

DRDO develops product to prevent spread of air droplets to doctors from Covid-19 patients

The product has been designed by two DRDO laboratories in Hyderabad and Chandigarh.

The move comes at a time when many doctors are testing positive for the virus

By Amrita Nayak Dutta

New Delhi: With the number of doctors and health workers testing positive for Covid-19 crossing 50 last week, the Defence Research and Development Organisation (DRDO) has come up with a product that will prevent transmission of air droplets from patients to medical staff.

The product, called the ‘Enclosure for Intubation Procedure — Aerosol Containment Box’, has been designed by two DRDO laboratories — the Research Centre Imarat (RCI), Hyderabad, and the Terminal Ballistics Research Laboratory (TBRL), Chandigarh.

While the RCI is a premier laboratory spearheading research and development for diversified defence, the TBRL is involved in the development, production, processing and characterisation of different high explosive compositions, among others, according to the DRDO website.

As of Friday evening, India reported 6,039 active coronavirus cases and 206 deaths.

What the Product is all About

Giving details of the product, a DRDO official told ThePrint it consists of a transparent cube covering the patient’s head upto the chest, and acts as a safety barrier against transmission of air droplets from patients to doctors and health workers.

“The two circular ports allow the health worker’s hands to pass and perform the airway procedures. The acrylic/perspex material used here is 50 per cent lighter thermoplastic compared to glass, making it easy to handle,” the official added.

The official said the product is useful while taking samples from suspected patients, during observation or during treatment to completely avoid droplets and aerosols, which could spread as they cough or sneeze.

The boxes have been designed in two sizes — for both adult and minor patients.

The official quoted above said the use of the enclosure could control the spread of the virus on gowns, gloves, face mask, eye shield, shoes and also on the floor of the hospitals, thereby effectively safeguarding doctors and health workers.

“The RCI has manufactured prototype units at local industry partners at Hyderabad and a demonstration has been carried out by a team of doctors at ESI Medical College, Hyderabad, and the design is validated and accepted. The design of TBRL has been tested and qualified at PGIMER, Chandigarh,” the official said.

The production of the containment box is being carried out at factories in Hyderabad and Chandigarh. Some products are being directly provided to the doctors.



DRDO's other Covid-19 products

Since the outbreak of Covid-19 in the country, the DRDO has developed several products to curb the spread of the virus — from hand sanitisers, sanitising equipment and disinfectants to five-layered N-99 masks, face shields and full-body suits.

An Ahmednagar-based DRDO laboratory has also designed a full-body disinfection chamber, called 'Personnel Sanitisation Enclosure', where a walk-through enclosure has been designed for decontamination of people.

DRDO Chief G. Satheesh Reddy had said the DRDO has also developed multi-patient ventilation kits, which have been successfully tested and would enable the use of a single ventilator for four to eight patients in case of an emergency.

Reddy had said scientists across the country have been asked to develop and share technologies at zero cost with the private sector to mass produce critical items identified by the government.

<https://theprint.in/defence/drdo-develops-product-to-prevent-spread-of-air-droplets-to-doctors-from-covid-19-patients/399484/>



Sat, 11 April 2020

DRDO does it again! Develops aerosol barrier for safety of medical professionals

The Enclosure for Aerosol Containment is useful while taking samples from a suspected patient, during intubation, observation or during treatment to completely avoid droplets and aerosols emanating from them due to cough & sneeze

By Huma Siddiqui

Helping the country in fighting COVID-19, Defence Research and Development Organisation (DRDO) has successfully demonstrated its new product 'Enclosure for Intubation Procedure – Aerosol Containment Box'.

Designed by RCI, Hyderabad & TBRL, Chandigarh, DRDO Laboratories, Acrylic and Perspex materials have been used respectively. There is a transparent cube which covers the patient's head up to the chest and acts as a safety barrier against transmitting droplets from patients while giving treatment.



Importance of Aerosol Containment Box?

There are two circular ports which allow the health worker's hands to pass and perform the airway procedures. The acrylic/perspex material used is 50 per cent lighter thermoplastic compared to glass making it easy to handle.

The Enclosure for Aerosol Containment is useful while taking samples from a suspected patient, during intubation, observation or during treatment to completely avoid droplets and aerosols emanating from them due to cough & sneeze.

