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Coronavirus lockdown | DRDO gears up to make 20,000 PPE a day

At a Defence Ministry review meeting, three Service Chiefs and other officials highlight their efforts

A laboratory under the Defence Research and Development Organisation (DRDO) had made arrangements to make 20,000 Personal Protective Equipment (PPE) a day and the DRDO was also engaged in minor modification of ventilators so that one machine could support four patients at a time, its Chairman, Satheesh Reddy, informed Defence Minister Rajnath Singh on Wednesday.

At a review meeting of the Ministry held through videoconferencing to contain Coronavirus, the three Service Chiefs and other officials too appraised him of their efforts.

Dr. Reddy informed that 50,000 litres of sanitizers made by the DRDO labs were supplied to various security entities, including the Delhi Police and another one lakh litres supplied all over the country, the Defence Ministry said in a statement. “Dr. Reddy said a five-layered nanotechnology face mask N99 are being made on a war footing. Ten thousand have already been made and soon per day production will be extended to 20,000,” the statement said.



Chief of the Defence Staff Gen. Bipin Rawat informed that separate hospitals have been identified to exclusively deal with COVID-19 and more than 9,000 hospital beds were available. “Over 1,000 evacuees are quarantined at facilities in Jaisalmer, Jodhpur, Chennai, Manesar, Hindan and Mumbai. Their quarantine period will end by April 7,” he said.

The Indian Air Force (IAF) had airlifted 25 tonnes of medical supplies in the last three days from Delhi, Surat, Chandigarh to Manipur, Nagaland and the Union Territories of Jammu and Kashmir and Ladakh, informed Air chief Marshal RKS Bhadauria.

These include PPE, hand sanitizers, surgical gloves, thermal scanners and medical personnel, the IAF said, adding that regular airlift of COVID-19 test samples from Ladakh to Delhi was also being carried out.

Army Chief Gen Manoj Naravane informed that more than 8,500 doctors and support staff were available to extend necessary assistance to the civilian administration. On providing assistance to neighbouring countries, he said that “assistance to Nepal in the form of medical equipment will be delivered shortly.”

Navy chief Admiral Karambir Singh said naval ships were on a standby to extend any required assistance.

Retired health professionals have also been kept in readiness to volunteer their services, said Lt. Gen. Anup Banerji, Director General Armed Force Medical Services (AFMS). Approximately, 25,000 National Cadet Corps (NCC) cadets were “being mobilised to provide necessary local assistance.”

<https://www.thehindu.com/news/national/coronavirus-lockdown-drdo-gears-up-to-make-20000-ppe-a-day/article31229996.ece>

India's fight against Covid-19 needs wartime industrial production, not more red tape

A credible industrial response during the coronavirus lockdown will translate into better provisioning for India's overall healthcare sector in future

By Saurav Jha

New Delhi: India's fight against Covid-19 requires a domestic industrial response that is akin to wartime production. At this hour, India's lazy procurement culture of depending on imports will simply not cut it, given that the international availability of pandemic-fighting kits — whether it be test kits or ventilators or even personal protective equipment (PPE) — is already riven with shortages. Rather, indigenous production of such equipment has the potential to serve the world at this time of need and help beyond fighting just the pandemic by allowing key industries to keep humming.

As we shall see, there are examples aplenty that give us confidence that Indian industry can indeed rise to the challenge. However, any industrial response will operate within the ambit of India's larger institutional response, which needs to be repurposed for rapid provisioning using domestic sources and this is as good a time as any to do that. Indeed, while a 'whole of society' approach may be touted by New Delhi, that 'whole' needs to shed the red tape for once.

India's Potential

The curious case of newly developed indigenous test-kits being accepted for trials by the Indian Council of Medical Research's (ICMR's) National Institute of Virology (NIV), only for the suppliers to hear from the Drug Controller General of India that they needed USFDA or European CE approval before commencing production must not be repeated. Of course, the Narendra Modi government has since clarified that an ICMR-NIV stamp is now sufficient and at least one indigenous kit has already passed trials and is scheduled to enter the market shortly.

Incidentally, this test-kit called PathoDetect made by MyLab is going to cost only a quarter of what imported test-kits cost, can deliver results much faster and has demonstrated 100 per cent 'sensitivity and specificity' in ICMR evaluations. Better still, the company says that it can deliver between 1-1.5 lakh patient tests every week.

There are other indigenous kits that are also close to demonstrating the necessary reliability levels and their entry into the market will provide India with the ability to conduct hundreds of thousands of tests per week, if it can concomitantly deploy enough trained paramedics with PPE and viral transport media (VTM). Although ICMR doesn't believe in what it calls 'indiscriminate testing', it is clear that much greater testing will be required to achieve what the ICMR wants to do — 'isolate, isolate, isolate'.

Cheaper and potentially superior domestic test-kits being rapidly produced is exactly the sort of 'innovation at scale' that India needs to comprehensively contain the novel coronavirus. However, it was only late last week that the Technology Development Board (TDB) under the Department of Science & Technology 'invited' proposals for fighting Covid-19 and wants those related to respiratory or protective equipment to be submitted before 27 March 2020.

Move Beyond Proposals

While the TDB move is noteworthy, this is not the time to merely invite proposals for possible innovative solutions to combat COVID-19. The Modi government should be pro-actively scouring India's scientific-technological landscape to identify possible breakthroughs. Because other countries certainly are.

Take the case of a Covid-19 inhibiting device invented by Bengaluru-based scientist Rajah Vijay Kumar, which is currently being evaluated by the US and Mexico.

Naturally, any relevant innovation or invention needs to be mass-produced, given the situation. Then there is the issue of increasing production of even well-established items such as ventilators and PPE, stocks of which are currently inadequate. In the matter of ventilators, some progress is being made with the government engaging Skanray Technologies, a domestic ventilator-maker that exports units to some 80 countries worldwide. Although currently able to produce only about 200 units on a monthly basis, Skanray says that it can ramp up production to 30,000 in a couple of months and to about a lakh subsequently.

Skanray is also offering its designs to other companies, so that they too can ramp up production. However, India's ventilator-makers depend on imported components and increased production requires either greater imports or indigenisation of the same.

While some military flights will be mounted to source imports, the Defence Research and Development Organisation (DRDO) is now working with Skanray and others to get the necessary components from India's aerospace and defence parts' suppliers. Here too, the use of India's small but growing clutch of 3D printing companies such as WIPRO 3D can be enlisted to manufacture key ventilator components such as regulator valves, as is already being done elsewhere in the world. Incidentally, DRDO is working on a multi-patient ventilator, which is expected to be ready for production by the first week of April 2020, and the Mahindra Group has been roped into making components for this design. This ventilator will cost around Rs 4 lakh.

Bharat Electronics Limited has now been asked by the government to manufacture some 30,000 ventilators in a consortium with Skanray. And the Department of Science and Technology (DST) has given a Pune-based start-up Rs 1 crore to make negative ion generators that can scrub a room of up to 99.7 per cent of its viral load in an hour. Some 1,000 such negative ion generators are expected to be deployed to hospitals across Maharashtra shortly.

Preparing for the Future

Even as the ventilator availability issue seems likely to get resolved, much greater movement is required on the PPE front, with social media already awash with doctors across India flagging shortages of even simple kit such as masks and gloves. While the government says that it is taking adequate steps to scale up indigenous sourcing of the same keeping in mind technical requirements, material availability and standards, the difference on the ground is yet to be felt.

Ultimately, the Covid-19 industrial response has to be on a proverbial war-footing. Which means the usual processes of government procurement will simply not do. As such, it is better if the Modi government creates an 'Empowered Committee for Covid-19 Production' that operates under Defence Regulation-11 (DR-11), which enables the government to provision itself without the usual multi-step procurement chain. This can be invoked even for the production and stocking of disinfectants as well as VTMs. VTMs will be crucial to any mass testing effort, since preserving samples on the way to laboratories is sine qua non for that.

Building up strategic reserves of vital equipment even as India is in a lockdown is a no-brainer, really. It is not just a matter of stocking up for testing and critical care related to Covid-19 suppression efforts either. Adequate provisioning will also ensure that the 'rest of healthcare' does not end up suffering due to coronavirus-related diversion of supplies. Furthermore, if the lockdown succeeds in breaking the chain of transmission and India averts a pandemic, the scaled-up production will help India meet worldwide shortages of such items. Adapted for industrial uses, PPE can also be used to re-start production in the wider industrial sector once India moves towards normalcy.

In the end, a credible industrial response will translate into better and cheaper provisioning for India's overall healthcare sector in the years ahead.

(The author is a former consultant to FICCI's International Division and Chief Editor of Delhi Defence Review. His Twitter handle is @SJha1618. Views are personal.)

<https://theprint.in/opinion/india-covid-19-needs-wartime-industrial-production/391902/>

Thu, 02 April 2020

Covid-19: Rajnath Singh tells armed forces to 'redouble work', coordinate with other ministries

By Rajat Pandit

New Delhi: The armed forces have kept over 9,000 hospital beds ready to treat Covid-19 patients, along with more than 8,500 doctors and support staff to extend necessary assistance to civilian administrations, even as military aircraft have transported around 25 tonne of medical supplies around the country in the last three days. Having already supplied around 1.5 lakh litres of sanitizers to different organizations, the DRDO is also making five-layered nano technology N99 face masks and PPE (personal protective equipment) on a war-footing now.

