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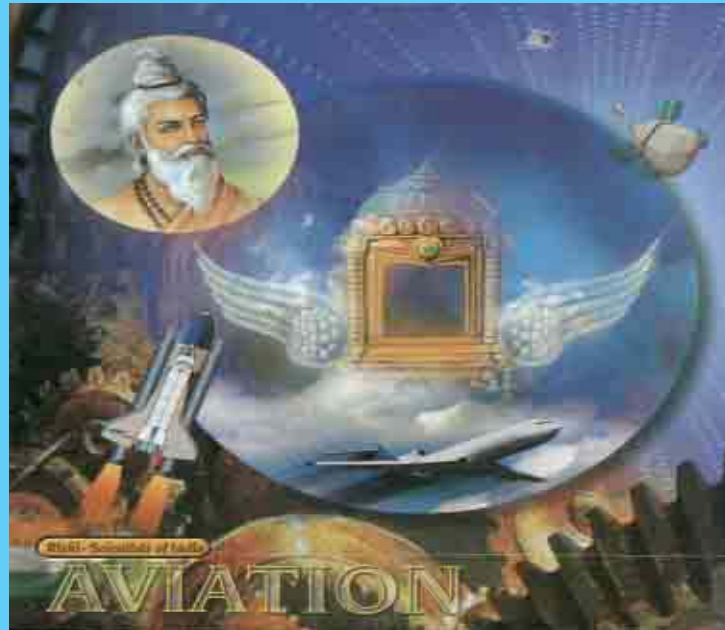
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PIONEER OF AVIATION TECHNOLOGY

Acharya Bharadwaj had a hermitage in the holy city of Prayag and was an ardent apostle of Ayurveda and mechanical sciences. He authored the "Yantra Sarvasva" which includes astonishing and outstanding discoveries in aviation science, space science and flying machines. He has described three categories of flying machines: 1.) One that flies on earth from one place to another. 2.) One that travels from one planet to another. 3.) And One that travels from one universe to another. His designs and descriptions have impressed and amazed aviation engineers of today. His brilliance in aviation technology is further reflected through techniques described by him:

- 1.) Profound Secret: The technique to make a flying machine invisible through the application of sunlight and wind force.
- 2.) Living Secret: The technique to make an invisible space machine visible through the application of electrical force.
- 3.) Secret of Eavesdropping: The technique to listen to a conversation in another plane.
- 4.) Visual Secrets: The technique to see what's happening inside another plane.

Through his innovative and brilliant discoveries, Acharya Bharadwaj has been recognized as the pioneer of aviation technology.

READER'S RESPONSE

The editorial team invites your views, suggestions, to the News about Members Column and contributions to the e-news.

IAF plaudits for LCH on its maiden flight

The indigenously produced Light Combat Helicopter (LCH) manufactured by the Hindustan Aeronautics Limited (HAL) has got the nod of the end user - the Indian Air Force. Inaugurating the maiden flight launch of the chopper at the Hindustan Aeronautics Limited (HAL) airport, the Vice-Chief of Air Staff, Air Marshal P K Barbora was unsparing with his admiration for the copter which is now likely to be inducted into the Armed forces by 2014. The LCH, the military version of the Advanced Light Helicopter (Dhruv) is a dedicated attack helicopter featuring a narrow fuselage and a tandem seating for the pilot and co-pilot. The machine is designed for low detection (reduced visual, aural, radar and infra red signatures) and has crashworthy landing gear for better survivability. With a host of features, the LCH is expected to play a major role in air defence aspect of the Indian Air Force (IAF) against slow moving aerial targets, destruction of enemy air defence operations, escort to special heliborne operations, support of combat search and rescue operations, anti-tank role and scout duties. "It is a red letter day for not only HAL, but the whole nation. I am quite positive; the aircraft will meet all requirements of the Indian Air Force (IAF) in this class of helicopters. The first display has been superb, though the chopper appears bulky and heavy," Mr Barbora said. The capability to indigenise a chopper of the class of LCH is possible only by a few nations globally, he added. "At the same time, HAL must learn from its past mistakes and not repeat them," he said in a pointed reference to the past differences between the IAF and HAL. Mr Ashok Nayak, HAL chairman who also spoke said, IAF had booked 65 LCHs. "The army has also shown keen interest in buying a large number of these for the army aviation wing," he said. Mr R K Singh, Secretary, Defence Production was also present. The event was, however overshadowed by the crash of Air India Express IX-812 in Mangalore on Saturday, with Defence Minister Mr A K Antony and Chief of Air Staff, Air Marshal P V Naik staying away from the ceremony as a mark of respect to lives lost in the air disaster. Chief test pilots Mr Unni Pillai and Mr Hari Nair, who flew the 5.8-tonne LCH, put up a 10-minute spectacular air display.

