

Is India's anti-satellite test a game-changer?

PARLEY

India must help shape the global governance of outer space

On April 1, the Indian Space Research Organisation (ISRO) successfully launched a PSLV C45 rocket with a payload of 29 satellites. Days before this, on March 27, in an operation called 'Mission Shakti', the Defence Research & Development Organisation demonstrated India's ability in offensive defence capability, using a missile to destroy a satellite in Low Earth Orbit. In a discussion moderated by V. Sudarshan, D. Raghunandan and Rajeswari Pillai Rajagopalan look at India's options and its role in the global governance of outer space. Excerpts:



Rajeswari Pillai Rajagopalan

is the head of the nuclear and space policy initiative of the ORF and also technical adviser to the UN group of governmental experts on the Prevention of an Arms Race in Outer Space

Rajeswari Pillai Rajagopalan:

The anti-satellite (ASAT) test has been in the making for more than a decade actually. Ever since the first Chinese anti-satellite test in January 2007, there has been concern over India's own space assets and what kind of damage and destruction could happen should China decide to shoot down or temporarily disable one of our own satellites. That was the first time we recognised the importance of preserving outer space in a big way. A second important factor is that we did not want to repeat the experience of what happened in the nuclear domain. We don't want a Treaty on the Non-Proliferation of Nuclear Weapons or NPT-like mechanism to come about in the space domain that would actually lead to a ban on India's future ASAT tests.

Raghunandan, how does knocking out a satellite in Low Earth Orbit actually promote deterrence?

D. Raghunandan: My own feeling is the U.S., Russia and China have come to realise the somewhat limited nature of deterrence offered by anti-satellite weapons. None of them has developed large inventories of ASAT missiles or targeted a whole range of satellites of adversary nations. One must understand that all these nations have a few hundreds of satellites up in space which are used for military or dual purposes.

How many satellites are you going to target and is knocking out one satellite going to really be a deterrent? Is it good to continue with kill-

er missiles or are there other ways to disable adversary satellites? So I have my doubts about the deterrent capabilities of ASAT missiles, particularly as you may have noticed that all nations are extremely cagey about blowing up satellites in orbit because of the debris created. And if you have multiple such things going on, then you are obviously going to create multiple sets of problems. If the conflict between nations were to reach a stage where you are knocking out each other's satellites, then I think it would have already reached nuclear weapon threshold and then we are in a different ballgame entirely.

Rajeshwari, is the deterrence in space as complex as Raghunandan says it is?

R.P.R.: It is. And I would start with the fact that, so far, the established space players who have demonstrated the ASAT capability have not adopted deterrence as part of their space policy. So we are still in a good space right now where states have not made space a part of their deterrence policy. So that is an encouraging sign and that must be continued.

D.R.: I agree.

R.P.R.: As Raghu mentioned, there are other technologies available. Increasingly, the electronic and cyber warfare capabilities, any number of technologies that can be used through cyber through lasers to create temporary disruptions, and disabling somebody else's satellite and communications services to creating more permanent damage. So there are many ways of addressing this issue.

Raghunandan, in terms of evolution of our space military posture, how integrated are we in our capabilities?

D.R.: Fortunately, ASAT capabilities have not fully been weaponised by all the countries. And, therefore, I think it affords a good opportunity to move forwards towards demilitarisation of outer space. The second aspect is that while India has articulated a doctrine with regard to nuclear weapons, which includes a



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declaration of no-first-use and so on, we do not as yet have a strategic doctrine with regard to the weaponisation in space. I think it would be good if India develops a doctrine for weaponisation in space as well as an integrated security doctrine which brings together nuclear, space and other advanced technologies so that you do have an integrated posture. The third point is that there is an added complication with regard to ASAT weaponry. That is, not all countries have their own dedicated military satellites which a third country can knock out and therefore disable that country's network-centric platforms and weapons systems. Many countries use third-party satellites. Many countries use dual purpose satellites. So it is not at all clear, for example, if India shoots down 'x' number of satellites belonging to a country, we have disabled that country's military communications. And this applies to any country.

Where are we in terms of disparities between us and China? What are we up against?