Taking stock of the efforts being made by the Army, Navy and IAF as well as DRDO, Defence PSUs and Ordnance Factory Board in terms of evacuation, medical care, quarantine facilities and production of medical equipment, defence minister Rajnath Singh on Wednesday asked them to “redouble their work” and closely coordinate with other ministries in the national endeavour to fight the coronavirus outbreak.

DRDO Chief Dr G Satheesh Reddy said his organization had already made 10,000 N99 masks and their daily production would be ramped up to 20,000 soon. “DRDO has also supplied 40,000 other face masks to the Delhi Police. A DRDO lab has also made arrangements to make 20,000 PPE per day. We also engaged in minor modification of ventilators so that one machine can support four patients at the same time,” he said

Chief of Defence Staff General Bipin Rawat, in turn, told the minister that 28 military hospitals, with over 9,000 beds, have been earmarked to exclusively deal with military and civilian Covid-19 patients.

Over 1,000 evacuees from countries like Italy, Iran and Malaysia are quarantined at military facilities in Jaisalmer, Jodhpur, Chennai, Manesar, Hindon and Mumbai. Their quarantine period will end by April 7, he said.

Navy Chief Admiral Karambir Singh said warships were on standby to extend assistance to civil administrations. The IAF, on its part, has airlifted nearly 25 tonnes of essential medical supplies from Delhi, Surat and Chandigarh to Manipur, Nagaland, J&K and Ladakh.

“Regular airlift of Covid-19 test samples from Ladakh to Delhi is also being carried out. IAF is adequately geared up to meet all the emerging demands, with aircraft like C-17s, C-130Js, An-32s, Avros and Dorniers being tasked as and when required basis,” said Air Chief Marshal RKS Bhadauria.

Army Chief General MM Naravane, in turn, informed Singh that over 8,500 doctors and support staff are ready to extend necessary assistance to civilian administrations. In keeping with the defence minister’s direction that help should be provided to neighbouring countries, assistance to Nepal in the form of medical equipment will be delivered shortly, he added.

Director General of the Armed Forces Medical Services Lt-General Anup Banerji said necessary equipment has been procured and dispatched to various hospitals. While retired health professionals have also been kept in readiness to volunteer their services, around 25,000 NCC cadets are being mobilized to provide necessary local assistance.

<https://timesofindia.indiatimes.com/india/covid-19-rajnath-singh-tells-armed-forces-to-redouble-work-coordinate-with-other-ministries/articleshow/74932739.cms>

कोरोना के खिलाफ सेना की तैयारी/133 अस्पताल, साढ़े 8 हजार डॉक्टर, 9 हजार बेड तैयार; डीआरडीओ 4 मरीजों को सपोर्ट करने वाला वेंटिलेटर बना रहा

रक्षा मंत्री राजनाथ सिंह ने कोविड-19 की तैयारियों के संबंध में बुधवार को वीडियो कॉन्फ्रेंस के जरिए सीडीएस जनरल बिपिन रावत और तीनों सेना प्रमुखों से बात की

- सेना प्रमुख जनरल एमएम नरवणे ने बताया- सैन्य अस्पतालों में 9 हजार से ज्यादा बेड उपलब्ध
- नौसेना प्रमुख एडमिरल करमबीर सिंह के मुताबिक, कोरोना से निपटने के लिए नौसेना के जहाज भी स्टैंडबाय पर

डीआरडीओ ने अब तक 1.50 लाख लीटर सैनिटाइजर सप्लाई किए, रोज 10 हजार मास्क बना रहा नई दिल्ली: देश में कोरोना मरीजों की संख्या लगातार बढ़ती जा रही है। इससे निपटने के लिए तीनों सेनाओं ने भी पुख्ता तैयारी की है। रक्षा मंत्री राजनाथ सिंह ने बुधवार को इस संबंध में वीडियो कॉन्फ्रेंसिंग के जरिए मीटिंग की। इसमें मौजूद चीफ ऑफ डिफेंस स्टाफ (सीडीएस) जनरल बिपिन रावत ने कहा- सेना के अस्पतालों में 9 हजार से ज्यादा बेड उपलब्ध हैं। उन्होंने बताया कि जैसलमेर, जोधपुर, चेन्नई, मानेसर, हिंडन और मुंबई में 1 हजार से ज्यादा लोगों को क्वारैंटाइन में रखा गया है। इसकी मियाद 7 अप्रैल को खत्म हो रही है। मार्च 2018 तक के आंकड़ों के मुताबिक, देशभर में सेना के 133 अस्पताल हैं। इनमें से 112 मिलिट्री, 12 एयरफोर्स और 9 नेवी के हैं।

इस वीडियो कॉन्फ्रेंसिंग के जरिए रक्षा मंत्री ने आर्मी चीफ जनरल एमएम नरवणे, एयरफोर्स चीफ आरकेएस भदौरिया, नेवी चीफ एडमिरल करमबीर सिंह, आर्म्ड फोर्सिस मेडिकल सर्विस के डीजी लेफ्टिनेंट जनरल अनूप बनर्जी और डीआरडीओ चेयरमैन डॉ. सतीश रेड्डी से भी बात की।

कोरोना से निपटने के लिए तीनों सेना की तैयारी :

आर्मी चीफ जनरल एमएम नरवणे : साढ़े 8 हजार से ज्यादा डॉक्टर्स और मेडिकल स्टाफ तैयार है। सेना के अस्पतालों में 9 हजार से ज्यादा बेड उपलब्ध।

एयरफोर्स चीफ एयर मार्शल आरकेएस भदौरिया : पिछले 5 दिन में वायुसेना ने देश के अलग-अलग हिस्सों में 25 टन से ज्यादा मेडिकल इक्विपमेंट की सप्लाई की है।

नेवी चीफ एडमिरल करमबीर सिंह : किसी भी स्थिति से निपटने के लिए नौसेना के जहाज स्टैंडबाय पर हैं। जरूरत पड़ने पर लोकल एडमिनिस्ट्रेशन के साथ मिलकर भी काम किया जा रहा है।

25 हजार एनसीसी कैडेट्स और रिटायर्ड हेल्थ प्रोफेशनल्स भी तैयार

आर्म्ड फोर्सिस मेडिकल सर्विस के डीजी लेफ्टिनेंट जनरल अनूप बनर्जी ने रक्षा मंत्री को बताया कि रिटायर्ड हेल्थ प्रोफेशनल्स भी सेवा देने के लिए तैयार हैं। उन्होंने बताया कि 25 हजार से ज्यादा एनसीसी कैडेट्स को भी ट्रेनिंग दी जा रही है।

डीआरडीओ एक समय में 4 मरीजों को सपोर्ट करने वाला वेंटिलेटर बना रहा

डीआरडीओ के चेयरमैन डॉ. डीजी सतीश रेड्डी ने रक्षा मंत्री राजनाथ सिंह को बताया कि डीआरडीओ लैब में बनाए गए 50 हजार लीटर सैनिटाइजर दिल्ली पुलिस समेत अलग-अलग सुरक्षा बलों को सप्लाई किए गए हैं। इसके अलावा, 1 लाख लीटर सैनिटाइजर देशभर में सप्लाई हुआ। उन्होंने बताया कि अभी रोज 10 हजार पांच लेयर वाले नैनो टेक्नोलॉजी फेस मास्क एन-99 बनाए जा रहे हैं और जल्द ही इसका प्रोडक्शन बढ़ाकर रोजाना 20 हजार किया जाएगा। डीआरडीओ ने 40 हजार फेस मास्क दिल्ली पुलिस को दिए हैं। डॉ. रेड्डी ने बताया कि हमारी एक लैब में रोज 20 हजार पीपीई यानी पर्सनल प्रोटेक्टिव इक्विपमेंट बनाए जा रहे हैं। इसके साथ ही एक ऐसा वेंटिलेटर भी बनाने की तैयारी है, जो एक समय में 4 मरीजों को सपोर्ट कर सके।

रक्षा मंत्रालय के सभी कर्मचारी पीएम-केयर फंड में एक दिन की सैलरी देंगे

कोरोनावायरस से लड़ने के लिए बनाए गए पीएम-केयर फंड में रक्षा मंत्रालय के भी सभी कर्मचारी एक दिन की सैलरी देंगे। बुधवार को रक्षा मंत्री राजनाथ सिंह ने इस प्रस्ताव को मंजूरी दी। ऐसा अनुमान है कि आर्मी, नेवी और एयरफोर्स समेत रक्षा मंत्रालय के अधीन आने वाली सभी विंग के कर्मचारियों की एक दिन की सैलरी से 500 करोड़ रुपए का फंड मिलेगा।

<https://www.bhaskar.com/national/news/133-hospitals-8-thousand-doctors-9-thousand-beds-ready-drdo-remains-ventilator-supporting-4-patients-127088702.html>