So far according to the DRDO two sizes of Aerosol Containment, Boxes are designed and developed for use by adult patients and child patients.

Why is the Enclosure Important?

The use of the enclosure is meant to safeguard against the spread of viral contamination of COVID-19 to reach the gown, gloves, face mask, eye shield, shoes and also on the floor of the hospitals effectively safeguarding health care workers.

RCI, Hyderabad has manufactured prototype units at local industry partners at Hyderabad and a demonstration has been carried out by a team of doctors at ESI Medical College, Hyderabad.

The design is validated and accepted. The design of TBRL has been tested and qualified at PGIMER, Chandigarh.

The production of required quantities of 'Enclosure for Intubation Procedure – Aerosol Containment Box' is being done at industries located in Hyderabad and Chandigarh.

<https://www.financialexpress.com/defence/drdo-does-it-again-develops-aerosol-barrier-for-safety-of-medical-professionals/1924554/>



Sat, 11 April 2020

DRDO develops 'Aerosol Containment Box'- PPE for COVID health workers: Here's what it does

In a bid to provide a major relief to the frontline medical workers fighting Coronavirus, DRDO has successfully demonstrated its new product against COVID-19

By Jay Pandya

Mumbai: In a bid to provide a major relief to the frontline medical workers fighting Coronavirus, DRDO has successfully demonstrated a new product against COVID-19 called 'Enclosure for Intubation Procedure - Aerosol Containment Box'.

DRDO's Research Centre Imarat (RCI) in Hyderabad and Terminal Ballistics Research Laboratory (TBRL) in Chandigarh have designed the product using Acrylic and Perspex materials respectively. It consists of a transparent cube which covers the patient's head up to the chest and acts as a safety barrier against transmitting droplets from patients while giving treatment. The two circular ports allow the health worker's hands to pass and perform the airway procedures.

Two sizes of Aerosol Containment Boxes are designed

The acrylic/perspex material used here is 50% lighter thermoplastic compared to glass making it easy to handle. According to the official press release, the Enclosure for Aerosol Containment is useful while taking samples from a suspected patient, during intubation, observation or during treatment to completely avoid droplets and aerosols emanating from them due to cough and sneeze. Two sizes of Aerosol Containment Boxes are designed and developed by DRDO for use by adult patients and child patients.



The use of the enclosure could safeguard against the spread of viral contamination of COVID-19 to reach on the gown, gloves, face mask, eye shield, shoes and also on the floor of the hospitals effectively safeguarding our health care workers.

RCI, Hyderabad has manufactured prototype units at local industry partners at Hyderabad and a demonstration is carried out by a team of doctors at ESI Medical College, Hyderabad and the design is validated and accepted. The design of TBRL has been tested and qualified at PGIMER, Chandigarh.

The production of required quantities of 'Enclosure for Intubation Procedure - Aerosol Containment Box' is being done at Industries in Hyderabad and Chandigarh.

Meanwhile, with an increase of 547 new COVID-19 cases in the last 12 hours, India's total number of coronavirus positive cases rose to 6,412 on Friday. Out of the total cases, 5,709 are active patients and 504 of them have been cured/discharged and migrated, as per the Ministry of Health and Family Welfare. With 30 new deaths reported in the last 12 hours, the death toll stands at 199.

<https://www.republicworld.com/technology-news/other-tech-news/drdo-develops-aerosol-containment-box-ppe-for-covid-health-warriors.html>

THEWEEK

Sat, 11 April 2020

From Gaganyaan to COVID-19: DFRL provides quick meals for healthcare workers

Over 10,000 ready to eat meals have been supplied to healthcare workers

By Pradip R Sagar

From the Kargil conflict to expeditions to Antarctica and the upcoming Gaganyaan human spaceflight mission, the responsibility of feeding India's heroes under extreme conditions lies with the Mysuru-based Defence Food Research Laboratory (DFRL).

With the whole country engaged in fighting COVID-19, DFRL has now prepared and distributed over 10,000 Ready-to-Eat (RTE) meals for healthcare professionals in Kochi and Mysuru. The meals included tomato rice, vegetable pulao, sooji halwa, khichdi, combo meals like white rice and dal, and ready-to-drink packets of pineapple juice, all distributed in the last two days.

