समाचार पत्रों से चयित अंश
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REPUBLIC

Tue, 31 March 2020

ICMR approves first indigenously developed coronavirus test kit by DRDO

ICMR approved the first indigenously developed Coronavirus test kit by the country's premier research and development organization DRDO

By Gloria Methri

Mumbai: The Indian Council of Medical Research (ICMR) on Monday approved the first indigenously developed Coronavirus test kit by the country's premier research and development organization DRDO. The test will cost Rs 1,200 against the present cost of Rs 4,500 per test. The Defence Research and Development Organization (DRDO) has devised several indigenous equipments including multiple-use ventilators, isolation tubes, bodysuits for doctors and N95 masks to fight COVID-19.

1. Ventilators

Since the COVID-19 virus also affects pulmonary functions, DRDO has also developed a wide range of other products like critical care ventilators. The Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bengaluru, a DRDO lab, has identified a vendor to produce ventilators. The DRDO in a statement said that Innovation is on to create a 'Multi patient-ventilator' wherein several patients can be supported by a single ventilator. This innovation is expected to be available within a week. Approximately 5,000 ventilators will be produced in the first month and 10,000 subsequently. Each ventilator unit will cost around Rs 4 lakh.

2. Body Suits

To fight the deadly coronavirus infection and to protect the medical staff from falling prey to the disease, DRDO developed a special bodysuit which can protect doctors and other health workers attending on Coronavirus patients. The suit which comes with a washable quality can be used to shield doctors, medical staff, sanitation workers and others. The qualities of the suit which has passed the ASTM International standards. The suit is widely tested by DRDO and other agencies and found appropriate for the cause.

The cost for each suit will be Rs 7,000. Frontier Protective Wear Pvt Ltd, Kolkata and Medikit Pvt Ltd, Mumbai are producing 10,000 suits per day. The bodysuit is one of the four instruments developed by the DRDO and is ready to get deployed in 'War against Corona'.

3. N99 Masks

The third instrument developed by DRDO is a five-layer N99 mask with two layers of nanomesh. The capacity is 10,000 masks per day. Material for these are is sourced from Ahmedabad Textile Industry's Research Association, which is already having plenty of government orders for N95 masks. The mask costs Rs 70 per piece.

4. Hand Sanitizers

Apart from the instruments mentioned above, the DRDO has also developed hand sanitizer, a basic necessity against the spread of COVID-19 It has provided about 4,000 liters of hand sanitizer to the Indian Armed forces, Armed Forces Medical Corps, and the Defence Security Corps, 1,500 liters to Ministry of Defence, 300 liters to the Parliament, and 500 liters to various security establishments and high offices to curb the spread of the deadly virus.

https://www.republicworld.com/india-news/general-news/icmr-approves-first-ingenuously-developed-coronavirus-test-kit-by-drdo.html

REPUBLIC

Tue, 31 March 2020

DRDO develops bodysuit for doctors, health workers treating COVID-19 patients

A bodysuit is developed by India's premier research and development organization DRDO which can protect doctors and health staff attending coronavirus patients

By Prachi Arya

Mumbai: To fight the deadly coronavirus infection and to protect the medical staff from falling prey to the disease, a special bodysuit is developed by India's premier research and development organization DRDO which can protect doctors and other health workers attending on COVID-19 patients. Designed by the Defence Research and Development Organisation (DRDO), the suit which comes with a washable quality, can be used to shield doctors, medical staff, sanitation workers and others.

Body-Suit to Avoid Contamination

DRDO released a statement that the bodysuit which was developed earlier for medical and paramedical staff to manage and evacuate the causalities in the event of radiological emergencies has now been converted into a full-body suit to stop contamination. The statement also explained the qualities of the suit which has passed the ASTM International standards. The suit is widely tested by DRDO and other agencies and found appropriate for the cause.

The cost for each suit will be Rs 7,000. Frontier Protective Wear Pvt Ltd, Kolkata and Medikit Pvt Ltd, Mumbai are producing 10,000 suits per day. The bodysuit is one of the four instruments developed by the DRDO and is ready to get deployed in 'War against Corona'.

Other Medical Instruments Prepared by DRDO

Apart from this, since the COVID-19 virus also affects pulmonary functions, DRDO has also developed a wide range of other products like critical care ventilators. The Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bengaluru, a DRDO lab, has identified a vendor to produce ventilators. The DRDO in a statement said that Innovation is on to create a 'Multi patient-ventilator' wherein several patients can be supported by a single ventilator. This innovation is expected to be available within a week. Approximately 5,000 ventilators will be produced in the first month and 10,000 subsequently. Each ventilator unit will cost around Rs 4 lakh.

The third instrument developed by DRDO is a five-layer N99 mask with two layers of nanomesh. The capacity is 10,000 masks per day. Material for these are is sourced from Ahmedabad Textile Industry's Research Association, which is already having plenty of government orders for N95 masks. The mask costs Rs 70 per piece.

Apart from the instruments mentioned above, the DRDO has also developed hand sanitizer, a basic necessity against the spread of COVID-19 It has provided about 4,000 liters of hand sanitizer to the Indian Armed forces, Armed Forces Medical Corps, and the Defence Security Corps, 1,500 liters to Ministry of Defence, 300 liters to the Parliament, and 500 liters to various security establishments and high offices to curb the spread of the deadly virus.

https://www.republicworld.com/india-news/general-news/drdo-develops-bodysuit-to-stop-the-spread-of-coronavirus-contamination.html

The Siasat Daily

Tue, 31 March 2020

DRDO body suit to protect doctors from Coronavirus

Hyderabad: A body suit developed by India's premier research and development organisation DRDO can protect doctors and other health workers attending on Covid-19 patients.

The Defence Research and Development Organisation (DRDO) said the body suit can shield doctors, medical staff, sanitation workers and others.

DRDO Statement

According to a DRDO statement, the body suit developed earlier for medical and paramedical staff to manage and evacuate the causalities in the event of radiological emergencies has now been converted into a full body suit to stop contamination.

"The suit is washable and has passed the ASTM International standards. The suit is widely tested by DRDO and other agencies and found suitable for the cause," it said.

Each suit costs Rs 7,000. Frontier Protective Wear Pvt Ltd, Kolkata and Medikit Pvt Ltd, Mumbai are producing 10,000 suits per day.

The body suit is one of the four instruments developed by the DRDO and ready to be deployed in 'War against Corona'.

Ventilators

Since COVID-19 affects pulmonary functions, it has developed critical care ventilators.

The Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bengaluru, a DRDO lab, has 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.

