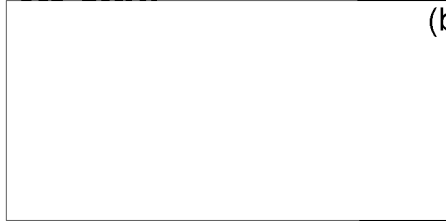




National Foreign Assessment Center

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Weapons Intelligence Daily Review

8 March 1978

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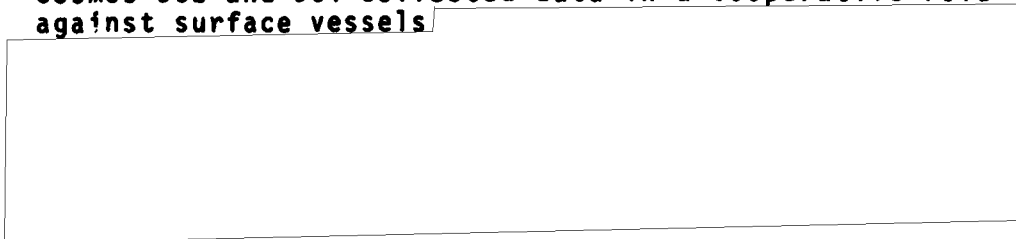
OFFICE OF WEAPONS INTELLIGENCE
Weapons Intelligence Daily Review
8 MARCH 1978

COSMOS 954 -- A SUMMARY

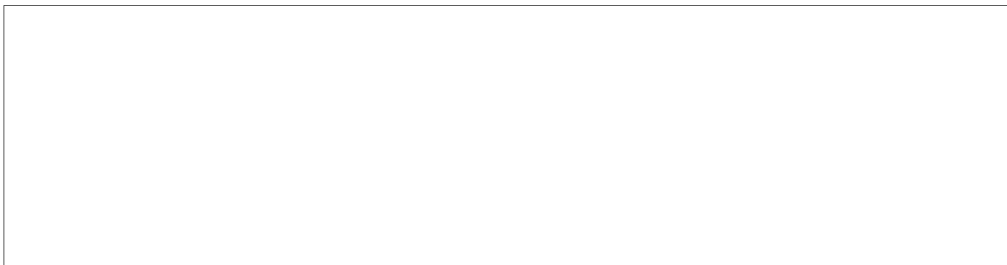
Cosmos 954, a nuclear powered radar ocean reconnaissance satellite (RORSAT) launched on 18 September 1977, reentered the atmosphere over northern Canada on 24 January 1978. To date, at least 10 pieces of the satellite have been located, one of which is highly radioactive.

Cosmos 954 was launched two days after the launch of another RORSAT, Cosmos 952. (Normally, the Soviets launch RORSATs in pairs in the same orbital plane.)

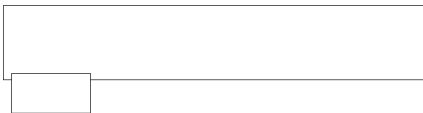
Cosmos 952 and 954 collected data in a cooperative role against surface vessels



