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FULL TEXT OF ARTICLE:

1. [Article by Lieutenant Colonel A. Dokuchayev, KRASNAYA ZVEZDA correspondent: ''A Bridle for the Nuclear 'Racers,' or What the Space Monitoring System Represents'']

2. [Text] We are completing an article on strategic deterrence systems that are at the disposal of the USSR Armed Forces. (See KRASNAYA ZVEZDA of 27 September and 5 October.) Today's material is about the outer space monitoring system (SKKP).

3. Colonel V. Nikolskiy pointed to an enormous bay with displays and multicolored screens--the command post of the space monitoring system. He says look and study.

4. ''From here we see practically the entire moving cosmos,'' he explained.

5. I familiarize myself with what yesterday was an inaccessible and top secret facility. Dozens of questions crop up. First: Why do we need this very modern and expensive all-seeing eye?

6. Colonel G. Kovsh, chief of the department who was keeping up the conversation, answers one question after another: ''Do you know how many objects there are in outer space? More than 7,000 have been counted, active and inactive satellites.... We are talking about those that are placed in orbit. All told there are more than 20,000 flying objects--outer space is cluttered. Out there a very ordinary needle is capable of piercing a spacecraft and causing trouble. But the problem is not in the number-- not all space apparatuses are harmless....''

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7. He showed a short chronicle of recent reports from abroad.

8. ``16 July. Pakistan launched its first Earth satellite vehicle, weighing 50 kilograms, from Chinese territory. According to the announcement of the prime minister, this is 'an important event on the road to the technological modernization of Pakistan.'

9. ``1 August. A missile whose electronic components were undergoing testing in the air for the 'Star Wars' program went off course and was destroyed on a command from Earth. The destruction command came from the White Sands test range (state of New Mexico).

10. ``4 August. A Delta-2 rocket was launched from the space center on Cape Canaveral. Its main objective--to put a Navstar system satellite into orbit--pursuant to a Pentagon program....''

11. ``Different, very different satellites are being put into orbit, and they simply are real dragons. Once outer space becomes more dangerous, then we must know everything,''' says Viktor Nikolskiy, ``or almost everything about each apparatus and object. These tasks surfaced as early as the beginning of the 1960's, and they were prompted by the placement of satellites into orbit that had a military purpose.'''

12. Like every new program, the system for monitoring outer space was born as they say with birth pangs. The original provision of space object tracking was accomplished through information obtained by optical systems of the USSR Academy of Sciences and the Air Defense Troops, with the use of plotting boards and individual programs.... But with the passage of time this became inadequate. Powerful radars of the missile attack warning and the antimissile defense systems were linked up in the tracking of objects. The streams of information were transformed into a real river that was full-flowing and rapid. The question arose as to the speedy and effective processing of information. And so in 1970 a space tracking center began to be created. N. Buslenko, G. Ryabov, and their colleagues performed a great service in this.

13. A kind of personal file is kept on each high-flying ``traveler''--it contains the satellite's coordinates, its capabilities, and its ``behavior''. A catalog is constructed from this kind of personal data. When the task arises to take a closer look at one or another space wanderer--for example, the U.S. reconnaissance satellite Ferret-D--the catalog helps find its location area quickly, and only then do the tracking complexes ``tell'' where it is located and give its characteristics. With what kind of accuracy? They explained it to me. Imagine that two soccer

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balls are flying at a distance of 10 centimeters from each other. We will say that there are two balls in orbit, and not one. But this is a figurative comparison. There are also examples of specific work that attest to the professionalism of the collective.

14. September 1983. A South Korean Boeing-747 aircraft violated the state border of the USSR, intruded into our country, and was shot down by a Soviet fighter. People died, a tragedy occurred. The world had to be told who was responsible. The Soviet side presented evidence that the intrusion into our airspace was intentional. Perhaps the most convincing evidence was that presented by the space tracking center. The flight of the Boeing-747 was very carefully synchronized with the flight of a Ferret-D reconnaissance satellite. The space spy appeared over Chukotsk at 1845 on 1 September, and for a period of approximately 12 minutes it flew to the east of Kamchatka and the Kuril Islands, monitoring Soviet electronic systems which were working in the normal mode. In the next orbit, the Ferret-D appeared over Kamchatka at exactly the moment of the intrusion of the encroaching aircraft, fixing the activity of our communications and electronic systems which were changing the intensity of their work. In the end, it was established that the third orbit coincided with absolute accuracy with the following third stage of the Boeing-747 over Sakhalin. The data presented to the public showed: Such an exact coincidence of the flight of the reconnaissance aircraft and the spy satellite cannot be explained away as accidental.

15. Mistakes must not be made in such cases. A tremendous responsibility is placed on equipment, and most of all on people. Who are they, the "controllers" of outer space?