Source: Deccan herald

Aerospace university to be set up in Gujarat

Gujarat is set to become a seat of learning for aviation studies. The state will house India's first aerospace university near Valsad in south Gujarat presently, there are only two such universities in the world. Gujarat Vittal Innovation City (GVIC), a joint venture between state government and a company promoted by a former Gujarat cadre bureaucrat, has tied up with leading aviation intelligence provider Centre for Asia Pacific Aviation (CAPA) to develop world's largest aerospace university. The Rs 400-crore project will be a part of GVIC's upcoming special economic zone. "The company intends to start work on the project in 2010, which happens to be the golden jubilee year of Gujarat. The project will be commissioned by the end of 2012," said Mr Pankaj Sharan, chief operating officer of GVIC. The university will offer short-term as well as long-term courses of integrated multi-disciplinary education and training, says CAPA South Asia chief Mr Kapil Kaul, adding, "The courses would include pilot training, air traffic control, maintenance, repairing and overhauling of aircraft, customer service, and aviation law among others. Besides, an airstrip of 1,800 metre is also being planned for a flying school."

Source: Times of India

PSLV launch rescheduled

The Indian Space Research Organisation (ISRO) has delayed the launch of PSLVC15 vehicle following a technical snag. A press release from ISRO stated that the rescheduling of the launch was decided after "a marginal drop in the pressure in the second stage of the vehicle was noticed during mandatory checks carried out on the PSLVC15 vehicle." The new date for the launch of PSLVC15 mission will be decided after preliminary results of the analysis are obtained, according to the release. PSLVC15 will be carrying India's Cartosat-ZB, an Algerian satellite ALSAT-2A, two nano satellites NLS 6.1 and NLS 612 from University of Toronto, Canada and STUDSAT, a satellite built by students from seven academic institutions in Karnataka and Andhra Pradesh.

Source: Deccan Herald

WALKING ON THE MOON

A walking robot on the moon? Well, it could someday be a reality - thanks to a group of Japanese companies which is actually planning to land a humanoid robot on the Earth's satellite by 2015. According to the New Scientist, the ambitious plan was announced last week by a small cooperative of companies in Osaka called Astro-Technology SOHLA, which launched a small satellite called Maido-1 to study lightning in January 2009. The group hopes that its robot, dubbed Maido-kun, could hitch a ride to the moon with a robotic mission set to be launched by the Japanese space agency JAXA in about five years; the magazine quoted a Japanese media report as saying. In fact, the Daily Yomiuri newspaper said that JAXA had previously opted against sending a bipedal robot to the moon because its footing would not be steady on the sandy lunar surface. But SOHLA president Hideo Sugimoto countered that a walking robot would be more inspiring than a wheeled rover, adding that Maido-kun would draw the Japanese flag on the moon's surface. "We decided on a human-like robot because it's more fascinating and stimulating for us. We'll make an attractive robot to carry our dreams to the universe," Sugimoto was quoted as saying. The project, estimated to cost about US dollars 10 million to develop, will not be a walk in the park. "Designing a robot that can balance and move on two legs will be a major challenge."