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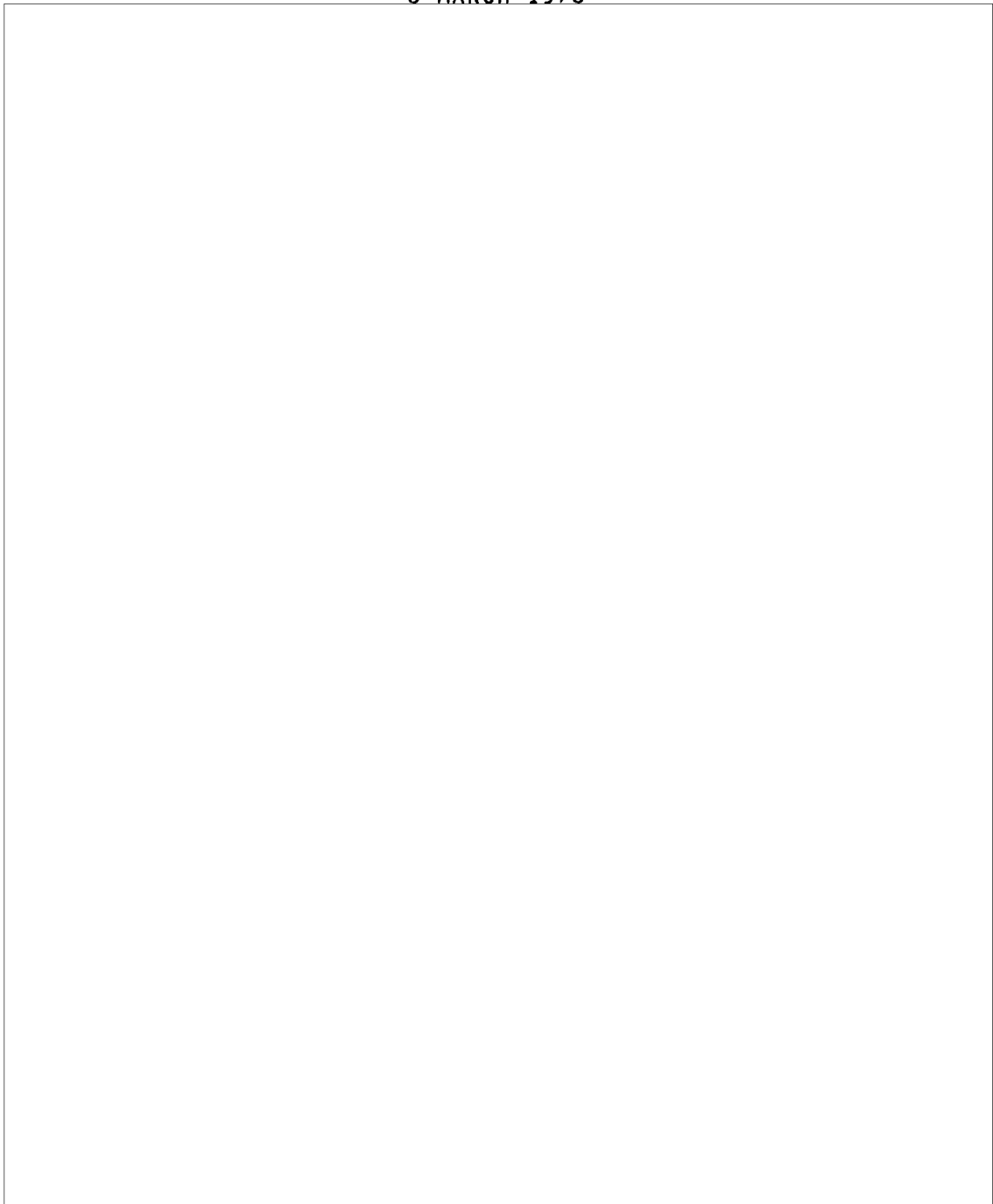
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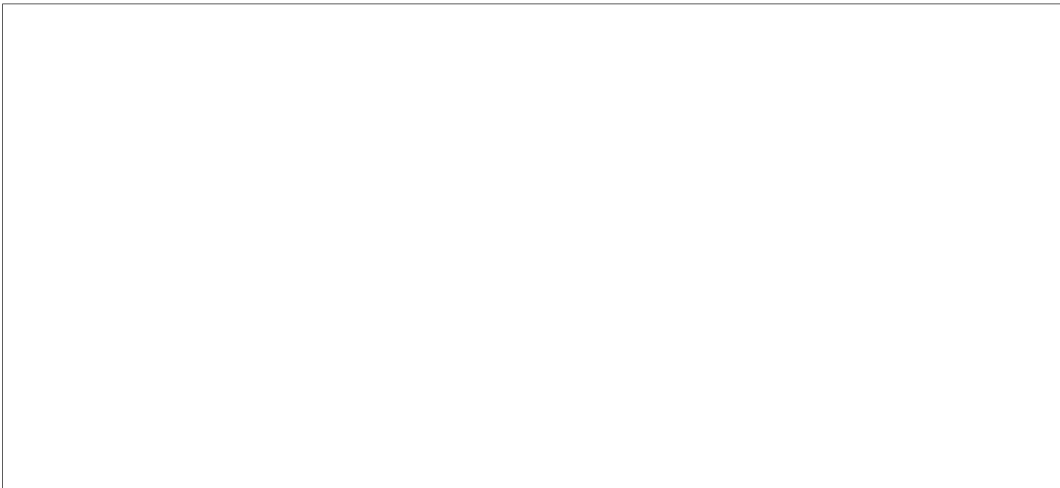
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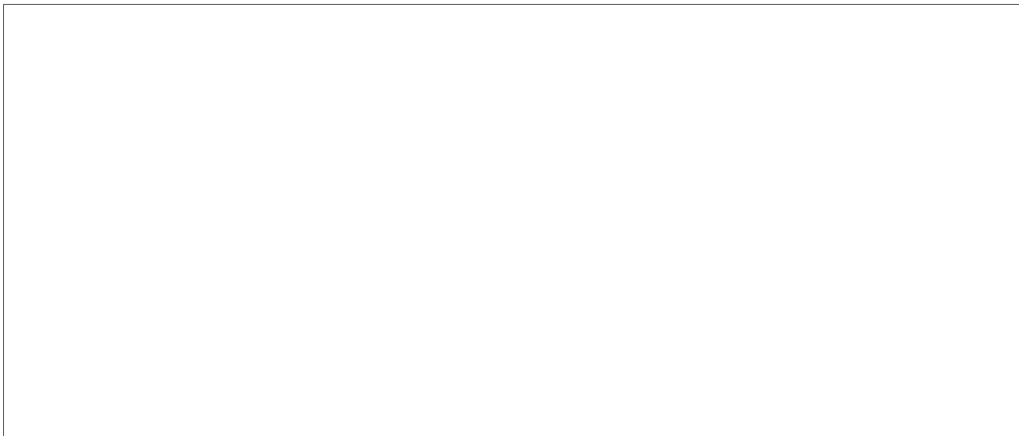
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On 6 January, Cosmos 954 began to tumble, accelerating its rate of orbital decay. It then was apparent that the Soviets would be unable to boost its nuclear reactor into a higher orbit. We do not know why Cosmos 954 began to tumble. It may have depleted its supply of attitude control gas or it may have, as stated by TASS, undergone a fast depressurization due to a collision "with some other object of natural or artificial origin."