Thu, 02 April 2020

कोरोना लॉकडाउन: एक वेंटिलेटर से 4 मरीजों को मिलेगी मदद, DRDO कर रहा है तैयार

कोरोना वायरस (Coronavirus) से संक्रमित मरीजों के इलाज के लिए अस्पतालों में वेंटिलेटर की कमी को देख डीआरडीओ (DRDO) ने विकसित की तकनीक। डीआरडीओ हर दिन 20 पर्सनल प्रोटेक्शन इक्विपमेंट (PPE) बनाने की तैयारी में भी जुटा है

संदीप बोल

नई दिल्ली: कोरोना वायरस (Coronavirus) से बचाव के लिए देश के अस्पतालों में वेंटिलेटर की कमी को दूर करने के लिए रक्षा अनुसंधान एवं विकास संगठन यानी डीआरडीओ (DRDO) आगे आया है। डीआरडीओ ने ऐसी तकनीक विकसित की है, जिससे एक वेंटिलेटर से एक बार में चार मरीजों को मदद दी जा सकेगी। डीआरडीओ के निदेशक का कहना है कि इसके लिए हम कोई नया वेंटिलेटर (ventilator) नहीं बना रहे हैं, बल्कि जो पहले से हैं, उन्हीं में कुछ संशोधन कर रहे हैं। इस तरह से कोरोना से पीड़ित किसी भी मरीज को वेंटिलेटर की कमी नहीं होने दी जाएगी। इसके अलावा डीआरडीओ 20 हजार पर्सनल प्रोटेक्शन इक्विपमेंट (PPE) हर दिन बनाने की तैयारी में भी जुटा हुआ है।

युद्धस्तर पर बनाए जा रहे हैं N99 मास्क

डीआरडीओ निदेशक डॉ. जी. सतीश रेड्डी ने रक्षामंत्री राजनाथ सिंह को जानकारी देते हुए बताया कि हमारे संस्थान में रात-दिन युद्धस्तर पर N99 मास्क बनाए जा रहे। किसी भी स्तर पर इसकी कमी नहीं

होने दी जाएगी। दिल्ली पुलिस को अभी तक 40 हजार मास्क की सप्लाई की जा चुकी है। वहीं दिल्ली पुलिस सहित देशभर में डीआरडीओ ने एक लाख लीटर सैनेटाइजर की सप्लाई भी की है।

<https://hindi.news18.com/news/delhi-ncr/corona-lockdown-single-ventilator-will-help-for-patients-drdo-is-researching-dlnh-2979040.html>

THE TIMES OF INDIA

Thu, 02 April 2020

Military ready with 9,000 beds, 8,500 docs & staff

New Delhi: The armed forces have kept over 9,000 hospital beds ready to treat Covid-19 patients, along with more than 8,500 doctors and support staff to extend necessary assistance to civilian administrations, even as military aircraft have transported around 25 tonne of medical supplies around the country in the last three days.

Having already supplied around 1.5 lakh litres of sanitisers to different organisations, the DRDO is also making five-layered nano technology N99 face masks and PPE (personal protective equipment) on a war-footing now.

Taking stock of the efforts being made by the Army, Navy and IAF as well as DRDO, defence PSUs and Ordnance Factory Board in terms of evacuation, medical care, quarantine facilities and production of medical equipment, defence minister Rajnath Singh on Wednesday asked them to “redouble their work” and closely coordinate with other ministries in the national endeavour to fight the coronavirus outbreak.



DRDO Chief Dr G Satheesh Reddy said his organisation had already made 10,000 N99 masks and their daily production would be ramped up to 20,000 soon. “DRDO has also supplied 40,000 other face masks to the Delhi Police. A DRDO lab has also made arrangements to make 20,000 PPE per day. We also engaged in minor modification of ventilators so that one machine can support four patients at the same time,” he said.

Chief of Defence Staff General Bipin Rawat, in turn, told the minister that 28 military hospitals, with over 9,000 beds, have been earmarked to exclusively deal with military and civilian Covid-19 patients.

Over 1,000 evacuees from countries like Italy, Iran and Malaysia are quarantined at military facilities in Jaisalmer, Jodhpur, Chennai, Manesar, Hindon and Mumbai. Their quarantine period will end by April 7, he said.

Navy chief Admiral Karambir Singh said warships were on standby to extend assistance to civil administrations. The IAF, on its part, has airlifted nearly 25 tonnes of essential medical supplies from Delhi, Surat and Chandigarh to Manipur, Nagaland, J&K and Ladakh.

“Regular airlift of Covid-19 test samples from Ladakh to Delhi is also being carried out. IAF is adequately geared up to meet all the emerging demands, with aircraft like C-17s, C-130Js, AN-32s, Avros and Dorniers being tasked as and when required basis,” said Air Chief Marshal RKS Bhadauria.

Army Chief General MM Naravane, in turn, informed Singh that over 8,500 doctors and support staff are ready to extend necessary assistance to civilian administrations. In keeping with the defence minister’s direction that help should be provided to neighbouring countries, assistance to Nepal in the form of medical equipment will be delivered shortly, he added.

Director General of the Armed Forces Medical Services Lt-General Anup Banerji said necessary equipment has been procured and dispatched to various hospitals. While retired health

professionals have also been kept in readiness to volunteer their services, around 25,000 NCC cadets are being mobilised to provide necessary local assistance.

<https://timesofindia.indiatimes.com/india/military-ready-with-9000-beds-8500-docs-staff/articleshow/74940104.cms>



Thu, 02 April 2020

Military joins in as India wages war against coronavirus

DRDO and Ordnance Factory Board said they have joined the war with production of five-layered nano technology face mask, hand sanitisers, face masks and Personal Protective Equipments

New Delhi: Indian military has readied its men, machines and resources to fight against coronavirus.

While the Chief of Defence Staff Bipin Rawat said that more than 9,000 hospital beds have been made available to deal with COVID-19, Army Chief General M M Naravane informed that more than 8,500 doctors and support staff are also available to extend necessary assistance to civilian administration.



The CDS, Service Chiefs and other Department heads were briefing the Defence Minister Rajnath Singh about their work till date and future plans through video conferencing on Wednesday

The Ministry of Defence (MoD) informed that the meeting was held through video conferencing. “Defence Minister appreciated the efforts being made by various Services, organisations and DPSUs in terms of evacuation, provision of healthcare in quarantine facilities and research & production of medical equipment such as sanitizers, facemasks and Personal Protective Equipments (PPEs). He directed all the organisations to redouble their efforts and work in close coordination with other ministries and organizations of Central Government in this crucial time.” said MoD

Referring to Rajnath Singh’s direction that help should be provided to neighbouring countries, Army Chief Naravane said that assistance to Nepal in the form of medical equipment will be delivered shortly.

Admiral Karambir Singh told the minister that naval ships are on the standby to extend any required assistance and is also extending assistance as required by local civilian administration.

Air Force is carrying on its all critical operational work while ensuring all necessary precautions. The Air Force planes transported approximately 25 tonnes of medical supplies in last five days, Chief, Air Chief Marshal R K S Bhadauria informed.

50,000 litres of sanitizers made by DRDO labs was supplied to various security entities, including Delhi Police. Another one lakh litres was supplied all over the country, said Dr G Satheesh Reddy, Secretary Department of Defence R&D and Chairman DRDO.

Dr Reddy said that five-layered nano technology face mask N99 are being made on war footing. 10,000 masks have already been made and soon per day production will be extended to 20,000. Ordnance Factory Board (OFB) is also engaged in manufacturing hand sanitisers, face masks and Personal Protective Equipments.

DRDO labs have also supplied 40,000 masks to Delhi Police. Another DRDO laboratory has also made arrangements to make 20,000 PPEs per day. DRDO is also engaged in minor

modification of ventilators so that one machine can support four patients at the same time, Dr Reddy added.

Approximately 25,000 National Cadet Corps (NCC) cadets are being mobilised to provide necessary local assistance, the minister was told during the meeting.

<https://www.newindianexpress.com/nation/2020/apr/01/military-joins-in-as-india-wages-war-against-coronavirus-2124408.html>

The Indian **EXPRESS**

Thu, 02 April 2020

HEMRL supplies disinfectants and hand sanitisers to civil, defence bodies

Officials from HEMRL said the facility is making available as many as 20,000 litres of of disinfectant and 200 litres of hand sanitiser per week free-of-cost to the PMC for healthcare personnel and residents of Pune. The first consignment was handed over on Monday

Pune: The High Energy Materials Research Laboratory (HEMRL), a Pune-based research and development facility of the Defence Research and Development Organisation (DRDO), has started supplying disinfectants and hand sanitisers to the Pune Municipal Corporation (PMC) and various defence establishments in and around Pune.

Officials from HEMRL said the facility is making available as many as 20,000 litres of disinfectant and 200 litres of hand sanitiser per week free-of-cost to the PMC for healthcare personnel and residents of Pune. The first consignment was handed over on Monday.