Source: Bangalore Mirror

Boost to research: IISc ups PhD seats by 150

At a time when our research labs are drying up for want of researchers, the 100-year-old Indian Institute of Science (IISc) will push up its enrolment for PhDs by 150 seats from this year. The institute through its all India entrance test admits 250 students for research programmes. This year, it will open its doors to 400 students a jump of 150. IISc academics told TOI that the entrance exam held recently saw a good response from students across the country. Students were tested on their science and engineering fundamentals in 11 subjects. Qualifying students will now appear for an interview. "If we admit 400 students every year for the next few years, we can expect to churn out at least 350 PhDs on average making allowance for

students who may take up careers midway," a senior academic said. A record offer had been made last year with 375 students having sent in their acceptance letters, which were about 50 students more compared to the 300 to 320 the previous year. Last year's offer and this year's decision to offer admission letters to 400 students is just the first step IISc has taken to expand its research student strength and outlook. The average PhD output so far has been 200 PhDs per year while the admission numbers may have been higher. "IISc has loosened up a bit on admissions to PhD as it was being felt by teachers and the Council that the institute had to have a higher number of students doing research. Students outside too have been feeling they don't get opportunity to study at IISc.

Source: *Times of India*

CSIR-NAL to launch civil transport aircraft project

The Council for Scientific and Industrial Research (CSIR) has constituted a 15 member high powered committee to launch a new national civil aircraft project. The high powered committee has former Indian Space Research Organisation (ISRO) chief Dr G Madhavan Nair as its chairman and met at a special session convened by the union by cabinet secretary. Nair who later briefed reporters said, the national project envisages design and development of a civilian transport aircraft which could be used for a feeder service connecting towns and cities across the country. "The civilian transport aircraft will be designed and developed under public private partnership (F'PP) to meet national requirements with support from the Centre." The government has recognized the need for such an indigenous civilian aircraft with 90-100 seater capacity for passenger service or freight service of equivalent capacity. A feasibility report will be prepared in a year to execute the project," said Nair. According to the former space scientist, the project report, design and development cost of the aircraft will take a year to prepare and would be a Rs 5000 crore project. The first prototype could roll out within four-five years after completion of the project report" Nair added. The committee would again meet on May 27 to work out the modalities, including the type of aircraft to be developed, the infrastructure required and the development cycle from design to manufacturing of the aircraft in large numbers in partnership with the industry. CSIR director-general Dr S K Brahmachari said, "The design centre for the regional civilian aircraft project will be set up in Bangalore under the supervision of NAL. Private partners will be involved right from the design stage itself. We are also open to explore a joint venture for developing the engine with a global aerospace major" The NAL under supervision of CSIR will be the agency to implement the project in association with another PSU aviation major, Hindustan Aeronautics Ltd (HAL), Aeronautical Development Agency (ADA), Defence Research and Development Organisation (DRDO) and Indian Space Research Organisation.

Source: *Deccan Herald*

India to launch satellite for cartography in June

The Indian space agency is expected to launch on June 5 its Polar Satellite Launch Vehicle (PSLV-C15), carrying a cartography satellite and a couple of other payloads. A source in the Indian Space Research Organisation (ISRO) said the launch is most likely to happen in the second

week of June. The 44-metre tall PSLV is a four-stage (engine) rocket powered by solid and liquid propellants alternatively. Originally scheduled for launch on May 9, the ISRO decided to postpone the flight to a future date as it found "a marginal drop in the pressure in the second stage of the vehicle during mandatory checks". At the time of postponement, the rocket was almost ready except for the loading of the satellites that have arrived at the launch centre. According to ISRO officials, once the rocket is fully assembled and satellites loaded, around 10 days were needed to test the entire system. ISRO technicians, meanwhile, have dismantled the second stage and are carrying out tests and analysis to spot the failed component that needs to be replaced at the Sriharikota rocket launch centre. The second stage had to be dismantled as the faulty part is in an inaccessible area after the rocket was assembled fully. ISRO official said once the faulty part is replaced, all tests have to be done once again. The main cargo of the rocket is the 690-kg Cartosat-2B satellite, which will carry a sophisticated panchromatic camera on board to take higher (0.8 metre) spatial resolution imageries with a swath of 9.6 km of specific spots for applications such as mapping, land and geographical information system. The rocket is also slated to ferry an Algerian Alsat communication satellite and two nano satellites, one each from Canada and Switzerland, and a pico satellite (under one kg) StudSat developed by college students in Bangalore and Hyderabad.