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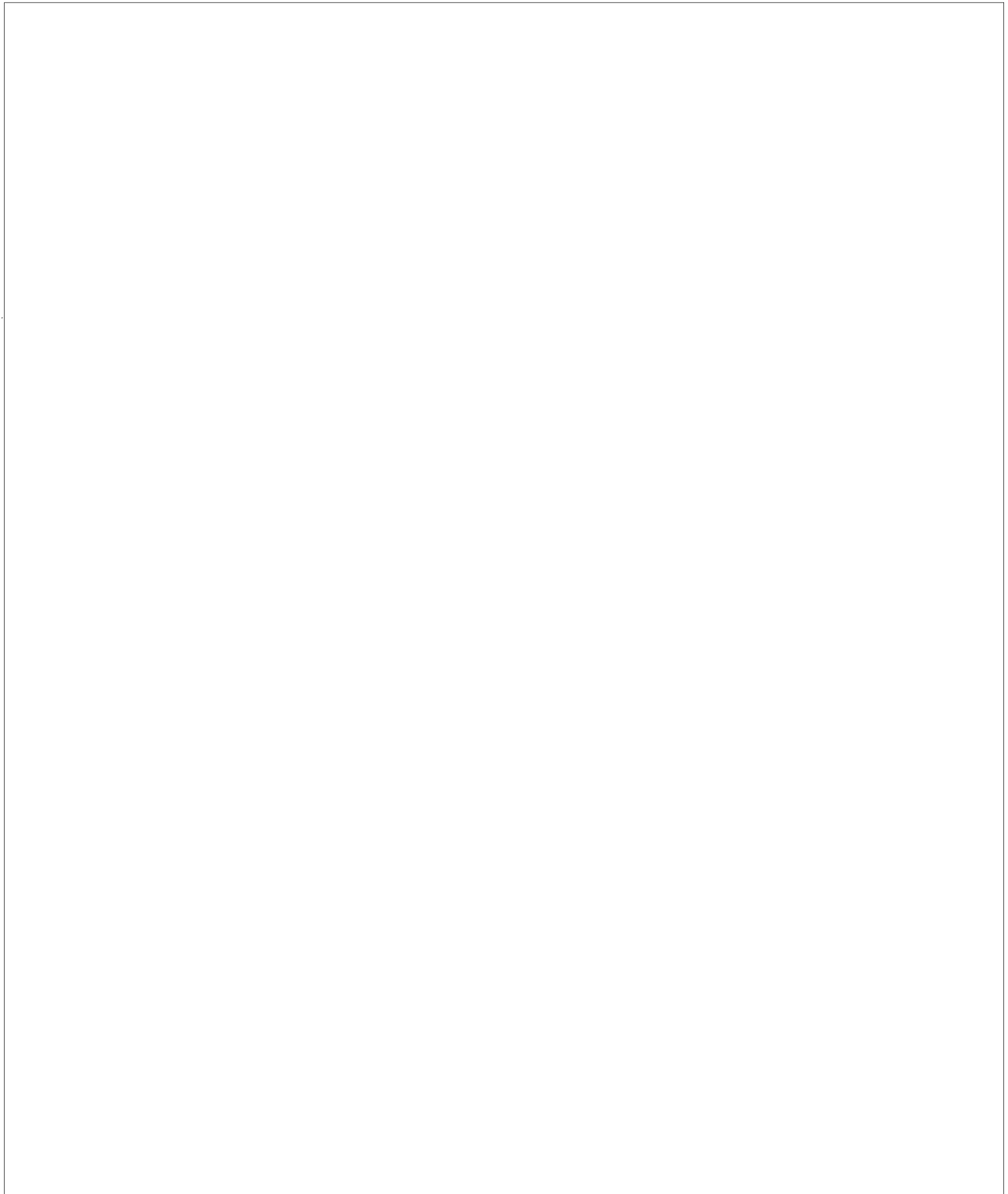
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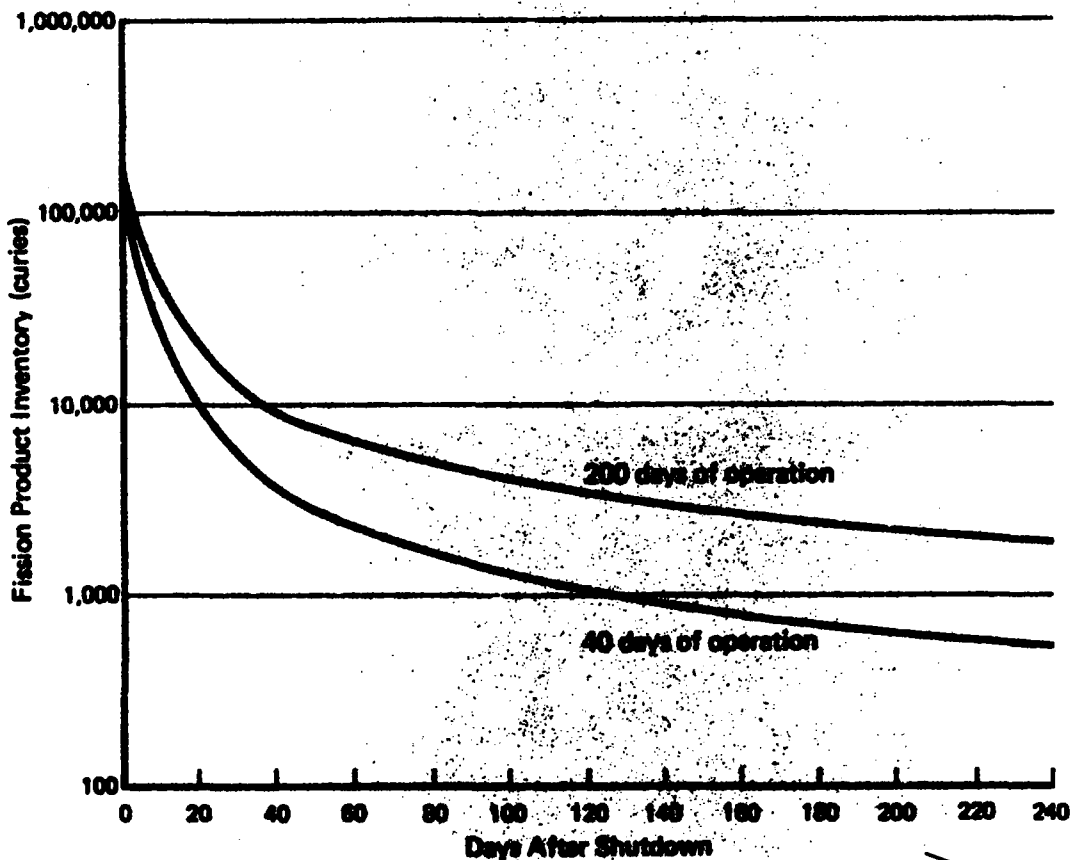
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Figure 3. Fission Product Decay After Shutdown