Around 5,000 ventilators will be produced in the first month and 10,000 subsequently. Each ventilator unit will cost around Rs 4 lakh.

The third instrument developed by DRDO is five layer N99 masksAwith two layers of nano mesh. The production vendors of this advanced mask are Venus Industries Mumbai, and IMTEC Kolkata. The capacity is 10,000 masks per day. Material for these are is sourced from Ahmedabad Textile Industry's Research Association, which is already having plenty of government orders for N95 masks. The mask costs Rs 70 per piece.

Hand Sanitiser

The DRDO has also developed hand sanitiser, a basic instrument against spread of Covid-19 It has provided about 4,000 litres of hand sanitiser to the Indian Armed forces, Armed Forces Medical Corps, and the Defence Security Corps, 1,500 litres to Ministry of Defence, 300 litres to the Parliament, and 500 litres to various security establishments and high offices.

Initially a DRDO lab, Defence Research & Development Establishment (DRDE), Gwalior produced about 20,000 litres. DRDO identified vendor, Gwalior Alco Brew Pvt Ltd, Gwalior for production of sanitisers.A It has a capacity of is 20,000 to 30,000 litres. It is priced at Rs 20 per litre.

https://www.siasat.com/drdo-body-suit-protect-doctors-coronavirus-1866640/

Outlook
THE FULLY LOADED MAGAZINE

Tue, 31 March 2020

DRDO developing ventilator prototype

New Delhi: The Defence Research Development Organisation has developed a prototype ventilator that can be used for multiple patients, its chief Satheesh Reddy said on Monday, amid a spike in the number of coronavirus cases in the country.

He added the model is being improved to include changes suggested by medical researchers and doctors and the new version should be ready by next week.

"We are attempting to take the output of one ventilator. The mechanism makes it usable for multiple patients. We have developed the first model. We have seen it is working. There are some medical researchers, doctors who have advised us to incorporate features. We are working on it," he said.

Reddy said this is a “last-minute resort” if the number of coronavirus patients increases and there is shortage of ventilators.

“By next week it should be ready with the suggestions made by the doctors and medical researchers,” he said.

The DRDO has prepared ventilator designs in the past and passed it on to the industry.

Separately, the Ministry of Health said the DRDO will begin manufacturing 20,000 N-95 masks per day from next week.

The ministry has also asked the Bharat Electronics Ltd, a public-sector undertaking under the Ministry of Defence, to manufacture 30,000 ventilators in next two months.

Among private players, Agva Healthcare, Noida, has been given an order to manufacture 10,000 ventilators within a month. Their supplies are expected to commence in the second week of April, the ministry said in a tweet.

(Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: PTI)

https://www.outlookindia.com/newsscroll/drdo-developing-ventilator-prototype/1785689

Business Standard

Tue, 31 March 2020

One ventilator can be used by multiple COVID-19 patients: DRDO Chairman

New Delhi: Defence Research and Development Organisation (DRDO) Chairman Dr G Satheesh Reddy on Monday said that a mechanism has been developed with which one ventilator can be used by multiple COVID-19 patients.

"We have developed a mechanism with which one ventilator can be used by multiple patients. In case, there is a large number of patients and a shortage of ventilators, then we can use one ventilator for multiple patients," said Reddy.

Reddy said the ventilator has been tested in few hospitals and it is working fine.

"That ventilator has been tested in a couple of hospitals and a couple of doctors, and it is working. Medical experts have given more suggestions to us. Probably in the next couple of days, we will be ready with the final product with new features added to it," added the DRDO chairman.

(This story has not been edited by Business Standard staff and is auto-generated from a syndicated feed.)

https://www.business-standard.com/article/news-ani/one-ventilator-can-be-used-by-multiple-covid-19-patients-drdo-chairman-120033001865_1.html

Tue, 31 March 2020

DRDO to develop ‘multi-patient ventilators’ for critical COVID-19 patients

The multi-patient ventilators will help support several patients through a single unit

By Sangeeta Nair

The Defence Research and Development Organisation (DRDO) is trying to develop 'multi-patient ventilators' to support critical COVID-19 patients.

The multi-patient ventilators will help support several patients through a single unit. The DRDO is developing the advanced ventilators to meet the demand in case the coronavirus outbreak goes out of control.

The first lot of the multi-patient ventilators are expected to be ready within a week.

Multi-Patient Ventilators: Key Highlights

The DRDO aims to produce around 5000 ventilators in the first months and 10,000 subsequently. Each of the critical care ventilators is expected to cost around Rs four lakh.

- The organisation has found some local alternatives to the supply of critical components.
- Around nine companies have been identified for design transfer and to produce the components of the ventilator. Anand Mahindra has been selected for the fabrication of components.
- As per reports, the government has reached out to five automobile companies- Honda Cars India, Maruti Suzuki India, Hyundai Motor India, Mahindra and Mahindra and Tata Motors to explore the possibility of making ventilators at their plants.
- The Defence Research and Development Organisation is also developing personal protection equipment including five-layered N-99 face masks for the healthcare personnel of the country.
- The DRDO has offered the technology to the industry to produce the face masks on a large scale. The DRDO has also produced surgical face masks and distributed them to the Delhi Police.
- The DRDO is also producing sanitizing vans in large numbers to supply to major cities and towns to sanitize people who enter the van.

Ventilators in India

- India has a total of about 40,000 ventilators at present including about 8,500 in public hospitals.
- Kerala, which has the highest number of positive coronavirus cases has around 5000 ventilators, Mumbai has about 1,000, Tamil Nadu has around 1,500 and Madhya Pradesh has about 1,800 ventilator units.
- The number of ventilators in some of the eastern states is less than 10.

Background

The Health Ministry has asked the public sector unit to make about 10,000 ventilators. Bharat Electronics Limited (BEL), a PSU under the Ministry of Defence, is expected to supply about 30,000 ventilators by June 2020.