Source: *Bangalore Mirror*

DRDO restructuring in the pipeline

In what may shake up the defence research and development organisation (DRDO) a bit, Defence Minister Mr A K Antony ordered restructuring of the strategies for the 50-year-old organization. DRDO is all set to be a lean outfit with a technology commission at the helm of affairs to guide it on futuristic strategic technologies. The mammoth organization with 47 laboratories will be trimmed some of its laboratories with other public-funded institutions with similar discipline. Despite being a government agency with confidential programmes, DRDO will also hire a human resource consultant to modify its HR policies. The HR consultant will look at the career progression, vacancy situation and will come out with innovative ideas for induction of talented persons in DRDO. Another major change will be decentralization of DRDO management seven clusters on specific areas, each headed director general. Bangalore will be the aviation cluster whereas the missile cluster will be in Hyderabad. The director generals of these clusters will report to Chairman, DRDO K Sarswat at the moment on timely execution of various projects. Though DRDO is often blamed for its slow pace on projects like LCA, Arjun Tank, Nag and Akash missile, it's not clear at the moment how creating an additional layer of bureaucracy will accelerate the projects.

Source: *Deccan Herald*

'India will be among top-5 civil aviation markets in 5 years'

The Union Minister of State for Civil Aviation, Mr Praful Patel, has said that the country will be in the top-five civil aviation markets in the world in the next five years. Inaugurating the new integrated terminal building of Mangalore airport here, he said that the country's civil aviation sector was not recognised in the world until a

few years ago. Today, India is the ninth largest civil aviation market in the world. "Within the next five years, India will be in the top-five civil aviation markets all across the world. That, I think, is a great achievement in the remarkably short period of time," he said. Stating that substantial improvements have been made in the civil aviation sector in the country, he said today flying is no more a luxury for the common man. Mr Patel said that country's infrastructure is undergoing a sea change under the leadership of the Prime Minister, Dr Manmohan Singh. For the first time there is a Cabinet Committee on Infrastructure headed by the Prime Minister. That is why projects were being monitored and implemented on time, he said.

Source: *Hindu Business Line*

IAF gives nod for HPT-32 revival

The Indian Air Force, which lacks a basic aircraft trainer to train its flying cadets, has given clearance for a Parachute Recovery System (PRS) to be fitted on the Hindustan Piston Trainer-32 (HPT-32). The PRS, it is hoped, will improve the confidence of HPT-32 pilots, enhance survivability during an emergency in the air and prevent the trainer from dropping out of the sky like a stone. The IAF's decision, which is based on the recommendations made by a committee headed by Air vice Marshal Pradeep Singh, will hopefully revive the HPT-32, a Hindustan Aeronautics Limited-designed and manufactured primary trainer that became operational with the defence forces in 1984, but was grounded last July after a fatality near Hyderabad that killed two senior flight

instructors. Reliability of the HPT-32 has long been in question with technical issues caused by the integration between the American Lycoming piston engine and the indigenously designed airframe being the most hurting. For the IAF engine cuts (a situation where the aircraft's engine suddenly switches off in mid-air) on the HPT-32 have been disastrous: there have been over 90 engine cuts during the HPT-32 operational life and given the trainer's poor power of glide, fatalities have been frequent.

Source: *Hindu*

Raise FDI cap in defence manufacturing to 74%

The question of capping foreign investment in defence manufacturing sector was thrown wide open with a working paper circulated by the Commerce and Industry Ministry suggesting this be raised to 74 per cent, from the existing 26 per cent, to encourage established players enter the field. "The established players in the defence industry should be encouraged to set up manufacturing facilities and integration of systems in India with FDI (Foreign Direct Investment) up to 74 per cent under the Government route," says the paper, circulated among different stakeholders in the field for their views and suggestions by July 31. The paper also has a caveat: "The views expressed in this discussion paper should not be construed as the views of the Government."

