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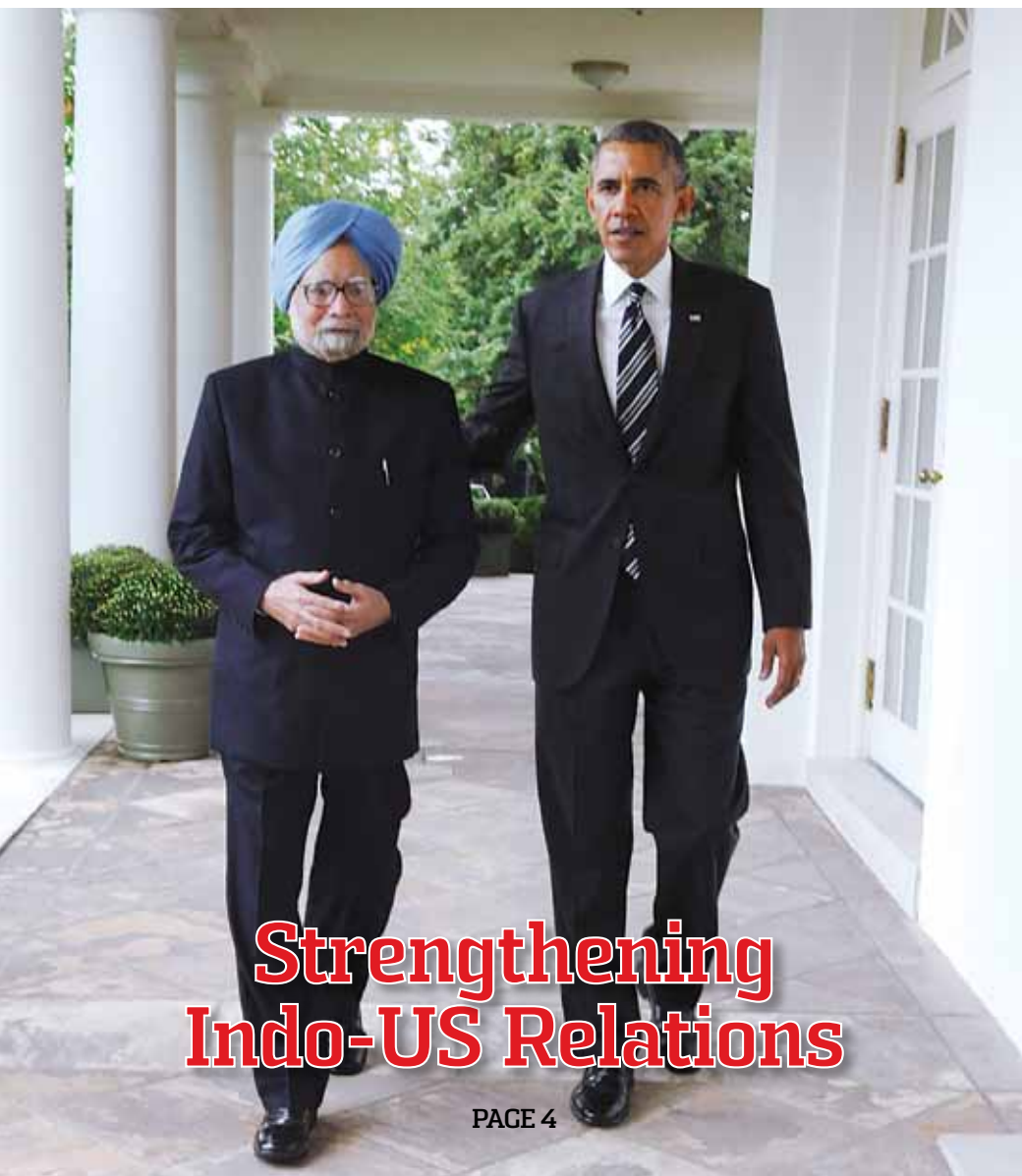
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Indo-US Joint Declaration on defence cooperation


India-United States defence cooperation and engagement has increased significantly over the past decade, in step with the overall deepening of Indo-US relations. The two nations continue to work towards achieving the full vision of expanded defence cooperation set forth in the 2005 New Framework Agreement.

In this context, India and the United States endorse the following general principles for fulfilling this vision:

- The United States and India share common security interests and place each other at the same level as their closest partners. This principle will apply with respect to defence technology transfer, trade, research, co-development and co-production for defence articles and services, including the most advanced and sophisticated technology. They will work to improve licensing processes, and, where



applicable, follow expedited licence approval processes to facilitate this cooperation. The US and India are also committed to protecting each other's sensitive technology and information.

- The US continues to fully support India's full membership in the four international export control regimes, which would further facilitate technology sharing.
- The two sides will continue their efforts to strengthen mutual understanding of their respective procurement systems and approval processes, and to address process-related difficulties in defence trade, technology transfer and collaboration.
- The two sides look forward to the identification of specific opportunities for cooperative and collaborative projects in advanced defence technologies and systems, within the next year. Such opportunities will be pursued by both sides in accordance with their national policies and procedures, in a manner that would reflect the full potential of the relationship. 



Cover:

Prime Minister Manmohan Singh and President Barack Obama have endorsed a Joint Declaration on Defence Cooperation as a means of enhancing their partnership in defence technology transfer, joint research, co-development and co-production.

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PUBLISHER AND EDITOR-IN-CHIEF

Jayant Baranwal

ASSISTANT GROUP EDITOR

R. Chandrakanth

EDITORIAL ADVISER

Air Marshal (Retd) Anil Chopra

SR TECHNICAL GROUP EDITORS

Air Marshal (Retd) B.K. Pandey

Lt General (Retd) Naresh Chand

Lt General (Retd) V.K. Kapoor

R. Adm (Retd) S.K. Ramsay

SPECIAL CONTRIBUTOR

Lt General (Retd) P.C. Katoch

ASSISTANT EDITOR

Sucheta Das Mohapatra

CHAIRMAN & MANAGING DIRECTOR

Jayant Baranwal

PLANNING & BUSINESS DEVELOPMENT

Executive Vice President: Rohit Goel

ADMIN & COORDINATION

Bharti Sharma

DESIGN & LAYOUT

Creative Director: Anoop Kamath

Designers: Vimlesh Kumar Yadav,

Sonu Bisht

Research Assistant - Graphics:

Survi Massey

SALES & MARKETING

Director: Neetu Dhulia

General Manager Sales: Rajeev Chugh

SP'S WEBSITES

Sr Web Developer: Shailendra P. Ashish

Web Developer: Ugrashen Vishwakarma

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E-mail: subscribe@spguidepublications.com

subscribe@spsmai.com

LETTERS TO THE EDITOR

editor@spsmai.com

FOR ADVERTISING DETAILS, CONTACT:

advertise@spsmai.com

neetu@spguidepublications.com

rajeev.chugh@spguidepublications.com

SP GUIDE PUBLICATIONS PVT LTD

A-133 Arjun Nagar

(Opposite Defence Colony)

New Delhi 110 003, India.

Tel: +91 (11) 24644693,

24644763, 24620130

Fax: +91 (11) 24647093

E-mail: info@spguidepublications.com

REPRESENTATIVE OFFICE

204, Jal Vayu Vihar

Kalyan Nagar

Bengaluru 560043

Tel : +91 (80) 23682204

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Indo-US cooperation and the Pakistan angle

The recent visit of the Indian Prime Minister Dr Manmohan Singh to the United States was under spotlight for two specific reasons — the meeting with the Pakistani Prime Minister Nawaz Sharif after the UN General Assembly meet and the meeting with President Barack Obama on further strengthening of relations with the US.

While it is indeed significant that Indo-US cooperation and engagement has increased substantially, including the defence realm, over the past decade one point keeps niggling at the core of this relationship — why isn't the US putting pressure on Pakistan in dismantling terror networks across our border?

The outcome of the two meetings have been on expected lines. The Indo-US Joint Statement has referred to the increasing and more intensive bilateral defence cooperation, including trade and military exercises; enhancing partnership in defence technology transfer, joint research, co-development and co-production. The Sharif meeting, which was largely opposed by the Bharatiya Janata Party and other vocal groups in the light of recent killings on the borders, was just another of those meetings without any commitment on the part of Pakistan in dealing with terror networks there. India has to be firm, while it engages the neighbour diplomatically, including military diplomacy.

We have analysis of the Prime Minister's visit by Lt General (Retd) V.K. Kapoor and Lt General (Retd) P.C. Katoch. Also of significance is the media call with eminent scholars on the eve of the Prime Minister's visit which, among other issues, underlines that if US investment, particularly in defence, has to increase, then foreign direct investment (FDI) has to be better than 26 per cent.

In this issue, we have two important interviews — one with the President & CEO of ReconRobotics who details the company's micro-robotic technology which has been "giving the warfighters precisely what they need." The other interview is with Senior Vice President of Rockwell Collins, Colin Mahoney who talks about the company's culture vis-à-vis overseas companies.

We have show report on India's first Naval and Maritime Exposition (NAMEXPO) 2013 held in Kochi recently. Organised by the Con-

federation of Indian Industry (CII), the show had mixed response, but sure enough it has a long way to go to establish itself on the firmament of naval expositions. R. Chandrakanth was at NAMEXPO talking to a few companies on the prospects of the naval equipment market and the emerging thoughts have been that while the prospects are phenomenal, the acquisition process needs to be speeded up and the FDI cap has to be increased from 26 per cent.