The initiative to invite corporates to make multi-patient ventilators is also being tried out by the United States, which currently has the maximum COVID-19 patients in the world.

https://www.jagranjosh.com/current-affairs/drdo-to-develop-multi-patient-ventilators-for-critical-covid-19-patients-1585563480-1

Tue, 31 March 2020

कोरोना से जंग में भारत को बड़ी कामयाबी, मल्टीपेशेंट वेंटिलेटर का टेस्ट सफल

भारत में कोरोना वायरस तेजी से फैलने के बीच मल्टीपेशेंट वेंटिलेटर के आ जाने से मरीजों के इलाज में राहत मिलेगी

मंजीत सिंह नेगी

- ***अगले महीने ऐसे 5,000 वेंटिलेटर बनाए जाएंगेः डीआरडीओ***
- ***देश में 30 से ज्यादा लोगों की कोरोना से हो चुकी है मौत***

कोरोना वायरस पूरी दुनिया में कहर बरपा रहा है और इससे निपटने के लिए दुनियाभर की सरकारें लगी हुई हैं. इस बीच इस जंग में भारत को बड़ी कामयाबी मिली है। भारत ने ऐसे वेंटिलेटर का सफल परीक्षण किया है जिसे कई मरीजों के लिए इस्तेमाल किया जा सकता है।

डीआरडीओ के चेयरमैन सतीश रेड्डी ने आजतक के साथ खास इंटरव्यू में कहा कि वेंटिलेटर की कमी की स्थिति में इन वेंटिलेटर्स का इस्तेमाल कई मरीजों के लिए किया जा सकता है।

सार्वजनिक उपक्रम भारत इलेक्ट्रॉनिक्स लिमिटेड (BEL) अगले महीने के अंत तक ऐसे 5,000 वेंटिलेटर्स का निर्माण कर लेगा।

डीआरडीओ के चेयरमैन डॉक्टर सतीश रेड्डी ने कहा कि इन वेंटिलेटर का कई अस्पतालों और कई डॉक्टरों के समूहों की ओर से परीक्षण किया गया है और यह सही ढंग से काम कर रहा है. मेडिकल एक्सपर्ट्स ने हमें अधिक सुझाव दिए थे। बहुत संभव है कि अगले कुछ दिनों में हम नई विशेषताओं के साथ नए उत्पाद बनाने शुरू कर देंगे।

इंडिया टुडे का खुलासा

इस बीच देश में कोरोना वायरस से जुड़े जैसे-जैसे मामले बढ़ रहे हैं वैसे ही वेंटिलेटर्स की जमाखोरी और अधिक कीमत ऐंठने का गंदा खेल भी शुरू हो गया है। इंडिया टुडे इंवेस्टिगेशन टीम ने अपनी जांच में इस खौफनाक हकीकत का खुलासा भी किया है। वेंटिलेटर फेफड़ों के नाकाम रहने पर ऑक्सीजन को मरीज के शरीर में पहुंचाता है। Covid19 के गंभीर मरीजों को ज़िंदा रहने के लिए इसकी ज़रूरत पड़ सकती है।

भारत में कोरोना वायरस तेजी से फैलता जा रहा है और अब तक 1,299 से ज्यादा केस सामने आ चुके हैं. देशभर में 1262 केस सामने आ चुके हैं और अब तक 36 लोगों की मौत हो चुकी है।

https://aajtak.intoday.in/story/corona-virus-drdo-chairman-satheesh-reddy-india-successfully-tests-multipatient-ventilator-tackling-challenges-1-1176206.html

Tue, 31 March 2020

कोरोनावायरस से मुकाबले के लिए केंद्र सरकार की तैयारियां तेज, 2 महीने में बनाए जाएंगे 30,000 वेंटिलेटर, DRDO हर रोज तैयार करेगा 20,000 मास्क

कोरोनावायरस: रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) अगले हफ्ते से हर दिन 20 हजार N99 मास्क बनाएगा. अभी देशभर के अस्पतालों में 11 लाख 95 हजार N95 मॉस्क स्टॉक में है।

परिमल कुमार

खास बातें

- ***कोरोनावायरस से जंग के लिए केंद्र सरकार ने की तैयारियां तेज***
- ***2 महीने में बनाए जाएंगे 30,000 वेंटिलेटर***
- ***डीआरडीओ हर रोज तैयार करेगा 20,000 मास्क***

नई दिल्ली: कोरोनावायरस के खतरे को देखते हुए ऑटोमोबाइल मैन्युफैक्चरर्स (वाहन विनिर्माताओं) को वेन्टीलेटर्स तैयार करने को कहा गया। स्वास्थ्य मंत्रालय के मुताबिक, भारत इलेक्ट्रॉनिक लिमिटेड (BEL) को अगले दो महीनों में लोकल मैन्युफैक्चरर्स (स्थानीय विनिर्माताओं) के साथ मिलकर 30 हजार वेंटीलेटर बनाने के लिए कहा गया है। मौजूदा समय में देश के अलग-अलग अस्पतालों में 14 हजार से ज्यादा वेन्टीलेटर्स कोरोनावायरस के मरीजों के लिए उपलब्ध हैं। नोएडा के Agva healthcare को एक महीने में 10 हजार वेंटिलेटर बनाने हैं। अप्रैल के दुसरे हफ्ते से इनके वेन्टीलेटर्स की सप्लाई शुरू हो जाएगी।

जानकारी के मुताबिक, रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) अगले हफ्ते से हर दिन 20 हजार N99 मास्क बनाएगा। अभी देशभर के अस्पतालों में 11 लाख 95 हजार N95 मॉस्क स्टॉक में है। दो घरेलू मैन्युफैक्चरर्स हर दिन 50 हजार N95 मास्क बना रहे हैं अगले हफ्ते तक ये हर दिन एक लाख बनाये जाएंगे। रेड क्रॉस ने आज 10 हजार पीपीई यानी पर्सनल प्रोटेक्टिव इक्विपमेंट डोनेट किया है। 20 लाख पीपीई के लिए साउथ कोरिया की एक फर्म को ऑर्डर दिया गया है। ये अगले दस दिन में सप्लाई शुरू करेगी और अगले हफ्ते ये फर्म हर दिन एक लाख पीपीई बनाएगी।

वहीं, 10 लाख PPE KIT के लिए सिंगापुर की एक फर्म को ऑर्डर दिया गया है। अभी फ़िलहाल देशभर के अलग अलग अस्पतालों में 3 लाख 34 हजार PPE हैं। 4 अप्रैल तक 3 लाख और PPE उपलब्ध होंगे। 12 अलग-अलग घरेलू कम्पनियों को 26 लाख PPE का आर्डर दिया जा चुका है। फिलहाल वो हर दिन 6 से 7 हजार बना रहे हैं जो 15 अप्रैल तक हर दिन 15 हजार हो जाएगा।

स्वास्थ्य मंत्रालय के आंकड़ों के मुताबिक, देश में अब तक कोरोनावायरस के एक हजार से ज्यादा मामले सामने आ चुके हैं। अब तक कोरोना संक्रमण के 1071 मामले सामने आए हैं। इस बीमारी से अब तक 29 लोगों की मौत हो चुकी है।. हालांकि, थोड़ी राहत वाली बात यह है कि 100 कोरोना संक्रमित मरीज अब तक ठीक भी हो चुके हैं।

https://khabar.ndtv.com/news/india/health-ministry-on-coronavirus-30-000-ventilators-to-be-made-in-2-months-drdo-will-make-20-000-masks-2202949