Source: *Indian Express*

Pilot production of airborne BrahMos begins

Pilot production of the air-launched version of the India-Russia BrahMos missile has started in Russia in line with plans to fit it in the IAF's Su-30MKI fighter aircraft by 2012. The first few missiles for factory tests have been manufactured at the Strela production association in the Orenburg Region; the Regnum news agency reported quoting regional government head Mr Sergei Grachyov. Once the ground tests were completed, the plant would launch series production of the airborne missile, he said. The 2.55-tonne BrahMos supersonic anti-ship missile has been modified, shedding 500 kg and getting a new ignition engine to fire the missile at high altitudes. The Su-30MKI also required modifications to fit the missile under its belly and integrate it into the plane's fire control system. The Sukhoi Corporation is working to strengthen the wings so that two more missiles can be fitted in the flanks.

Source: *Hindu*

INDIAN VARIANT OF 5G PLANE TO TAKE WINGS IN 8 YEARS, SAYS HAL

THE two-seater Indian variant of the fifth generation fighter aircraft (FGFA) programme which has been touted to replicate the success of the Indo-Russian BrahMos missile project is still in the drawing board. The two countries, which inked a memorandum of understanding (MoU) about a year and a half ago, have still not figured out the design specifications of the FGFA. But the first prototype of the Russian variant, which is a single-seater aircraft, has already been tested in Russia in January 2010. Hindustan Aeronautics Limited (HAL), the developers of the Indian variant, has said that the project

is still in the initial stage and it will take seven to eight years for the first prototype to take wings. "We have not even initiated talks with Russia for the preliminary design and yet to get the specifications from the Indian Air Force (IAF)," HAL chairman Mr Ashok Nayak told Express. It is said that HAL had negotiated with the Sukhoi Corporation for a 25% share of design and development work in the programme.

Source: *Indian Express*

Govt gives thrust to research through new University

The Centre plans to setup a new pan-Indian university that will take advantage of the Council of Scientific and Industrial Research's (CSIR) 37 laboratories spread across the country, to produce more than a thousand PhDs in science, technology and engineering. The move aims to bridge the research and development gap with China. The proposed Academy of Council of Scientific and Industrial Research (ACSIR) with a deemed university status, has found favour with the Union Human Resource Development and the Science and Technology ministries. The academy is expected to produce 1,000 PhDs in science and about 120 PhDs in engineering annually, from the fifth year onwards. Currently, the CSIR produces 400 PhDs every year. The degrees are granted by various universities, even though the researches are carried out in CSIR laboratories. 'We need to create a mechanism wherein the CSIR gets its due credit, and set up an

academy which shall enable the CSIR to grant degrees is a sine qua non now:’ said Union Science and Technology Minister Prithviraj Chauhan.

Source: Deccan Herald

THE NEW GREEN PLANE

A Massachusetts Institute of Technology-led team has designed green airplanes that are estimated to use 70 per cent less fuel than current planes while also reducing noise and emission of Nitrogen Oxides (NOx). The design was one of two that the team presented to NASA last month. The research is aimed at identifying tech that will enable greener airplanes to take flight around 2035. The team studied concepts for subsonic (slower than the speed of sound) and concepts for supersonic (faster than the speed of sound) commercial aircraft. The team was led by principal investigator Mr Ed Greitzer, professor of aeronautics and astronautics. Their objective was to develop concepts for quieter subsonic commercial planes that would burn 70 per cent less fuel and emit 75 percent less than today’s planes. NASA also wanted an aircraft that uses shorter runways. Designing an airplane that could meet NASA’s criteria while accounting for the changes in air travel in 2035 – when air traffic is expected to double – would require “a radical change,” according to Greitzer. Although automobiles have undergone extensive changes over the last half-century, “aircraft silhouettes have basically remained the same over the past 50 years,” he said, describing the traditional, easily recognisable “tube and-wing” structure of an aircraft’s wings and fuselage. The MIT team met the challenge with two designs: the 180-passenger D “double bubble” series and the 350 passenger H “hybrid wing body” series for international flights. The engineers conceived of the D series by reconfiguring the tube and-wing structure. Instead of using a single fuselage cylinder, they used two partial cylinders placed side by side to create a wider structure. They also moved the engines from the usual wing-mounted locations to the rear of the fuselage.