These meals are also what the DFRL will be providing for the astronauts who will be part of the upcoming Rs 10,000 crore Gaganyaan human space-flight mission.

"From potable water in pouches with dispensing system to Oral Rehydration solution(ORS), Saline water, food heater, cutlery, in pouch rehydration system, waste disposal & restraining bag, DFRL has been tasked by the Indian Space Research Organisation (ISRO) to provide space food," a senior DRDO official privy to the development told THE WEEK.

From the 1999 Kargil operation to expeditions in Antarctica, mountaineering missions in Kanchenjunga, Nanda Devi and Mount Everest and rowing expeditions, scientists of DFRL have proved themselves by providing processed food. They have also done so during natural calamities like the Latur and Gujarat earthquakes, Malpa and Chamoli landslides, Orissa cyclone, J&K floods, Chennai floods and 2018 Kerala flood rescue and relief operations.

The DFRL Mysore, established in 1961, was assigned to cater to the needs of varied foods of Indian Army, Navy, Air force and paramilitary forces. Their aim is to design light-weight convenient packed food with longer shelf-life under varying climatic conditions.

Since then, scientists of DRFL has developed to produce many ready-to-eat, quick-cooking and instant foods with longer shelf-life. Some of them are, long keeping chappatis (shelf-life six months), high protein snacks (nine months), spiced potato parathas (six months), fruit bars (nine months), mutton pickle (six months), stabilized chikki (one year), fruit juice powder (mango, pineapple, mosumbi (one year) and chicken pulao with a shelf-life of one year. Besides, precooked dehydrated (PD) dal/curries, PD rice, and PD potato peas curry, scientists have also come out with instant pulao mix, instant curries, dal, instant kheer mix, instant khichadi mix, instant basmati rice, instant upma mix—with each a shelf life of one year.



DFRL has developed various rations including the Main Battle Tank (MBT) ration, submarine rations and survival rations for the Army, Navy and Air Force. Besides, DFRL has also designed emergency ration for Army, emergency flying ration for aircrew, survival ration for Navy and commandos.

Explaining about Meals-Ready-To-Eat [MRE] ration for Indian Army, scientists said that it does not require any cooking since the contents are thermally processed. And it can be consumed readily after a little warming if required.

"The food products are processed in a special retort to internationally accepted food standard. The Indian MRE supplies adequate calories and nutrition during operation and competes very well with well-known international rations like MRE of USA and UK in nutritional quality and hygienic. Its shelf life is 12 months," scientists explained.

While describing the role of military food during Operation Vijay, a scientist recalls DFRL had supplied 50,000 survival rations and 30,000 MRE rations to the Army for Kargil operation at a very short notice of only 48 hrs. Besides, it supplied 1,000 MRE rations to the Navy and 125 MRE rations to Air Force station, Pune. "Packaged Biryani for army personnel deployed in icy heights like Siachen and Kargil, can now expect mutton and chicken biryanis or non-vegetarian sandwiches with all nutrients and home-made taste," he narrates.

Scientists also spoke about 'minimally processed vegetables', a new technology by which a variety of tropical, subtropical and temperate vegetables like cauliflower, cabbage carrot, beetroot, potato, sweet potato, sponge gourd, ridge gourd, radish, papaya raw, mango raw and French beans are processed.

"Additives and preservatives are used up to permissible level. But the technology does not include any thermal treatment as it retains the freshness of vegetables for a longer period. They are safe from microorganisms besides being rich in ascorbic acid. The process condition and additive treatment change with the vegetable. This technology gives the product a shelf-life of 14 to 28 days," another military scientist said.

DFRL is also engaged in the food supply to the paramilitary forces. The food requirements of paramilitary forces are different from that of the army in general as paramilitary forces need energy-rich food with less volume since they are constantly on the move and are engaged in Low-Intensity Combat (LIC) operations.

"Research is going on for the new packaging material and technology to increase the shelf-life of the food products," scientists added.

<https://www.theweek.in/news/india/2020/04/10/from-gaganyaan-to-covid-19-dfrl-provides-quick-meals-for-healthcare-workers.html>



Sat, 11 April 2020

Coronavirus: DRDO, ITI to team up to manufacture portable ventilators

The Defence Research and Development Organisation (DRDO) and the Indian Telephone Industries (ITI) are likely to ink a deal soon to produce portable ventilators, a first of its kind in India, following the Coronavirus or Covid-19 outbreak.

