

The Aerospace Update

A Falcon Heavy rocket is being mated to the Mobile Launcher Tower (MLT) at night. The rocket is white with black and red accents, and the SpaceX logo is visible on the side. The MLT is a tall, white, lattice-structured tower. The scene is illuminated by bright spotlights, and the sky is dark with some clouds. The rocket is positioned vertically, and the MLT is being lowered into place next to it. The background shows the launch pad area with various structures and lights.

Falcon Heavy's Launch Pad Debut

Jan. 4, 2018

Image Credit: SpaceX

Falcon Heavy Raised on Pad 39A for First Time



SpaceX's first Falcon Heavy rocket, made up of two previously-flown Falcon 9 boosters and a beefed up central core stage, made the trip to launch pad 39A at NASA's Kennedy Space Center in Florida and was raised vertical Thursday, Dec. 28th for testing ahead of its first liftoff next month. The fully-assembled 229-foot-tall (70-meter) rocket will be the most powerful in the world when it blasts off, and Thursday's arrival atop pad 39A marks a major step toward readying the Falcon Heavy for flight. SpaceX engineers conducted a fit check and completed other tests at pad 39A this week, to followed by a hold-down firing of all 27 first stage engines some time after New Year's Day. The company has not set a target date for the Falcon Heavy's first liftoff, but officials say the launch is targeted in January, some time after the hold-down hotfire test. The rocket was lowered back to a horizontal position before dawn Friday, Dec 29th.

Video Credit: SpaceX

Source: Stephen Clark @ SpaceFlightNow.com

Musk's Tesla Roadster Prepped for One-Way Trip to Deep Space



SpaceX has released photos of Elon Musk's midnight cherry red Tesla Roadster, the dummy payload selected for the Falcon Heavy rocket's maiden test flight, being readied for launch at Cape Canaveral. The electric sports car will be launched on a trajectory to escape the grasp of Earth's gravity aboard the first flight of SpaceX's new heavy-lifter, a test launch currently scheduled for some time this month from pad 39A at NASA's Kennedy Space Center in Florida.

Source: Stephen Clark @ SpaceFlightNow.com

Photo Credit: SpaceX

Russian Official Blames Nov. 28 Launch Failure on Software Error



A senior Russian politician whose portfolio includes the country's space program has blamed human error for a Nov. 28 launch failure that led to the destruction of a \$45 million weather satellite and 18 secondary payloads, according to multiple news reports. Russian deputy prime minister Dmitry Rogozin said the guidance settings were for a launch departing from the Baikonur Cosmodrome in Kazakhstan, the Russian space program's primary launch site, and not the new Vostochny Cosmodrome in Russia's Far East.