Source: Bangalore Mirror

Defence Technology Commission coming: Saraswat

A Defence Technology Commission will be set up on the lines of the Atomic Energy Commission to improve the functioning of the Defence Research and Development Organisation (DRDO) laboratories in the country, V. K. Saraswat, Scientific Adviser to the Defence Minister, said. He was here to inaugurate the Environmental Test Centre (ETC) on the premises of the Naval Science and Technological Laboratory (NSTL). Talking to journalists later, Dr. Saraswat said that the Commission, to be chaired by the Defence Minister, would take key decisions to promote self-reliance among the DRDO labs through better funding and administrative decentralization. He was optimistic that the setting up of the Commission would lead to improved performance and ultimately benefit the end-users. Describing the NSTL as one of the best DRDO labs in the country, he said, the new facility would enable it to test its products on its own instead of getting them tested in Hyderabad and Bangalore. “Since India is a signatory to the Nuclear Non-Proliferation Treaty (NPT), we will not build chemical weapons ourselves. We are, however,

developing technologies to counter the possible use of such weapons by non-signatories to the treaty,” he said in reply to a question.

Source: Hindu

Agni-II missile test-fired successfully

After two successive setbacks, Agni-II surface-to-surface ballistic was successfully flight-tested from the Wheeler Island off the Orissa coast. The intermediate range missile can carry nuclear weapons and has a range of more than 2000 km. It was fired from a rail mobile launcher by personnel of the Strategic Forces Command at 9.18 a.m., as part of user training exercise. After a flight of about 660 seconds, the missile splashed down near the pre-designated target in the Bay of Bengal and met all the mission objectives, Defence Research and Development Organisation (DRDO) officials said. The missile’s re-entry vehicle, made of carbon-carbon composites, withstood very high temperatures of up to 3,000 degree Celsius as it descended with a speed of 3.5 km/second after reaching a height of 230 km. It was tested for the full range. Two down range naval ships tracked the missile reaching the target, while a network of radars, telemetry and electro-optical tracking systems along Orissa’s coast, monitored its path and evaluated all parameters in real time. An advanced navigation system enabled Agni-II to reach the target very accurately. The missile has maneuvering capability to deceive any anti-ballistic weapon system.

Source: Hindu

IISc Prof devises means to avert air crashes

Mid-air collisions are disastrous. Potential collisions are chilling. Developing technologies that sense an oncoming collision are vital to save lives and aerospace scientist Mr Radhakant Padhi of IISc has done precisely that. Mr Padhi has developed a technology that can prevent mid-air collisions of manned and unmanned UAVs and potentially those of commercial aircraft too. Mr Padhi’s technology, known as the MPSP algorithm, is a series of pre-installed instructions which can detect and destroy a target. “Mission-specific instructions are fed into a flight device that ensures that an aerospace vehicle reaches its destination even if it deviates from the pre-defined path. The algorithm acts as the virtual brain of a flight vehicle.” As UAVs fly at a low altitude, they tend to collide with low-lying objects and even other flying UAVs. “An algorithm had to be worked out that could detect and avoid these objects and other UAVs. The algorithm is a set of instructions and computations that enables this. It is an intelligent system that enables guidance and control,” Mr Padhi explained.

Source: Times of India

IAF to start airfield modernization soon

The Indian Air Force (IAF) hopes to kick-start its \$260-million Modernization of Airfield Infrastructure project, which envisages upgrading 30 airfields, in the first phase, over the next few weeks. Contract negotiations are under way with a leading Indian corporate, and the pilot project will begin at the IAF base at Hindan, Ghaziabad, on the outskirts of Delhi. Sources in the IAF said the negotiations were on the verge of conclusion. The American transport aircraft, C130 J Hercules, will be based in Ghaziabad. The IAF has placed an order with Lockheed Martin for six of these planes, which are expected to arrive next year. Besides the purchase of C130 J Hercules, the IAF will acquire 126 Medium Multi-Role Combat Aircraft. As these planes have been fitted with sophisticated avionics, the modernization project has been envisaged. The project includes supply, testing, integration and sustenance of the Instrument Landing System (ILS), the Distance Measurement Equipment, the Tactical Air Navigation System, the Air Traffic Management System, and the CAT-2 Airfield Lighting System. In the first phase, the IAF will modernize 30 airfields, and the exercise is expected to be completed in 42 months. The Centre has made a provisional allocation of Rs.180 crore for the project in the 2009-10 budget, and the sum will be released after the contract is signed.

