

# Can we still run our nuclear and space industries?

by Jonathan Tennenbaum

In the mad rush toward “free market liberalization” and short-term profits, people seem to have forgotten the existence of laws of physics. The complex physical-production processes upon which a modern economy is based, do not obey the “laws of the market,” nor do they bend to the accountant’s desire for arbitrary cost-cutting. Even to maintain the present level of technology requires long-term investment and a high level of scientific and technical discipline—qualities which are rarely encountered among the new breed of “market-oriented” industrial managers who have come to occupy the key positions in the advanced-sector countries.

The resulting collapse in the levels of technological competence, from the top management of companies down to the floor level, has already led to a proliferation of dangerous industrial accidents that would have been extremely rare, if not unimaginable, in former times.

## The Japanese nuclear accident

The accident in the Japanese nuclear reprocessing facility in Tokaimura on Sept. 30 provides a frightening case in point. There, Japanese workers unwittingly mixed a critical amount of enriched uranium into a tank, thereby triggering an uncontrolled chain reaction and causing serious radioactive contamination within the plant. Although a large-scale disaster was averted, numerous workers were exposed to overdoses of radiation.

“This accident was only possible because of *gross incompetence* of the top management,” said a leading European nuclear expert in a discussion with *EIR*. “The circumstances and practices which led to the accident would *never* have been permitted under competent technical leadership. Precautions against this sort of accident are well-known and elementary. But the engineers and technicians, who used to run nuclear facilities in Japan and other countries, have been replaced by professional managers who know about markets and financing but *nothing about nuclear science*.”

“You cannot run a complex technology like nuclear energy in this way,” said the expert, warning that the trend toward purely “market-oriented management” would lead to

more, dangerous nuclear accidents in Western countries. He further cautioned, that managerial incompetence is creating a “gray zone” for possible acts of sabotage from the highly motivated and well-financed anti-nuclear movement.

## U.S. space launch failures

Another example, from a very different field of high technology, is the unprecedented string of launch failures and accidents which has afflicted the U.S. space industry since 1998. In August 1998, a Titan 4 rocket exploded in flight, destroying a \$1 billion military satellite. In April 1999, two additional Titan 4 rockets malfunctioned, leading, among other things, to the loss of another, \$800 million military satellite. In addition, two launches of the new Boeing Delta-3 rocket, and launch of Lockheed Martin’s new Athena rocket, failed; and failures in the Boeing Inertial Upper Stage and the General Dynamics Centaur upper stage systems led to critical delays.

Meanwhile, Lockheed Martin engineers were finally able to terminate a series of six straight test failures in the development of the Theater High-Altitude Area Defense (THAAD) system.

No less embarrassing was the recent failure of the Mars Climate Orbiter mission, which reportedly took the wrong trajectory around Mars because of a mixup between the metric and the U.S. system of units in the programming of its guidance systems.

The series of failures, unprecedented in the history of space technology, caused alarm bells to sound all the way to the White House. A special investigative committee, put together at the demand of President Clinton, linked the epidemic of failures to “systemic problems” in the space industry, including: “over-emphasis on cost-cutting,” “loss of experienced personnel,” “poor quality assurance mechanisms,” and the “improper applications of ‘faster, better, cheaper’ (FBC) concepts” which had led to elimination of design reviews and costly, but proven, checks and balances in the design and production process. Particular attention was given to the situation at Lockheed Martin, where the committee called upon the Lockheed management to “communicate to its employees that ensuring a successful mission takes priority over cost-based engineering decisions.”

In another reflection of the collapse of managerial competence, John Willacker of the Aerospace Corporation told the *New York Times* that the competitive market pressure to reduce costs has led to a shortage of experienced engineers and technicians in the space industry, and thereby to an over-reliance on computer simulations and modelling to replace the extensive physical testing required to develop new hardware. Willacker said, “Historically, you would build test aircraft or rockets and fly them before you commit to production. We seem to have convinced ourselves that we don’t need that ‘luxury’ today.”