that will meet the needs of both theater- and national-level users. On Sept. 29, the Joint Requirements Oversight Council agreed that the constellation of radar satellites should provide a “dynamic tasking capability” that will give priority access to any user whose needs are most urgent at the time. In other words, Defense Department requirements for the system now stipulate that officials must be able to change the path of SBR satellites to accommodate a theater commander or other user who might request specific ISR data. The move is considered a win for the joint commander, according to one defense official.

Next Test Of GMD System Delayed, MDA Says

By Marc Selinger, Aerospace Daily, October 24, 2003

The next test of the Ground-based Midcourse Defense (GMD) system has been delayed, according to the Missile Defense Agency.

The test, the first launch of the Lockheed Martin interceptor booster, already had been postponed from September to October and will now likely take place during the last two weeks of November, MDA spokesman Rick Lehner said Oct. 23.

Lehner attributed the two-month delay in Booster Verification-5 (BV-5) to Lockheed Martin's desire to do more ground testing of components and subcomponents, and to the need to carefully document work done on the booster. GMD program officials are eager to avoid repeating testing problems that occurred with its old booster, which twice failed to separate from the interceptor's exoatmospheric kill vehicle (EKV). MDA is developing two new interceptor boosters for GMD. The Orbital Sciences booster had a successful first launch test, BV-6, in August (DAILY, Aug. 19). Tests involving simulated and actual intercept attempts are expected to occur in 2004. Despite the delay in BV-5, the Defense Department still plans to begin fielding GMD in September 2004.

Weather Intelligence High-fidelity weather-sat sensors will enhance forecasts, improve combat mission planning

By William B. Scott, Denver, Aviation Week & Space Technology, November 10, 2003

Next-generation weather satellites will give military commanders a wealth of "environmental intelligence," significantly improving effectiveness of tactical operations that often hinge on the quality of forecasts. Pentagon planners already are altering their concepts-of-operation and battlefield strategies to maximize the impacts of advanced weather spacecraft now in development. Air, sea, and land forces have always depended on accurate forecasts of cloud cover, storms and winds, but visible-light imagers, infrared sensors and microwave sounders flying on NASA's Terra and Aqua satellites have taken "weather" beyond basic atmospheric phenomena. Operations in Afghanistan and Iraq were highly dependent on weather "knowledge" gleaned from data acquired by NASA's environment-monitoring satellites. And military commanders were quick to recognize the impact of advanced sensor systems on these spacecraft — and take advantage of them. "In the first three months of (the war on terrorism), 15 percent of the targets ... and 30 percent of the weapons were changed as a result of what the weatherman said," Brig. Gen. David L. Johnson, Pentagon's director of weather operations, noted last December. But the next generation of joint civil-military spacecraft will "allow military users to go from coping with weather to exploiting it for tactical and strategic purposes," according to a Northrop Grumman official. To that end, Northrop Grumman and Raytheon are developing the National Polar-orbiting Operational Environmental Satellite System (NPOESS), a constellation of low-Earth satellites and a ground data network that will replace aging civil and military systems.

U.S. Monopoly On Satellites To End

By Anthony Browne, in Brussels, London Times, October 30, 2003

China will today formally join forces with the European Union to put an end to an American monopoly on one of the world's most commercially, strategically and militarily important technologies: satellite navigation. China is investing €200 million (£140 million) and pledging scientific co-operation with the Galileo space project, which rivals America's Global Positioning System (GPS), the technological foundation stone of its global military dominance. China has set up a research center dedicated to help develop Galileo, which should be operational by 2008. Russia, India and Japan are also thought to want to join the Galileo project. Galileo, which will be based on 30 satellites circling the globe, should be more technically advanced than the American system, with greater accuracy. It will allow users such as tankers, tractors, lorries, ambulances and motorists to fix their position to within just one meter, against ten meters for the U.S. system. The U.S. is developing a new version, GPS-M, which will be as advanced as Galileo, but which will not be operational until 2012. It has opposed the establishment of a rival system and its satellite-guided missiles, bombs and jets would be impossible to use without GPS.

Boeing Awarded \$147 Million to Build Next Three GPS IIF Satellites First IIF launch planned for mid-2006

By Hampton Stephens, Inside the Air Force, November 7, 2003

The Air Force has awarded a \$147 million contract to Boeing to produce three more Global Positioning System IIF satellites, the Defense Department announced last week. The contract, announced Oct. 31, authorizes production of satellites four through six of the 12 planned GPS IIF Space vehicles. The IIF satellites will add new capabilities to the GPS constellation, including new signals for military and civilian use and up to 10 decibels of additional power to specific signals for protection against jamming. The GPS satellites now on orbit are a mixture of blocks I, IIA and IIR spacecraft. Lockheed Martin has built 21 IIR satellites for DoD and 10 of those are now on orbit, according to the company.