The issue of increase in FDI cap has been a recurrent theme and it is time that the powers that be look at it on a priority basis. But then we will have to wait for the parliamentary elections to be over in 2014 and a stable government in place to take such a bold decision.

Meanwhile, we look forward to your feedback as it will help us sharpen our coverage of news and analysis.

Happy reading!

Jayant Baranwal
Publisher & Editor-in-Chief

Prime Minister Manmohan Singh's meetings with Barack Obama and Nawaz Sharif in the US

[By Lt General (Retd) V.K. Kapoor]

At Washington D.C.

The meeting of Prime Minister Manmohan Singh on September 27, 2013, with President Barack Obama has evoked considerable interest in India regarding its deliverables. TV anchors and strategic analysts, by and large, were of the view that nothing much was going to emerge from this third bilateral summit because even the US is aware that parliamentary elections are due in 2014 and Prime Minister Manmohan Singh's manoeuvrable space is limited due to domestic politics. However, notwithstanding the criticism at home let us examine the issue of defence cooperation which has received a fairly large space in the Joint Statement by both the leaders.

The Joint Statement referred to the increasing and more intensive bilateral defence cooperation, including trade and military exercises. The leaders endorsed a Joint Declaration on Defence Cooperation as a means of enhancing their partnership in defence technology transfer, joint research, co-development and co-production. As per the Joint Statement President Obama encouraged the further participation of US firms in partnering India's efforts to enhance its defence capacities. However the Joint Statement does not clarify the context of the two of US mandatory technology safeguard agreements which threaten to adversely impact the transfer of advanced equipment and technologies. India's hesitancy in confirming the Communications Interoperability and Security Memorandum of Agreement (CISMoa) and the Basic Exchange and Cooperation Agreement for Geo-spatial Cooperation (BECA) forecloses the option of the US transferring advanced avionics and communication equipment, satellite navigational aids and other advanced technologies. Therefore such hurdles have to be crossed before we can move forward on the technology transfer and these issues require resolution. Moreover if the defence cooperation agreement was to take care of procedural problems why was no senior representative of the MoD present with this delegation? The basic question which remains unanswered is: "Is the Ministry of Defence (MoD) on board with this agreement?" Under US law both the above-mentioned pacts need bilateral confirmation to ensure client compliance with sensitive technology control transfers. In the past India has

looked upon all such agreements with the US 'cautiously'.

Kanwal Sibal, the former foreign secretary, has concerns with this agreement because of its adverse impact on India's relations with Russia who has supplied more than 70 per cent of the current equipment held by the three services and has given sensitive technologies such as the nuclear submarine and BrahMos missile.

Meeting with Nawaz Sharif

Most analysts and political leaders of opposition parties, especially the Bharatiya Janata Party, were not in favour of the Indian Prime Minister meeting the Prime Minister of Pakistan at this stage when the developments leading up to the meeting – especially the violations of the line of control (LoC) – had provoked the opposition parties and the people in India, to mount considerable pressure on him to call it off. However, Prime Minister Manmohan Singh, despite the pressures, went ahead with the meeting. He appreciated that the aim of the attackers was to derail the talks and therefore stood his ground. However, being sensitive to the recent LoC developments he insisted with his counterpart to rein in the hardline elements within Pakistan's military establishment so that peace and tranquillity could be maintained along the LoC. This, he stressed, must be the first step to

address other issues including trade, a liberal visa regime, Siachen, Sir Creek and Kashmir, and the reciprocal prime ministerial visits.

After the recent Samba incident in Jammu region, it had become clear that the planned meeting was in jeopardy, but having committed to the meeting, a cancellation was not desirable. Hence both leaders met and stated their piece and decided to leave the matter of LoC incidents to their respective Director Generals of Military Operations (DGMOs) to sort out through military diplomacy. However, this is not going to be easy because the incidents on the LoC are part of the larger picture which involves resolution of the Kashmir problem which is a political issue. Moreover, the terrorist camps across the LoC in Pakistan occupied Kashmir are supported by the Pakistan's Inter-Services Intelligence (ISI)/military and reining in the terrorists and dismantling their infrastructure will require political dialogue and hard bargaining followed by military procedures on the ground to ensure peace and this cannot be done through military diplomacy alone. **SP**



Media Call: Prime Minister Manmohan Singh's White House visit

Prime Minister Dr Manmohan Singh met President Barack Obama on September 27 at the White House. Prior to Dr Singh's visit to the White House, the Carnegie Endowment for International Peace organised a media call in which eminent scholars such as Ashley J. Tellis and Milan Vaishnav discussed topics likely to come up in the bilateral meeting between the two leaders, including the landmark India-US civil nuclear deal, enhancing defence cooperation, and strengthening trade, investment and economic collaboration.

The visit being an important one, the Editor-in-Chief of SP's M.A.I. Jayant Baranwal, participated in the media call to elicit views of the scholars on Indo-US relations, particularly in relation to defence.



Dr Manmohan Singh and President Barack Obama at their summit meeting at the White House

And, you know, I would just recommend you go to any of the fact sheets that have been published in the last several years and you'll get an extraordinary agenda about the cooperation.

SP's: How does the US see the nuclear capability of India now? A quick review.

Tellis: When you say 'nuclear capability', are you talking of civilian nuclear energy or are you talking of nuclear weapons?

SP's: Holistically.

Tellis: Well, on the civil nuclear energy side, I think the US recognises that India has placed a priority on increasing the share of nuclear energy as part of its total energy mix. And the US has reported that and is looking forward really to concluding, you know, the promise of the civil nuclear agreement to make that happen.

On the nuclear weapons issue, the US has been silent because as a matter of rule we don't comment on the nuclear weapons

capabilities of other countries. But as you know, the US has reconciled itself to the fact that India has nuclear weapons, and today this administration in particular is far more focused on nuclear security rather than on the weaponry itself.

SP's: In terms of the defence market, what kind of an investment can be expected by US companies in India in the next 10 years?

Tellis: It all depends on how India treats US defence companies in terms of its own regulations and its investment levels. As long as foreign direct investment (FDI) in defence is capped at 26 per cent, I don't think US companies will take the initiative to make major investments in India. But if the FDI caps are liberalised upwards, then I think you will begin to see a process.

Now, there is already some investment occurring because of the off-sets requirements, but if you want to see real, major investments by US companies in India, then I think you have to have an increase in FDI levels. You cannot have FDI levels capped at 26 per cent and expect that US companies will make big investments in India. **SP**

Jayant Baranwal (SP's): What are the steps the United States is taking towards creating concrete synergies between the world's two largest democracies?

Ashley J. Tellis: The short answer to that is to look at the character of the engagement that has been put in place now over the last 10-odd years. There is a huge agenda that the two countries are working on in the context of the strategic dialogue.

The strategic dialogue is this umbrella that covers strategic cooperation, defence cooperation, cooperation on energy, cooperation on science and technology, cooperation in education, cooperation on climate. I mean, the list is literally endless. And both sides have been working first on reconciling policies. Secondly, there are concrete initiatives that both sides are pursuing under each of these issue areas. And so when one talks of synergies between the two countries, I think the one thing that has certainly changed when one thinks of the relationship prior to 1998 is that today both countries are pursuing a cooperation agenda that is actually really far too detailed to kind of list.



LT GENERAL (RETD)
P.C. KATOCH

Prime Minister's visit gave mixed results

Prime Minister Manmohan Singh's visit to the United States has been a mixed bag of results. While the focus of the visit was to attend the UN General Assembly and meet President Barack Obama and Prime Minister Nawaz Sharif, the latter event was overshadowed by the dastardly terrorist attacks on Hira Nagar Police Station and an Army unit in Samba sector.

The hallmark of the meeting with Obama was operationalising the civil nuclear deal – Nuclear Power Corporation of India (NPCIL) a Westinghouse (US) to develop a nuclear power plant in Gujarat, and subsequently NPCIL in conjunction with Westinghouse and General Electric-Hitachi to establish nuclear power plants in Gujarat and Andhra Pradesh. The Joint Declaration does mention enhancing partnership in defence technology transfer, joint research, co-development and co-production, plus expanding homeland security cooperation, etc., besides condemning terrorism.

However, there was no indication from Obama that US would pressure Pakistan to close down her terror infrastructure and stop the proxy war against India. It is no secret that US has been seeking Pakistan's assistance to open dialogue with the Taliban for a political solution in Afghanistan which is utopian but Pakistani diplomacy has kept the US dream alive in this context. But this is only a development in last three to four years. The fact is that since the last decade including when US launched its GWOT, it turned a Nelson's eye to the Lashkar-e Toiba (LeT) that has been attacking India regularly. US Predator attacks have also deliberately avoided the LeT under secret understanding with Pakistan, as revealed recently. US has been fully aware of the 42 terrorist camps in the Pakistan occupied Kashmir (PoK).

Not without reason Ashley Tellis of the Carnegie Endowment, wrote, "India being continuously subjected to terror actually suits many... India is a sponge that absorbs global terror. There has been no apparent concern in the US regarding Chinese incursions and intrusions in India and Bhutan, which gives the impression US is comfortable with these developments and only seeks India's role in the Indian and Pacific oceans as part of its Asia pivot.

Nothing could be expected from the meeting with

Nawaz Sharif in the first place. His address at the UN General Assembly left no doubt. His request for self-determination in Kashmir is laughable. The 1948 UN Resolution on Kashmir through which Pakistan still demands plebiscite has categorical precondition that Pakistan withdraw all her security forces from territory of Jammu and Kashmir (J&K) prior to plebiscite. Pakistan did the opposite and, unlike India, drastically altered demography of PoK by design. More importantly, results of the first-ever poll on both sides of the line of control in J&K conducted by the Royal Institute of International Affairs (Chatham House), UK, in conjunction with King's College during 2009-10 brought out that 98 per cent of people in J&K do not wish to be part of Pakistan and 50 per cent of people in PoK do not wish to remain with Pakistan.