D.R.: India has barely begun development of ASAT missiles. China has been at this for more than a decade. They are believed to have worked on missiles targeting high latitude satellites at 36,000 km above the earth whereas we have only conducted the test at the Low Earth Orbit. China has also been doing considerable work experimenting with laser-based weaponry and cyber

Even as China talks the language of peaceful uses of outer space, the reality has been that there is a flourishing military programme

weaponry which are likely to prove to be more effective than a whole battery of missiles targeting satellites. We are way behind.

Isn't there an inherent contradiction between our position on no weaponisation of space that we have adopted and a steady accrual of military assets in space that we are also doing at the same time?

D.R.: There is, in the sense that these two impulses are contrary. But I think that the real question to be asked is whether India's statement about weaponisation in space, wanting to dial back weaponisation, is more for public consumption than for actual pursuit of de-weaponisation in space. If India is serious about wanting to de-weaponise space, then India should take active measures in the conference on disarmament along with other countries like Russia or China which have already initiated some proposals there. All of these have been completely stonewalled by the U.S., which disagrees with even the term 'weaponisation of space' and has resisted attempts to look for de-weaponisation of space, claiming that any moves in that direction denies

the U.S. the ability for self-defence. But if India is serious, India should declare no-first-use of the ASAT weaponry as we have done for the nuclear [weapons], and adopt a strong domestic doctrine on weaponisation of space just as we have a declared doctrine for nuclear weapons.

We are launching a lot of satellites for other countries. How much do you think our military programmes are being cross-subsidised by these launches?

D.R.: I doubt it is very much. The major reason why India is popular as a launch destination is because of its lower costs. The incomes also will be correspondingly not very high. The second aspect is that all satellites we have launched have been Low Earth satellites. The real money in international launches lies in the communication satellites, the heavier satellites at 36,000 km above the earth. That's where the money is for telephony, television and the rest. We haven't yet broken into that league in terms of satellite launching.

Rajeshwari, can you give us an overview of what we are up against in terms of their militarisation in terms of space?

R.P.R.: China has shown it has much greater space competitiveness. For the longest time, India was just doing four to five launches per year; on the other hand, the Chinese were doing this on an average of 20 a year. That has a certain consequence not just for the overall competitiveness in terms of the launch market... but when you look at the global commercial space market that is available (and that you don't want to lose it completely) and if you are not able to increase competitiveness, that's a serious problem. Second, there is another important component which is about how much of the growing requirements of the military are from the security sector within India that ISRO will be able to provide.

There is a capacity gap. Even as China talks the language of peaceful uses of outer space, the reality has been that there is a flourishing military programme under the PLA leadership. The Chinese are also set-

ting up a space station some time in the 2022-2024 time frame when the International Space Station is possibly winding down. This also leads to concerns as to how space activity in the future might shape [up].

Is there a contradiction between the impulse towards disarmament and the impulse towards militarisation?

R.P.R.: Again I would emphasise that our deterrence capability is not a war-fighting capability. We are still looking at a non-weaponisation of space. On militarisation I want to refer to a point that Raghu mentioned. Raghu said we need to prevent space militarisation. I like the idea of preventing space militarisation but I think there is a big difference between space militarisation and space weaponisation. And I think these two concepts are used in a very interchangeable manner. Space militarisation is something that has happened from the 1990s.

In the first Gulf War, for instance, you actually saw technology playing a major role in warfare. Since then, most militaries around the world have come to recognise and acknowledge the possible use of space assets for military operations. What they call intelligence gathering, surveillance, reconnaissance, military communications, drone programmes. We cannot go back on all these developments. But what we are trying to prevent today is the early trend towards weaponisation. We don't want to weaponise outer space. For that again we do not have to put weapons in outer space.

ASAT capabilities are the best example. That is warfare, that is weaponisation and that is something we are trying to see - if that can be stopped, that process can be halted. But again, we have been going back and forth, there are different understandings of what a space weapon is. How do you define these terms? There are major differences of opinion.

Now that India has demonstrated this capability, India needs to play an even more active role in the global governance of outer space. But I have a slightly different opinion when it comes to who we partner with if India feels that we alone cannot go out into the global domain and create new rules of the road. We can certainly partner with like-minded countries.