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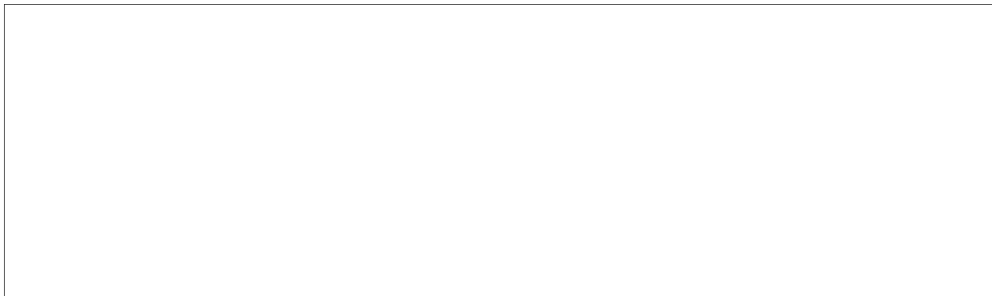
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The RORSAT's development program has been a long one. In the last few years, there have been numerous failures in the program; however, Cosmos 954 was the only vehicle which failed to boost its nuclear payload into a disposal orbit. In spite of its long development program, these recent RORSAT failures lead us to question this satellite system's reliability. It is possible that subtle, undetected changes or improvements to various subsystems have been made to update the system, causing the erratic demonstrated lifetimes. Despite the recent failures, we expect the RORSAT to continue to be used in controlled situations to monitor US and Allied exercises.