"DRDO wants ITI to manufacture portable ventilators and is transferring technology to us. Once, we come up with a final product and after due test procedures, we'll be able to produce such ventilators," ITI Chairman Shri Rakesh Mohan Agarwal told ETT.

In the wake of the ongoing pandemic, medical experts say that India would require several thousand ventilators and its absence may impair the country's healthcare system to respond to rising epidemic cases.

With a population of 1.33 billion, India has nearly 50,000 ventilators.

Agarwal said that ITI is well poised to fast-track the production amid the present Covid-19 situation, and have plans to undertake manufacturing in its Bengaluru facility.

ITI is a state-owned electronics product manufacturer under the Department of Telecommunications (DoT) that produces radio modems, optical networks, smart metres, and Wi-Fi access points, with the defence sector contributing to a third or nearly 35% of its overall revenue.

"Once we come up with the product prototype, ITI will be able to produce portable ventilators within the next 30 to 60 days", the top official said and added that the apparent challenge would be on the component sourcing front.

The state-controlled telecom technology company is signing the Memorandum of Understanding (MoU) with DRDO this week.

"The only thing that worries us is component sourcing. We will require components locally as well as from other countries which appears to be a cumbersome task during the current lockdown," he added.

Since March 24, India is under a 21-day lockdown to prevent community transmission of novel Coronavirus that has so far killed 150 individuals with nearly 6,000 confirmed infection cases.

Shri Agarwal further said that portable ventilators could not be used merely in the present Covid-19 crisis but would be required in the future by the army and paramilitary forces and defense hospitals.

Meanwhile, taking a cue from carmakers worldwide, Mahindra Group, Maruti Suzuki India, and Hyundai Motor Company have expressed their keenness to manufacture ventilators locally amid the Coronavirus pandemic.

With a strong order book worth about Rs 20,000 crore, the state-owned ITI is expecting to continue with a growth momentum of nearly 35%.

In Q3, 2019, the public sector firm posted a turnover of Rs 979 crore, up 53% over the same quarter last year.

Shares of ITI LTD. was last trading in BSE at Rs.72.8 as compared to the previous close of Rs. 69. The total number of shares traded during the day was 140616 in over 2484 trades.

The stock hit an intraday high of Rs. 74.5 and intraday low of 68.25. The net turnover during the day was Rs. 10037728.

https://www.equitybulls.com/admin/news2006/news_det.asp?id=265164

THE TIMES OF INDIA

Sat, 11 April 2020

Samples approved, Indore textile units start making 5,000 protective kits per day

By Meenakshi Sharma

Indore: Textile units engaged in making Personal Protective Equipment (PPE) kits have increased production with supplies touching over 5,000 kits per day. The production capacity was enhanced after a team of experts from Defence Research and Development Establishment (DRDE) in Gwalior, visited manufacturing facilities and also cleared some samples sent to them.

Madhya Pradesh Industry Development Corporation (MPIDC) Indore head Kumar Purushottam said, "We had sent three samples of PPE kits to DRDO and of them two were approved and one

could not pass through. All the manufacturing of PPE suits in textile units is as per the standard fixed by DRDO.”

DRDO is a premier research institute that works for the development of defence technologies. The institute is also producing sanitisers, masks and working on developing ventilators to combat Covid 19.

The state government has roped in a few textile units of Indore to produce PPE kits, masks and gloves to supply across the state. According to government officials, the daily requirement of PPE kits in the state is about 6,000-7,000 kits per day.

HS Jha, vice president, Human Resource at Pratibha Syntex Ltd engaged into production of PPE suits said, “We had an inspection by team of DRDO last week and they checked the entire working station and gave certain directives. Our samples have been approved and we are producing kits as per the laid directives.”

According to the company, experts team advised to carry manufacturing process in a packed room, pass all raw material through a tunnel of disinfectant, workers should be sanitized at regular intervals and floor should be disinfected after every few hours. Pratibha is producing around 5,000 PPE kits per day, 15,000-20,000 masks and gloves. In the wake of increasing demand of PPE kits in the state, the parent company and allied units engaged into production are working on increasing production.