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SINGLE FILE

Reflections on a massacre

Jallianwala Bagh's importance lies in what preceded it and in what followed

UDAY BALAKRISHNAN



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For Indians, the massacre that evokes strong emotions is not Nader Shah's slaughter of 30,000 people in Delhi in 1739 but Jallianwala Bagh in Amritsar, where, a century ago, on April 13, troops commanded by General Dyer

fired into an unarmed crowd, killing hundreds.

The massacre at Jallianwala Bagh, like later ones in Lidice (1942) and My Lai (1968), was relatively small. It was nothing compared to the hundreds of thousands killed by the Japanese army in Nanjing in 1937-38 or by Indonesian soldiers in East Timor 1975 onward.

Jallianwala Bagh's importance lies not in the numbers killed but in what preceded it and in what followed. The Anarchical and Revolutionary Crimes Act of 1919, better known as the Rowlatt Act, came into force a month before the massacre in Jallianwala Bagh. It shocked most Indians who had expected to be rewarded, not punished, for willingly fighting alongside the British in the First World War.

The massacre, followed by the feting and rewarding of its perpetrator, General Dyer, by the British public, removed all illusions about benign British rule in the country. It also marked the start of a liberation struggle like no other under Mahatma Gandhi.

It took Nobel laureate Rabindranath Tagore to capture the full import of the outrage at Jallianwala Bagh. In his letter of protest renouncing the knighthood conferred on him, he wrote: "The accounts of the insults and sufferings by our brothers in Punjab have trickled through the gagged silence, reaching every corner of India, and the universal agony of indignation roused in the hearts of our people has been ignored by our rulers - possibly congratulating themselves for what they imagine as salutary lessons."

Many massacres in history fade while some linger as grisly curiosities. The killing of every male inhabitant of the Persian town of Kernan in 1794 by Agha Mohammed Khan is better known for the latter's insistence that the eyeballs be brought to him in baskets and poured on the floor.

Most massacres that endure in public memory are those for which countries are responsible. Like Jallianwala Bagh, they are never forgotten or forgiven but unfailingly recollected through generations with deep loathing for their perpetrators. No Pole can talk about the 1940 Katyn massacre of over 20,000 Polish soldiers and civilians by the Russians, with equanimity. Another, and more recent, the 1995 massacre of some 8,000 Bosnians by break-away Serbians, is commemorated by a vast sombre memorial that doubles up as a cemetery comprising over 6,000 graves in Srebrenica.

Massacres are often lifted to immortality by art. Picasso's 'Guernica' and M.F. Husain's 'Bhopal' speak for massacres past and those that are very likely to occur in future. These works are also reminders of what the powerful, given a chance, will inflict on the weak, Jallianwala Bagh being just one example.

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NOTEBOOK

In Dharmapuri, still divided by identity politics

Tracking the hold of caste amid the visible signs of change

T. RAMAKRISHNAN

Visible signs of change can be deceptive. This was what I found in my recent visit to the Dharmapuri district in the western part of Tamil Nadu, a place regarded at the all-India level as chronically backward.

I was visiting Dharmapuri town after nine years. There are some shopping complexes and a flashy hotel in the core part of this tier-III town which were not there earlier.

Connectivity, in terms of physical infrastructure and communication, is no longer an issue. In 2006 when I went to the town for the first time on an assignment to cover the Assembly polls, it was still a sleepy and dusty town with old-fashioned shops and restaurants.

Not many changes had taken place four years later when I was there to assess the situation for a by-election. Even today, there are

some lodges which provide only lodging. If you order coffee or tea, it is brought from a nearby eatery.

Once extremely backward in education, Dharmapuri, as a district, is now the topper at the State level with regard to the gross enrolment ratio for secondary education. The district has 1,620 schools with 1.85 lakh students. It has more than 110 pre-primary schools. There are six engineering colleges, including one government-run college, says M. Vadivelan, who runs an engineering college and whose office is located opposite the campus of the Government Medical College that started functioning six years ago.