Source: Stephen Clark @ SpaceFlightNow.com

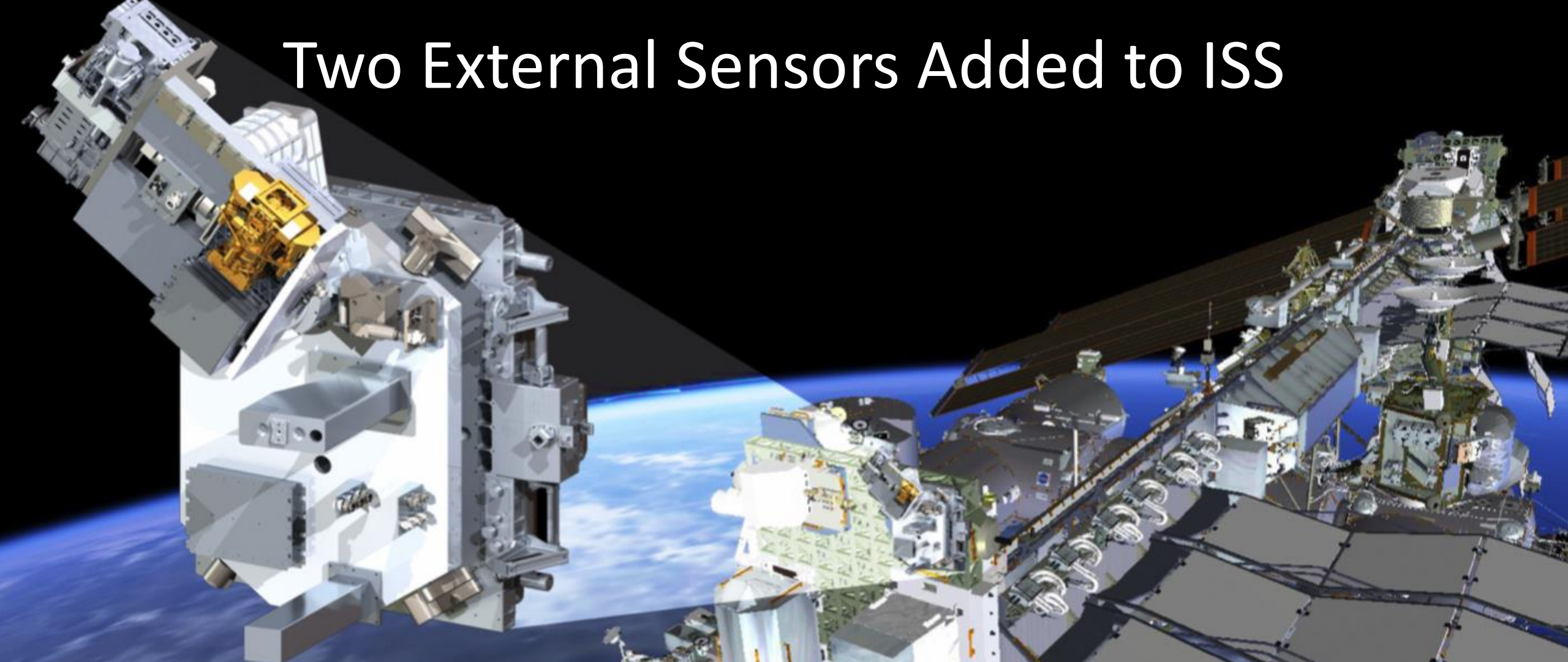
Photo Credit: Roscosmos

'Winking' Star May Be Devouring Wrecked Planets

A team of U.S. astronomers studying the star RZ Piscium has found evidence suggesting its strange, unpredictable dimming episodes may be caused by vast orbiting clouds of gas and dust, the remains of one or more destroyed planets. "Our observations show there are massive blobs of dust and gas that occasionally block the star's light and are probably spiraling into it," said Kristina Punzi, a doctoral student at the Rochester Institute of Technology (RIT) in New York and lead author of a paper describing the findings. "Although there could be other explanations, we suggest this material may have been produced by the break-up of massive orbiting bodies near the star."

Something occasionally dims the star RZ Piscium.

