



The Tajmahal

India's space odyssey

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On the same lines, the growing need for domestic satellites - six for the INSAT system, three remote sensing and one astronomy satellite in the next five years - has led ISRO to build a new production facility in Bangalore that can handle six satellites at a time.

ISRO says its reliance on foreign launchers for the INSAT satellites will also end once the Mark-3 version of GSLV, that can lift four tonnes, comes out in 2008. A launch on GSLV-Mark 3 should cost half the rate charged by Europe's Ariane. Nair said ISRO is looking ahead in terms of newer technologies like reusable rockets to further reduce launch costs.

Remarkably, ISRO has been able to do all this with an annual budget of \$660 million - three percent of what the US space agency NASA spends in a year.

From the firing of three-inch thick

'toy' rockets in 1963, to the 414-tonne GSLV today, ISRO's journey has been a saga of dedication and determination - but a journey that has not always been smooth.

Out of 21 launches there were five failures - the latest on July 18 this year when its GSLV crashed along with a \$20 million satellite.

But such failures, common in the space business, have not diminished ISRO's credibility globally. Last year, it grabbed a contract for supply of a satellite for Europe's Eutelsat, and another for developing and launching of a satellite for Russia's global satellite navigation system Glonass.

In 1981, when ISRO scientists were transporting their first communications satellite APPLE to the launch pad on a bullock cart, sceptics wondered if a primitive country could really harness advanced technology.

Their doubts will vanish in

January 2008 when an Indian rocket with scientific payloads from Europe and the US will blast off from Sriharikota for a rendezvous with the moon.

The moon mission, Chandrayaan-1, will create 3D maps of the moon's surface at a resolution of between 5 and 10 meters, something that has never

been done before, said Nair.

And India's space programme continues to zoom upwards.

Indo-Asian News Service

India: 15 years of economic liberalisation

TATSUO IKENAGA The Sekai Nippo

CHENNAI, INDIA -- 1991 marked a historic turning point for India. In January that year, the Gulf War broke out, and in December the Soviet Union collapsed. The Gulf War triggered sharp hikes in the price of crude oil, depleting India's foreign currency reserves. The demise of the Soviet Union, one of India's largest trade partners, left the country on the verge of economic collapse.

India launched an economic liberalization program with the twin pillars of market liberalization and deregulation, separating itself from the socialist policies that had troubled its economy. China was already well into an effort to put aside Communist-style economic management in favor of reform and openness. Since then, India has achieved steady economic growth, and the rate of growth is rising.

Today, 15 years since that turning point, dramatic changes can be seen in the capital New Delhi and in India's commercial center Mumbai (previously known as Bombay), its IT hub Hyderabad, and Chennai (previously known as Madras), the industrial center of southern India. This article is the first of a 12-part series reporting from each of these cities.

[This series was originally published in the Japanese newspaper Sekai Nippo, and was translated into English by World Peace Herald.]

I visited the Apollo Hospital in Chennai, the largest private hospital

in India that boasts state-of-the-art facilities. Vice chief director Uma welcomed me into her office equipped with a diagnosis bed. She joined Apollo Hospital as a doctor and was subsequently asked to join the administrative team. "Even now, when I am asked to diagnose a patient, I see the patient here and refer them to a specialist," she says. This practice of an administrator working in the front line is rather unusual in India's class-conscious society.

"Academically excellent Indians aim at becoming a medical doctor or a lawyer as the first choice," Dr. Rohit Barman of Mumbai's Breach Candy Hospital explained.

"Indian students studying overseas tend to be concentrated in medical schools and law schools," Dr. Barman said.

"There are many Indian students in the United States who remain there and work as a medical doctor or a lawyer. In fact, about 20 percent of medical doctors who work at hospitals in the United States are Indians. The percentage reaches 40 percent in Great Britain."

Indian doctors are successful in highly competitive markets and master rigid academic courses. They naturally excel in the international arena. Many study and obtain their medical licenses in other countries before returning to practice in India. The quality of medical care in India is high. Hospitals in rural areas have many problems, but urban hospitals

are equipped with high-quality medical equipment and devices, and many doctors possess a high degree of professional qualification. Patients come to these hospitals not only from throughout India but also from around the world.

India's expanding skyway

I flew to Hyderabad, the IT hub of southern India, by Air Deccan, the pioneer in India's discount air-carrier market. Tickets are issued electronically, and Air Deccan's bare-bones discount service provides no magazines, newspapers or food onboard - not even a piece of candy.

Beverages are served in-flight, although for a fee. A can of Coke is 50 Indian rupees (about \$1.00). This is about 2.5 times the market price. Some India states still prohibit alcohol and beer or wine are not served.

With the expansion of a new middle-class, the tourism market is rapidly growing in India. Discount air travel, especially, has witnessed a dramatic expansion. Deregulation of the airline industry opened the way for the emergence of many discount air carriers. Discount fares in turn stimulated an increase in the number of air travelers, which is growing by more than 20 percent a year.

The most notable is Jet Airways, India's leading airline. The company was founded in 1991 when India's economic reforms were initiated. It took off amid the country's drastic shift from a socialist to a free market

system, and is the fruit of India's economic liberalization. It started operating domestic flights in 1993, and currently operates more than 280 flights on 48 routes. The number of passengers reaches more than 10 million per year. Its domestic share is 44 percent and surpasses Air India, the country's flag carrier.

The company introduced various measures to improve customer service, including the establishment of 24-hour help desks, and succeeded in gaining new customers and expanding its market. Jet Airways' success stimulated the improvement and streamlining of national carriers such as Air India, which had become complacent with a market monopoly. Its role of contributing to an increase in the international competitiveness of India's airline industry as a whole is highly regarded.

In the beginning of August, IndiGo Airlines started operation as India's eighth private airline. The airline connects New Delhi with Bangalore and Karnataka state, among others. The think tank, Center for Asia Pacific Aviation, forecasts an increase in India's air travelers from 23 million last year to more than 50 million a year by 2010.

There are challenges. One is that the airports in large metropolitan areas serving international traffic are already at full capacity. For these airports to increase slots, airport infrastructure renovation is necessary.

Discount air carriers are turning their attention to international routes as well. Jet Airways launched its Southeast Asia service last year, establishing Mumbai-Singapore and Chennai-Kuala Lumpur routes. The company wants to further expand its operations into Thailand and Japan. Air Sahara, the second-largest private carrier in India, is planning to launch Singapore and Malaysia routes.

South East Asia airlines has expanded its operations into China and is growing dramatically. It is now eager to expand its air routes to India, which are maintaining steady economic growth and experiencing increased air traffic demand.

In the forefront of the group looking at flights to India is Singapore. It is followed by Thailand and Malaysia, a pattern similar to the one in the medical service tourism boom.

Neighboring Sri Lanka is experiencing a rapidly growing air carrier market of its own, and is also putting efforts into India routes. Sri Lanka Airlines' route connecting Colombo with Goa is the tenth Indian city in its route map.

"The Colombo-Chennai route is bringing in a lot of money, but passengers flying from Colombo to other Indian cities are also rapidly increasing," Kimio Kanasugi, deputy director of Sri Lanka Airlines Tokyo office, said.

"The volume is expected to increase by 50 percent this year compared to last year," he said.

Our heartiest felicitations on the occasion of the Republic Day of India

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