

## From New Delhi by Susan Maitra

### **Agni: India joins the IRBM club**

*The successful test launch of this missile named for the Hindu fire god gave a real boost to the nation's R&D and space effort.*

**A**fter two false starts, India's first intermediate-range ballistic missile was successfully test launched May 22 at the Interim Test Range at Chandipur on the coast of Orissa. It was without doubt a major achievement with significant implications for India's strategic position, especially for the country's R&D establishment and the space effort.

Agni is the wholly indigenous product of India's Integrated Guided Missile Development Program (IGMDP) started in 1983, and its launch follows by just over a year the successful testing of Prithvi, a 250 km range surface-to-surface missile tested in February 1988. The 75-ton Agni, which has a range of 2,500 km, has been described as a "hybrid vehicle," combining as it does, the first stage of the SLV-3 satellite launch vehicle propelled by solid fuel that was developed by the Indian Space Research Organization (ISRO) with many of the technologies developed for Prithvi, a tactical battlefield missile.

Unlike Prithvi, which is scheduled for its second test flight soon, and is already "on order" by the Army, Agni is officially referred to as a "technology demonstrator" with no identifiable user at the moment. This, along with Prime Minister Rajiv Gandhi's announcement that Agni was *not* a nuclear delivery system, is a bit of rhetorical formalism meant to keep India's anti-nuclear weapons posture intact. It is well known, despite official ambiguity in these matters since India's 1974 Pokhran explosion, that an IRBM or ICBM effort without the nuclear warheads component is not very

credible at all.

As K. Subrahmanyam, former head of the Institute for Defense Studies and Analyses and defense adviser to the government, pointed out, besides being able to carry a nuclear warhead, Agni can be used to destroy distant airfields and hard targets. Perhaps most important, he notes, echoing the prime minister, Agni can be used to deploy military observation satellites.

Defense Ministry sources have told the Press Trust of India that some 20 test flights would be conducted before regular production of Agni is begun. The next goal, they say, is to develop an ICBM with a range beyond 5,000 km. Other reports are that three test launches will be undertaken while awaiting the political go-ahead for a full-fledged missile program in the 1990s.

The IGMDP, housed at the Defense Research and Development Laboratory, is a remarkable effort. Funded at \$500 million for a 10-year period, and with a broad mandate to develop a "family of missiles for the Army, Navy, and Air Force," the IGMDP began work in 1983 on five different missiles simultaneously. Now, after less than six years, three of the missiles have already reached the testing stage. Trishul, a short-range, quick-reaction surface-to-air missile, reached the prototype testing stage first. After 30-40 test launches and clearance by the Air Force, it is expected to enter production next year and be ready for deployment by 1993. Then came Prithvi and Agni.

Still under development is Akash, another long-range surface-to-air mis-

sile, and Nag, a next-generation "fire and forget" anti-tank missile that will use infrared imaging to destroy a tank 3-4 km away. Major technology elements for both have been proven, says the Defense Ministry, and ground versions are undergoing tests now.

Defense analysts here note happily that with the IGMDP the "Chinese wall" between the civilian and military rocket programs was torn down. The transfer of Dr. Abdul Kalam from ISRO, where he played a major role in developing the SLV-3 satellite launch vehicle, to direct the management board of the IGMDP was perhaps the most dramatic indication. Agni drew heavily from ISRO, including wholesale adoption of the SLV-3 first-stage rocket.

Reaction to the Indian achievement abroad was varied. Significantly, the Pakistani response was cool and factual. A flutter in Australia was attributed to a local campaign to boost the defense budget. China has other, more pressing things to worry about at the moment.

In the U.S., except for loud shouting from a strange gaggle in Congress, the reaction appears to be low key. The hypocrisy of the U.S. non-proliferation posture, brought to new heights of absurdity in the April 1987 Missile Technology Control Regime, is increasingly overshadowed by its untenability. Ironically, it is the U.S. that has offered India the electro-optical instrumentation for the planned National Testing Range at Baliapal, Orissa.

A U.S. license for the sophisticated Combined Acceleration Vibration Climatic System, used for simulating heat and vibration at the reentry phase, granted in 1983 and as yet unused, is now up for renewal. The disposition of India's renewal request will constitute the official American response to Agni.