Significantly, this poll was at the behest of Pervez Musharraf and financed by Gaddafi's son. Nawaz Sharif in the same appointment had met Prime Minister I.K. Gujral, did nothing to curb terror even when India for-

bade intelligence operatives going to Pakistan. When Prime Minister Atal Behari Vajpayee travelled to Lahore to meet him, Musharraf, his army chief, was busy stabbing India in Kargil. His feigning that he does not know about the Kargil intrusions can hardly fool anyone. But the hard fact is that today (as always) he is a mere puppet in the hands of the Pakistani military irrespective of who the army chief is. The proof lies in his inability

to act against the perpetrators of 26/11 Mumbai terrorist attacks and shut down terrorist camps, inability to heel the military and the ISI, intransigence to his own constituency officially doling out millions of rupees to terrorist organisations, full support to radicals like Hafiz Saeed holding open anti-India rallies, etc.

The present tenure of Nawaz Sharif will be no different from the incapacity displayed in his previous tenures to check Pakistan's state policy of terrorism and Pakistani military to continue waging proxy war on India, which is likely to be accelerated post-US withdrawal from Afghanistan. Besides, he now has more Chinese backing for being mischievous. Oh yes, he would expect India to continue giving more and more concessions without any Pakistani reciprocation whatsoever! **SP**

The views expressed herein are the personal views of the author.



It is no secret that US has been seeking Pakistan's assistance to open dialogue with the Taliban for a political solution in Afghanistan which is utopian but Pakistani diplomacy has kept the US dream alive in this context

NAMEXPO to be a biennial event

[By R. Chandrakanth]

The Confederation of Indian Industry (CII) ambitiously organised India's first Naval and Maritime Exposition (NAMEXPO) 2013 from September 23 to 27. While the focused effort has to be appreciated, there were quite a number of hiccups and one of them being it was stretched out over five days and none of the participants had any steam left after the second day. The CII needs to rethink on the duration, now that it has decided NAMEXPO would be a biennial event.

One other major let down was that it was low key participation, both from national and international companies. Being held in Kochi and Cochin Shipyard was conspicuous by its absence and so were major countries such as the US and UK. Only Russia dominated and the Rosoboronexport Deputy Director General Viktor M. Komardin made it a point to ask, "Where are the other countries? See India and Russia are genetically friendly." Besides companies, the lack of attendance by the Defence Minister A.K. Antony whose State is Kerala and the Naval Chief and other to decision-makers came as a dampener.

There were 30-odd exhibitors and there was mixed reaction from them, some praising the focused environment, some stating that it had not helped in business development. But then these are teething years.

Saab's strong portfolio of naval products

Saab, which was a key sponsor, was enthused by the event and it presented a spectrum of naval products covering the air, surface, underwater and coastal security domains that provide naval forces complete command over the seas. Saab's portfolio of products included the Sea Gripen, 9LV SAT, 9LV CMS, 9LV FCS, AUV 62 MR Spurt, Sea Giraffe, Saab 340 MSA, Naval training and AIS.

Saab India Crossover Chairperson Lars-Olof Lindgren said: "This event is a good forum for us to meet with the relevant stakeholders in the naval domain. The main theme for Saab for this NAMEXPO is 'Teaming Up With India' on naval systems. We believe that partnership is the way forward to work in India and to be able to fully support the market."

Commodore (Retd) Jagdish Anand, Senior Vice President-Domain of Saab India, said: "Kochi is the nerve centre of naval training and we have had good audience." As regards Saab's offerings to the Indian market, he said: "We are very bullish" though the Indian procurement process is 'very slow'.

Rosoboronexport puts up good show

Enterprises affiliated with the United Shipbuilding Corporation (USC) - Rubin Central Design Bureau for Marine Engineering, St. Petersburg-based Malakhit Marine Engineering Bureau and Sudexport - as well as the Mars Research & Production Association and the Aquamarin Company displayed their products under the aegis of Rosoboronexport, part of the Rostec State Corporation.

"We work closely with our Indian partners in the naval area and hope that the new specialised exhibition will be a good platform to showcase our capabilities. Today, India has set ambitious goals to strengthen the national naval forces and Russia, as its strategic ally, is ready to comprehensively cooperate to effectively implement these plans," said Viktor Komardin.

Turkey's Dearsan Shipyard on exploratory mission

For the first time ever, Dearsan Shipyard was participating in an Indian exhibition only to 'understand the Indian market'. Deniz Esrefoglu of Dearsan said the visit has been a truly learning experience and we are keen on entering the Indian market which is huge, both in military and civil segments.

Dearsan Shipyard has constructed and delivered numerous vessels including specialised and sophisticated vessels like naval combatants, mega yachts, tug boats and chemical tankers for leading companies in the world and the Turkish Navy. At the show it presented Tuzla class patrol boats; fast intervention boats; fast passenger ferry; tug boats and oil/chemical tankers.



Minister for Ports, Fisheries & Excise, Government of Kerala, K. Babu lighting of lamp at the NAMEXPO 2013

Selex ES debuts Miysis DIRCM

Selex ES, a Finmeccanica company, brought to Kochi Miysis DIRCM for the first time after its recent launch. Said to be the lightest countermeasure system in the world, the product provides all-round infrared countermeasure protection for large and small, rotary- and fixed-wing platforms. It is the latest generation of Directed Infrared Countermeasure (DIRCM) system from Selex ES and the company hopes to capture substantial market in the near future.

The company presented Seaspray 7000E and 7500E multi-mode surveillance radar which uses

multiple low power, is solid state transmit/receive modules and makes them highly reliable. Selex also put on show the Picosar, compact, lightweight airborne ground surveillance radar with all-weather capability for unmanned aerial systems, fixed-wing and helicopter platforms.

Low-key Indian participation

The major exhibitors at the show were Defence Research and Development Organisation, Larsen and Toubro Engineering division, BrahMos Aerospace, Tata Power, GRSE, among others. The Kerala Minister for Ports K. Babu inaugurated the expo and Vice-Admiral Satish Soni, Flag Officer Commanding-in-Chief of the Southern Naval Command, who spoke at the inaugural said the country had no choice except to give impetus to indigenisation. Warship construction in the country had come a long way, meeting the requirements of the Navy. However, indigenisation must not be at the cost of critical technology, like propulsion systems.

The expo had a grand start marked by the berthing of indigenous stealth frigate INS Satpura and a scintillating operational demonstration by marine commandos on the waterfront. **SP**

ShinMaywa all set to clinch amphibious deal

ShinMaywa Industries is upbeat as during the recent Indian Prime Minister Dr. Manmohan Singh's visit to Japan the offer of ShinMaywa US-2 amphibious aircraft to the Indian Navy figured in the discussions. "That is a good sign," said the company's Executive Officer Kanji Ishimaru on the sidelines of NAMEXPO 2013 in Kochi.

It is almost two years since ShinMaywa established its presence in India responding to the request for information (RFI) of the Indian Navy for nine amphibious aircraft. "We are confident as our product is the best as it has multi-role capabilities – remote island support, search and rescue, anti-piracy, outer sea operations among others." It is not weaponised.

Ishimaru told *SP's M.A.I.* that the company was looking for an Indian collaborator to meet the offset requirements. "The offset requirements are challenging and we are looking for a partner in the maintenance repair and overhaul (MRO) segment." Taking the exam-



ple of Suzuki which made the first major breakthrough in India and found success, he said that ShinMaywa was enthused by the Indian market. "Like Suzuki we are looking for long-term relationship."

Talking about the capabilities of the US-2, he mentioned that no other amphibious aircraft had outer sea landing capabilities, landing when the waves were even 3 metres high, compared to the competitors who could max 1.2 metres. The aircraft has long range – 4,700 km, needs about 300 metres only for take-off and landing and a good payload (it can carry 30 soldiers).

Yasuo Kawanishi, General Manager (Business Development), said: "We are waiting for a request for proposal from the Navy."

Giving an example of its search and rescue operations, recently the US-2i rescued a newscaster who was drowning in the Pacific Ocean, 1,200 km from shore. "Reaching by boat/ship would have taken days, but the aircraft did a marvellous job." **SP**

— R. Chandrakanth

We don't want to be a supplier, but a partner: AgustaWestland

The mainstream media in Kochi had splashed across their front pages the interview of Jackie Callcut, Chief Executive Officer of AgustaWestland India, thus eclipsing the inauguration of India's first Naval and Maritime Exposition (NAMEXPO 2013). The media was following AgustaWestland which is under the scanner on charges of corruption in the ₹3,727-crore contract for 12 AW-101 VVIP helicopters for the Indian Air Force.

Flattered by the coverage, Jackie Callcut told *SP's M.A.I.* that it was understandable that the media was chasing the story. "There is no denying that it has been a difficult year for us, but we are confident in the Indian system and we have nothing to hide. We will be totally vindicated and we hope AgustaWestland will be restored to its former position."

The defence market, she remarked, is not an easy one, particularly at this moment and the equipment programme for the Indian armed forces have been delayed due to certain weaknesses in the system. "Notwithstanding these issues, AgustaWestland will continue to expand its presence in India. We want to bring the best of technologies here and we want to have joint ventures on equitable terms."