ZEEBUSINESS हिंदी

Tue, 31 March 2020

कोरोना से लड़ाई के लिए डीआरडीओ बनाएगा N99 मास्क, ऑटोमोबाइल कंपनियां बना रही हैं वेंटिलेटर

नई दिल्ली: देश की सेनाओं को युद्ध के लिए अचूक हथियार उपलब्ध कराने वाले डीआरडीओ (DRDO) ने कोरोना वायरस (Coronavirus) के खिलाफ लड़ाई में भी महत्वपूर्ण भूमिका निभाने का ऐलान किया है। स्वास्थ्य मंत्रालय (Ministry of Health) की ओर से दी गई जानकारी के मुताबिक डीआरडीओ अगले सप्ताह से N99 मास्क का प्रोडक्शन शुरू कर देगा। ये खास तरह के मास्क होते हैं इनका इस्तेमाल कोरोना का इलाज कर रहे मेडिकल स्टॉफ द्वारा किया जा रहा है।

बड़े पैमाने पर मास्क का किया जा रहा है प्रोडक्शन

केंद्रीय स्वास्थ्य मंत्रालय की ओर से दी गई जानकारी के मुताबिक देश के अस्पतालों में 11.95 लाख N95 masks स्टॉक में हैं। इसके अलावा पिछले दो दिनों के दौरान 5 लाख मास्क बांटे गए हैं। सोमवार को भी लगभग 1.40 लाख मास्क बांटे गए हैं। 2 अन्य निर्माता भी हर दिन लगभग 50,000 N95masks का उत्पादन कर रहे हैं. सरकार ने एक सप्ताह के अंदर हर दिन 1 लाख मास्क के उत्पादन का लक्ष्य रखा गया है।

डॉक्टरों के काम आने वाले सूट का किया गया है इंतजाम

देशभर के अस्पतालों में डॉक्टरों और अन्य मेडिकल स्टॉफ के लिए कोरोना के इलाज में काम आने वाले 3.34 लाख कवर सूट (PPE) उपलब्ध कराए गए हैं। इसके अलावा विश्वभर से दिए गए डोनेशन के तहत 3 लाख कवरसूट 4 अप्रैल तक अस्पतालों को दे दिए जाएंगे।

वेंटिलेटर्स बनाने के की गई ये प्लानिंग

कोरोना वायरस के इलाज के लिए हालत गंभीर होने पर वेंटिलेटर्स की जरूरत पड़ती है ***डीआरडीओ*** इसको ध्यान में रखते हुए सरकार बड़े पैमाने पर वेंटिलेटर्स बनवाने का प्रयास कर रही है। स्थानीय निर्माताओं के सहयोग से भारत इलेक्ट्रॉनिक्स लिमिटेड BEL को अगले दो महीनों में 30,000 ventilators बनाने के लिए कहा गया है। ऑटोमोबाइल निर्माताओं से भी ventilators बनाने के लिए कहा गया है। कई ऑटोमोबाइल कंपनियों ने जल्द ही वेंटिलेटर उपलब्ध कराने की बात कही है।

https://www.zeebiz.com/hindi/india/n99-face-masks-to-be-manufactured-by-drdocoronaviruscovid19-23655

ఈనాడు

Tue, 31 March 2020

Indian Ventilators

భారత వెంటిలేటర్లు

- దేశీయ తయారీకి వాహన సంస్థలు సై
- ఖరీదు కూడా బాగా తగ్గే అవకాశం
- డీఆర్‌డీఓ, భారత్ ఎలక్ట్రానిక్స్ సహకారం

ఈనాడు వాణిజ్య విభాగం

దేశీయంగా వెంటిలేటర్లు.. 50,000లోపు
జులైకు అవసరం .. 10 - 12 లక్షలు

వ్యాధిగ్రస్తులు, ప్రమాద బాధితులు, శస్త్రచికిత్స జరుగుతున్న పుడు ఊపిరి పీల్చుకోవడం వీలుకాని పరిస్థితుల్లో కృత్రిమ శ్వాసకు వీలు కల్పించే పరికరమే వెంటిలేటర్. దేశీయంగా ప్రభుత్వ/ప్రైవేటు ఆధునిక/పెద్ద ఆసుపత్రుల్లోని అత్యవసర చికిత్సా గదు (ఇంటెన్సివ్‌కేర్ యూనిట్ల)ల్లో అందుబాటులో ఉన్న వెంటిలేటర్ల సంఖ్య 50,000 లోపే ఉంటుందని నిపుణులు పేర్కొంటున్నారు. వీటిలోనూ కరోనా వైరస్ బాధితుల కోసం 14,000 కేటాయించారు. బాధితుల సంఖ్య పెరుగుతోందని, జులై నాటికి ఈ సంఖ్య భారీగానే పెరిగే అవకాశం ఉందన్న అంచనాలు వ్యక్తమవుతున్నాయి. అప్పటికి 10-12 లక్షల వరకు వెంటిలేటర్ల అవసరమని ప్రఖ్యాత విశ్వ విద్యాలయాల అధ్యయనంలో తేలింది. ప్రస్తుతం విదేశాల నుంచి దిగుమతి చేసుకుంటున్న, విడిభాగాలు దిగుమతి చేసుకుని - ఇక్కడ అసెంబుల్ చేస్తున్న ఒక్కో వెంటిలేటర్ ఖరీదు రూ.5-10 లక్షలు ఉంటుండగా, ఇంత భారీ సంఖ్యలో సమకూర్చుకోవడం సాధ్యమేనా అన్న ప్రశ్న తలెత్తుతోంది. ప్రపంచ దేశాలన్నింటికీ ఇవి అవసరం అవుతున్నందున, మనకు సరఫరా చేయడం అసాధ్యమే అని భావిస్తున్నారు. ఈ నేపథ్యంలోనే దేశీయంగా తక్కువ ఖర్చుతో వీటి డిజైన్ బాధ్యతను డీఆర్‌డీఓ వంటి సంస్థలు స్వీకరించగా, మహీంద్రా అండ్ మహీంద్రా (ఎం అండ్‌ఎం), మారుతీ సుజుకీ వంటి వాహన తయారీ సంస్థలు వెంటిలేటర్ల తయారీకి ముందుకు రావడం భారతావని 'ఊపిరి' పీల్చుకునేందుకు కలిసొచ్చే అంశం.

