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DECCAN Chronicle

Sat, 31 Aug 2019

‘More of the same’ across the LoC: Why peace really scares Pak Army

This arrangement also insulates the Pakistani military from any negativity, as the civilian government carries the can of public responsibility

By Bhopinder Singh

The year 1971 was a landmark in the India-Pakistan realm that left an indelible imprint in the psyche of the militaries on both sides of the Line of Control. While India celebrated the professional preparedness of Gen. S.H.F.J. “Sam” Manekshaw (later Field Marshal) and the combat genius of Lt. Gen. Sagat Singh and Maj. Gen. F.J.R. Jacob (later Lt. Gen.) — the Pakistani military top brass witnessed a parallel fall from grace as the President and commander-in-chief, Gen. Yahya Khan, and the Eastern Army commander who surrendered in Dhaka, Lt. Gen. A.A.K. Niazi, were banished and dismissed from service respectively. Victory in 1971 was in quick succession to 1965, and it reconfirmed the need for even more professionalism and apolitical moorings for the Indian armed forces, whereas it triggered a paranoia for the defeated Pakistani military to try and control the levers of governance in Pakistan. Even though the War Enquiry Commission chaired by Justice Hamoodur Rahman was bitterly critical of the Pakistani military’s interference in politics, the findings were soon forgotten and by 1978, a military coup led by Gen. Zia-ul Haq perpetuated the Pakistani tryst with military generals. Officially or behind the veneer of civilian governments, the generals at the Rawalpindi GHQ have held sway over the civilian leaders in Islamabad. For the similarly structured militaries of India and Pakistan that both adopted British traditions, since 1971 the Indian Army has seen 20 Chiefs of Army Staff, whereas Pakistan is only on its 10th Chief. This signifies the phenomenon of “extensions”, or formal usurpation of even civilian posts, by Pakistani generals — a legacy that has continued with incumbent Chief of Army Staff Gen. Qamar Javed Bajwa’s extension.

Both India’s Chief of Army Staff Gen. Bipin Rawat and his Pakistani counterpart Gen. Bajwa are the post-1971 generation in service, yet they inherit the ethos, DNA and instincts of their institutional culture. While both are also second-generation soldiers who joined and commanded the infantry units that their respective fathers had commanded (5/11 Gorkha Rifles and 16th Balouch) — Gen. Bajwa’s “professional” and supposedly apolitical credentials notwithstanding, the reality of generals controlling the destiny of Pakistan is as it was in the previous tenures of generals like Raheel Sharif, Ashfaq Kayani, Pervez Musharraf, etc. Like Gen. Kayani earlier, Gen. Bajwa too has managed a three-year extension and the reasons professed are eerily the same — “continuity in difficult times”! If it was the “fight against terrorism” in the Swat valley during Gen. Kayani’s time, Prime Minister Imran Khan’s office posited the latest decision “in view of the regional security environment”. However, unlike the brazen “takeover” by Gen. Pervez Musharaf in a coup in 1999, the template of all subsequent Pakistani military chiefs has been decidedly more reclusive and behind-the-glare that still ensures that the real power flows from Army House, whilst maintaining the charade of democracy, through a pliant civilian government. This arrangement also insulates the Pakistani military from any negativity, as the civilian government carries the can of public responsibility.

All foreign nations recognise this unique arrangement, and therefore the Army House becomes the mandatory pit-stop for any delegation that visits Pakistan. The Chinese know that the safety and protection of their $60 billion punt on the China-Pakistan Economic Corridor (CPEC) is guaranteed by the Pakistani military, which has no qualms in raising a dedicated division of 15,000 soldiers to exclusively guard CPEC facilities; the Arab sheikdoms recognise that Pakistanis can provide the requisite military wherewithal at the most optimum cost (former Pakistan Army Chief Gen. Raheel

Sharif is now leading the Saudi-led 39-nation Islamic Military Counter Terrorism Coalition). Even the White House acquiesces to the Pakistani narrative by co-hosting Prime Minister Imran Khan with the looming shadow of Gen. Bajwa and the ISI chief in uniformed splendour in tow. Now the institutional interests of the Pakistan Army are so well protected and entrenched that there is no need for public military-civilian spats that required the generals to shed their fatigues for shalwar suits, as was done by Gen. Zia-ul Haq and Gen. Pervez Musharraf. Today the generals are able to manipulate and calibrate the situation to suit their agenda seamlessly. The role of the Pakistani military in "managing" the political landscape during the elections or in the midst of crippling "sit-ins" by the Opposition parties or religious organisations is the worst-kept secret of Pakistani politics. Both the leaderships of the Opposition PML-N and PPP had alluded to the invisible-though-invaluable hand of the Pakistani military under Gen. Bajwa to usher in Imran Khan's Tehreek-e-Insaaf into power.