For that to happen, she affirms that India has to further liberalise its foreign direct investment policy. "To get high-end technologies, the stake has to be better than 26 per cent. We are keen on developing indigenous capabilities, but the market needs to be incentivised."

As regards AgustaWestland's footprints in India, she mentioned the relationship beginning with Seaking helicopters and the prog-



ress towards a joint venture with Tatas for civil helicopters. Talking about the potential of the naval market, she said that "the company would continue its support of Seaking helicopters and participate in the tender for 56 naval utility helicopters (NUH) replacement and the multi-role helicopter replacement."

"At the end of the day, we don't want to be just a supplier, but a partner," she asserted. **SP**

— R. Chandrakanth

We are looking at joint venture, provided it is not 26 per cent FDI: Eurocopter

Though some of the original equipment manufacturers (OEMs) are getting impatient with the protracted decision-making process with regard to defence equipment, they are hanging on as India continues to be a key and strategic market. Eurocopter is one such company.

Speaking to *SP's M.A.I.* on the sidelines of NAMEXPO 2013 in Kochi recently, Eurocopter Vice President (Sales and Customers Relation) India and South Asia, Rainer Farid said: "There are many programmes in India, but most of them are delayed due to scandals, impending elections...and it is really be difficult environment now." The Indian Army has shortlisted companies for its requirement of 197 helicopters but there have been delays.

Giving examples of significant strides made in cooperation with countries such as South Korea (for co-development of 7-tonne helicopter), Australia (joint venture for NH90), US (for Lakota medium helicopters) and Brazil (for EC735), Farid said, "We are patient here. We want to go into cooperation with India too."



"In the helicopter segment, everything here is obsolete except the Dhruv. The Seakings are over 30 years old and it is time for replacement. India has come up with 'buy and make' programme and this is a good route." Eurocopter, he said, is keen on transferring technology, building a global supply chain in India etc. "We are looking at joint venture, provided it is not 26 per cent FDI.

It is our technology and we will be responsible for the end product."

Eurocopter is offering India the AS565 MB Panther and the product is in the technical evaluation stage and trials are expected early next year. "We are very confident." In its naval version, the all-weather, multi-role light helicopter can be operated from ship decks, offshore platforms and land bases with demonstrated capabilities to cover the full range of Indian Navy and Coast Guard mission requirements - including maritime surveillance, search and rescue, offshore patrolling and counter-terrorism, casualty evacuation and vertical replenishment. **SP**

— R. Chandrakanth

Indo-Russian defence deals should further progress: Rosoboronexport

A very vocal Deputy Director General of Rosoboronexport, the Russian defence export agency, Viktor M. Komardin began his interaction with the media at NAMEXPO 2013 in Kochi by stating that only Russia was predominant in the show. "Where are the other countries?," he asked.

Taking his argument further, Komardin said India and Russia are 'genetically friendly' and 'politics comes first and economics comes second' in this relationship. Dismissing the question that India was moving away from Russia with regard to defence deals, he remarked 'never judge by digits'. Indian imports with Russia are increasing and Russia has been transferring technologies.

"More than 70 warships have been built for India over 45 years of Russian-Indian cooperation in the naval sphere. Russia is providing assistance in designing and supplying systems and equipment for indigenously developed ships under construction in India. Among them are the Project 15A, 15B destroyers, Project 17 frigates and Project 71 aircraft carrier. In addition, Sevmash, part of USC, is completing the trials of the aircraft carrier Vikramaditya."

On the medium multi-role combat aircraft (MMRCA) deal, Komardin said the procurement of 126 Rafale aircraft had been delayed and that cost had almost double. "While the contract nego-

tiations between the buyer and the lowest bidder would normally witness the buyer asking for further lowering of price, the MMRCA negotiations saw the price almost double. What does this mean?"

Komardin also said that the fifth-generation fighter aircraft being jointly developed by India and Russia would be ready in the next five years and it would be a generation ahead of the Rafale. As for the multi-role transport aircraft (MTA), developed by the Russian United Aircraft Corporation-Transport Aircraft and the Hindustan Aeronautics Limited (HAL) under a joint venture, he said the project would take time to fructify as bureaucracy made processes cumbersome and difficult.

Regarding naval potential, he said the Russian companies were looking at deepening cooperation with India's state and private manufacturers of naval equipment, in particular, the joint design and construction of new ships. Rosoboronexport was holding talks with its partners in South East Asia, where potential customers are showing interest in patrol boats and Project 22460E patrol ships, Gepard 3.9 class frigates, Bastion and Bal-E coastal defence missile systems, shipborne SAM and artillery systems, and anti-ship missiles. **SP**

— R. Chandrakanth



Innovation at the core of ReconRobotics success

In an interview with the Editor-in-Chief of SP's M.A.I. Jayant Baranwal, the President & CEO of ReconRobotics Alan F. Bignall outlines the success of ReconRobotics as the company believes in "giving the warfighters precisely what they need." Excerpts of the interview:

Jayant Baranwal (SP's): In about seven years time since inception of your company, you have emerged as the second largest producer of military and police robots in the world. What do you attribute to this huge success?

Alan F. Bignall (Bignall): Seven years ago, all military and police robots were very large – 20+ kilograms – and very complex with articulated arms, large control units. They were transported in a vehicle and operated only by trained experts, primarily during counter-IED operations. In 2007, we introduced a .5-kilogram personal robot that was a game changer. It could be carried in a small pouch, deployed in five seconds, thrown up to 35 metres and operated by anyone. Military and police operators quickly realised that this micro-robot would save many lives by providing immediate situational awareness. This innovation led to great success in the US and ultimately in more than 30 countries worldwide. We now have more than 4,100 of our Throwbot XT (TXT) sensor systems deployed with military and police forces.

SP's: ReconRobotics (RR) has participated in Counter Terror Expos in UK and USA, has your company explored the Asian market and participated in exhibitions or demonstrated your products in Asian countries?

Bignall: We participated in DSA in Kuala Lumpur in 2011, and in the Land Warfare Conference in Melbourne in 2012. In addition, our resellers have participated in country-specific exhibitions in many Asian countries, including China, South Korea, India and Indonesia.

SP's: Besides the US, which countries account for healthy sales of

RR products? Do you have a distribution network in India and if yes, what is the contact point and who have you marketed your products?

Bignall: Our strongest international markets to date have been Canada, the UK, Switzerland, Italy, Norway and China. Our distributor in India is AudoViso Private Limited, managed by Ashim Kumar. +91 11 4584 0000; military@audoviso.com

SP's: From its description, Throwbot XT would be of good use to locate terrorist in NLOS conditions but in situations where they do not have overhead cover, is it possible to manoeuvre this micro-robot through openings made by fire or through an open window in order to cover the situation within the building?

Bignall: The Throwbot XT is designed to be thrown – through a window or door, onto a rooftop, or over a wall. It can even be dropped from the top of a three-storey building onto concrete and still send back clear video and audio reconnaissance. The micro-robot operates at low frequencies, enabling the transmissions to and from the robot to propagate through walls, windows and doors. No other robot in the world delivers this unique set of capabilities. It is also important to note that the Throwbot XT is an important tool for maritime interdiction and ship-boarding teams. Because of its unique transmitting frequencies, the TXT can be used to search one- and two-levels below the top deck of a ship, and the operating standing on the top deck is able to still receive clear video reconnaissance. We also make a SearchStick that converts our Throwbot XT into a pole camera, which can be used to search over walls or into attics, crawl spaces and even into the holds of a ship.

SP's: What would be the effect of rain, snow and wind on the operation of the Throwbot XT since there are many occasions of counter-terrorist operations being conducted in adverse weather conditions?

Bignall: The Throwbot XT is highly water resistant and can easily withstand immersion in up to 30 cm of water for up to 10 minutes. It can also be decontaminated following use in HAZMAT situations, and can be used in temperatures well below freezing. More than 1,000 of these micro-robots have been used in all kinds of weather for more than three years in Afghanistan, and they continue to save lives and help soldiers perform their missions without fail.

SP's: What technological edge does Recon Scout have over its nearest competitor?

Bignall: Our edge has always been strongest in giving warfighters precisely what they need. They wanted a throwable audio and video sensor that was ultra-lightweight, quick to deploy, simple to operate, easy to carry, extremely durable and quiet in its operation. The Throwbot XT delivers all of these capabilities and costs thousands of dollars less than any other military robot. It has been battle-tested now for three years and many foreign militaries are now equipping their warfighters with this unique capability.

SP's: Since the Throwbot XT can be thrown up to 120 feet (35 metres), can it be useful for surveillance in high altitude areas as elevated surveillance platform as a supplement to UAV cover?

Bignall: The Throwbot XT can be used at any altitude, and we see no reason why it would not work on an elevated surveillance platform.

SP's: As described, the Recon Scout Throwbot delivers situational awareness about what lies behind a door, down a hallway, or over a wall before the force enters a location. What is not clear is what can the Throwbot XT tell what is "behind the door" and how?

Bignall: Once a TXT is deployed into an environment, an operator can direct the robot to move deep into the structure, down hallways and into rooms, and the video and audio signals will still propagate through several walls to the hand held operator control unit. This gives the operator tremendous standoff distance, which keeps him safe from hidden threats.



SP's: Is ReconRobotics prepared to undertake transfer of technology to Asian countries including India and help establish production line in the buyer country?

Bignall: We have not been asked by any country to establish production in their country. Our international buyers in police and military seem very pleased with the superb quality of our American-made micro-robot systems, and have not expressed a desire to change our manufacturing system.