ప్రతి 100 మందిలో 10 మందికే అవసరం

కరోనా వైరస్ బారినపడినా, 80 శాతం మంది సాధారణ చికిత్సతో కోలుకుంటారని అంచనా. 10 శాతం మందికి సాధారణ ఆక్సిజన్ సిలెండరు సాయంతో చికిత్స చేయొచ్చని, మరో 10 శాతం మందికి మాత్రం వెంటిలేటర్ల అవసరమవుతాయన్నది అంచనా. శ్వాసకోశ-హృదయ సంబంధిత వ్యాధులతో బాధపడుతూ, కరోనా వైరస్‌కు గురైన వారికి వీటి అవసరం ఎక్కువ ఉంటుంది.

దిగుమతికి ఆంక్షలనే అవకాశంగా..

వెంటిలేటర్ల ఎగుమతి చేయడంపై పలు దేశాలు ఆంక్షలు విధించాయి. 8 రకాల సెన్సర్లు, రిసెస్టర్లు, కెపాసిటర్లు, డయోడ్ల వంటి విడిభాగాలు చైనా, ఐరోపా, అమెరికా, జపాన్ వంటి దేశాల నుంచి దిగుమతి చేసుకుంటున్నారు. అందువల్ల భారీస్థాయిలో ఉత్పత్తి పెంచలేమని దేశీయంగా వీటిని అసెంబుల్ చేస్తున్న సంస్థలు చేతులెత్తేశాయి.

- ఒకేసారి అనేకమందికి సేవలందించగలిగే వెంటిలేటర్‌ను భారత రక్షణ పరిశోధనా సంస్థ (డీఆర్‌డీఓ) డిజైన్ చేసింది. మొదటి నెలలో 5,000, రెండో నెలలో 10,000 తయారు చేయగలమని తెలిపింది. ఈ డిజైన్‌ను ఎం అండ్ ఎం సహా 9 కంపెనీలకు అప్పగించి, మరింత భారీ సంఖ్యలో తయారు చేసేందుకు కృషిచేస్తోంది.
- కరోనా వైరస్ చికిత్సకు సరిపడా ఆటోమేటెడ్ బ్యాగ్‌వాల్వ్ మాస్క్ వెంటిలేటర్‌ను రూ.7500కే తయారు చేసేందుకు సిద్ధమవుతున్నామని, ప్రోటో టైప్ సాక్ష్యంగా మహీంద్రా అండ్ మహీంద్రా గ్రూప్ ఛైర్మన్ ఆనంద్ మహీంద్రా ప్రకటించారు.

- మైసూర్ కేంద్రంగా పనిచేసే స్కూన్‌రాయ్ టెక్నాలజీస్ 2 నెలల్లో లక్ష వెంటిలేటర్లు తయారు చేస్తామని తెలిపింది.
- 1-2 నెలల్లో 30,000 వెంటిలేటర్లు సరఫరా చేయాలని భారత్ ఎలక్ట్రానిక్స్ లిమిటెడ్‌ను ఆరోగ్య మంత్రిత్వ శాఖ కోరిందని సమాచారం.

నెలకు 10,000 తయారీ: మారుతీ సుజుకీ

ప్రభుత్వ విజ్ఞప్తి మేరకు వెంటిలేటర్లు, మాస్కులు, ఇతర వైద్య పరికరాల తయారీకి చర్యలు తీసుకుంటున్నట్లు మారుతీ సుజుకీ ఇండియా తెలిపింది. వెంటిలేటర్ల తయారీకి లైసెన్స్ కలిగిన అగ్వా హెల్త్‌కేర్‌తో ఒప్పందం చేసుకున్నట్లు వెల్లడించింది. నెలకు 10,000 వెంటిలేటర్లు తయారీ లక్ష్యమని వెల్లడించింది. సాంకేతికత, విక్రయాలు, నిర్వహణ బాధ్యత అగ్వా దే. విడిభాగాలను తమ భాగస్వాములతో మారుతీ సుజుకీ చేయిస్తుంది. ఆర్థిక సాయమూ చేస్తుంది. 3 అంచెల మాస్కులను కూడా భాగస్వామ్య సంస్థ కృష్ణ మారుతీలో తయారుచేయించి, 20 లక్షల మేర ప్రభుత్వాలకు అందచేస్తామని పేర్కొంది.

నమస్తే తెలంగాణ

Tue, 31 March 2020

DRDO develops ‘multi-patient ventilators’ for critical COVID-19 patients

ఒకే వెంటిలెటర్‌ను ఎక్కువ మంది రోగులకు వినియోగించే విధానాన్ని మేం అభివృద్ధి చేశాం. దేశంలో రోగులు పెరిగి, వెంటిలెటర్లకు కొరత ఏర్పడితే మనం ఈ విధానాన్ని అవలంబించవచ్చు. ఈ తరహా వెంటిలెటర్‌ను పలు దవాఖానల్లో పరీక్షించాం. ఇది పనిచేస్తున్నది. వైద్య నిపుణులు కొన్ని సలహాలు అందించారు. కొత్త ఫీచర్లను జోడించి త్వరలోనే తుదిరూపు తీసుకొస్తాం.

–డాక్టర్ సతీశ్‌రెడ్డి,
డీఆర్డీవో చైర్మన్

Business Standard

Tue, 31 March 2020

Centre asks auto firms to make ventilators; DRDO to make 20,000 masks a day

The ministry informed that over 14,000 existing ventilators are earmarked for COVID-19 patients in various hospitals in the country while there are 1.19 million N-95 masks in stock

The central government has asked automobile manufacturers to use their facilities to produce ventilators to boost the country's capacity of such machines in view of rising COVID-19 cases.

The Health ministry said that the Defence Research and Development Organisation (DRDO) will begin manufacturing 20,000 N-95 masks per day within the next week.

The ministry informed that over 14,000 existing ventilators are earmarked for COVID-19 patients in various hospitals in the country while there are 1.19 million N-95 masks in stock.

Additional 500,000 masks were distributed during the last two days and 140,000 were distributed on Monday.

"Automobile manufacturers have been asked to manufacture ventilators and they are working towards this end," the health ministry said in a tweet.

Besides, the Ministry of health has already asked the Bharat Electronics Limited (BEL), a public sector undertaking under the Ministry of Defence, to manufacture 30,000 ventilators in the next two months in collaboration with local manufacturers, the ministry said.