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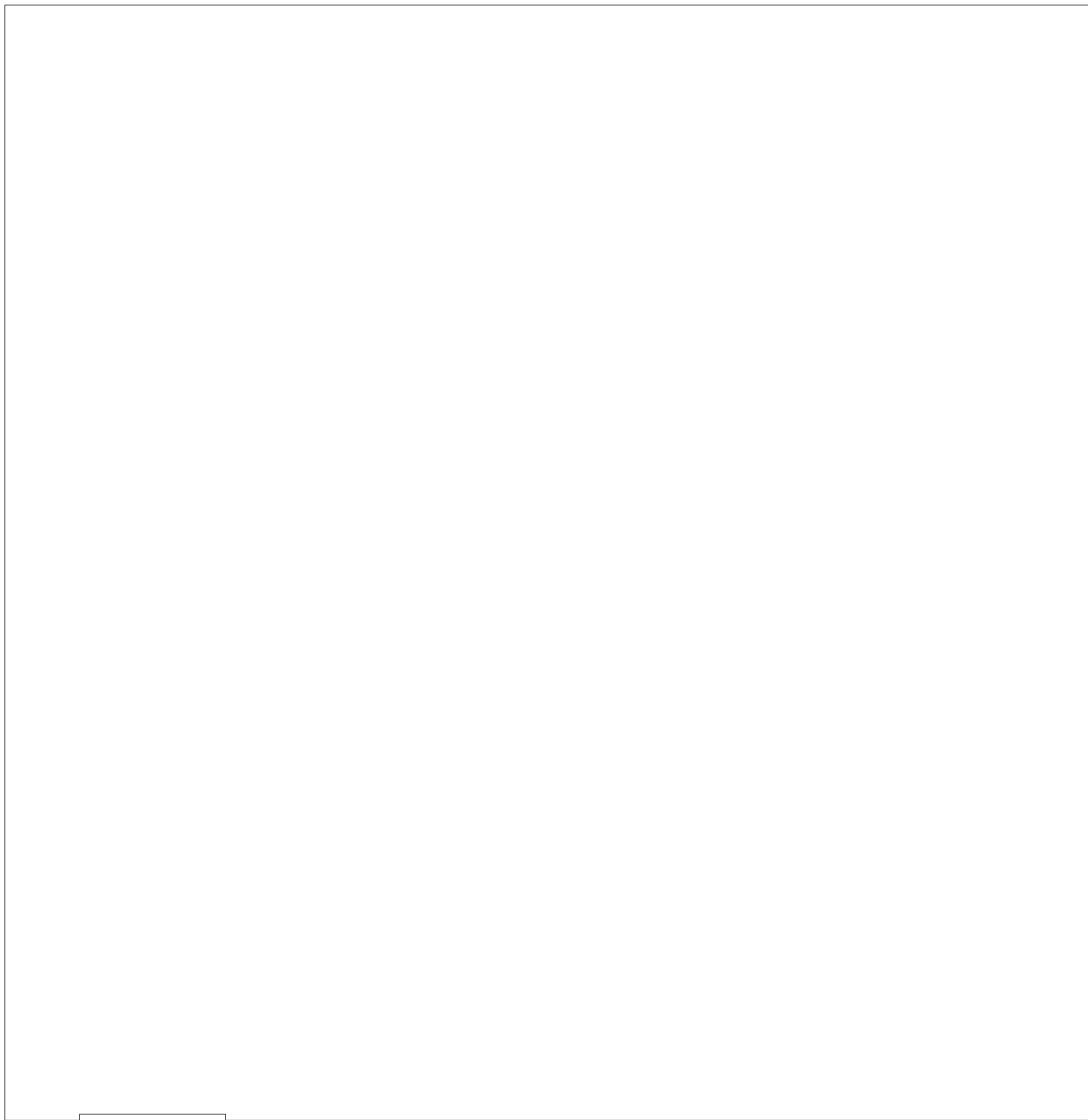
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Events Leading to the Decay of Cosmos 954