SP's: Has the Recon Scout IR been used in actual combat situations? Aside from use in counterterrorism tasks in built-up areas in urban environment, how can this be used in open and forested terrain? Can it be used for surveillance in border areas by night?

Bignall: Both the Recon Scout IR and Throwbot XT have been successfully used in hundreds of military operations, including route- and building-clearing missions, urban warfare operations, IED reconnaissance and remote surveillance. It can be placed along a trail at night to watch for dismounted enemy troops, and is also exceptional when used at vehicle checkpoints to inspect vehicle undercarriages for explosives or narcotics. The TXT's infrared optics allow it to see in complete darkness.

SP's: Are you also developing IED detection equipment that can be mounted on vehicles leading a convoy and which can remotely detonate various types of IEDs before the convoy reaches the danger zone?

Bignall: That would be an excellent capability to deliver to warfighters, but we have no plans to develop such technologies.


SP's: Can these micro-robots survive IEDs?

Bignall: The Throwbot XT is not designed to withstand an IED explosion, but it all depends on how close the robot is to the IED and the force of the explosion. The Throwbot XT operates very low to the ground, so in that respect it is somewhat protected.

SP's: What further research is going on in the company to enhance life-saving reconnaissance capabilities of micro-robots? What percentage of your overall business is invested in research?

Bignall: We are continually receiving ideas from military and counterterrorism teams about new technologies to add to our micro-robots, and our design and engineering group is very good at bringing them to market. We redirect the overwhelming majority of our profits back into product development and this strategy of continuous innovation has served us very well. In 2013, we were named one of the 50 Most Innovative Companies in the World by *Fast Company*, an outstanding US-based business magazine. We are proud of this recognition, which placed us on the list with Google, Apple and Amazon, and it motivates us to keep our innovative edge.

SP's: Could you give us some examples of the extraordinary work the micro-robots have done in saving lives of warfighters?

Bignall: We get letters and e-mails all the time from both warfighters and police indicating that "Your Throwbot XT saved our lives last night." The "Know Before You Go" capability that our micro-robots provide not only protects warfighters but also innocent civilians. This knowledge motivates everyone at our company to excel in designing and building game-changing products for those men and women who put their lives on the line in military and police service. There are many SWAT profiles on our website that contain such testimonials, including this one from the French Counter Terror RAID team: http://www.reconrobotics.com/pdfs/ReconRoboticsw_RAID_micro-robot_Toulouse.pdf 



1964

Our Journey Starts as Guide Publications was founded by its Founder Publisher & Founder Editor Shri S P Baranwal...

Apart from many publications written, edited and published by the Founder, Military Yearbook is introduced in 1965...

1974

Military Yearbook continues relentlessly with collective support from dignitaries including the Prime Ministers and Presidents of India...

1984

50

JUST 1 STEP SHORT OF

2014

WE SHALL BE 50 THIS YEAR

Guide Publications is rechristened as SP Guide Publications offering tribute and gratitude to its Founder...Also envisioned is the path of introduction of a few magazines...

2013

Military Yearbook is rechristened as SP's Military Yearbook conveying gratitude to Founder Publisher...

SP's Aviation, SP's Land Forces, SP's Naval Forces are launched starting from '98 and within a span of a few years...

SP's Airbuz, SP's M.A.I. follows the intensity of magazines introduction...

1994

2004

50 YEARS

1964 - 2014



50 YEARS

SP GUIDE PUBLICATIONS

Submarine Artful takes a bow during grand unveiling

The latest state-of-the-art submarine in the Astute class has been unveiled during a ceremony at its site in Barrow-in-Furness. Artful — a 7,400-tonne, 97-metre-long attack submarine — was officially named in front of thousands of guests in an event to mark the end of its build process.

The ceremony was performed by Amanda Lady Zambellas, wife of the Royal Navy's First Sea Lord, Admiral Sir George Zambellas, inside BAE Systems' giant Devonshire Dock Hall (DDH) submarine construction facility.

John Hudson, Managing Director of BAE Systems Maritime-Submarines, said: "The design and build of a nuclear powered submarine is as challenging as it is complex, so today represents a significant milestone in Artful's programme.

"It requires real skill and innovation to deliver submarines as sophisticated as Artful and this would not have been possible



without the valued contribution of our employees and the collaborative efforts of the whole submarine enterprise.

"With this ceremony Artful moves one step closer to joining her sister vessels HMS Astute and HMS Ambush in the Royal Navy fleet, equipping the submarine service with a class of highly capable vessels."

Following the ceremony, Artful will remain in the DDH to complete a series of commissioning activities, before being launched in early 2014 for further tests and commissioning. **SP**

PHOTOGRAPHS: Lockheed Martin, BAE Systems



Lockheed Martin Havoc 8x8 demonstrates crew protection in Marine Corps' blast testing

Lockheed Martin's Havoc 8x8 armoured modular vehicle successfully completed protection systems testing, achieving every test objective during a series of blast tests this summer. Havoc is Lockheed Martin's entry in the marine personnel carrier (MPC) competition.

Havoc completed all threshold and objective protection system testing, with instrumentation indicating that no disabling injuries would have resulted to any of three crew members and nine dismounted marines, had they been on board during the test events.

"Keeping marines safe and ready to

execute their mission is our top objective, and we have now validated that Havoc will provide the protection our Marines require," said Scott Greene, Vice President of Ground Vehicles at Lockheed Martin Missiles and Fire Control. "Havoc's armour performed just as our advanced protection modeling had predicted."

In March, Havoc successfully concluded amphibious and human-factors "swim" testing, showing its ability to maintain 100 per cent operational readiness while completing all surf- and wave-condition testing required by the Marines.

Havoc is a multi-mission, expeditionary ground combat vehicle that is an evolution of the Patria 8x8 Armoured Modular Vehicle, a battle-tested design used by armed forces globally. In cooperation with Plasan Sasa Israel, the team has advanced the design of the vehicle significantly for the Marine Corps. **SP**

Navantia and US Navy sign service contract of four destroyers

Navantia has signed with the US Navy a service contract of four destroyers who will be deployed during 2014 and 2015 in the Naval Base of Rota as part of the BMDI, according to the agreement reached between both governments in 2011 and signed in 2012. The contract includes the maintenance of these units in the periods of immobilisation in Rota,

and has a duration of one year more six optional years.

Navantia's experience in the design, construction and maintenance of the ships, similar to the Spanish Navy in its systems, as well as its excellent infrastructure and workforce skill capacity, have been decisive for the adjudication of this contract.

Likewise, the attainment of this contract with the US Navy, with the highest level of requirements, supposes for Navantia a great international prestige, guaranteeing his leading world position in the naval military construction. **SP**

Airbus Military delivers first A400M to France



After many trials and tribulations, Airbus Military on September 30 delivered its first A400M, said to be most versatile airlifter of the 21st century. The A400M programme was launched in 2003 and the maiden flight took place on December 11, 2009, but the programme was plagued by one problem or the other, leading to cost overruns of about 6.2 billion euros.

The programme has been going through rough weather but then after the September 30 handover ceremony at the Airbus Military plant in Seville, Spain, Airbus Military officials are excited about the airlifter which is to take head on the competition from Lockheed Martin's C-130 Hercules. The ceremony was attended among others by HRH Prince of Asturias, French Minister of Defence Jean-Yves Le Drian, Spanish Minister of Defence Pedro Morenés, as well as other military authorities from France and other partner nations and OCCAR representatives attended the ceremony along with EADS CEO Tom Enders, and Airbus Military CEO Domingo Ureña-Raso. The French Minister termed the aircraft as a 'technological feat'.

As of August 2013, Airbus Military had an order book of 174 A400M of which France will be picking up 50, Germany 53, Spain 27 and Britain 22. The French have rescheduled their purchase and the Minister has clarified that France will take only 15 planes in its 2014-19 supply programme, down from 35 A400M it had planned to take. EADS is worried that any downsizing of the deliveries by France will have a cascading effect on the programme which is backed by seven partners—NATO members Belgium, Britain, France, Germany, Luxembourg, Spain and Turkey, besides Malaysia.

The A400M has had problems with the complex engine and also the demanding requirements of the partner nations which resulted in inordinate delays.

However, the aircraft is a versatile one which can perform three

very different types of duties: tactical missions to the point of need and long range strategic/logistic ones, besides serving as an air-to-air refuelling "tanker". Powered by four unique counter-rotating Europrop International (EPI) TP400 turboprop power plants, the A400M offers a wide flight envelope in terms of both speed and altitude. It is the ideal airlifter to fulfil the most varied requirements of any nation around the globe in terms of military, humanitarian and any other "civic" mission for the benefit of society.

The A400M can perform missions which previously required two or more different types of aircraft, and which even then provided an imperfect solution. Its fuselage external width of 5.64 metres (18 ft 6 in) is equal to that of the A330/A340 wide-body. Its cargo hold has an inside usable width of four metres (13 ft), height of up to four metres (13 ft), and usable length of 17.71 metres (58 ft).