Agva Healthcare, Noida has also been given an order to manufacture 10,000 ventilators within a month. Their supplies are expected to commence in the 2nd week of April, the ministry said in another tweet.

Two domestic manufacturers are producing 50,000 N-95 masks per day. This is expected to go up to 100,000 per day within next week, the ministry tweeted.

It further said that 10,000 personal protection equipment donated by Red Cross have been received and are being distributed on Monday.

The number of COVID-19 cases climbed to 1071 across the country, while the death toll rose to 29, according to the Union Health Ministry.

https://www.business-standard.com/article/companies/automobile-manufacturers-asked-to-make-ventilators-health-ministry-120033000668_1.html

DECCAN HERALD

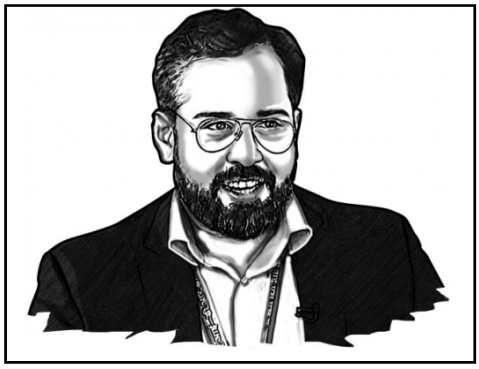
Tue, 31 March 2020

A new defence lab aims to embed AI into the military

By Akhil Kadidal

At 33, Sunny Manchanda is one of the youngest Directors of a Defence Research and Development Organisation (DRDO) lab. Hand-picked by the Defence Minister’s Science Adviser and DRDO top brass, Manchanda heads one of the five newly established DRDO Young Scientists’ Lab (DYSL), which are meant to develop cutting-edge technologies. Operational since mid-April, Manchanda’s lab, for instance, is to develop Artificial Intelligence (AI) and associated technologies. He wants to establish the lab as a “global centre of research” and “build products for the military and those that impact the lives of people in general”, Manchanda tells DH’s Akhil Kadidal

Can you tell us a little bit about your background?



I started out in computer science with undergraduate studies before joining DRDO in October 2009 as a Research Scientist, where I worked on Netra, the Airborne Early Warning and Control System. By 2016, I was involved with managing the flight-testing phase of the programme, when I decided to head back to university. In 2018, I obtained a Master's in Computer Science at IIT Delhi, with a specialty in AI and Data Sciences.

Your specialization is in AI, but what makes it so attractive to you?

I think it has been a long-standing (human) pursuit to understand the nature of our own intelligence. Most of us do not understand how human intelligence works. In aviation, for example, we understand the principles of flying, but the principles of of intelligence are still hidden from us. That is what endeavouring in AI amounts to. It is a study of perhaps ourselves. There is also the great advantage of building technology to make the lives of people better.

Is there any particular area that you and your team is focusing on in AI?

We are working on computer vision, speech, forensics and biometrics. Not only in terms of how to use AI technology for these kinds of areas, we are also looking at dual-use technologies for the defence sector and the civilian market as well.

Stephen Hawking was deeply concerned by AI, to the point that he saw it as a threat to the human race. Considering this, should we be all that proud about endeavouring in AI?

I think these concerns might be a little premature. Essentially, what we do is that we build algorithms for machines to understand and interpret the world. But the concerns for machines to actually come up with strategic thinking and take over humans is science fiction. I don't think that will be a concern for the next at least 5-10 decades. That's too far to look into the future. But there has to be within the AI research and development community an open and responsible debate and communication about what to use AI for.

What prompted you to join the DRDO?

I had a professor who left a lucrative job in the Bay Area (California) to teach at IIT. He said that one can of course always make a living, even as a fruit seller, but that making a living itself is not the bottom line. I could have contributed to profits at big companies, but my focus was to help with nation-building, making the lives of our soldiers better and making the lives of our people better.

So, you have a lot of freedom to experiment?

The flexibility that we have here is what makes us unique. We have the freedom to choose the kind of problems that we want to tackle. It is a unique place in terms of fulfilling every scientist's aspiration to do good science and to help the country. We are grateful to have been given such an opportunity to serve and to be assured of all the support and resources required.

Are there any AI applications that you can talk about?

We are also interested in developing solutions for internal security. We have a few projects going on, including one intended to enhance video imagery and another to determine deep fakes or doctored videos and audio.

What is at stake?

If we are successful, a lot of our defence technology will have been given a boost even in the international market. Our final objectives are two-fold: make our military strong and help develop technologies of importance to humanity. We would also want to contribute to the global AI research community and publish in the topmost avenues.

https://www.deccanherald.com/national/a-new-defence-lab-aims-to-embed-ai-into-the-military-819482.html

NEWS18

Tue, 31 March 2020

Here's how the new HAL-made FOC-standard Tejas is better than the current IAF's IOC fighter jet

The FOC Tejas is said to be more advanced and was developed with improvements suggested by IAF after inducting IOC Tejas LCA

By Arjit Garg

Hindustan Aeronautics Limited (HAL) recently conducted maiden test flight of its Light Combat Aircraft Tejas in Final Operational Clearance-standard. The jet bearing number SP-21 was piloted by Air Cmde. K A Muthana (Retd), Chief Test Flying (Fixed Wing) of HAL. The aircraft took-off from HAL Airport and was airborne for 40 minutes.

"HAL achieved the momentous feat within a record time of 12 months after release of Drawing Applicability List (DAL) and SOP (Standard Operating Procedure) by CEMILAC", the statement said.

The FOC Tejas is said to be more advanced and was developed with improvements suggested after inducting LCA IOC in IAF. "It imbibes a lot of manufacturing improvements which were based on the operational feedback of LCA IOC (Initial Operational Clearance) fleet with IAF", HAL said.

IAF will soon induct 16 FOC-Standard Tejas for its 18 Flying Bullets squadron based out of Sulur, where the first Tejas squadron 45 Flying Daggers was established, consisting 16 IOC Tejas.

Once all the 16 FOC Tejas are delivered, HAL will covert the IOC Tejas to Final Operational Clearance-standard and will then move to manufacture the Tejas MkI.

Here's how the FOC Tejas is better than IOC Tejas and what are the changes in the new fighter jet.

Range

The biggest criticism of the LCA Tejas IOC version was its limited range and fuel carrying capacity. The IOC Tejas currently carries two fixed tanks of 1,200 and 800 litre capacity. The FOC-Standard Tejas now gets an additional tank with 725-litre capacity installed in the central line, just at the centre of fuselage.