Two External Sensors Added to ISS

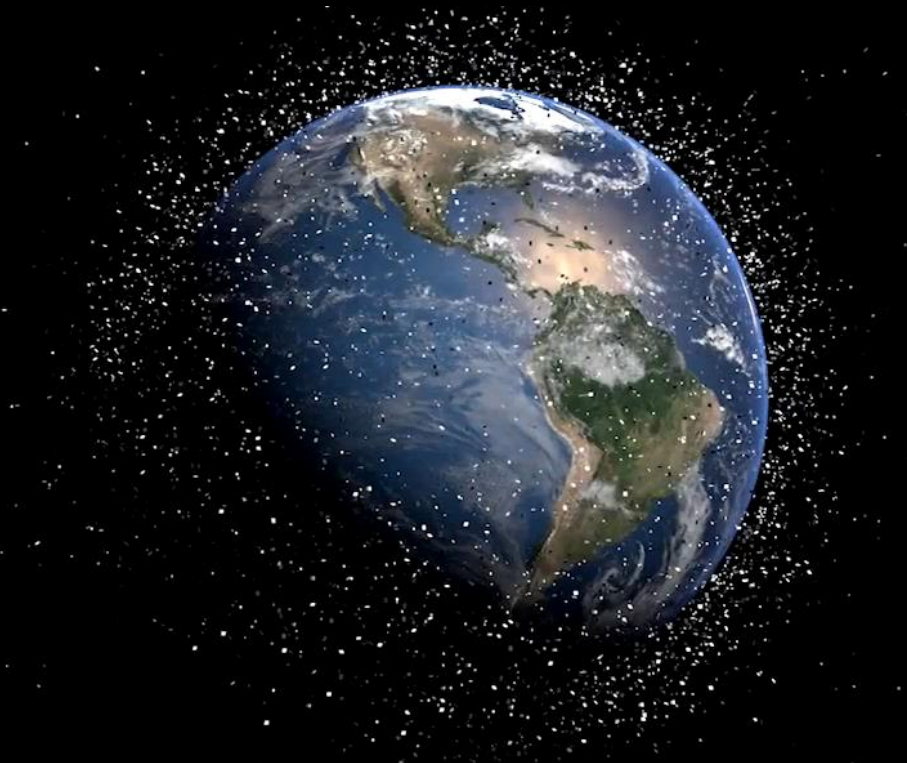


While many around the world celebrated the arrival of 2018 with champagne, fireworks and social gatherings, robotics operators at NASA's Johnson Space Center rang in the New Year by working to remotely install new external instruments recently brought to ISS inside the trunk of SpaceX's CRS-13 Dragon cargo spacecraft. The first, TSIS-1 was developed by the University of Colorado's Laboratory for Atmospheric and Space Physics (LASP) in Boulder, Colorado. It is designed to measure total solar irradiance and solar spectral irradiance. According to NASA, it will help establish Earth's total energy input and contribute to the understanding of how the atmosphere responds to solar output changes.

Source: DEREK RICHARDSON @ SpaceFlightInsider.com

Image Credit: NASA

Sensor to Monitor Orbital Debris Outside Space Station



**MORE THAN 20,000 PIECES OF DEBRIS
ARE TRACKED AS THEY ORBIT EARTH.**

The second of the two external instruments extracted from Dragon's trunk is the Space Debris Sensor (SDS) which will monitor the small debris environment around the space station for two to three years. It has a three-layer sensor that can record the time and scale of impacts. The goal is to be able to estimate the amount of debris smaller than one millimeter that exists in low-Earth orbit. There are currently more than 20,000 pieces of debris tracked in space that are larger than several inches. NASA says the vast majority of space junk is too small to be tracked by ground-based sensors. The U.S. space agency estimates that there is more than 100 million tiny pieces of debris less than one centimeter in Earth's orbit.

Source: DEREK RICHARDSON @ SpaceFlightInsider.com

Video courtesy of NASA's Johnson Space Center

Astronauts Have Identified Unknown Microbes in Space For The First Time



Where ever humans roam, there you will find microbes. It's just a fact of life that we contaminate everything we touch. Which means, hundreds of kilometers above the Earth, there are trillions of bacteria predicted to be living on the International Space Station. Now, thanks to the Genes in Space-3 project, NASA astronauts and biochemists have done just that. They've identified microbes aboard the space station for the very first time. The microbes were all ordinary, known microbes that are common where humans live and work (NASA didn't specify exactly which species they were).

Aurora's Long-Range Orion UAS Receives USAF Funding



The US Air Force has awarded Aurora Flight Sciences a \$48 million contract to develop a certificated version of the ultra-long-endurance Orion unmanned air vehicle, possibly reviving the unmanned air system's prospects after a four-year hiatus. Orion demonstrated a record-setting 80h flight in 2014 but the air force's chief of intelligence, surveillance and reconnaissance argued the service had no operational requirement for a multi-day, long-endurance unmanned aircraft. But Aurora Flight Sciences continued to market the aircraft as an option for meeting the USAF's seemingly insatiable appetite for aerial surveillance coverage. Boeing acquired the Virginia-based company in October, giving the previously small contractor significantly more sales support. The twin-engine Orion is designed to fly for more than 100 hours and carry payloads over 453kg (1,000lb).