Jha said, “We are working in two shifts and now we are contacting our workers on leave to check if they can report to work because workload is very high and we need more manpower.” To ensure continuous supply of PPE kits, the state government has called raw material from Pune, Gujarat and Bengaluru and is targeting to build inventories for over one lakh PPE kits.

<https://timesofindia.indiatimes.com/city/indore/samples-approved-indore-textile-units-start-making-5000-protective-kits-per-day/articleshow/75087875.cms>



Sat, 11 April 2020

IAF airlifts 3 tonnes of raw material from Mumbai to Bengaluru for production of medical protection kits

New Delhi: While the nation is battling to contain COVID-19 spread amid the lockdown, the Indian Air Force (IAF) under 'Har Kaam Desh Ke Naam' initiative airlifted 3 tonnes of essential raw material for the production of personal protection equipment (PPE) from Mumbai to Bangalore.

The task was completed in support of the Defence Research and Development Organisation (DRDO) to facilitate expeditious production of PPEs in the Karnataka region.

"One AN-32 aircraft of IAF airlifted 3.0T of essential raw material



for production of Personal Protection Equipment (PPE) from Mumbai to Bangalore on April 8. The task was completed in support of DRDO to facilitate expeditious production of PPE in Karnataka region," the IAF tweeted.

With 547 new positive COVID-19 cases reported in the last 12 hours, India's tally of positive coronavirus cases crossed the 6,000 mark as the number of cases rose to 6,412.

Out of the 6,412 cases, 5,709 are active patients and 504 people have been cured/discharged and migrated.

With 30 new deaths reported in the last 12 hours, the death toll stands at 199. (ANI)

<https://www.aninews.in/news/national/general-news/iaf-airlifts-3-tonnes-of-raw-material-from-mumbai-to-bengaluru-for-production-of-medical-protection-kits20200410091518/>



Sat, 11 April 2020

LCA-Tejas performed better than competitors in Malaysia: HAL official

With the recent slump in India's bilateral ties with Malaysia, state-run Hindustan Aeronautics Ltd (HAL) officials belonging to LCA division who was part of the team which visited Kuala Lumpur with Two LCA-Tejas fighter jets for evaluation by the Royal Malaysian Air Force (RMAF) said in an interview to Anantha Krishnan M that LCA-Tejas not only performed better than other jets in the competition but also demonstrated better turn around time after each sortie.

After exist of India critic, Mahathir bin Mohamad and with the appointment of Muhyiddin Yassin has Malaysia's New Prime Minister, India, and Malaysia are keen to reset ties and HAL sees good opportunity to sell LCA Tejas to Malaysia.

Malaysia plan to procure up to 36 light combat aircraft/fighter lead-in trainer (LCA/FLIT) with options for 26 and types under consideration are the Korean Aerospace Industries (KAI) FA-50 Fighting Eagle; the Hindustan Aeronautics Limited (HAL) Tejas; the Leonardo M-346; the Aero Vodochody L-39NG; the CAC L-15A/B; the CAC/PAC JF-17; the Saab Gripen; and the Yakovlev Yak-130.



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<https://idrw.org/lca-tejas-performed-better-than-competitors-in-malaysia-hal-official/#more-225017>

IAF की मदद से बेंगलुरु पहुंचा 3 टन कच्चा

माल, बनाए जाएंगे प्रोटेक्शन किट

3 टन कच्चा माल मुंबई से बेंगलुरु तक पर्सनल प्रोटेक्शन

इक्विपमेंट (PPE) के प्रोडक्शन के लिए IAF की मदद से लाया गया है।

नई दिल्ली: कोविड 19 (COVID-19) के कारण देश संकट में है। इसके लिए मदद करने को भारतीय वायुसेना (Indian Air Force) की ओर से 'हर काम देश के नाम (Har Kam Desh K Naam)' नामक एक शुरुआत हुई है। इसके तहत वायुसेना ने 3 टन कच्चा माल मुंबई से बेंगलुरु पहुंचाया है। यह माल पर्सनल प्रोटेक्शन इक्विपमेंट (PPE) के प्रोडक्शन के लिए लाया गया है। यह काम रक्षा अनुसंधान और विकास संगठन (DRDO) के सहयोग से पूरा हुआ।