While Gen. Bajwa's tenure has seen multiple political interventions, deliberations and manipulations — unlike Gen. Zia, he cannot be accused of religious bigotry or puritanical preferences personally. He has played the copybook style and ensured the requisite "heat" in the environment by continuing to interfere in India, Afghanistan and Iran, as nothing delegitimises the Pakistani military as much as peace! The Pakistani military is the ultimate driver and impactor of peace or otherwise in the region, therefore as the principal architect of the regional environment — to legitimise their own extension owing to the prevailing "regional security environment" — lends itself to obvious portents of being stage-managed.

For India, Gen. Bajwa's continuation makes no fundamental difference, for better or for worse. He is bound by the larger impulses and necessities of his institutional requirements and therefore the "Deep State" remains the status quo. There could be circumstantial evolution owing to the rapidly changing situation in Afghanistan with the American pullout and the ongoing tensions on the Line of Control, though the same changes would have been managed by a next-in-line Lt. Gen. Sarfraz Sattar or Nadeem Raza — yet the urge to "individualise" relevance over the institution has prevailed and a cult-like phenomenon that militates against professionalism is perpetuated. Gen. Bajwa's extension has formally clarified as to who is the real McCoy in Pakistan, and yet again the foreboding sense of sameness blows in "Naya Pakistan". Neighbouring countries as well as internal stakeholders must take note that the unsettled past and its reasons are here to stay.

(The writer is a retired lieutenant-general and a former lieutenant-governor of Andaman & Nicobar Islands and Puducherry)

https://www.deccanchronicle.com/opinion/op-ed/310819/more-of-the-same-across-the-loc-why-peace-really-scares-pak-arm.html

THE NATIONAL INTEREST

Sat, 31 Aug 2019

How would Pakistan take on the Indian Air Force? China's JF-17 Fighter

Pakistan is not alone

By Charlie Gao

As the JF-17 is one of China's "clean slate" designs, this bodes well for the reliability characteristics of the current generation of Chinese aircraft. However, the JF-17 still uses a Russian engine, and the PAF rejected offers to use Chinese engines in their JF-17s in 2015. Engines remain a critical weakness in the Chinese aerospace industry.

The 2019 India-Pakistan border skirmish resulted in major shake-ups within the Indian Air Force (IAF). The most accepted narrative, that of a loss of an IAF MiG-21 Bison to no losses of the Pakistan Air Force bodes poorly for the IAF. But interestingly, according to a July interview, the skirmish marked one of the first "hot" use of Pakistan's new Chinese JF-17 "Thunder" fighters.

The JF-17 is a relatively new single-engine fighter, meant to compete against other light fighters like the F-16, Gripen, and MiG-29 for export contracts. As the Pakistan Air Force (PAF) is the only large user, most solid information about the aircraft is from Chinese marketing documents. But the July interview gives one pilot's opinion on how the JF-17 stacks up against most common adversaries, from Sukhois to F-16s.

The extent of the JF-17's "hot" usage following the border skirmish was in patrols near the border. In some incidents, the pilot said that during these patrols, he was getting radar lock-on Su-30MKIs at ranges in excess of 100 kilometers.

However, this doesn't mean that a JF-17 could kill with a missile at that range. The JF-17's primary beyond-visual-range (BVR) armament is the PL-12 missile, which is still undergoing integration (as of February 2019). During the actual border air skirmish, PAF F-16s lobbed AIM-120C-5 AMRAAM missiles at similar ranges, which forced IAF aircraft to go defensive to dodge the missiles, but no kills were scored. As the PL-12 is said to have a similar range to the AMRAAM, it's likely that its kinematic performance at range is similar, and it too wouldn't be able to score a kill.

But if the JF-17 allows the pilot to "lob" a missile at planes at such ranges, it still might be a step ahead of the IAF's Su-30MKIs. According to an NDTV report, the Russian R-77 missiles cannot engage targets past 80 km.

Despite the Su-30's missile limitations, the JF-17 pilot said that the Su-30 was one of the most formidable threats the PAF faces. This is likely due to the strong engines and maneuvering capability of the Su-30, which allows it to recover energy quickly after maneuvering and makes it hard to shoot down in a within visual range (WVR) engagement.