Mid-Air Refueling

To enhance the range further, the FOC Tejas further gets a mid-air refueling probe for the very first time, which means, it can fly for longer missions without worrying much about the fuel. This however, will increase the radar cross section of the indigenous jet, which otherwise has a small radar signature thanks to its compact design.

Auto Cannon

The FOC Tejas carries a Gsh-23 auto cannon with twin barrel 23 mm gun. The auto cannon now has better software and has been tested on ground. Soon, the cannon will be tested for its air combat capabilities too.

BVR Missiles

The LCA FOC Tejas will also carry the Astra BVR missiles (Beyond Visual Range) in future. Astra is home-made BVR air-to-air missile with 110 km range. Currently Tejas carries Derby BVR sourced from Israel.

Agility

The FOC Tejas will have a better maneuverability and agility that will help Tejas to touch 8G force at lower speed, increasing its flying envelope. Tejas can maneuver from -3G to 8G. To achieve such agility, changes have been made to the mechanical system including the flaps. This will also help Tejas to save itself from incoming missiles by quickly pulling a 8G move without stalling mid-air.

https://www.news18.com/news/auto/heres-how-the-new-hal-made-foc-standard-tejas-is-better-than-the-current-iaf-ioc-fighter-jet-2548651.html

Outlook
THE FULLY LOADED MAGAZINE

Tue, 31 March 2020

Indian Navy manufactures multi-feed oxygen cylinder for Covid-19 patients

New Delhi: To cater to the requirement of oxygen supply for multiple patients during the ongoing COVID-19 pandemic, personnel from Naval Dockyard Visakhapatnam has designed an innovative "portable multi-feed oxygen manifold (MOM)" using a six-way radial header fitted to a single cylinder.

After successful trials, the dockyard has started manufacturing of the oxygen cylinder that can cater to six patients at one time.

This innovation would enable one oxygen cylinder to supply to six patients concurrently, thus enabling critical care management to a larger number of COVID-19 patients with the existing limited resources.

The entire set up was made operational by the manufacturing of a Fine Adjustment Reducer and specific adapters of requisite dimensions for connecting the oxygen cylinder and the portable multi-feed oxygen manifold.

A typical oxygen providing facility at hospitals comprises an oxygen cylinder feeding only one patient through a Ventimask arrangement.

During the ongoing pandemic, ventilator support will be required for about 5-8 per cent of patients with symptoms whereas a large number of patients would require oxygen support.

The existing facilities are not adequate to cater to such large requirements.

"A need was therefore felt to design a suitable portable arrangement that could provide oxygen through masks to a number of needy patients using a single-cylinder during emergencies which is the need of the hour," Navy Spokesperson Commander Vivek Madhwal said.

The preliminary trials of the entire assembly were conducted at the medical inspection room in the Naval Dockyard, Visakhapatnam, which was followed by rapid trials at the Naval Hospital INHS Kalyani wherein the portable multi-feed oxygen manifold was successfully set up within 30 minutes.

After successful trials, the Naval Dockyard has commenced manufacturing of 10 portable multi-feed oxygen manifold with two six-way radial headers catering to 120 patients at makeshift locations.

(Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds.)

https://www.outlookindia.com/newsscroll/indian-navy-manufactures-multifeed-oxygen-cylinder-for-covid19-patients/1785616?scroll

THE | DIPLOMAT
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Tue, 31 March 2020

Indian army prepares to assist in virus response measures

The Indian Army is training to assist in COVID–19 containment efforts, if needed

By Ankit Panda

Amid a nationwide lockdown in response to the coronavirus disease (COVID–19) pandemic, the Indian Army has started training personnel to participate in assisting state authorities in enforcement efforts. India's lockdown, affecting some 1.3 billion people, is the largest national policy response of its type to the ongoing pandemic in the world.

According to the *Economic Times*, the Indian Army has started training troops on how they might collaborate with law enforcement authorities to make sure that lockdown rules are followed. "A major part of the training involves the type of equipment they need to carry, clothing to be worn and precautions to be taken for themselves and in treating and helping" citizens, the *Economic Times* reports.

As the training continues, no Indian states have formally requested the Indian Army's assistance in enforcing a lockdown. The Indian Army has been in contact with the state governments of Maharashtra, Delhi, Uttar Pradesh, Karnataka, Kerala and Rajasthan.

Last Friday, General Manoj Mukund Naravane, the Indian chief of army staff, launched what the Indian Army dubbed Operation Namaste — an effort to bring the country's 1.3 million-strong armed force to assist in pandemic response operations.

"I would request everyone to take care of themselves and their families. Your safety is my first responsibility," the Naravane said. "I want to assure all the soldiers posted on the border that we will take special care of your families. We will achieve success in the 'Operation Namaste'" he added.

Naravane also addressed concerns that COVID-19 could spread within the ranks of the Indian Army. Earlier in March, the Army recorded an initial confirmed case of the disease in a soldier assigned with the Ladakh Scouts. The soldier had family that had traveled recently to Iran, one of the worst-struck countries by the pandemic.

"As the Army Chief, it is my priority to protect my force. We all will have to stay away from this disease. We will be able to serve the nation when we are away from the disease," Naravane said on Friday.

Naravane took up his position as the 28th chief of army staff on December 31, 2019, replacing Gen. Bipin Rawat, who in turn became India's first-ever Chief of defense staff, a newly created position. As of Monday, March 30, India had confirmed more than 1,250 cases of COVID–19 countrywide with more than 30 deaths attributable to the illness. Testing capacity in India remains limited.

Speaking on Monday, Indian Prime Minister Narendra Modi apologized to Indians for the "difficulties" caused by the nationwide lockdown. "I know some of you will be angry with me. But these tough measures were needed to win this battle," Modi said.

https://thediplomat.com/2020/03/indian-army-prepares-to-assist-in-virus-response-measures/

THE ECONOMIC TIMES

Tue, 31 March 2020

Indian Army teams decontaminate command hospital in Kolkata after doctor tests positive for coronavirus

The army doctor, who had travelled to Delhi between March 12 and 17 and participated in professional discussions in the national capital, had tested positive for COVID-19 at the Eastern Command Hospital on March 29

By Shaurya Karanbir Gurung

Kolkata: The army employed three different sanitising teams to decontaminate its command hospital in Kolkata, after a doctor there tested positive for Covid-19 on Sunday. It has also put under quarantine close to 30 doctors and staff who had come in contact with him.

The army is trying to identify all the people who had come in contact with the 52-year-old army doctor in Delhi, where he had travelled to earlier this month, and in Kolkata. They will also be quarantined.