कोरोना वायरस से जंग में भारतीय वायुसेना भी काफी मदद कर रही है। वायुसेना का कहना है कि हालात के अनुसार वे कदम उठा रहे हैं। इसके लिए मंत्रालयों और संबंधित विभिन्न विभागों के साथ वायुसेना संपर्क में है। इसके लिए क्राइसिस मैनेजमेंट सेल का भी गठन हुआ है जिसमें देश के कई मालवाहक विमान और हेलिकॉप्टर भी काम पर लगाए गए हैं।

दूसरे देशों में फंसे भारतीय नागरिकों के लिए वायुसेना ने 'ऑपरेशन संजीवनी' की शुरुआत की। भारत सरकार इस महामारी के संकट से संघर्ष के लिए सेना, वायु सेना और नौसेना की सहायत ले रही है और उनके संसाधनों का उपयोग कर रही है।



IAF ने ट्वीट किया, 'वायुसेना का एक AN-32 एयरक्राफ्ट मुंबई से 3.0 टन कच्चा माल लेकर 8 अप्रैल, सोमवार को बेंगलुरु पहुंचा। कर्नाटक में PPE के तेजी से प्रोडक्शन के लिए किया गया यह काम DRDO के सहयोग से पूरा हुआ।' बता दें कि कोरोना वायरस के खिलाफ जारी जंग में डीआरडीओ ने राष्ट्रीय राजधानी स्थित अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) में पूरे शरीर को संक्रमणरहित करने वाला चैंबर स्थापित किया है।

इस चैंबर को कार्मिक स्वच्छता संलग्नक और फेस प्रोटेक्शन मास्क के नाम से जाना जाता है।

पिछले 12 घंटे में कोविड-19 के 547 नए मामले आए इसके साथ ही देश में अब तक संक्रमण का आंकड़ा 6 हजार के पार हो गया। मामले में मरने वालों का आंकड़ा 199 पर पहुंच गया है।

<https://www.jagran.com/news/national-iaf-airlifts-3-tonnes-of-raw-material-from-mumbai-to-bengaluru-for-production-of-medical-protection-kits-20179333.html>



Sat, 11 April 2020

Pivotal role being played by forces in Covid-19 fight, all assistance to industry: Defence Secretary

In an interview to Manu Pubby, Defence Secretary Ajay Kumar has said that regular interactions are on with industry to minimize the Covid impact, instructions to release payments have been issued and shares the role the armed forces and defence production units are playing to combat the virus.

Q: The Defence Ministry has activated the forces, PSUs and its medical units to tackle Covid. What has been the scale of this effort, some are calling it unprecedented?

Armed Forces have always played pivotal role in mitigating any national calamity plaguing the country from time to time. Covid-19 is a pandemic of extraordinary scale, affecting not only India, but almost whole of the world. To face this unprecedented challenge all the Ministries and Departments of Government of India are working to their optimum level to contain the adverse effects of Covid-19 and mitigate the sufferings of the people. As far as Ministry of Defence is concerned, right from rescuing stranded Indians from COVID-19 affected areas, such as China, Iran, Italy, Malaysia etc, to providing relief materials to all across the country, Armed Forces have put in place all its medical and manpower resources. Force's Hospitals and Medical Facilities have been dedicated to treat Covid-19 patients and some of its bases have been turned into quarantine centres.



Besides the all out efforts of Armed Forces, its various organizations and arms viz. Armed Forces Medical Services, Defence Research and Development Organisation (DRDO), Defence Public Sector Undertakings, Ordnance Factory Board, Indian Coast Guard, Cantonment Boards, National Cadet Corps are contributing in their own way to fight this pandemic. More and more ventilators, personal protection equipment (PPE), face shields, N99 & N 95 masks, hand sanitisers and other disinfectant and protective gears are being manufactured stopping all the routine works.

The Directorate of Public Relations of MoD has been disseminating the information on a daily basis through its press releases made public through the Press Information Bureau and reaching out to Media.

Q: You have taken into consideration the concerns of the industry and have interacted with industry leaders through video conferencing. What is the ministry doing to minimize the impact of the crisis on the industry?

We are continuously working with the industry to address the issues raised by them. We had a Video-conference on March 27th in which nearly 250 industry representatives participated.

<https://www.defenceaviationpost.com/2020/04/pivotal-role-being-played-by-forces-in-covid-19-fight-all-assistance-to-industry-defence-secretary/>