Heavy and outsize loads

With a maximum payload of up to 37 tonnes (81,600 lb) and a volume of 340 m³ (12,000 ft³), the A400M can carry numerous pieces of outsize cargo including, vehicles and helicopters that are too large or too heavy for previous generation tactical airlifters, for example, an NH90 or a CH-47 Chinook helicopter, or two heavy armoured vehicles for military purposes. The A400M can also carry 116 personnel, or paratroops. The airlifter has the capability to fly distances up to 4,700 nm (8,700 km), at a cruising altitude up to 37,000 feet, and at a speed of up to Mach 0.72, very similar to that of a turbofan powered airlifter. It can even fly up to 40,000 feet for special operations. Thanks to its unique short landing characteristics, the A400M is the only large airlifter that can fly equipment and personnel directly to the site of action, where these materials are urgently needed. **SP**

— R. Chandrakanth

HAL delivers home-made 'Hawk' to Indian Navy

The Hindustan Aeronautics Limited (HAL) has achieved another milestone by handing over the first home-made Hawk Mk 132 aircraft to Indian Navy recently. "We built this aircraft in time and this is the first of the five aircraft to be delivered to the Indian Navy. The remaining four will be delivered soon", said Dr R.K. Tyagi, Chairman, HAL. He handed over the related documents to Vice Admiral Pradeep K. Chatterjee, Deputy Chief of Naval Staff.

Dr Tyagi said it is matter of pride that all the training aircraft of the Indian Navy have been supplied by HAL. "We are carrying forward this legacy and will ensure that the Navy gets all the support from HAL on all parameters." Hawk Mk-132 is the latest entry into HAL made and maintained aircraft and helicopters of the Indian Navy which include Kiran and DO 228 aircraft, advanced light helicopter (ALH), Chetak and Cheetah helicopters. In addition HAL has also supported the Navy in upgrade of Sea Harrier.

Vice Admiral Chatterjee said the Navy has a long-standing and unique partnership with HAL. "We will continue to work shoulder to shoulder for all our current and future programmes. Hawk delivered



today will have a pride of place in the Navy's fleet. Given the fruitful association with HAL, we will even think of reviving past projects."

Against the contract for supplying 17 Hawk aircraft, HAL plans to deliver five aircraft in the current fiscal and balance in next three years to the Indian Navy. **SP**

Sikorsky S-97 Raider helicopter enters final assembly



Sikorsky Aircraft Corp. has begun final assembly of the prototype S-97 Raider helicopter following acceptance of the fuselage structure from Aurora Flight Sciences.

Consisting of an integrated cockpit, cabin and tail cone, the composite fuselage arrived September 20 at Sikorsky's Development Flight Center in West Palm Beach, Florida, where the company will complete a light tactical rotorcraft designed to outmatch conventional military helicopters in speed, manoeuvrability, payload, range and high altitude operations.

"The first fuselage marks a significant milestone for the industry-funded Raider helicopter programme," said Debra Zampano, Sikorsky S-97 Raider Program Director. "Aurora has delivered an advanced composite aerostructure designed for our rapid development programme. The Sikorsky

team is now ready for final assembly of the prototype Raider aircraft. We look forward to showcasing the aircraft's exceptional performance and value to the US military."

Sikorsky will convert the fuselage into a 36-foot-long, 11,000-lb. gross weight S-97 Raider prototype aircraft. Configured to Sikorsky's X2 coaxial design, the fly-by-wire controlled helicopter will feature counter-rotating rigid main rotor blades for lift and forward flight, and a pusher propeller for high speed acceleration and deceleration.

Sikorsky proved the efficiency of the rigid rotor coaxial design in 2010 when its 6,000-lb. gross weight X2 demonstrator helicopter achieved 250 knot flight speed, or twice the speed of conventional helicopters. It also demonstrated low pilot workload and low acoustic signature.

The Raider prototype aircraft will improve on the X2 demonstrator by showcasing precision manoeuvres in low flight speed, high G turning manoeuvres at over 200 knots, hot day hover performance at altitudes up to 10,000 feet, and significant improvements in payload and flight endurance compared with conventional light tactical helicopters. **SP**

Saab bags orders from HAL

Defence and security company Saab has received two orders from the Hindustan Aeronautics Limited (HAL) for serial production of an integrated electronic warfare self-protection system for installa-

tion on the Indian Army's and Air Force's advanced light helicopter (ALH). The orders have a total value of approximately SEK 216 million (USD\$33 million).

Saab's Integrated Defensive Aids Suite (IDAS) protects crew and aircraft and enhances the survivability in sophisticated, diverse and dense threat environments. The system provides a timely warning against different types of threats including radar, laser and missile approach warning; and automatically deploys the appropriate countermeasures.

"Saab has an unbeaten capability in the field of electronic warfare and self-protection. The IDAS system is one of our flagship products sold to customers around the world," says Micael Johansson, Senior Vice President and Head of Saab's business area Electronic Defence Systems.

These orders follow initial serial production orders received in 2008 and further established Saab as a local partner to the Indian industry and provider of high-tech products and systems to the Indian armed forces.

"With these orders we continue to build on our very successful partnership with HAL. The fact that HAL and the armed forces have continued to show faith in the IDAS system is a testimony of the effectiveness and reliability of the solution," says Lars-Olof Lindgren, Head of Market Area, Saab India.

Deliveries are scheduled to commence in 2014. Development and production of the IDAS system will take place at Saab in Centurion, South Africa. **SP**

Northrop Grumman readies MQ-8C Fire Scout for flight operations

Northrop Grumman Corporation (NOC) turned on the power to the US Navy's first MQ-8C Fire Scout unmanned helicopter and rotated the aircraft's four blades for the first time during initial ground testing and engine runs at Naval Base Ventura County Point Mugu, California, September 20.

Conducting initial engine runs of the aircraft allows engineers to collect data to ensure that all the aircraft's systems are functioning and communicating properly prior to its first flight.

"Completion of these tests signifies our steady progress towards the first flight of the MQ-8C Fire Scout," said George Vardoulakis, Vice President of Medium Range Tactical Systems at Northrop Grumman. "We continue to work closely with our Navy customer, ensuring that the Fire Scout system is checked out and ready before operational use."

This latest aircraft upgrade to the Fire Scout system provides the Navy with more than twice the endurance and three times the payload carrying capacity, enabling an unprecedented level of persistent surveillance, intelligence and reconnaissance capability. **SP**



First flight by a French crew of a Reaper drone

The first familiarisation flight of a French Air Force crew flying an MQ-9 Reaper drone took place on September 24, 2013, at the Holloman air force base in New Mexico, in the United States. The flight, which lasted two hours, was intended to familiarise the crew with the handling of the aircraft and of its onboard sensors; the crew consisted of two pilot/operators with prior experience of the French UAV systems.

This first flight concludes theoretical and practical training courses lasting five weeks, and which included five hours on a flight simulator.

France's defence white paper identified four principles for our future defence model that underlie the choice of the equipment that will be provided by the military planning law. The first of these principles is the strategic autonomy to allow France to have its freedom of decision and action. To meet this requirement, the law provides for capacity building to allow initiative in simple and probable operations, including better intelligence-gathering, for example by using medium altitude long endurance (MALE) drones.

This is why the military planning bill provides an unprecedented effort in the field of intelligence including, inter alia, the acquisition of 12 Reaper MALE UAVs.

Delivery of the first two aircraft and one ground station is scheduled after the turn of the year. To allow their earliest operational availability, three crews belonging to the

air force's 1/33 "Belfort" Drone Squadron, based at Cognac air base, is currently training at Holloman air force base. **SP**

Boeing QF-16 aerial target completes first pilotless flight

Boeing and the US Air Force have completed the first unmanned QF-16 full scale aerial target flight, demonstrating the next-generation of combat training and testing.

Two US Air Force test pilots in a ground control station remotely flew the QF-16, which is a retired F-16 jet modified to be an aerial target. The QF-16 mission profile included auto takeoff, a series of simulated manoeuvres, supersonic flight, and an auto land, all without a pilot in the cockpit.

"It was a little different to see an F-16 take off without anyone in it, but it was a great flight all the way around," said Lt Col Ryan Inman, Commander, 82nd Aerial Tar-

gets Squadron. "Now we have a mission capable, highly sustainable full-scale aerial target to take us into the future." **SP**

UCAS centennial flight



The X-47B (AV-2) conducted the 100th flight for the Navy's unmanned combat air system demonstration (UCAS-D) programme recently.

The Navy UCAS programme successfully completed all objectives for the carrier demonstration phase with the X-47B in July. During three at-sea periods over eight months, the X-47B conducted a total of 16 precision approaches to the carrier flight deck, including five planned tests of X-47B wave-off functions, nine touch-and-go landings, two arrested landings and three catapult launches.

The programme is currently planning for continued carrier integration demonstrations and has also begun surrogate Learjet testing of the autonomous aerial refuelling (AAR) capability, which promises to significantly increase the endurance and range of carrier-based unmanned aircraft. **SP**





LT GENERAL (RETD)
P.C. KATOCH

Hacker help in cyber chinks

But while the focus remains on big-ticket issues, we fail to appreciate how vulnerable all our industries are and the cumulative shock that our economy can receive if these are attacked to regress our industrial growth. The general belief that industrial systems are safe if not connected to internet is highly naive.

Industrial espionage and cyber attacks on industrial networks including critical infrastructure is not a new phenomenon, supervisory control and data acquisition system (SCADA) being far more vulnerable. Such an attack had caused the 1982 Siberian pipeline explosion with a Trojan inserted into SCADA software. Since then, there have been numerous cyber attacks world over: disabling multiple emergency systems, attacking floodgates of dams, shutting power and communications at airports, gas pipeline failure; crippling nuclear monitoring, shutting down hospital systems and more.

In year 2000, an ex-employee issued radio commands to the sewage system in Australia resulting in 8,00,000 litres of raw sewage flowing in reverse, causing major spills, submerging grounds of Hyatt Regency Hotel, killing marine life, turning creek water black and unbearable stench continuing for days. In more recent times, we have heard of Stuxnet, Du Qu and Flame; Stuxnet jointly developed by US and Israel that attacked centrifuges of the Iranian nuclear programme, Qu Du used extensively for industrial espionage and Flame primarily for cyber espionage in the Middle East and slowing down the Iranian nuclear programme.