All these changes look impressive, given the track record of the district. But conversations with a cross-section of people in the district underscore the importance of the caste factor in elections. They made me

wonder about the chasm between visible changes and identity consciousness among the people.

Over time

Less than 10 km away from the town is Cholakottai village where P. Sukumar, a middle-aged owner of a petty shop, is not unaffected by the changes. All his children go to school. At the same time, he talks vividly of how a bridge was broken and a public transport vehicle burnt down years ago "in support of the cause" of his community, the Vanniyaers. He says the community will steadfastly support Anbumani Ramadoss, the nominee of the Pattali Makkal Katchi (PMK) and former Union Minister, also a Vanniyaer.

A. Govindan, who is from Periyapallipatti village nearby, spent 27 days in jail for his participation in an agitation by the PMK. "Regardless of what the party has done for me, I

will vote for Mr. Ramadoss," he says. Sukumar and Govindan do not fail to point out that it is because of their stance that Scheduled Caste voters will support the Dravida Munnetra Kazhagam's nominee.

"Who else will I support?" asks Lenin, an auto-rickshaw driver who belongs to the SC community and is living in government-provided accommodation near Morappur, about 35 km from Dharmapuri.

He is a man of few words, but when he speaks, it is not without reference to the 2012-13 tragic episode around an inter-caste marriage, which is still fresh in the memory of the public in this part of the State.

I wonder how long people, despite being similarly placed economically and educationally, continue to be divided by identity. When will changes in physical infrastructure break the hold of caste?

FROM The Hindu. ARCHIVES

FIFTY YEARS AGO APRIL 12, 1969

Rs. 1,110 crore defence spending

A new defence plan is being formulated to cover 1969-74 in view of the rephrasing of the Fourth Five-Year Plan over this period. This takes into account "the continuing hostility of Pakistan and China" towards India, "their strategic and military capabilities and the possibility of their acting in concert" against India. This has been revealed in the annual report of the Ministry of Defence for 1968-69. The report also outlines a defence expenditure of Rs. 1,110 crores for 1969-70, which works out to be 3.46 per cent of the gross national product. This is against the defence expenditure of Rs. 1,051.38 crores for 1968-69 which was 3.4 per cent of the gross national product. A new factor which has arisen during the year, the Ministry said, is the possibility of supplies of military equipment to Pakistan from the Soviet Union. Such supplies in addition to those coming from other countries at concessional rates including China are bound "to move Pakistan towards a posture of even increased intransigence and would certainly make normalisation of relations more difficult."

A HUNDRED YEARS AGO APRIL 12, 1919.

Motor Smash.

Shortly after 7:30 on Thursday [April 10] evening, a serious motor car smash took place on the Napier Road [in Calcutta] resulting in the death of Captain W.J. Simmons of the steamer "Actor" and serious injuries to a carter named Golwar and his attendant Lutna. So far as could be learnt last night Captain Simmons with two friends left the docks at about 7:30 P.M. in a motor car. One of the Captain's friends was driving while Captain Simmons and another European were seated behind. While the car was proceeding along the Napier Road the driver in order to avoid a straw cart which was in front of him swerved to his right when the wheels skidded and the car ran into an empty bullock cart which was in front of the straw cart. Captain Simmons sustained serious injuries on his head and was at once taken to the General Hospital where he died at about 1 o'clock this morning [April 11] without regaining consciousness. The driver of the cart and his attendant who were also seriously injured were removed in a motor ambulance to the Medical College Hospital.

POLL CALL

Campaign expenditure

Limits on campaign expenditure are meant to ensure a level-playing field for everyone contesting elections. The Election Commission of India imposes limits on campaign expenditure incurred by a candidate, but not by a political party. Expenditure by a Lok Sabha candidate is capped at between ₹50 lakh and ₹70 lakh. For Assembly elections, the ceiling is between ₹20 lakh and ₹28 lakh. Candidates must mandatorily file a true account of election expenses with the EC. An incorrect account, or expenditure beyond the ceiling, can attract disqualification for up to three years. There is plenty of anecdotal evidence to suggest that many candidates in India spend much more than the ceiling.

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