

GPS and GLONASS Constellation Status

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At this time it appears that GPS and GLONASS are taking very different paths into the future as far as constellation maintenance and future development is concerned. The U.S. Air Force Master Control Center headquartered at Falcon AFB near Colorado Springs is continuing to monitor and control the current constellation of GPS satellites. At the same time the USAF through the GPS Joint Program Office (JPO) is making the necessary engineering adjustments to ensure that the next generation of satellites (Block IIF) provides the level of service required by the Department of Defense (DoD) and meets the needs of the civil community.

Conversely, the state of the Russian GLONASS satellite constellation appears to be diminishing at an alarming rate, with no published plans of replenishment. As of May 1998, the number of healthy GLONASS satellites was down to 14. One additional satellite is still in orbit and transmitting but is designated as unhealthy. The current GLONASS constellation in three orbital planes is shown in Figure 1. Since full deployment (24 on-line satellites) was first achieved in January 1996, no new GLONASS satellites have been launched. We received information in January of this year that three GLONASS satellites were to be launched by the end of

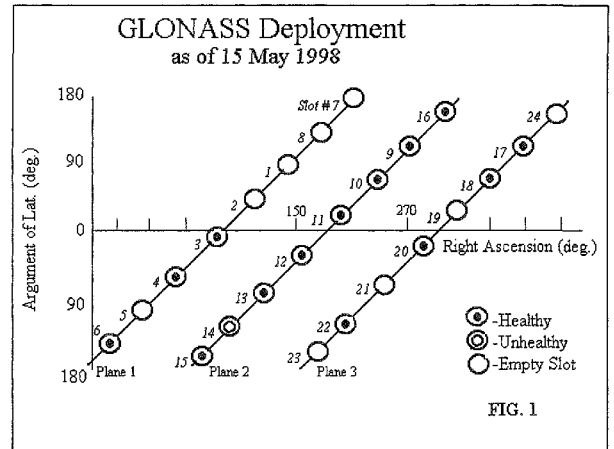


FIGURE 1.

March. This launch had not taken place as of this writing.

The GPS constellation configuration as of May 15, 1998 consists of 8 GPS Block II spacecraft (S/C), 18 Block IIA S/C, and 1 Block IIR S/C. There are two additional satellites (1 Block II and 1 Block IIA) that are still in orbit but no longer in service. An unsuccessful launch of a Block IIR occurred in January of 1997. Six months later the first Block IIR was successfully launched. That S/C came on-line in January of this year and has been functioning properly.

For health status and deployment information for GPS and GLONASS on the Internet, consult the Lincoln Lab Homepage at <http://satnav.atc.ll.mit.edu>.

For additional GPS information, civil users can contact the USCG Navigation Center on a 24-hour basis at (703) 313-5900 and their computer BB at (703) 313-5910. Military users can contact 2Lt. Brian Barker, 2SOPS/DOAN, Navigation Analyst, at (719) 567-6378; DSN (719) 560-6378; BB at (719) 567-6379. ■