16. The operations duty officer is Colonel V. Minayev. He is 49 years of age, has completed a military school and a military academy, and is married and has children. He is from the Kharkov area. Lieutenant Colonel Ya. Tsybalytuy, a member of the team, also comes from the Ukraine. "I also have a connection with the Ukraine," says Major N. Davydov. "I graduated from a military school there."

17. A lot can be told about each of them. Take Yaroslav Tsybalytuy. He has been here since the beginning. He assembled the electronic apparatus of the automated control system--specialists from the manufacturing plant were amazed: Where did such knowledge come from, and such skill?--he studied it, and now he is operating it. He can say with complete justification: "my center."

18. "Competence is the main thing that characterizes the officers of the center. Other specialists 'do not survive here,'" said Colonel V. Nikolskiy. He talked with pride about the fact that this year alone 20 medalists came here from military schools. "Very high

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knowledge and solid skills are the main requirement for holding conversations with outer space. An aspiring person next to wonderful equipment cannot help but grow...."

19. Incidentally, this is understood very well in the higher educational institutions and in the scientific research institutes, and they eagerly invite officers who have worked well in the tracking center. They have more than one research work to their credit. Officers Yu. Gorobchuk, V. Zyubin, and M. Chernov recently defended their candidate dissertations.

20. "Is it difficult to be an officer in the SKKP?" I could not refrain from asking Minayev this banal question.

21. "Speaking for myself, it is difficult," he answered. "Today, the situation here is more or less quiet, but it is not always this way. For example, one of our tasks is to track space objects in the descent sector--we get precise information on the point of impact, and we issue information about this. And what are the satellites like now? There are those with nuclear equipment. When can they be expected? Where will the fragments fall...?"

22. Vladimir Minayev and his colleagues had occasion to worry some in the spring. It all started on the 8 March holiday. Four new fragments appeared in space. The analysis and data processing group reported: These are parts of a satellite that was put into orbit by the American spacecraft "Atlantis." It would seem it was nothing to worry about, but the object was not a simple one, and it was launched in the interests of the Pentagon--for visual and electronic intelligence, and its weight was 17 tons. Apparently the Americans blew it up because of defects. A precise answer had to be given: Where will the parts fall? Will they burn up completely in the atmosphere. The specialists did not err in their calculations. The first fragment burned up in the thick layers of the atmosphere on 19 March 1,500 kilometers to the north of Midway Island in the Pacific Ocean. They explained that the rest of the fragments do not represent a danger. Of course, their attention did not slacken until all of the fragments "died."

23. "There is also work with the manned spacecraft," explains Colonel Kovsh. "But we get involved only in an emergency situation. If an orbital station or a spacecraft is being guided, and close communication is being maintained with them, then here as the saying goes our job is on the sideline. But if a malfunction should occur, and the Mission Control Center 'loses' its envoys, then it cannot do without us...."

24. Grigoriy Kovsh showed TASS information appended to a file.

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''Several corrections in trajectory movement were made during the two-day automatic flight of the Soyuz T-13, as a result of which the spacecraft approached the Salyut-7 station at the prescribed distance. Further closing was executed by the crew manually with the use of a range determination apparatus and the onboard computer system.'' It was not reported then that Vladimir Dzhanibekov and Viktor Savinykh executed the docking with the silent station that was ''lost'' by Mission Control Center, and that they found it only with the data that was issued from here, from the space tracking center.

25. ...Of course the collective does not live only with celestial distances. Here as in any garrison weddings are celebrated, apartments which are not in surplus are awaited impatiently, there is gossip about the shortage of commodities, there are holidays, and it is a blessing that the military facility is situated in a refreshing coniferous forest. But nevertheless, the main thing that determines everyone's mood is outer space, and more precisely monitoring it. When I tried to distract officers from discussions about work and to talk about everyday living matters, it did not always work out and they only steered away from the subject. They spoke with bitterness about the fact that frequently specialists from the space department took credit for the tracking center's work, and that they were being taken advantage of because of their secrecy. You see, no one else can spot falling fragments and pinpoint the coordinates of silent satellites....

26. Here in the tracking center they understand that the process of disarmament that has been started will not affect them--the outer space monitoring system will be needed even when there are no armies. The main concern is not to fall behind in the rapid exploration of outer space in order to secure their fellow citizens from various accidents. Indeed, the military danger from outer space has not been removed. On the days that I was in the tracking center, the Pentagon carried out a regular experiment in launching a powerful energy device within the framework of the ''Star Wars'' program. It appears that these warriors are assured this complex work for a long time. We will not shy away from giving credit to them for their unobtrusive work--so important and necessary in behalf of our security and peace--which for many years has been guarded by a curtain of secrecy.

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