The HEMRL is also supplying disinfectants and hand sanitisers to DRDO institutions like Armament Research and Development Establishment, Research and Development Establishment (Engineers), Vehicle Research and Development Establishment and allied defence institutions like Garrison Engineers, Estate Management Unit, Chief Construction Engineer and Controller of Defence Accounts.

HEMRL is also supporting other defence institutions like 12 Mahar Regiment and the Armed Forces Medical College. Officials said the facility follows the quality standards as per ISO 9001: 2015 and high quality standards are maintained for preparation of the hand rub sanitiser as per the formulation suggested by the WHO. ENS

<https://indianexpress.com/article/cities/pune/petrol-pumps-fuel-coronavirus-lockdown-essential-goods-6342499/>

The Tribune

Thu, 02 April 2020

DRDO makes N-99 mask to combat virus

New Delhi: The Defence Research and Development Organisation (DRDO) has developed a new mask, N-99, in the wake of Covid-19 outbreak. The mask has five layers and has been made using nano-technology.

Some 10,000 masks have been made, and soon 20,000 masks will be produced per day. A few days ago, the DRDO announced that a modification in ventilators would allow one machine to support four patients at a time.

Another DRDO laboratory has also made arrangements to make 20,000 personal protective equipment (PPE). The PPE is in demand all over the country and is used by doctors and nurses, who are attending Covid suspects. This was revealed by DRDO chief Dr G Sateesh Reddy at a

review meeting with Defence Minister Rajnath Singh in Delhi on Wednesday. Singh has asked all organisations under the MoD to redouble their efforts.

The Navy has put ships on standby, while the IAF has transported some 25 tonnes of medical supplies.

<https://www.tribuneindia.com/news/nation/drdo-makes-n-99-mask-to-combat-virus-64285>



Thu, 02 April 2020

After body suits, hand and body sanitisers, N-99 masks, DRDO gears up to produce ventilators useful for 4-8 patients

By Laxitha Mundhra

The Defence Research and Development Organisation or the DRDO is an agency of the Government of India under the Ministry of Defense. It is the military research and development centre that offers cutting edge military technology. During this Coronavirus Pandemic, it has done the same and waged a “War Against Corona”.

Earlier in March 2020, the organisation developed three medical equipment and it has now launched the fourth one. The Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bengaluru is a DRDO lab. The lab had identified a vendor (Scanray Tech Pvt Ltd, Mysore) to produce ventilators. “Innovation is on to create ‘Multi patient-ventilator’ wherein several patients can be supported by a single ventilator. This innovation is expected to be available within a week,” the DRDO said.

The DRDO Ventilators

The Government of India, on its twitter handle, released a video of a panel of scientists stating the development of the Ventilator technology. It is a cutting edge tech that the organisation expects to build as a robust product. When it issued an earlier statement, DRDO said that the ventilator will cost around INR 4 lacs. In the last four-five days, they have been able to test the ventilators in Apollo Hospital and certain ESI Hospitals.

COVID-19 affects the respiratory system. Therefore, this technology is a great relief for doctors and nurses all over India. The organisation also stated to release around 5,000 ventilators in the first month and 10,000 subsequently. Bharat Electronics Limited will be the primary vendor.

The Body Suits

DRDO released a statement saying that the bodysuit can shield doctors, medical staff, sanitation workers and others. DRDO initially developed the bodysuit for medical and paramedical staff to manage and evacuate the casualties in the event of radiological emergencies. Due to the evolving pandemic, this suit was later converted to a bodysuit to stop contamination. The suit is washable and has passed the ASTM International standards.

Frontier Protective Wear Pvt Ltd, Kolkata and Medikit Pvt Ltd, Mumbai are producing 10,000 suits per day. These suits cost around INR 7000. These suits will be useful for the frontline fighters against Coronavirus.

The N-99 Masks

The N-99 mask is a five-layer pollution protection mask. As an upgrade, the DRDO has used two layers of nanomesh to make them for medical purpose. The N-99 masks cost INR 75 per piece.

Venus Industries and IMTEC, in Mumbai and Kolkata respectively, are the vendors for this mask. Ahmedabad Textile Industry’s Research Association supplies the cloth for the masks. The latter has a lot of order from the government for N-95 masks.

DRDO has also stated that it will produce 3D masks for police and health workers. The organisation has already produced a large number of surgical masks. It will further mass produce as and when needed.

The Hand Sanitisers

Defence Research & Development Establishment (DRDE), Gwalior is a lab of the DRDO. They initially produced around 20,000 ltrs of alcohol-based sanitiser. Later, the DRDO found a vendor, Gwalior Alco Brew Pvt Ltd. The vendor has a production capacity of 20-30 thousand litres every day. The sanitiser will cost Rs 20 per litre.

The hand sanitiser is the basic weapon against COVID-19. Hence, DRDO has supplied over 9000 ltrs to the following:

- The Indian Armed Forces
- The Armed Forces Medical Corps
- The Defence Security Corps
- The Ministry of Defense
- The Parliament and various high-level offices.

Future Ahead

The DRDO aims to build isolation tents, oxygen-based isolation tubes, sanitisation tanks and sanitizing vans. Dr Sateesh Reddy, Chairman of DRDO stated that they will soon produce Sanitizing Vans in considerable numbers. They will be supplied to major cities and towns for sanitizing people who enter the van. Similarly, he said that DRDO is working on technology relating to isolation tubes.

<https://www.ciol.com/drdo-produce-ventilators-can-used-4-8-patients-n99mask-sanitisers/>

THE ECONOMIC TIMES

Thu, 02 April 2020

25,000 NCC cadets, retired military health professionals, 8,500 army doctors on standby, while 9000 forces' hospital beds provided for coronavirus outbreak

Indian Air Force Chief Air Chief Marshal RKS Bhaduria told the minister that air force planes have transported about 25 tons of medical supplies within the country in the last five days. Officials added that in the last three days, these supplies were airlifted from Delhi, Surat and Chandigarh to Manipur, Nagaland and the union territories of J&K and Ladakh

By Shaurya Karanbir Gurung

New Delhi: About 25,000 National Cadet Corps cadets and retired military health professionals have been readied to provide assistance to the government to tackle the coronavirus outbreak in India, even as the Chief of Defence Staff and Army Chief on Wednesday said that over 9,000 services hospital beds have been made available and 8,500 doctors and support staff are on standby.

The developments were shared by the Director General Armed Forces Medical Services (DG AFMS) Lieutenant General Anup Banerji, who is responsible to the government for the overall medical policy relating to the forces, and CDS General Bipin Rawat and Army Chief General MM Naravane to Defence Minister Rajnath Singh, who reviewed the defence ministry's assistance to fight COVID-19 through video conference. Navy Chief Admiral Karambir Singh also informed Singh that Naval ships are on standby to extend any assistance.

Indian Air Force Chief Air Chief Marshal RKS Bhadauria told the minister that air force planes have transported about 25 tons of medical supplies within the country in the last five days. Officials added that in the last three days, these supplies, including Personal Protective Equipment (PPE), hand sanitisers, surgical gloves, besides medical personnel, were airlifted from Delhi, Surat and Chandigarh to Manipur, Nagaland and the union territories of J&K and Ladakh.

Singh appreciated the efforts being made by the forces, organisations and Defence PSUs for evacuation, health care in quarantine facilities, and research and production of medical equipment such as sanitizers, facemasks and PPE. “He directed all the organisations to redouble their efforts and work in close coordination with other ministries and organizations of the Central Government in this crucial time,” a defence ministry statement read.

The DG AFMS, who heads the Armed Forces Medical Services (of the army, air force and navy), told Singh said that necessary equipment has been procured and dispatched to various hospitals. “Retired health professionals (read as military) have also been kept in readiness to volunteer their services. Approximately 25,000 National Cadet Corps (NCC) cadets are being mobilised to provide necessary local assistance,” the ministry said.

The CDS informed Singh that separate hospitals have been identified to exclusively deal with COVID-19 and “more than 9,000 hospital beds have been made available”. Over 1,000 evacuees are quarantined at facilities in Jaisalmer, Jodhpur, Chennai, Manesar, Hindan and Mumbai. Their quarantine period will end on April 7.

Naravane informed the minister that, “more than 8,500 doctors and support staff are available to extend necessary assistance to civilian administration,” adding that assistance to Nepal by providing medical equipment will be delivered shortly.

The IAF, on its part, is regularly airlifting COVID-19 test samples from the Union Territory of Ladakh to Delhi. For this, C-17, C-130, An-32, AVRO and Dornier aircraft are being tasked. Medical care to Indian citizens evacuated from Iran and Malaysia is being provided at Air bases at Hindon and Tambaram.

Meanwhile, Defence Research and Development Organisation (DRDO) Chairman Dr G Sathesh Reddy informed Singh that 50,000 litres of sanitizers made by DRDO labs were supplied to different security entities, including Delhi Police, while another one lakh litres were supplied across the country. Reddy said that a five-layered nanotechnology face mask N99 is being made on a war footing. “10,000 have already been made and soon their per day production will be extended to 20,000. DRDO labs have also supplied 40,000 other face masks to Delhi Police. Another DRDO laboratory has also made arrangements to make 20,000 PPE per day,” the ministry said.

