

The Limits of Safety: Organizations, Accidents and Nuclear Weapons.

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Sagan SD. Princeton NJ: Princeton University Press; 1993. ISBN: 9780691032214.

<https://psnet.ahrq.gov/issue/limits-safety-organizations-accidents-and-nuclear-weapons>

Two competing paradigms dominate the study of the hazards associated with complex organizations. The more optimistic of these paradigms, high-reliability theory, focuses on organizations that have achieved exemplary safety records and identifies key factors contributing to these records, including a high priority for safety within the organization, significant levels of redundancy, decentralization of authority, and organizational learning. Normal accident theory takes a more pessimistic view by asserting that, with a certain degree of complexity and when processes are time dependent and tightly coupled, major accidents become almost inevitable. In fact, redundancy, decentralized decision making, and many specific safety measures may only increase the degree to which actions in one part of the system can produce unexpected, baffling effects in other parts of the system. Sagan sets out to test these two competing theories by answering the question: why has there never been an accidental nuclear war? The results of Sagan's detailed archival research initially appear to confirm the predictions of high-reliability theory. However, interviews with key personnel uncover several hair-raising near misses during the Cuban missile crisis. In fact, Sagan ultimately concludes that good fortune played a greater role than good design in the safety record of the nuclear weapons industry to date.