Interestingly, the pilot then goes onto state that he's not that afraid of the Su-30 because he's trained against F-16s with AMRAAMs, which he thinks is a far superior missile. The pilot also states that the MICA on the Mirage is also a significant threat.

This suggests that the pilot probably thinks that the fight will be largely decided, or largely influenced by the BVR stage of the engagement and that the JF-17's capabilities in that arena are competitive to the F-16 and Mirage. However, the pilot does say that the JF-17's limited BVR loadout is its main weakness, as most models of the JF-17 can only carry four BVR missiles, compared to the Su-30MKI which can carry eight or more.

The pilot also gives good marks to the JF-17 for reliability, flight characteristics, and maintenance. As the JF-17 is one of China's "clean slate" designs, this bodes well for the reliability characteristics of the current generation of Chinese aircraft. However, the JF-17 still uses a Russian engine, and the PAF rejected offers to use Chinese engines in their JF-17s in 2015. Engines remain a critical weakness in the Chinese aerospace industry.

(Charlie Gao studied political and computer science at Grinnell College and is a frequent commentator on defense and national-security issues.)

https://nationalinterest.org/blog/buzz/how-would-pakistan-take-indian-air-force-chinas-jf-17-fighter-76771

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New US space command to dominate space war

Rising concern over threat to satellites from Russia, China

Washington: US President Donald Trump has formally launched the US Space Command, that he said will ensure that America's dominance in space is "never threatened," amidst advances made by countries like Russia and China.

The command's establishment comes as the US has grown increasingly co-ncerned about threats to its satellites from Russia and China.

"Those who wish to harm the US, to seek to challenge us on the ultimate high ground of space, it's going to be a whole different ballgame," he said on Thur-sday at a White House ceremony marking the command's establishment.

Describing the establishment of the 11th Comb-atant Command as a landmark moment, Trump said it recognises the centrality of space to America's national security and defence.

Gen. John W. Raymond will be the commander of the US Space Command, which has been established as the 11th Unified Combatant Command of the American armed forces.

The command will initially consist of just 287 personnel and its final location has yet to be determined. Its responsibilities will be transferred primarily from US Strategic Command, according to CNN.

"It's a big deal. As the newest combatant command, SPACECOM will defend America's vital interests in space — the next war-fighting domain," Trump, also the Comma-nder-in-Chief of the US military, said.

"SpaceCom will ensure that America's dominance in space is never threatened," he said. "This is a landmark day, one that recognises the centrality of space to America's security and defence," he said.

The Trump administration has identified Russia and China as the countries who pose threat to the United States in space.

"Our adversaries are weaponising Earth's orbits with new technology targeting American satellites that are critical to both battlefield operations and our way of life at home.

"Our freedom to operate in space is also essential to detecting and destroying any missile launched against the United States," he said.

"Just as we have recognised land, air, sea, and cyber as vital war-fighting domains, we will now treat space as an independent region overseen by a new unified geographic combatant command," said the US president.

The Space Command, he said, will soon be followed by establishment of the United States Space Force as the sixth branch of the United States Armed Forces.

The launch was attended among others by Vice President Mike Pence and Defence Secretary Mark Esper.

https://www.deccanchronicle.com/world/america/310819/new-us-space-command-to-dominate-space-war.html

hindustantimes

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Chandrayaan-2 one step away from the moon's atmosphere

Scientists at Indian Space Research Organisation (ISRO) will have to perform just one more orbit-lowering manoeuvre on September 1 to reach the orbit

New Delhi: The firing of the on-board propulsion system on Friday evening brought the Chandrayaan 2 very close to the final 100x100 km circular orbit, where the orbiter will remain for a year studying the lunar terrain, the thin atmosphere around the moon, lunar ionosphere, and minerals on the moon.

Scientists at Indian Space Research Organisation (Isro) will have to perform just one more orbit-lowering manoeuvre on September 1 to reach the orbit.

The spacecraft was brought to 124x164 km orbit by firing the propulsion system for 1,155 seconds at 06:18 pm on Friday.

"All the spacecraft parameters are normal," Isro said in a statement.

The next milestone for the mission will be on September 2 when the lander-rover will separate from the orbiter. Both the modules would be separately operated from the control room after the separation.

This is crucial as this will be the first time the indigenously developed lander-rover will work in space.

"As the day for the landing nears, the anxiety here is only increasing. This is because till now we have been operating the propulsion system of the orbiter, but after the separation, on September 2 we will start operating the orbiter and the lander separately. The lander technology and the powered descent is something that Isro will be doing for the first time," Isro chairperson K Sivan had said after the spacecraft entered the lunar orbit.