<https://economictimes.indiatimes.com/news/defence/25000-ncc-cadets-retired-military-health-professionals-8500-army-doctors-on-standby-while-9000-forces-hospital-beds-provided-for-coronavirus-pandemic/articleshow/74931601.cms>

ThePrint

Thu, 02 April 2020

Coronavirus doesn't stop Indian Army from carrying out its annual cyber security exercise

Army had earlier issued advisory claiming India's adversaries were launching coronavirus-themed campaigns to infect official or personal IT assets of defence personnel

By Amrita Nayak Dutta

New Delhi: Even as it prepares to deal with any emergencies due to the Covid-19 crisis, the Army is launching a cyber security exercise this month to assess its operational preparedness in the cyber domain.

In a recent interview to Economic Times, India's National Cyber Security Coordinator (NCSC) Lt. Gen. Rajesh Pant had said almost 4,000 fraud portals related to coronavirus have been created across the globe by cyber criminals and mafia organisations in the last two months.

The Army too had, in March, issued an advisory that said targeted campaigns on the theme of coronavirus have been undertaken in the last few weeks by India's adversaries to compromise email or other accounts and also to infect official or personal IT assets of defence personnel.

Army sources told ThePrint the annual exercise will help assess the defensive cyber security preparedness of the Army, data security and in evaluating compliance to the Army's existing cyber security policies.

"The exercise is aimed at looking for vulnerabilities in the network and coming out with corrective actions. The exercise will generally help take a relook at the existing procedures, verify if reported issues have been resolved and carry out additional checks to secure the force's cyber infrastructure," an Army source said.

While preparations for the exercise had begun last month, it is likely to conclude by November, after which a final report will be prepared, sources said. The exercise was conducted last year too.

Exercise to Evaluate Cyber Awareness

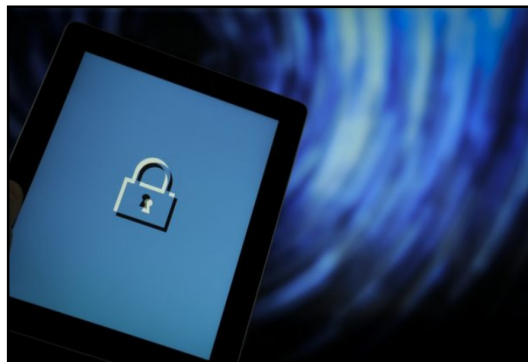
Defence sources said cyber security exercises, in general, evaluate cyber awareness and precautions taken by every individual in the service apart from strengthening intra service networks from cyber attacks. These include phishing or denial-of-service (DDoS) attacks, which are a malicious attempt to disrupt normal traffic of a targeted server, service or network by overwhelming the target or its surrounding infrastructure with a flood of Internet traffic.

For three months in 2019, India faced the most cyberattacks in the world, according to a report released by Subex, a Bengaluru-based firm providing analytics to telecom and communication service providers.

The report, released on 27 February, notes that while the US was the most cyber-targeted nation in 2019, India held the top spot in April, May and June.

ThePrint had earlier reported that the Indian Army faced at least 23 cyberattack attempts last year. Lt Gen D.B. Shekatkar (ret'd), president of the think-tank Centre Knowledge Sovereignty India, had then said there would be an increase in cyberattacks from India's adversaries in the years to come, which could be "deadlier" than terrorist attacks and can also affect a nuclear facility, or the air traffic control system, the power grid or even disable the war machinery during a war.

<https://theprint.in/defence/coronavirus-doesnt-stop-indian-army-from-carrying-out-its-annual-cyber-security-exercise/393049/>



Thu, 02 April 2020

Contain COVID-19 with 'indigenous strategy': Army think tank

By Aditya Raj Kaul

As India reports over 1,600 COVID-19 cases and over 35 deaths, the Indian Army has started 'quarantine wellness facilities' at several locations, and also begun immediate measures to research and present a strategy to counter the coronavirus pandemic.

The Centre for Joint Warfare Studies (CENJOWS), under the Chief of Defence Staff (CDS), has released a ‘A Counter Pandemic Strategy’ by Brigadier Sanjay Vishwasrao, who was India’s defence and military attaché in Pakistan from 2017 to 2019.

The 19-page research paper concludes that India can successfully control the curve of the pandemic using an indigenous strategy which creates an environment that’s unfriendly for the coronavirus.

‘India’s Strategy Needs to Suit Social, Political Setting’

The research comes at a time when COVID-19 cases worldwide have shot up to more than 8,00,000 with over 40,000 deaths. In an attempt to curb the spread of the virus in India, Prime Minister Narendra Modi announced a 21-day nationwide lockdown on 24 March.

Pointing towards the lockdown and other recent measures, the research argues India’s counter-pandemic strategy should cater to its economic, technological, social, cultural, demographic and political setting.

Among its key findings is that India’s unique culture, nationalism, strategic autonomy, along with social programmes such as Swachh Bharat, International Day of Yoga, Digital India Programme and Make in India could help contain the impact of COVID-19.

Isolate India From Foreign Carriers, Prevent Spread to Congested Areas

The research suggests an indigenous strategy to “deny/delay the negative tipping point of high number of infected and to hasten positive tipping point of more numbers isolated – treated than numbers infected per day/week/month.”

It also asks to isolate India from foreign carriers and focus on the affluent 20 percent with foreign travel history and their family/staff, and 20 percent counter-pandemic health workers to prevent spread to congested, susceptible areas. This is something that the Indian government has been focusing on during the Stage 2 over the last two weeks.

Further, domestically, it asks to create an environment unfriendly to the spread of COVID-19 by encouraging social distancing through Swachh Bharat, Yoga Day, Digital India Programme, etc., and repairing roadblocks such as slow broadband, no pay for daily wagers and so on.

Lastly, the research asks the administration leading the counter-pandemic measures to create an environment friendly for the counter-pandemic with easy access to protective equipment, unified payments interface (UPI) based pay/benefit disbursement, imaginative awareness programmes across all media, financial packages, etc.

<https://www.thequint.com/news/india/indian-army-research-paper-on-how-to-control-spread-of-coronavirus-in-india>

The Forbes logo is displayed in white serif font on a black rectangular background.

Thu, 02 April 2020

The Indian Navy’s potent conventional submarine capability

By H I Sutton

India is currently planning a fleet of nuclear powered submarines. But unlike other nuclear navies, India will not go all-nuclear. Instead they they will be complemented by 6 locally-built Kalvari Class conventionally powered boats and 6 of a follow-on Project-75I type. These conventional diesel-electric boats will be an important pillar of India’s submarine capability.

The Kalvari Class are an Indian Navy specific version of the French Scorpène design. Currently 2 are in service, 2 more are on trials and 2 are under construction. Together with the Project-75I type they will replace the ageing Shishumar class (German Type-209) and Sindhughosh class (Russian Kilo). The main capability jump for Project-75I will be Air Independent Power (AIP). This will allow the submarines to remain submerged for longer periods. The design of the Project-

75I has not been selected yet. Potential overseas partners include German, French, South Korean, Spanish and Italian firms.

But the new submarine building projects will not deliver submarines as quickly as some in the Navy would hope. Russia may be hoping to capitalize on the situation by offering more refurbished Kilo Class submarines. This would see 6 of the Indian Kilos serving longer to bridge the gap. Two of the original Kilos are already out of service; *INS Sindhurakshak* was lost in an accident in Mumbai harbor in 2013 and *INS Sindhuvir* was transferred to Myanmar last year, becoming their first submarine. The deal, reported in local media, would see 3 Kilos supplied as well as to life-extension upgrades on 3 of India's existing Kilo fleet.

Russia was once India's main source of submarines. It lost some ground to Germany in the 1980s when 4 Type-209 *Shishumar Class* submarines were acquired. And the next order went to France who sold India the *Scorpène* design.

The new proposal may take some pressure off this situation, buying time. But the Russian boats themselves are not fresh hulls. The refits, details of which were not reported, would likely keep them viable. But they cannot be thought of as truly modern submarines.

One important capability which the Kilos provide India is their submarine launched cruise missiles. They are equipped with the Russian supplied 3M-14E Club-S missile which is roughly similar to the American Tomahawk. It is shorter ranged however, being limited to under 200 miles.

Russia is still in the picture either way though as it is helping India with its indigenous nuclear submarine program. And the Kilo deal may make the Russian entry for Project-75I look more attractive. So the 2030s could see Russia return to its premier position as India's external submarine partner. Russia has yet to prove modern AIP however.

<https://www.forbes.com/sites/hisutton/2020/04/01/the-indian-navys-potent-conventional-submarine-capability/#280881c4413e>



THE | DIPLOMAT
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Thu, 02 April 2020

India's Navy to begin receiving 4 more P-8I Neptune maritime patrol aircraft in May

Delivery of the four P-8I maritime patrol aircraft is expected to be completed by January 2022

By Franz-Stefan Gady

The Indian Navy is slated to begin inducting four more Boeing P-8I Neptune advanced maritime patrol/anti-submarine warfare (ASW) aircraft this May, according to Navy sources.