Event	Days to Reentry	Date
Cosmos 954 launched from Tyuratam -- begins sensor activity	127	18 Sep 77
[redacted]		
Satellite loses stability; orbital decay accelerates	18	6 Jan 78
[redacted]		
No apparent Soviet interest in satellite		11-14 Jan 78
[redacted]		

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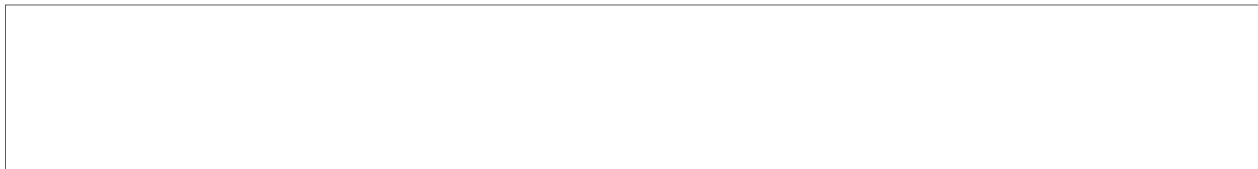
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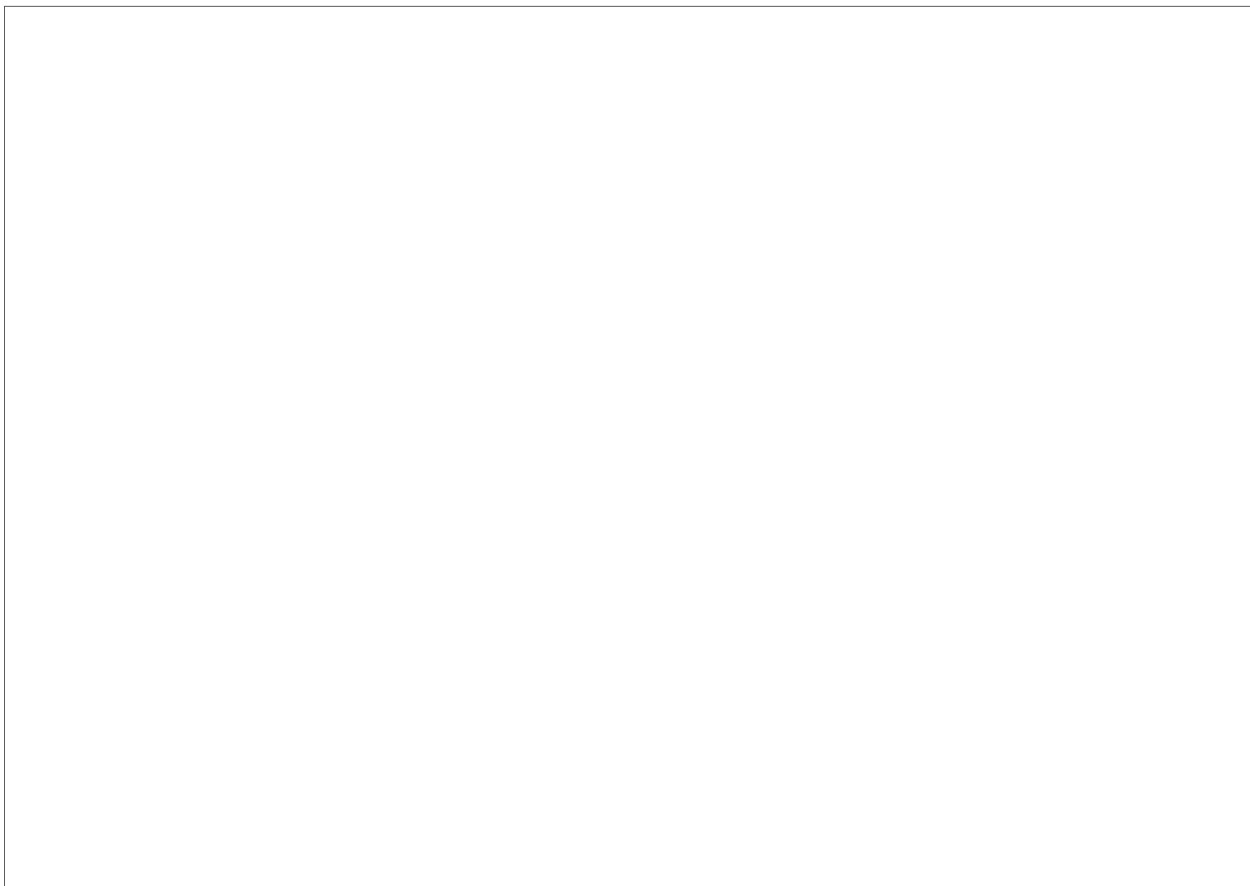
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Chemical, biological and
radiological exercises by
Soviet and non-Soviet Warsaw
Pact forces, possibly
in preparation for
Cosmos 954's reentry