After the separation, the scientists will test the propulsion system on the lander by firing it for 3 seconds on September 3. The next day, the actual orbit lowering manoeuvre will be done for 6.5 seconds to bring the lander-rover to a 100x35km orbit.

The space agency will attempt the soft landing on the moon on September 7 at 01:40 am. The lander-rover will take "15 terrifying minutes" to descend near the south pole of the moon.

India will be the fourth country, after Russia, Japan and China, to land on the moon, and the first to do so close to the south pole.

https://www.hindustantimes.com/india-news/chandrayaan-2-one-step-away-from-the-moon-s-atmosphere/story-YXkWRZti5hmxKlyMWKpGHI.html

Discover SCIENCE FOR THE CURIOUS

Tue, 27 Aug 2019

Forecasting doom: new tech could help predict volcanic eruptions

Satellite and sensor upgrades may make it easier to detect future eruptions

By Mathew Berger

It was 1975 on the Caribbean island of Basse-Terre, part of Guadeloupe. Beyond a green stretch of jungle, the volcano La Soufrière de Guadeloupe loomed. The island's capital, also called Basse-Terre, lay nestled between the ocean and the towering peak, which hadn't had a major eruption since around 1530. But that July, La Soufrière began showing signs of life.

Debate ensued among seismologists over the chances of a major eruption; some saw evidence that molten magma below the Earth's crust was rising. By November, authorities were scrambling to craft an emergency plan for the city and the surrounding area, then home to roughly 75,000 people. In August of the following year, at least 72,000 residents were evacuated.

But no magma came. The evacuation itself proved more destructive, costing $342 million at the time — an estimated 60 percent of Guadeloupe's annual gross domestic product. And the cost was more than economic.

"Scientific credibility took a hit," says Michael Poland, a geophysicist with the U.S. Geological Survey. "The next time you say there's going to be a hazardous eruption, people might blow you off."

In the decades since, scientists have been searching for ways to prevent similar false alarms and avoid the worst-case scenario: a deadly eruption that's a complete surprise.

Researchers aim to forecast eruptions like we forecast a hurricane's path and intensity, and recent developments in technology have helped researchers close in on that goal. Improvements in satellite capabilities have helped experts detect subtle shifts in a volcano's topography and heat that could spell impending explosions. And new sensors can pick up which gases are escaping volcanoes' vents in near-real time. Others can detect underground noises — inaudible to human ears — linked to eruptions.

The new data has led to tangible progress. In October, Italian scientists announced the results of an eight-year test of an automated system that had been monitoring the volcanic activity of Mount Etna. The system sent out text-message warnings before 57 of the volcano's 59 most recent eruptions. During an eruption in December, the warnings went out only a few minutes before magma reached the surface. But generally, they had been going out nearly an hour before, says Mauricio Ripepe, a University of Florence volcanologist who helped lead the project.

Still, early warnings aren't the same as forecasting an eruption's probability — or its possible destructiveness — days in advance. To do that, someone would need to combine all this new data to create prediction models. So far, that hasn't happened.

"It's mostly based on pattern recognition," Poland says about the current warning system. When experts see things like gas releases or swelling or sinking in a volcano's surface, their reaction is, " 'Aha! That's what we saw last time.' It's usually right," he says, but "sometimes we get the size of the eruption wrong. So it's dangerous because of that false confidence."

It's similar to where weather forecasting was a half-century ago, Poland says. When the atmospheric pressure dropped in a certain way, for example, meteorologists predicted a cold spell. The real world is more complex than that, though, so predictions were sometimes way off. Eventually,

weather experts incorporated sensor and satellite data into models that more closely mimic the atmosphere.

For volcanoes, that would mean accounting for the behavior and characteristics of different types of rock, the various shapes of underground magma chambers, the different ways in which magma can flow, the way the earth deforms slightly near a volcanic site and seismic activity nearby.

According to Poland, we'll likely see these next-generation models for the best-studied volcanoes first — Hawaii's Kilauea or Washington's Mount St. Helens, for example — and they'd eventually be applied to all volcanoes.

"These models are a long way away, but we're not far from being able to start doing the probabilities based on the information we do have," he says. "Even if we don't have that perfect model that helps us forecast everything, we can make progress on bits and pieces and apply those."

http://discovermagazine.com/2019/july/cloudy-with-a-chance-of-lava