This appears to confirm earlier reports this year that the first of the four aircraft will be delivered in the middle of 2020. "Based on the contract, the first of the four aircraft will be delivered in mid-2020 and the remaining three in 2021" a Boeing Spokesperson was quoted as saying by the *Economic Times* on February 17.

“These aircraft will also be in the same configuration as the earlier eight aircraft,” the Navy source was quoted as saying by *The Hindu* on March 18. “Plans are on to install encrypted communication systems on the earlier ones.”

The installation of encrypted communication systems on the U.S.-made aircraft is made possible by the signing of a Communications, Compatibility and Security Agreement (COMCASA) in September 2019.

“COMCASA allows the U.S. military to transfer secure communications and data equipment to India. Prior to the conclusion of the agreement, the United States had to remove advanced communication equipment from all military platforms sold to India such as the P-8I Neptune,” I explained previously. “Additionally, the United States had to place less secure temporary systems on Indian units so the two sides could communicate during bilateral exercises.”

According to the Indian Navy source, the service has already operationalized COMCASA and has exchanged information with the U.S. military. COMCASA reportedly allows P-8I and P-8A Poseidon aircraft, the U.S. Navy variant of the aircraft, to share real-time operational intelligence, including a secure Common Tactical Picture.

The Indian government and Boeing concluded a \$2.1 billion contract for the purchase of eight P-8I aircraft in 2009 making India the first international customer of an export variant of the maritime patrol aircraft. The Indian Ministry of Defense (MoD) placed a \$1.1 billion follow-on order for four additional P-8Is in 2016. The Indian MoD approved the procurement of 10 more P-8Is in June 2019. As I explained previously:

The P-8I is equipped with some of the most modern U.S. anti-submarine warfare (ASW) technology including a Telephonics APS-143 OceanEye aft radar system and a cutting-edge magnetic anomaly detector. The APS-143 is not present on the original P-8A Poseidon in use by the U.S. Navy.

The aircraft is also armed with U.S. weapons systems including Harpoon Block-II missiles, [and] MK-54 lightweight torpedoes [next to others]. The aircraft are all data-linked with Indian submarines in order to have the capability to pass on information about enemy vessels.

The Indian Navy’s P-8I squadron (Indian Naval Air Squadron 312A) operates out of the Indian naval air station Rajali in southern India.

<https://thediplomat.com/2020/04/indias-navy-to-begin-receiving-four-more-p-8i-neptune-maritime-patrol-aircraft-in-may/>

नवभारत टाइम्स

Thu, 02 April 2020

वायुसेना ने देशभर में 25 टन चिकित्सा सामग्री की ढुलाई की

नयी दिल्ली, एक अप्रैल (भाषा): कोरोना वायरस के खिलाफ लड़ाई के लिये देशभर में लागू लॉकडाउन के बीच भारतीय वायुसेना ने बुधवार को कहा कि उसने बीते तीन दिन में दिल्ली, सूरत और चंडीगढ़ से 25 टन आवश्यक चिकित्सा सामग्री मणिपुर, नागालैंड और केन्द्र शासित प्रदेशों जम्मू-कश्मीर तथा लद्दाख पहुंचाई है।

वायुसेना ने एक बयान में कहा कि चिकित्सा सामग्री में पर्सनल प्रोटेक्टिव एक्विपमेंट (पीपीई), हैंड सेनिटाइजर, सर्जिकल ग्लव्स, थर्मल स्कैनर शामिल हैं। बयान में कहा गया है कि वायुसेना अपने विमानों का इस्तेमाल कर चिकित्सा कर्मियों को भी एक स्थान से दूसरे स्थान पर ले जा रही है।

(यह आर्टिकल एजेंसी फीड से ऑटो-अपलोड हुआ है। इसे नवभारतटाइम्स.कॉम की टीम ने एडिट नहीं किया है।)

<https://navbharattimes.indiatimes.com/india/air-force-carries-25-tons-of-medical-supplies-across-the-country/articleshow/74934107.cms>

Thu, 02 April 2020

Indian Navy develops low-cost temperature gun, protective gear to help coronavirus fighters

India witnessed a sharp increase in the number of coronavirus disease (COVID-19) cases in the last 24 hours

As the coronavirus disease (COVID-19) pandemic outbreak continues to spread like wildfire across India, the Naval Dockyard in Mumbai has designed and developed its own handheld infrared-based temperature sensor and protective gear to shield professionals from the virus exposure. It is to be noted that the instrument was manufactured at a nominal cost of just under Rs. 1000, through in-house resources. The Indian Navy has informed that the cost is a fraction of the cost of the temperature guns in the market.

The spokesperson of the Indian Navy on Thursday took to Twitter to state that in support of the healthcare workers fighting the COVID-19 outbreak in India, the Indian Navy's Naval Dockyard in Mumbai has risen to the occasion and produced Personal Protective Gear (PPG) to minimise exposure of the aforementioned professionals to the 'hazardous' COVID-19. The spokesperson added that this gear consists of masks, gowns, headcover, and footwear. The gloves in use are disposable latex gloves, it was said.

India witnessed the maximum number of coronavirus COVID-19 cases in the last 24 hours (March 31 midnight to April 1 midnight) with 437 new infections reported from different parts of the country taking the total to 1,965 with 50 deaths, according to the latest government update.

Maharashtra, Tamil Nadu, and Delhi were among the places to report a large number of new cases.

Prime Minister Narendra Modi will also hold a video conference with all chief ministers on Thursday during which issues such as ways to contain the spread of COVID-19, movement of migrants and contact tracing of Tablighi Jamat participants are likely to come up for discussion, sources said.

In light of the heightened concern on the spread of the coronavirus disease (COVID-19) in India, the country has been placed under complete lockdown for 21 days. Authorities have asked citizens to maintain strict social distancing to cut the spread of the virus outbreak.

<https://www.dnaindia.com/india/report-indian-navy-develops-low-cost-temperature-gun-protective-gear-to-help-coronavirus-fighters-2819395>

The Tribune

Thu, 02 April 2020

Navy patrols on, but no foreign port visits

By Ajay Banerjee

New Delhi: Despite the threat of Covid, Indian Navy warships continue to be deployed along key maritime trading routes and strategic locations. So far, none of its personnel on board ships have tested positive while foreign port visits have been barred even to pick supplies.

Safety measures

Any ship returning to port will have 14 days of quarantine for ships sailing out, health of all personnel who are to sail is being monitored at least four to five days prior to sailing.

Cases of Covid positive are being reported in the US Navy and that has led the Indian Navy to issue an advisory. "No such case (of Covid) has been reported so far, in case of anyone showing

symptoms he will be isolated onboard till the ship returns or the personnel will be evacuated,” a functionary said.

The US Navy that has some 60 per cent of its force deployed in the Indo-Pacific — an area defined from the west coast of India to Hawaii, the US island in Pacific Ocean.

British newspaper, The Guardian, reported that US aircraft carrier Theodore Roosevelt was in the Pacific when it reported an unconfirmed number of Covid positive cases. It has since pulled into port in Guam, a US island territory in the western Pacific. Sources said the Indian Navy continues to be deployed in the straits of Hormuz.

<https://www.tribuneindia.com/news/nation/navy-patrols-on-but-no-foreign-port-visits-64284>

THEWEEK

Thu, 02 April 2020

COVID-19: Navy to replenish warships at sea to stop port calls

The move is aimed at preventing possible outbreak of COVID-19 on its ships

By Pradip R Sagar

The Indian Navy has decided to refuel and do the necessary replenishment of its warships at sea, for those that are already deployed in international waters on multiple missions. The move is aimed at preventing possible outbreak of COVID-19 on its ships by minimising port calls at foreign shores, besides ensuring non-stop availability of warships for missions.

According to an Indian Navy official, authorities are taking precautionary measures by restricting port calls at foreign shores and ensuring regular medical monitoring of its sailors onboard. "As an action to combat COVID-19, Navy has called off foreign port visits. And any ship returning to port will have at least 14 days of quarantine (including stay at sea)," said a senior naval official. He added that for warships sailing out, the health of all personnel who are to sail is being monitored at least four to five days prior to sailing.

"While no such case has been reported so far, in case of anyone showing symptoms, he will be isolated onboard till the ship returns or the personnel be evacuated," the official added.

Maintaining that refuelling at sea is a complex task, the Navy official said in order to ensure uninterrupted availability of warships for missions, this is the only viable option, in view of the coronavirus pandemic.

The decision by the naval headquarters gained significance after hundreds of sailors were found COVID-19 infected on US aircraft carrier USS Theodore Roosevelt. The captain of the US aircraft carrier, in a communication to the higher authorities, had described a bleak situation on board as a large number of sailors tested positive for the coronavirus. "We are not at war. Sailors do not need to die. If we do not act now, we are failing to properly take care of our most trusted asset - our sailors," the letter from the captain of the nuclear-powered carrier, with around 4,000 men on board, read.

According to an official, at present, around 10 naval ships are floating in international waters on mission-based deployments, besides an equal number of offshore security and coastal security patrol vessels. More than 3,000 naval personnel are onboard these warships, a naval officer said, adding that the health and safety of onboard personnel are the main cause of concern.