Source: *Hindu*

Kemrock Industries Commissions India's first Carbon Fibre facility

Kemrock industries and Exports Ltd., one of the leading manufacturers of Reinforced polymer (FRP) composites, commissioned India's first carbon fibre manufacturing facility in Vadodara, Gujarat. The Honorable Dr. APJ Abdul Kalam, distinguished Former President of India, inaugurated the facility in the presence of eminent scientists and dignitaries. This fully integrated plant, which includes polymerization, wet spinning & carbonization has been set up with technology know-how from CSIR- National Aerospace Laboratory, Bengaluru, with an initial capacity of 400 tonnes per annum. The project investment of Rs. 200 crores has been financed through a mix of equity, debt and internal accruals. The company will manufacture carbon fibre composites and preregs for advanced composites applications which would serve the defence, aerospace, wind energy, transportation & infrastructure sectors. Carbon fibre reinforced composites have high strength and stiffness and are also very light weight. Speaking on the occasion, Mr. Kalpesh Patel, CMD, Kemrock industries and Exports Ltd. said, "With the commissioning of this unit, we complete the most ambitious project since our inception. Today, we unveil a new chapter that would propel our company to greater heights in the coming years. In-house production of carbon fibre is the first step towards establishing a self sufficient domestic capability to produce composite products for the aerospace, defence and wind energy markets. The carbon fibre capability will be a strategic fit to our existing operations, augmenting our resin production, technical fabric capability and molding ability." The global composite industry is estimated at about USD 85 billion. North America and Europe accounts for about three quarters of the composite industry's total market value. The Asia-Pacific region represents about 20% of the market and the rest for the world accounting for the remainder. Market projections suggest that Asia will be leading the growth in global composites industry, with CAGR of > 5% by 201-3. At this growth rate, Asia will represent around 40% of the total composites market. The stock was trading at Rs.671.90, down by Rs.51.95 or 7.18%. The stock hit an intraday high of Rs.715 and low of Rs.662.55.

The total traded quantity was 244782 compared to 2 week average of 433411.

Source: *Equity Bulls*

Mahindra Satyam eyes aircraft making

Information technology firm Mahindra Satyam is looking to leverage group synergies to move from aerospace design services to manufacturing of components. The firm has begun to build on a few contracts that will include design plus manufacturing, a top company executive has said. The move towards 'design to build' will help the firm garner a bigger pie of the Indian outsourced aerospace engineering market, valued between \$600 million and \$700 million. The market, without the defence offset windfall, is expected to balloon to \$4 billion by 2020. "We are getting ready for the offset. We are a design services company. Now we are getting into 'design to build' because of group synergies. This means we will be able to manufacture as well. This will help in better positioning," said Mr Karthikeyan Natarajan, VP and head, Integrated Engineering Solutions, Mahindra Satyam. Under the offset clause, companies bagging defence tenders need to source 30% of the value of the contract awarded from India - this may include IT, engineering, manufacturing, supply chain, maintenance, and MRO. On the defense side, the government is expected to spend \$40-50 billion on modernization programmes over the next five-seven years and to the extent of \$100 billion over the next 10-12 years, experts say. This implies \$30-\$40 billion offset needs to be managed within the country. The executive said Mahindra group companies like Systech and Mahindra Defence Systems can be leveraged for manufacturing.

Source: *The Financial Express*

Dedicated satellite for Navy within a year

India's first dedicated military satellite should be up in space well within a year. Indian Space Research Organization (ISRO) has fixed the "launch window" of the naval communication and surveillance satellite between December 2010 and March 2011. The defence establishment was slightly worried ISRO might not be able to stick to the planned launch window after the failure of the geosynchronous satellite launch vehicle (GSLV-D3) in mid-April, which was launched with the new indigenously-developed cryogenic engine. "But ISRO has assured us the naval satellite, with an around 1,000 nautical mile footprint over Indian Ocean, will be launched as slated... The project cost is Rs 950 crore. IAF and Army satellites will follow in a couple of years," said a senior defence ministry official.

Source: *Times of India*

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