Source: Leigh Giangreco @ FlightGlobal.com

Photo Credit: Aurora Flight Sciences

Vulcanair V1.0 Receives FAA Certification



Flight training schools in the U.S. have a new option for training aircraft, Vulcanair's now-FAA-certified V1.0 four-seat piston single. While long certified in Europe, Vulcanair, an Italian Aviation firm, brought the V1.0 to last year's EAA AirVenture show and promised that it would achieve FAA certification by the end of 2017. The V1.0 is powered by a 180-hp Lycoming IO-360 (fuel injected) with a Hartzell constant-speed propeller. Available at an introductory price (for a limited number of orders) of \$259,000, the V1.0 costs about \$100,000 less than competing four-seat training airplanes. Specifications include a useful load of 919 pounds, cruise speed at 75 percent power of 130 knots, and service ceiling of 14,700 feet.

China's AG600, World's Largest Amphibian, Flies



The world's largest amphibian aircraft, the AG600 "Kunlong," flew for the first time on December 24, taking off from Zhuhai Jinwan Airport at 9:40 a.m. local time. The flight lasted about an hour. The aircraft has a maximum takeoff weight of approximately 117,700 pounds (53.6 tonnes) and is about 11 percent larger than the Shinmaywa US-1A and more than twice the size of the Canadair CL-215. Sea trials will begin next summer, starting from a calmer inland lake.

Source: Chen Chuanren @ AINOnline.com

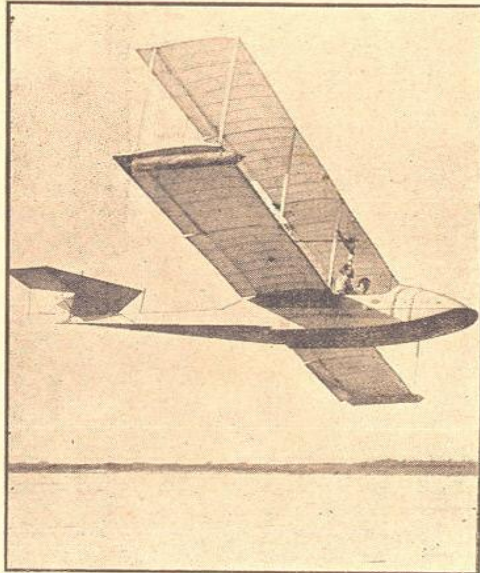
Photo Credit: Chinese state media CCTV

St. Petersburg-Tampa AIRBOAT LINE

Fast Passenger and Express Service

SCHEDULE:

Lv. St. Petersburg	10:00 A. M.
Arrive Tampa	10:30 A. M.
Leave Tampa	11:00 A. M.
Ar. St. Petersburg	11:30 A. M.
Lv. St. Petersburg	2:00 P. M.
Arrive Tampa	2:30 P. M.
Leave Tampa	3:00 P. M.
Ar. St. Petersburg	3:30 P. M.



Special Flight Trips

Can be arranged through any of our agents or by communicating directly with the St. Petersburg Hangar. Trips covering any distance over all-water routes and from the waters' surface to several thousand feet high AT PASSENGERS' REQUEST.

A minimum charge of \$15 per Special Flight.

Rates: \$5.00 Per Trip. Round Trip \$10. Booking for Passage in Advance.

NOTE--Passengers are allowed a weight of 200 pounds GROSS including hand baggage, excess charged at \$5.00 per 100 pounds, minimum charge 25 cents. EXPRESS RATES, for packages, suit cases, mail matter, etc., \$5.00 per hundred pounds, minimum charge 25 cents. Express carried from hangar to hangar only, delivery and receipt by shipper.

Tickets on Sale at Hangars or

CITY NEWS STAND

F. C. WEST, PROP.

271 CENTRAL AVENUE

ST. PETERSBURG, FLORIDA

The Independent Job Dept., St. Petersburg, Fla.

1 January 1914: The First Scheduled Commercial Passenger Flight

The world's first scheduled commercial passenger flight took place when Anthony H. Jannus piloted a St. Petersburg-Tampa Airboat Line Benoist type XIV flying boat from St. Petersburg to Tampa, Florida. The passenger was St. Petersburg's mayor, Abraham C. Pheil. Over 3,000 people witnessed the departure. The federal government determined that pilots of commercial flights should be licensed. Jannus became the first federally-licensed pilot. There were two Benoist type XIV's. They were named the "Lark of Duluth" and "Florida." Over the next three months, the two flying boats carried 1,205 passengers and flew over 11,000 miles. When the city subsidy ceased, the airline was no longer profitable and the operation came to an end. "Lark of Duluth" was used to fly passengers at several cities around the United States and was damaged beyond repair at San Diego, California.