But while the focus remains on such big-ticket issues, we fail to appreciate how vulnerable all our industries are and the cumulative shock that our economy can receive if these are attacked to regress our industrial growth. The general belief that industrial systems are safe if not connected to Internet is highly naive.

At a recent event organised the Cyber Security and Privacy Foundation at Anna University, Chennai, a pair of Brazilian network specialists (one hacker and another industrial control system expert) held the audience in complete awe. The hacker (Ewerson Guimaraes), who runs Delabs (a security research laboratory), presented the vulnerabilities of servers on Citrix platform where even simple tasks like using the 'help' option or hot keys can lead to hacking the server itself.

Significantly, he has found vulnerabilities in 'all' the operating systems. Even simple tasks like using 'help' option or hot keys can lead to hacking servers on Citrix platform. Citrix applications are widely used by companies to provide virtualised applications. Hacking

involved using help menu of applications to gain control of the server on just pressing CTRL+F1 to bring the shutdown screen of the server.

Ewerson wrote to Citrix eight years ago to fix this vulnerability but this has not been rectified. The Brazilian industrial control system expert (Jan Seidl) demonstrated how public services could be abused in order to disrupt systems while avoiding detection. He demonstrated how communication between servers could be disrupted, 'faking' vital data that can lead to irreparable damage to industries.

The paradox is more because SCADA systems are increasingly being adapted by industries, especially for power distribution and for controlling critical processes like in steel plants, and these systems are becoming more and more vulnerable. As part of his demonstration, he even disconnected the physical controlling unit PLC (programmable logic controller) from the system after replacing it with his own software simulation which took over control effortlessly. According to him, at least 99 per cent of industrial platforms can be attacked even when isolated from Internet. Industrial malwares are being increasingly used by governments and corporations to target specific installations, Stuxnet being one example.

As per a report in the *Wall Street Journal* in July this year, hacker firms like Auriemma and Ferrante would have sold their services to Israel, Britain, Russia, India and Brazil, reportedly some of the biggest spenders in this regard. ReVuln specialises in finding remote vulnerabilities in industrial control and US and Israel both have exploited a series of flaws in operating systems including in Windows. Governments are paying thousands of dollars to learn and exploit chinks in computer systems of adversaries. Not without reason, China has an army of over 60,000 civilian hackers other than within PLA and the PLA spearheads Chinese cyber warfare. Our cyber security establishment and NTRO need to take note. Undoubtedly, there is plenty of talent (IT engineers, hackers and others) in the country that merely needs harnessing and direction. **SP**

The views expressed herein are the personal views of the author.



National Integration Council condemns violence in any form

The 16th meeting of the National Integration Council, which was held in New Delhi, unanimously resolved to condemn violence in any form committed to disturb communal harmony and to deal with all those indulging in such violence in a prompt and resolute manner under the law.

The resolution said efforts would be made to take all measures to preserve, sustain and strengthen the harmonious relationship between all communities and enable all citizens to lead their lives in freedom as equal citizens with dignity and honour.

It also resolved that the Government and all stakeholders shall take all measures for resolving differences and disputes among the people within the framework of law and institutions set up thereunder in order to strengthen our secular and pluralistic society.

The other resolutions included: To condemn the repeated atrocities on the Scheduled Castes and Scheduled Tribes, and take stringent action on the perpetrators of such crimes under the various laws and special acts enacted. To condemn the sexual abuse, molestation and violent attacks on women and to ensure prompt and firm action against the culprits by the law enforcement agencies as well as speedy prosecution of such cases under the criminal justice system. **SP**

India, Mozambique discuss bilateral security

Bilateral security matters between India and Mozambique were reviewed at the Minister's level meeting held in New Delhi recently. The Indian side was led by Mullappally Ramachandran, Union Minister of State for Home Affairs and the Mozambique side by Jose Mandra, Deputy Minister of Interior.

Both the Ministers reviewed matters related to training of police personnel, supply of security related equipment, visa for their citizens, immigration issues and disaster management. The meeting was held in a warm and cordial atmosphere. Both the countries resolved to strengthen their bilateral security cooperation. **SP**

Prime Minister expresses shock over Westgate terror attack

Dr Manmohan Singh has expressed shock over the Westgate Mall terror attack in Nairobi. In a message to President Uhuru Kenyatta of Kenya, Prime Minister said the incident is a reminder of the challenge posed by terrorism and called for a sustained response from the global community and assured Kenya that India stands ready to assist the country in this hour of grief.

The Prime Minister said: "I was deeply shocked and saddened by the brutal terror attack yesterday on the Westgate Mall in Nairobi. This incident is a stark reminder that the persisting menace of terrorism remains a formidable challenge that calls for a concerted and sustained response from the global community. India condemns in the strongest terms this heinous and senseless assault, which has snuffed out so many innocent lives, including nationals of both our countries.

"We stand in solidarity with you and the Government and the people of Kenya in this hour of grief. Please convey our heartfelt condolences to the bereaved families and our good wishes to the injured for a full and speedy recovery. I am confident that Your Excellency and the people of Kenya will have the strength and the resilience to deal with this tragedy and respond firmly to the forces of terror. We stand ready to assist you in your efforts." **SP**

Fighting terrorism....people need to be trained

The US Secretary of State John Kerry has unveiled an initiative to address the problem of violent extremism. Addressing the Global Counterterrorism Ministerial Forum recently, he said that US will enhance its contribution to the forum and also work

towards strengthening two training centres to help train people in fighting terror attacks.

The Centre for Excellence in Countering Violent Extremism is functioning in Abu Dhabi and another is expected to open in 2014 in Malta. The second is called the International Institute of Justice and the Rule of Law.

"It is fair to say that unspeakable evil still exists in our world. We have to find a way to prevent, to preempt, to act ahead of these kinds of obscenities," Kerry said.

Denouncing the recent terrorist attacks, including the massacre in a Nairobi mall by the Somali al-Shabab militants, and the double suicide attack on a church in northwest Pakistan which killed 82 people, he said they were "cowardly attacks like these cannot be allowed to change who we are, or shake our resolve to find peace and justice for all."

Kerry announced the United States would put an additional \$30 million into the fund which supports the forum's activities, and said the Department of State was working to launch a new arm of the forum specifically to address terrorism at grassroots level. "From Kenya to Pakistan from Mali to Yemen the threat that we face is more diffused, centralised, geographically dispersed than ever before," he said.

"Addressing this threat will require every tool in our arsenal—political, economical, diplomatic, military — and perhaps most importantly, the power of our ideas." Kerry stressed, however, that "getting this right is not just about taking terrorists off the street, it's about providing more economic opportunities for marginalised youth at risk of recruitment. It's about challenging the narrative of violence that is used to justify the slaughtering of innocent people."

For such efforts to be "effective, they've got to be driven by local knowledge, they've got to be responsive to concerns of local communities," he told the forum. **SP**

US Acting Secretary of Homeland dwells on aviation security

Acting Secretary of Homeland Security Rand Beers was in Canada recently to participate in the 38th Assembly of the International Civil Aviation Organization (ICAO) in Montréal, and meet with international counterparts to discuss aviation security and efforts to secure the global supply chain.

"In recent years, the international community has worked together to forge a new foundation for aviation security, making air travel safer and more secure than ever before," said Acting Secretary Beers. "In order for us to continue to build upon this progress, we must continue to work together on an international, risk-based approach to expediting travel while improving security." **SP**



'We do have a strong offset strategy across Rockwell Collins'

*Rockwell Collins is growing rapidly, thanks to its global strategies and values. Excerpts of a conversation between **Colin Mahoney**, the Senior Vice President (International and Service Solutions) Rockwell Collins and **Jayant Baranwal**, Editor-in-Chief, SP's M.A.I.*

Jayant Baranwal (SP's): Could you give a brief overview of Rockwell Collins?

Colin Mahoney (Mahoney): We started 80 years ago as a communications company and have maintained the heritage and advanced it. Our portfolio includes core aviation electronics, displays, autopilots, flight management systems, communication navigation surveillance, and mission computers. We have head-up guidance systems very familiar in the defence environment and becoming increasingly popular in the commercial environment too.

SP's: Besides aviation, could you indicate your footprint in the other forces and the entities at sea?

Mahoney: In network-centric operations, we have got to have an element of ground activity, surface either army or naval. Targeting systems are a big deal for us and when you think of being in a coalition environment, it is important to bring all the forces to bear in the battlefield. We have a lot of targeting and joint fire capabilities in the domain of surface solutions in our government business. In naval, of course there are satellite communication, sub-net relays, ad hoc networks, etc. It is all aviation electronics and how we tailor that to the ground environment.

SP's: Does the Boeing P-8I have any Rockwell content?

Mahoney: Yes, everything including cockpit and avionics. The airplane comes with complete Rockwell Collins communication navigation surveillance system. It is max version, so when you get max version you get Rockwell Collins displays, autopilot, and extensive flight deck capabilities.

SP's: This means that the involvement of Rockwell Collins is likely to increase in India gradually? Are you hoping to get a good share of business once the battlefield management system (BMS) gets finalised?

Mahoney: That is what we are planning for sure. As new airplanes come into this market we are more often than not a big part of the C-17, C-130, etc. These carrier planes come in foreign military sales (FMS) environment and generally have got Rockwell Collins content.

SP's: Which is beneficial for your company – FMS route or the direct commercial sales (DCS) route?