“The sanitisation of the entire Eastern Command Hospital in Kolkata was done on Sunday night,” said an official who didn’t want to be named.

The decontamination was done especially at the hospital’s operation theatre, because the doctor is an anaesthetist, said another official, also speaking on the condition of anonymity.

A command hospital is the most important medical facility of an army command, and all patients of the armed forces who cannot be provided adequate treatment at other military hospitals of that formation are referred there.

The doctor’s condition is stable, said the official. Others on quarantine are housed at a different facility in Kolkata. “These are about 10-15 doctors and an equal number of staff members,” the official said.

Officials said the doctor had travelled to Delhi on March 10 and returned to Kolkata on March 17.

A 47-year-old junior commissioned officer in the army, posted near Dehradun, also tested positive for the disease on Sunday. He had travelled to Delhi from Dehradun by bus on February 25 and thereafter headed to Jhunjhunu, Rajasthan. On March 11, he returned to Delhi and headed to Dehradun the same day.

Army chief General MM Naravane, while launching an initiative termed ‘Operation Namaste’ that involves extending help to the government to tackle the coronavirus outbreak, had last week instructed his men to take all necessary precautions against the pandemic. The army has been issuing advisories with instructions to its personnel on maintaining social distancing and precautions to safeguard themselves.

https://economictimes.indiatimes.com/news/defence/indian-army-teams-decontaminate-command-hospital-in-kolkata-after-doctor-tests-positive-for-coronavirus/articleshow/74891531.cms

THE FINANCIAL EXPRESS

Tue, 31 March 2020

P8I maritime patrol aircraft: A game-changer for Indian Navy

P-8I is able to launch submarine detection sonobuoys, active or passive versions as per the mission requirements

By Milind Kulshreshtha

With the induction of advanced P-8I multi-role maritime ASW aircraft, Indian Navy has come to the forefront of aerial Anti-submarine Warfare (ASW), ensuring that the hostile neighbours reworked their underwater surveillance and intelligence gathering tactics. P-8I aircraft are true C4I (Command, Control, Communication, Computers & Intelligence) airborne platforms and a force multiplier for Indian Navy with its interoperability capabilities. These aircraft are efficient means to track ships and submarines, with an additional capability to hunt and destroy submarines. Since 2009, India has been in the process of inducting P-8I's aircraft from Boeing, USA and more have been re-ordered, with the delivery process occurring sequentially. The aircraft systems have been optimised to work in the Indian tropical climate and multiple Indian manufactured equipment have been installed onboard . P-8I maritime patrol aircraft is considered one of the best in its class with hi-tech gadgetry onboard and exceptional aircraft characteristics. ASW aircraft sometimes need to fly low for long durations for sonobuoy deployment or for Magnetic Anomaly Detector (MAD) operations, with low flying putting extreme stress on the aircraft's airframe.

A submarine detection is a high air power-intensive role involving thousands of flying hours to cover a large area undertaking patrol patterns. With an increase in shipping traffic, the sea has become noisier and this underwater feature makes it easier for submarines to hide.

Indian Navy's ageing Tupolev-142 (TU-142) and Ilyushin-38 (IL-38) and Dornier fleet required a rapid alternative despite the various upgrade of equipment during different Life Extension Programmes. The submarines technology have undergone a quantum advancement over a period, making them more silent (with techniques like Air-independent Propulsion or AIP) and possess long-range torpedoes. Such hostile submarines need to be detected and hunted down before they can cause damage to the Fleet ships. Maritime ASW patrol aircraft like P8I have the weaponry to search, track and sink an enemy submarine during hostilities. P-8I is multi-mission aircraft with roles like surveillance, EW and execute C4I capability through a dedicated tactical data link and inter-operability features.

How P-8I Aircraft do ASW operations?

The P-8Imaritime patrol aircraft uses the highly reliable airframe of Boeing 737 and carries a flight crew of three members along with a complement of Naval Observers. Remarkably, though the aircraft is capable of flying at low altitude for longer durations for carrying out manoeuvres like sonobuoy deployment or MAD searches, but it usually operates at high altitude to achieve successful surveillance due to height advantage which is leveraged by powerful sensors onboard. Aircrafts exploits the thin atmosphere effect at higher altitudes to gain on longer ranges, and with in-air refuelling arrangements, P-8I can remain on its air station duty for prolonged hours. These capabilities make them well suited for operations over IOR oceans and for patrolling India's 7516.6 km coastline and EEZ involving 13 coastal States and Union Territories.

The nose cone radar fitted onboard is a highly specialized electronics which has been designed specifically to handle downward-looking maritime and coastal areas. It can further undertake land-based surveillance also in an equally effective manner. The radar images are of such a high resolution that even a confirmed target detection can take place with a short time. The radar is capable of advance features like SAR (Synthetic Aperture Radar) and ISAR (Inverse Synthetic Aperture Radar)for the operator to select as

per the environmental conditions. Most importantly, using an advance radar signal processing technique, even a periscope can be clearly detected for a submarine cruising underwater near the sea surface.

As a visual aid, the aircraft also carries a retractable electro-optic IR (Infra-Red) for heat signature detection. A state of the art EW suite fitted onboard the aircraft gives an exceptional ability to the crew especially when it comes to detection of any transmission in the electromagnetic domain and its further categorization and classification for identification. EW equipment onboard has been installed so as to provide full three-sixty degree coverage for ESM and other countermeasures like enemy jamming and cyber response.

P-8I is able to launch submarine detection sonobuoys, active or passive versions as per the mission requirements. Active sonobuoys have a trans-receiver system and passive sonobuoys are predominantly use listening hydrophones. Sonobuoys are highly sensitive underwater sensors that are capable of transmitting signals to P-8I aircraft for further signal processing using advanced real-time processors onboard. The aircraft can deploy more than hundred sonobuoys as part of ASW operations.

Fleet Operations

The P-8I ASW aircraft operates along with main Task Force, playing a vital role to safeguard capital ships and an aircraft carrier(s) from any type of submarine attack, whilst the ships are underway. The ASW aircraft form a barrier screen around the fleet task force through surveillance and sonobuoy detectors, this screen radius primarily decided by the hostile submarine's torpedo range. The aim is always to detect an enemy submarine before it can fire a torpedo. After detection and classification of an enemy submarine, P-8I aircraft can attack and annihilate the submarine by launching its onboard torpedoes and depth charges.

(The author is C4I expert. The views expressed are personal.)

https://www.financialexpress.com/defence/p8i-maritime-patrol-aircraft-a-game-changer-for-indian-navy/1913838/