Source: Bryan R. Swopes@thisdayinaviation.com

Image Credit: Smithsonian Institution National Air & Space Museum

2 January 1959: First Cosmic Ship



First Cosmic Ship (which was later known as (Mechta, “Dream”) and today is called Luna 1) was launched from the Scientific-Research Test Range No. 5 at Tyuratam, Kazakhstan (later named the Baikonur Cosmodrome) aboard a Vostok-L8K72 three-stage rocket.

Mechta was the fourth in a series of lunar probes designed to explore the Moon. It was spherical with several antennas and weighed 361 kilograms (795.9 pounds). The probe carried a magnetometer, Geiger counter, scintillation detector and micrometeorite detector. It was powered by batteries. Radio telemetry equipment relayed data to Earth.

It was intended that the spacecraft would impact the lunar surface, but an error in programming the third stage burn time caused a near miss. After 34 hours of flight, the probe passed within 5,995 kilometers (3,725 miles) of the lunar surface. It then entered a solar orbit between Earth and Mars, where it remains today, circling the Sun every 450 days.

Luna 1 was the first space vehicle to reach escape velocity and leave Earth’s gravitational field, the first to reach the vicinity of the Moon and the first man-made device to orbit the Sun.

Source: Bryan R. Swopes@thisdayinaviation.com

Photo Credit: RIA Novosti Archive

In The News



Angosat-1 Communications Restored After Post-Launch Glitch. Angola's new satellite is communicating normally with ground teams again after losing contact shortly following launch. Moscow-based Energia, manufacturer of Angosat-1, as well as the Russian state corporation Roscosmos confirmed in press releases Dec. 29 that the satellite is sending telemetry and that onboard systems are in good health. *(Caleb Henry SpaceNews.com)*



Boeing Seeks Embraer Control, With Defense Safeguards. Boeing Co. is seeking control of Embraer SA while offering the Brazilian government safeguards concerning the company's defense unit, people familiar with the matter said. Boeing is arguing that deals it has made in Australia and the U.K. show that it can operate defense businesses without compromising military plans. Brazil, which signaled opposition to an acquisition last month, is now suggesting it has some flexibility on the control issue. *(Bloomberg.com)*



Southwest Defers Smallest Boeing 737 Max, Adds Larger Planes. Southwest Airlines has confirmed orders for 40 Boeing 737 Max 8 aircraft "valued at nearly \$4.5 billion. At the same time, Southwest delayed orders for 23 of Boeing Co.'s 737 Max 7 aircraft, casting doubt on the future of the smallest Max variant. *(Bloomberg.com)*



Japan Launches Super-Low-Orbit Satellite to Test Ion Engines. A satellite designed to orbit the earth at the lowest altitude ever has been successfully launched by the Japan Aerospace Exploration Agency (JAXA). The 400-kilogram satellite – known as Tsubame – will be used to take high-resolution images of Earth and measure oxygen levels. If successful, it may pave the way for more super-low-orbit satellites that are easier and cheaper to launch. Tsubame initially began orbiting at an altitude of 300 miles, but will be gradually lowered over the next two years to test how far it can go. It is being driven by a highly fuel-efficient ion engine powered by electricity and xenon gas that JAXA hopes will help withstand atmospheric drag. *(Alice Klein @ NewScientist.com)*



Airbus Ready to Phase Out A380 if Fails to Win Emirates Deal: sources. Airbus is drawing up contingency plans to phase out production of the world's largest jetliner, the A380 superjumbo, if it fails to win a key order from Dubai's Emirates, three people familiar with the matter said. The moment of truth for the slow-selling airliner looms after just 10 years in service and leaves one of Europe's most visible international symbols hanging by a thread, despite a major airline investment in new cabins unveiled this month. *(Reuters.com)*