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Troubled SBIRS High Program to Undergo Broad Review, Again GAO warns of further cost overrun risks

By Elizabeth Rees, Inside the Air Force, November 7, 2003

The Pentagon's troubled next-generation Space-based early missile warning program will once again undergo a broad review, the Defense Department says. The statement comes in response to a recent government audit warning that the Space-Based Infrared System High is still at risk of dramatic cost and schedule overruns despite a program restructure just last year. The SBIRS program began in 1996 with the goal of improving long-range ballistic missile detection capabilities over those of the current system now on orbit, the Defense Support System. SBIRS is divided into two architectures indicating the orbiting altitude of the Space-based elements — "High" and "Low." In the fall of 2001, SBIRS Low management was transferred from the Air Force to the Missile Defense Agency, where it has had its fair share of cost overruns and program delays. MDA has renamed the program the Space Tracking and Surveillance System. Meanwhile, SBIRS High has been under intense scrutiny since 2001, when officials disclosed they were about \$2 billion over budget. The overrun prompted a two-year delay in the launch of its satellites. SBIRS High was originally slated for fielding in 2004; the constellation will consist of four satellites and the Air Force is procuring a launch-ready spare. The Defense Department convened an independent review team to unearth the budget problems and recommend program reforms. Based on the review, the Air Force restructured the program last year to provide contract incentives and various oversight measures.

Officials Eye Datalink, GPS Capabilities For Future AMRAAM Variant

By Elizabeth Rees, Inside Defense, October 31, 2003

As full operational testing for the latest variant of the Advanced Medium-Range Air-to-Air Missile draws near, the Air Force is crafting plans to integrate datalink and Global Positioning System guidance capabilities for the future version of the AMRAAM, further improving its range and accuracy, according to program officials. Both the Navy and the Air Force use AMRAAM. AMRAAM is currently guided to its target with a seeker and inertial reference unit. Future variants of the missile will house a combined Global Positioning System/inertial measurement unit to replace the baseline AMRAAM inertial reference unit, thus improving accuracy at longer ranges, according to program officials.

Satellite Security Systems Demonstrates Shut Down of Tanker Truck Via Satellite Communications

San Diego, SpatialNews.com Release, November 3, 2003

Satellite Security Systems (S3), a global provider of asset security and logistics control, in cooperation with the California Highway Patrol (CHP) and InterState Oil Company, dramati-

cally demonstrated the first wireless remote shutdown of a fully loaded moving petrochemical tanker truck. From S3's headquarters in San Diego — 530 miles from the demonstration site — satellite communications were used to disable the truck in seconds, proving S3's GlobalGuard(TM) and FleetGuard(TM) a viable solution to the challenge of controlling rogue hazardous waste vehicles that could pose a threat to homeland security. The event, conducted on CHP Academy grounds in Sacramento and administered by the CHP, addresses ongoing concerns about the affordability of effective security technology, stealthiness of such a security device, and how GPS monitoring can be incorporated safely into law enforcement protocol. The need to secure trucks carrying hazardous waste or petrochemical products is of paramount concern to trucking companies, California Independent Oil Marketing Association (CIOMA) members, and State and Federal departments. While the California state government may be voting as early as January on Assembly Bill (AB) 575 (requiring truck disabling devices, global positioning or other "location reporting systems" on hazardous material haulers), the CHP has been tasked with researching various technologies to support these regulatory initiatives.

MDA Delays Next Missile Defense Intercept Test To Spring '04

By Sharon Weinberger, Defense Daily, October 31, 2003

The next full intercept test of the Pentagon's Ground-Based Midcourse Defense (GMD) system will take place in spring of next year, rather than the end of this year as originally planned, according to a spokesman for the Missile Defense Agency (MDA). Integrated Flight Test-14, or IFT-14, will take place "in the spring time," Rick Lehner, spokesman for the MDA told Defense Daily. The change in schedule was made so that MDA could eventually choose between the two boosters under development by Orbital Sciences and Lockheed Martin, which have not been tested yet from Ronald Reagan Flight Test Facility on Kwajalein Atoll in the Pacific. IFT-14 was originally planned as a fully integrated flight test with an intercept set to take place later this year. In that test, the booster, either the one designed by Lockheed Martin or Orbital, would fly out of Kwajalein. In addition, the production kill vehicle, which is built by Raytheon, will be used in that test. MDA may decide to use the Orbital booster "because that is the one furthest along," Lehner said. A final decision on which booster to use will be made by the BMD program office in Huntsville, Ala. IFT-14 will be the first test of the booster — other than the surrogate used in previous flight test — designed specifically for the BMD system. Orbital's GMD boost vehicle is a three-stage system based on hardware that has flown 45 times on missions carried out by the company's Pegasus, Taurus and Minotaur space launch vehicles. The other booster design now being developed by Lockheed Martin for the GMD program is slated to make a similar test launch from Vandenberg in December.