16-19 Jan 78



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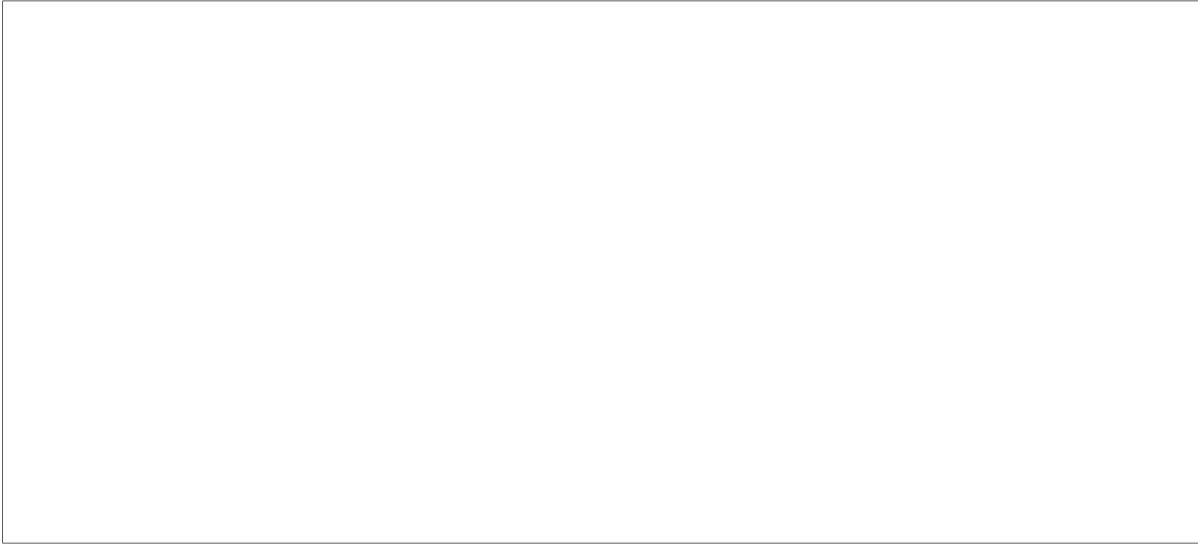
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