Last week, Indian Navy used its *Shardul*-class amphibious warfare vessels to carry out refuelling of *INS Tarkash*, which has been on mission deployment under Operational Sankalp to monitor the situation in the Gulf of Oman.

In the backdrop of the deteriorating security situation in the Gulf region post attacks on merchant ships in the Gulf of Oman in last year, the Indian Navy had commenced maritime

security operations, code-named ‘Operation Sankalp’, to ensure the safe passage of Indian flag vessels transiting through the Strait of Hormuz.

Two ships of the Navy and one ship of the Coast Guard are off the islands of Mauritius and Seychelles as part of the First Training Squadron. INS Sukanya is patrolling in the Gulf of Aden under anti-piracy mission.

Moreover, warships on the harbour are being manned with a complement crew adequate to meet the shore task. The complete crew will only be called in case the ship is going for sailing, a naval officer added.

The Navy has also set up quarantine facilities in all its three commands with the capacity to accommodate around 1,500 personnel. Ghatkopar in Mumbai is already functional with Indians brought back from Iran.

Teams of Battlefield Nursing Assistants (BFNA), comprising of non-medical personnel, have been readied to assist medical staff.

<https://www.theweek.in/news/india/2020/04/01/covid-19-navy-to-replenish-warships-at-sea-to-stop-port-calls.html>



Thu, 02 April 2020

Fight against COVID-19: All hands-on board! Rajnath Singh urges all organizations to assist civilian authorities

Due to the lockdown situation in Delhi, the Indian Navy air lifted a shipment of 60,000 face masks ordered by Indian Medical Association, Goa to offset the shortfall in the state

By Huma Siddiqui

At a review meeting called by defence minister Rajnath Singh, has asked all the three services and Defence Research and Development Organisation (DRDO), Ordnance Factory Board (OFB) as well as Defence PSUs to double up their efforts to help the civil administration to fight against COVID-19 pandemic. Through video-conference, each service outlines the tasks they have undertaken and the steps to help the civil authorities. Updating the minister of the steps Chief of Defence Staff Gen Bipin Rawat said that around 9000 new hospital beds were available for COVID-19 patients.

The Indian Army has already identified hospitals which will deal just with the COVID-19 patients and around 9000 hospital beds are available. So far almost 1,000 evacuees from various countries have been are quarantined at facilities including — Jaisalmer, Jodhpur, Chennai, Manesar, Hindan and Mumbai. And the quarantine period of the travellers is expected to be over by April 7.

According to the Army Chief General MM Naravane more than 8,500 doctors and support staff are available to extend necessary assistance to civilian administration and he also updated on the army’s plans to give assistance to neighbouring Nepal in the form of medical equipment to be delivered shortly.

Giving an update on what the Navy has been doing, Chief of Naval Staff Admiral Karambir Singh said that “naval ships are on standby and has been extending assistance as required by local civilian administration.”

Due to the lockdown situation in Delhi, the Indian Navy air lifted a shipment of 60,000 face masks ordered by Indian Medical Association, Goa to offset the shortfall in the state.

The Southern Naval Command (SNC) has taken several measures and is prepared and equipped to assist the civil society. According to the Indian Navy around ten teams of Battlefield Nursing

Assistants (BFNA) are on standby. Also, one of its training units at Kochi has been turned into Corona Care Centre (CCC) for 200 Indian citizens who have been airlifted and are being quarantined there.

Said Air Chief Marshal RKS Bhadauria that the Air Force planes conducted several sorties within the country in the last five days to transport approximately 25 tonnes of medical supplies. He said critical operational work is continuing while ensuring all necessary precautions.

The supplies have airlifted nearly 25 Tons of essential medical supplies from Delhi, Surat, Chandigarh to Manipur, Nagaland and the Union Territories of J&K and Ladakh. These include medical supplies like Personal Protective Equipment (PPE), Hand sanitizers, surgical gloves, thermal scanners and medical personnel.

Also, the IAF has been playing a very critical role and has been airlifting of COVID test samples from the Union Territory of Ladakh to Delhi and for this C-17, C-130, An-32. AVRO & Dornier aircraft of IAF are put in service.

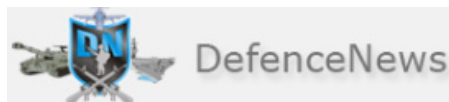
According to Secretary Department of Defence R&D and Chairman DRDO Dr G Satheesh Reddy 50,000 litres of sanitizers made by DRDO labs were supplied to various security entities, including Delhi Police and another one lakh litres were supplied all over the country.

According to the DRDO chief, “A five-layered nanotechnology face mask N99 is being made on a war footing; 10,000 have already been made and the production per day will be raised to 20,000. The premier agency has also supplied 40,000 other face masks to Delhi Police. Besides the masks and the sanitizers, DRDO is also engaged in a minor modification of ventilators which could be modified to hold four patients at the same time.

While the NCC cadets are in the process of being mobilized, the DG AFMS Lt Gen Anup Banerji has said that necessary equipment has been procured and dispatched to various hospitals and the retired health professionals have also been kept in readiness to volunteer their services.

Ordnance Factory Board (OFB) is also engaged in manufacturing hand sanitisers, face masks and Personal Protective Equipment (PPE).

<https://www.financialexpress.com/defence/fight-against-covid-19-all-hands-on-board-rajnath-singh-urges-all-organizations-to-assist-civilian-authorities/1916134/>



Thu, 02 April 2020

With hypersonic missiles, advance radars, SU-30 MKIs to remain the backbone of the Indian Air Force

Hindustan Aeronautics Limited has been producing the SU-30 MKIs which has been the backbone of the Indian Air Force under licence from Russia United Aircraft Corporation. HAL had requested the approval of Indian Defence Ministry for assembling 72 SU-30 MKI jets at its Nashik facility in Maharashtra. The total order was for the project was around \$5 billion dollars and the cost of per aircraft was around \$70 million dollars.

In a statement issued by HAL, the company expressed hope regarding additional orders from the IAF in future. “The order book is likely to attain a healthy position during the next fiscal year 2020-21”. HAL had recorder a whopping turnover of (\$3 billion) Rs 21,000 crores for the previous year 2019-20. The IAF currently has 30 squadrons and needs 42 squadrons i.e around 240 jets to counter a two-pronged threat from the eastern and the western border. Each squadron has around 18-20 fighter jets. Currently, India has 260 SU-30 MKI jets.

Earlier this year as EurAsian Times reported, the Tigersharks squadron of SU-30 MKI equipped with supersonic Brahmos cruise missiles was inducted into the IAF at Thanjavur in Southern India

to guard India's interest in the Indian Ocean Region. The SU-30 MKIs have also been deployed at Halwara, Pune, Jodhpur, Sirsa, Bareilly, Tezpur and Chabua to counter threats from Pakistan and China.

The SU-30 MKI performs multiple roles from strategic bombing to strike fighting and is an all-weather aircraft that can strike locations on land and sea with pinpoint accuracy in day and night. The Indian Government is planning to equip the fighter with Irbis-E Stealth Hunter Radar to target stealth fighter jets.

Multiple fighters equipped with Irbis-E radars will share data from their sensors and have a very high degree of situational awareness allowing them to destroy stealth fighters from a range of 58 km to as far as 90 km. The radar will be more resistant to jamming by its enemies.

Also in the plan is the decision to integrate the jets with Saturn AL-31FS engine which is more powerful than the current AL-31FP and has a longer life span will increase the jets endurance and also make it more survivable and better suited to carry heavy weapons.

There are also plans to integrate the fighter jets with R-37M air to air missiles which have a greater range than their R-77 and R-27 variants and will give IAF superiority over Pakistan and China. With Irbis-Radar systems, IAF can better use the R-37 munition which is a hypersonic missile with a formidable speed of Mach 6 and a range of 400 km.

It also makes these missiles far more effective against Air Borne Early Warning And Control System (AWACS) radar systems. Another planned integration is the deployment of K-77 air-to-air missiles with a short range of 200 km but with missile radar capable of detecting enemy fighters in an unmatched 360-degree arc. India is also in talks with Russia to develop a more advanced version of BrahMos missiles which is likely to have a speed more than Mach 5 and even higher manoeuvrability.

The SU-30 MKI is expected to be the backbone of the IAF with all the planned improvements in the foreseeable future with its current fleet of 260 jets and another 240 aircraft in the offering. Also once the French Dassault's Rafale fighters arrive and start operating alongside SU-30MKIs, it will become a deadly combination for India's enemies and certain to make Indian skies safer.

<https://www.defencenews.in/article/With-Hypersonic-Missiles,-Advance-Radars,-SU-30-MKIs-To-Remain-The-Backbone-Of-The-Indian-Air-Force-810023>



Thu, 02 April 2020

The knights on white horse

The Shwet Ashw team of the Corps of Military Police set the benchmark for motorcycle display riding teams even as it continues to break new ground

Of all the motorcycle display teams supported of the Indian Army and central paramilitary forces, the Shwet Ashw (White Horse) team of the Corps of Military Police based out of the CMP Centre and School in Bengaluru carries the most enduring legacy.