Mahoney: We are kind of agnostic. Our presence in India will drive

results in either category. We think we are good and ultimately we cannot make you decide whether you want to procure via FMS or DCS. What we can do is make sure you are fully aware of everything we provide. At the end of the day, it is DCS or FMS, the teams in India would have done their work.

SP's: Could you outline the range of Rockwell Collins' technologies and services in military markets?

Mahoney: We have very strong presence in fixed- and rotary-wing aircraft. Helicopters radars, we are pretty much on AgustaWestland in communication and surveillance and they have shown proven capabilities in flying airplanes and battlefield systems.

In securing communication environment in network-centric operations we are a big player. There is an increasing demand everywhere, including India. Targeted solutions, electronic warfare solutions are some of our defence capabilities.

In India, for defence applications, we are focused on communications, avionics and situational awareness solutions for helicopters, satellite communications, electronic warfare (EW), and networking systems. Today, we have radios, GPS and EW equipment on multiple military aircraft, including the following example customers:

- ECIL for electronic counter-countermeasure radio modules
- HAL for DO 228 (communication and navigation equipment) - end customers are Navy, Coast Guard and Indian Air Force (IAF)
- Indian Space Research Organisation
- IAF for communication, navigation in platforms such as C-130, C-17 and future Helos (Apache and Chinook).
- We have many customers with our ARC 210 and Talon radios on platforms such as the DO 228 for the Navy. As well as electronic counter-countermeasure equipment and GPS on aircraft use by defence forces through our customer the Electronics Corporation of India Ltd (ECIL).

We do face more challenges on the defence side related to indigenisation, export laws and only in recent years are being able to do defence business with India. It does take time to build relationships and make progress in new countries as we have seen that in Brazil and the Middle East. We believe we will succeed in India as well.

SP's: Could you tell us about the design centre in Hyderabad?

Mahoney: The design centre is the operating arm of engineering business. Our vision for Rockwell Collins' India Design Centre is to support

'We fully expect many of the future programmes in India to be "Make India" programmes, so teaming with Indian partners has been and will continue to be a key element in our strategy'

local and international governments, aerospace OEMs, and contractors with engineering design services and systems that can help customers achieve a shorter time to market, at a lower programme or project life-cycle cost, with the highest quality innovative solutions.

SP's: What has been the expansion strategy and which are the target markets for your company?

Mahoney: We are present in 27 countries and have service centres in 13 countries. In military, we have an offering called Flexforce which is performance based logistics. Everybody is rewarded for success and the product is there when you need it. A performance based environment is better way than the historic approach in which if a part breaks, the customer sends it to the company and is charged for that. The performance based approach is cost-effective and is helping us expand our customer point touch network.

SP's: Which country in Asia is your topmost strategic partner as of today?

Mahoney: From the defence perspective, India is in the top of the list. With the refining of the Defence Procurement Procedure (DPP), India is where opportunity exists for us and that's why the level of focus from our company.

In South Korea, I will take a European analogy. Turkey for example years ago embarked upon making their industry indigenous. Unfortunately for us, we did not see that happening and we embarked upon the journey a bit too late. We weren't part of the infrastructure development and we tried to put in niche products. In Korea, it is fast forward, it looks like Turkey of 10 years ago. We started developing assets for Korea and help develop indigenous capabilities. India's defence industry aspires to become indigenous. The last DPP was very specific in terms of source selection. We have got to be part of infrastructure aviation by not just bringing products but partnering with companies in India to accomplish the mission.

SP's: India has been fine-tuning its offset and defence procurement procedure. Is it creating a friendly environment for global companies to participate?

Mahoney: The DPP policy is crystal clear. They are steering your acquisition approach. That is different from the turkey example. It's written down with clarity. Of course you want to be self-sufficient considering your relations with China and Pakistan. We understand your need for transfer of technologies. It is perfectly clear to us. We don't find it unfair.

We fully expect many of the future programmes in India to be "Make India" programmes, so teaming with Indian partners has been and will continue to be a key element in our strategy.

Our US Government also values India. However, there are still some challenges with bringing some of our products to India. While we plan to win defence business in India working through partners, and are continuing to develop exportable products, we're also hopeful that India and the US will ultimately come to an agreement regarding communications and information security.

We do have a strong offset strategy across Rockwell Collins which we can tailor depending on the requirements and initiatives within each country where we do business. As we continue to win business in international growth markets, we are prepared to provide the most attractive offset programmes which truly are a win-win for Rockwell Collins, our partners and our customers.

SP's: Could you indicate what specific areas Rockwell Collins has identified for business development in conformity with Indian policies?

Mahoney: We opened the business development office in Gurgaon about 18 months ago. It makes us collaborate with partners in India and to understand needs and to help Indian entities know what is available. The Hyderabad centre is a cost-effective place to do business.

As regards specific business development standpoint, the journey that you have set up on advancing your network-centric communication and what we do fits very nicely with that. The partnership with Tatas on software defined radios (SDRs) is a very good example of defence business partnering.

The company's strength in network-enabled communications, advanced, integrated avionics and communications systems for fixed- and rotary-wing aircraft, precision navigation and nose to tail systems for unmanned aerial vehicles (UAVs) aligns well with India's needs. Leveraging commercial systems for military applications, we can offer faster time to market and lower cost.

SP's: The user perception is that India does not get top-end technology. What is your view?

Mahoney: In our case we are quite often in the environment of being at the forefront of technologies. Some we got, some are maturing. We bring that. I think some of your comments are around protection strategies. We have distinct strategy to grow securitisation of communication in India.

SP's: Is Rockwell Collins working on any technology breakthrough which can benefit our forces?


Mahoney: We just launched a new product line called HeliSure primarily for helicopters. Whether it's emergency medical services (EMS), law enforcement, search and rescue, or any number of other demanding mission profiles, the very nature of a typical helicopter mission means the aircrew must operate in potentially dangerous environments. HeliSure is the only completely unique portfolio of products that combines 3D visualisation, displays, sensors and databases together to provide unprecedented situational awareness for helicopters.

HeliSure's scalability and flexibility make it virtually platform agnostic. Sensor data is delivered in real time through an intuitive user interface that features 3D visualisation for information that pilots can easily, quickly and effectively process.

The first two products of the HeliSure family are helicopter synthetic vision system (H-SVS) and helicopter terrain awareness and warning system (H-TAWS). HeliSure could certainly benefit Indian defence forces.

SP's: You must be excited about P-8I, C-17, C-130.

Mahoney: Every time we come here we get excited. We have been learning to be patient and persistent. We do not take anything for granted in this line. We are going to earn here and we are going to value add for the country. That is the essence of partnership.

We believe that we have to demonstrate a value proposition to our partners. Historically, many US companies often ask what Indian companies bring to the table. We cannot think like that. That is horribly arrogant. We look at it the other way. It is this which makes partnerships work. 

Girls' actress goes 'nuts' about Jay Z

Twenty-eight-year-old British actress Jemima Kirke had to be removed by security personnel as she got overly excited seeing rapper Jay Z who was on a tour to promote his new album. The *Girls'* actress latched on to Jay Z and refused to let go while he rapped to the crowd.

But Jay Z ran into more trouble than just tiredness as he filmed the performance art piece for *Picasso Baby*, after *Girls'* actress Jemima Kirke got slightly overexcited. Jemima, who plays Jessa Johansson in the hit HBO show, threw herself at Jay Z and clung to him till security had to be called. The blonde actress, who was wearing pink trousers and a black top, kept smiling broadly as she kept a tight grip on the musician. However, Jay Z didn't let the unwanted attention from Jemima distract from his performance, continuing to rap to the eager crowd. **SP**



Westgate shopping mall massacre

On September 21, 2013, unidentified gunmen attacked the upscale Westgate shopping mall in Nairobi, Kenya, killing 66 persons including 60 civilians and six Kenyan soldiers. Five of the attackers were killed in counter operations. The attack lasted until September 24 with the attackers holding hostages and later engaging in gun battles with the Kenyan security forces. Over 200 people were reportedly wounded in the mass shooting.

The Islamist group al-Shabab claimed responsibility for the incident, which it characterised as retribution for the Kenyan military's deployment in Somalia. Many media outlets also suspected the

insurgent group's involvement in the attack based on earlier reprisal warnings it had issued in the wake of Operation Lindia Nchi from 2011 to 2012.

The *International Business Times* stated that Kenya and Israel had a secret security pact. Israeli military advisers were reported to have participated in the counter-offensive against the hostage takers and to have joined in the fighting although the Israeli Foreign Ministry refused to confirm or deny the presence of its forces. **SP**

Tunisian Interior Minister grilled over alleged security failure

Tunisian Minister of Interior Lotfi Ben Jeddou appeared recently before members of the National Constituent Assembly for questioning over an alleged security failure. The inquiry was prompted by a leak revealing Interior Ministry had prior knowledge of an assassination plot targeting opposition leader Mohamed Brahmi, who was shot dead in front of his house on July 25.

The session was attended by about 124 MPs, as the opposition has been boycotting the Assembly and calling for its dissolution since their withdrawal shortly after the killing took place. Lotfi Ben Jeddou admitted that his ministry received information about a potential threat to Brahmi's life but was unable to verify it.

The *Al Maghreb* daily published a leaked document implying that the Interior Ministry had received information from the US Central Intelligence Agency that some salafists were planning to murder Brahmi. Tunisia's ruling Ennahdha Party released a statement to urge the authorities to identify those responsible for the murder. The moderate Islamist Party, allied with two secular parties in the ruling coalition since December 2011, has called the incident a "dangerous security failure." **SP**



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