When India was still taking small steps on the road to freedom, the country's oldest motorcycle display team was raised at the CMP Centre and School in 1952 when it was still based in Faizabad in Uttar Pradesh. It was christened as Shwet Ashw by the then Chief of the Army Staff, Gen. AS Vaidya. According to various historical records, the team was raised to showcase the role of the Military Police's motorcycle outriders, who lead convoys of high dignitaries and state guests.

From its modest start, by 1977 Shwet Ashw was crisscrossing the span of India out its permanent base in Bangalore, putting up shows of its daredevilry. But it was their display at the opening ceremony of the 9th Asian Games in Delhi in 1982 that put them in the international spotlight. Soon enough, Shwet Ashw was much in demand for their breathtaking displays at high-profile events like the 8th Asian Track and Field Championship and Miss World Beauty Contest in Bangalore in 1992.

With the passage of time, the team's fame spread far and wide, including invitations to perform at the Centenary Celebrations of Mongolia and National Day of Seychelles. "It was an honour to represent the corps and India at such prestigious events...the audience was absolutely spellbound by our show. People would meet us on the streets to congratulate us and click pictures...we were treated like heroes," recalls Subedar NK Tiwari, captain of the team.

The Shwet Ashw team comprises one officer who is in charge of the team, two Junior Commissioned Officers and 35 Other Rank personnel. It is led by Lt. Col. KC Monnappa, while Subedar NK Tiwari, a veteran of 23 years is the captain of the team.



In fact, the success of Shwet Ashw over the years has inspired other units of the Indian Army like to the Army Service Corps and Signals to raise their own team, besides inspiring paramilitary forces like the BSF and ITBP to launch their versions of motorcycle display outfits. "We take a lot of pride in saying that Shwet Ashw was the trendsetter. Years of experience has enabled us to fine-tune the dynamics of the team to such an extent that it works almost in the auto-pilot mode. Every member of the team is aware of their roles and responsibilities and they work in close coordination," points of Lt. Col. KC Monnappa, Officer-In-Charge (OIC) of the team.

Shwet Ashw is, probably, the busiest motorcycle display team. Apart from being a regular at the Army Day on January 15, it puts up 13 to 14 shows every year across the country. Of the many achievements of the CMP team over the years, the three Guinness World Records remain as their showpiece badges of honour. On September 22, 1995, they set a record of carrying 133 men on 11 motorcycles over a distance of 315 metres. Shwet Ashw broke its own record on October 15, 1999, by hauling 151 men astride 11 motorcycles over a distance of 215 metres. Then on October 30, 2010, the daredevils of the CMP Centre & School once again made headlines by carrying 40 men on a single 500 Royal Enfield Motorcycle, bettering the number set by the riders of the Brazilian Army. This world record stood for seven years before it was bettered by another Bengaluru-based team, ASC Tornadoes, in 2017. Unfortunately, the Guinness World Records have placed a moratorium on such record attempts for an indefinite period. It has left riders like Havaldar Sishpal, who is keen to break the ladder climbing of a moving motorcycle record set by the Border Security Force, disappointed. "We have written to the Guinness World Records a number of times expressing our desire to set a new benchmark, but they have not responded to our request. I am ready to set a new world record with just three days of preparation," says Sishpal.

Even as the CMP team waits for the moratorium to be lifted, they sweat it out every day, to keep their riding skills sharp and their Royal Enfield motorcycles in top condition.

<https://www.outlookindia.com/website/story/outlook-spotlight-the-knights-on-white-horse/349848>



Thu, 02 April 2020

Coronavirus Pandemic: Researchers race to develop effective vaccine against Covid-19

As the global cases of coronavirus infection keep increasing, there is a growing impatience for a vaccine that can prevent infection completely. Several research organizations have already begun work and are looking at starting clinical trials

New Delhi: As the global cases of coronavirus infection keep increasing and countries such as Italy, Spain, and the United States have surpassed the number of cases in China and are enforcing stricter regulations to stop the spread of the infection there is a growing impatience for a vaccine that can prevent infection completely. Several research organizations have already begun work and are looking at starting clinical trials.

Vaccines help the body acquire immunity against infectious diseases by exposing it to an agent that is like the disease-causing micro-organism. This helps the body learn to recognize the pathogen as a threat and remember the response used to fight the organism in the future. Despite a small but rapidly growing movement of anti-vaxxers (people against vaccination) who feel that vaccines are responsible for disorders such as autism, vaccination still remains one of the most effective, cheap and safe methods of providing the body with lifelong immunity.

For the novel coronavirus, Chinese institutes are working round the clock to develop a vaccine that is an effective treatment. After approval from authorities, the first stage of a clinical trial of the vaccine was started on March 16 in Wuhan, the city which the epicenter of the current pandemic. If the ongoing trial proves to be successful, then additional trials in other countries may be conducted.

Researchers from the Jenner Institute at Oxford University are developing a vaccine based on an adenovirus vaccine vector and the SARS-CoV-2 spike protein. The adenovirus is a different virus that causes common cold-like symptoms. Research is now entering stage 1 of clinical trials and the institute is already looking for healthy volunteers between ages 18-55 for testing. The Jenner Institute has also been working on a vaccine against another coronavirus, Middle East Respiratory Syndrome (MERS). US-based pharmaceutical company Moderna Therapeutics has also developed a vaccine based on RNA technology is currently conducting trials. The firm Johnson & Johnson also announced that it will start human trials by September this year.

Researchers are optimistic about developing an effective vaccine as the mutation rate of novel coronavirus seems to be slower than other viruses such as HIV. This means that any vaccine developed for it will be durable.

The World Health Organization (WHO) released a list of 44 vaccine candidates in clinical evaluation globally as of March 20. Of this, only two vaccine candidates are in Phase 1 of trials, while others are in pre-clinical stages.

In India, Ahmedabad based Zydus Cadila Healthcare and Pune-based Serum Institute of India are working on a vaccine for COVID-19.

Experts feel that the development of the vaccine will take more time than what research organizations are claiming. Considering the scale of the pandemic it is necessary that once the vaccine is in the market it is not retracted later, for example, the vaccine developed by GlaxoSmithKline Plc (earlier SmithKline Beecham) for Lyme disease had to be pulled out of markets after links to arthritis emerged. For now, the best defense against the infection remains adequate precautionary methods such as washing hands for at least 20 seconds, using a sanitizer with at least 60 percent alcohol, social distancing and following other quarantine measures.

<https://news.abplive.com/health/coronavirus-pandemic-covid-19-vaccine-researchers-race-to-develop-effective-cure-1186505>

New CT scoring criteria for timely diagnosis, treatment of coronavirus disease (COVID-19)

Updated CT scoring criteria that considers lobe involvement, as well as changes in CT findings (i.e., ground-glass opacity, crazy-paving pattern, and consolidation), could quantitatively and accurately evaluate the progression of coronavirus disease (COVID-19) pneumonia, according to a new article

By American Roentgen Ray Society

Updated CT scoring criteria that considers lobe involvement, as well as changes in CT findings, could quantitatively and accurately evaluate the progression of coronavirus disease (COVID-19) pneumonia, according to an open-access article in the *American Journal of Roentgenology* (AJR).

"The earlier that COVID-19 is diagnosed and treated, the shorter the time to disease resolution and the lower the highest and last CT scores are," concluded lead author Guoquan Huang of Wuhu Second People's Hospital in China.

Assigning CT scores to 25 patients according to CT findings and lung involvement, Huang and colleagues recorded the time from symptom onset to diagnosis and treatment for each patient. Patients with COVID-19 were divided into two groups: (patients for whom this interval was ≤ 3 days) and group 2 (those for whom the interval was > 3 days).

Using a Lorentzian line-shape curve to show the variation tendency during treatment, the fitted tendency curves for group 1 and group 2 were significantly different. Peak points showed that the estimated highest CT score was 10 and 16 for each group, respectively, and the time to disease resolution was 6 and 13 days, respectively.

The Mann-Whitney test showed that the last CT scores were lower for group 1 than for group 2 ($p = 0.025$), although the chi-square test found no difference in age and sex between the groups. The time from symptom onset to diagnosis and treatment had a positive correlation with the time to disease resolution ($r = 0.93$; $p = 0.000$), as well as with the highest CT score ($r = 0.83$; $p = 0.006$).

"Sequential chest CT examinations enable qualitative investigation of alterations in COVID-19 infection during the course of treatment," Huang explained.

Because previously proposed CT scoring criteria regarding lobe involvement gave no consideration to changes in CT features (i.e., the change from observation of GGO to a crazy-paving pattern and then consolidation), Huang et al. suggest that such a rubric is not sufficiently accurate to assess the progression of pneumonia.

"In the present study," wrote Huang, "we propose a new version of CT scoring criteria that considers both lobe involvement and changes in CT findings, in an attempt to more comprehensively evaluate COVID-19 pneumonia on sequential chest CT examinations."

<https://www.sciencedaily.com/releases/2020/04/200401150833.htm>