



المملكة العربية السعودية للطيران المدني
General Authority of Civil Aviation

Published Every 2 Months By The
General Authority of Civil Aviation, Kingdom of Saudi Arabia

CIVIL AVIATION

Issue 77, July 2013, Ramadan 1434



**Prince Fahd Bin Abdullah
Signs KIA Development
Contract**

Early Aircraft Retirement: Passing Fad or Permanent Trend?



Endless entertainment

800 hours of entertainment on large 23" screens
onboard our new Boeing 777-300ER



Welcome to your world
www.saudiairlines.com



Total System Integration Solutions

- Integrated Smart Solutions
- Network Design & Planning
- Unified Communication Solutions
- VSAT Systems
- Private Mobile Radio Solutions
- Broad Band Wireless Solutions
- Audio Visual Systems for Boardrooms & Conference Centers
- Projects Management
- SCADA Solutions



- الحلول الذكية المتكاملة
- تصميم و تخطيط الشبكات
- حلول الإتصالات الموحدة
- أنظمة الفيسات
- حلول الراديو
- الحلول اللاسلكية واسعة النطاق
- الأنظمة السمعية والمرئية
- لغرف وصالات مجالس الإدارة وقاعات الاجتماعات
- إدارة المشاريع
- حلول أنظمة التحكم (الإسكادا)





المدينة العامة للطيران المدني
General Authority of Civil Aviation

Published Every 2 Months by the
General Authority of Civil Aviation,
Kingdom of Saudi Arabia

CIVIL AVIATION

Issue 77, July 2013, Ramadan 1434

Presiding Editor

Dr. Faisal H. Al-Sugair
VP, GACA

Assistant Presiding Editor

Abdul Aziz A. Al-Angari
Executive VP, GACA

Editor-in-Chief

Dr. Salem A. Sahab

Advisory Board

Dr. Moqbel Saleh Al Zakeer
Dr. Mohamed A. Al Amin
Dr. Mohsen Al-Naggar
Dr. Ali H. Al-Zahrani
Prof. Ali M. Al-bahi



Edited & Designed by
Fikra, Media &
Marketing Consultants
P.O.Box 8004
Jeddah, 21482
Saudi Arabia
Tel: 665-6669, 661-2601
Fax: 665-4719
E-mail: info@efikra.com
Web: www.efikra.com

المجلة

8



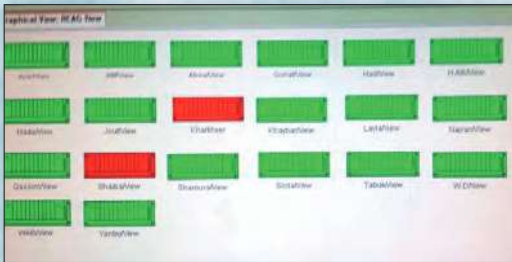
International Airport Security Conference in Jeddah

9



GACA hosts the 2nd Meeting of Civil Aviation Officials in the ME Region (DGCA-MID/2)

12



System Maintenance Engineers (SME) "Those Behind the Scene"

14



The Dreamliner: Return with a Vengeance!

Low Cost Airlines: Great Leaps Forward

The general impression about low-cost airlines (budget airlines) is that their activities are of local nature as they seldom cross the boundaries of their home countries and a number of their neighboring countries due to the nature of their objectives, purpose, and available markets. For example, Air Arabia, Jazeera Airways, Fly Dubai, and NAS air now fly to most of the Arabian Gulf States and neighboring Arab countries. This trend is supported by the fact that most of the low-cost carriers (LCC) use fleets of relatively small aircraft which cannot fly long distances with heavy loads.

Most convincing evidence of the rapid growth of these air carriers is the Asian market which embraces huge numbers of those who are looking for such cost-effective solutions that combine saving money with the enjoyment of travel through a wider network of cities in Asia and South East Asia.

At the level of Asia Pacific alone number of LCC passengers increased from around 10 million passengers in 2003 to about 300 million passengers in 2012.

However, in the last few years this new concept has crossed the boundaries of the regions surrounding home countries of LCC as recent indicators show that these carriers have already penetrated the markets that have previously been dominated by legacy national air carriers. Most recent international statistics show that number of passengers travelling from Asia-Pacific region

to abroad and vice versa have jumped from some tens of thousands in 2005 to around 8 million passengers in 2012.

Are we going to see the day when NAS Air flies to Europe or North America? Or will EasyJet lands in KFIA in Dammam or in Cairo or Oman? Most important is that this new trend should be accompanied by a reduction in cost of travel to passengers.

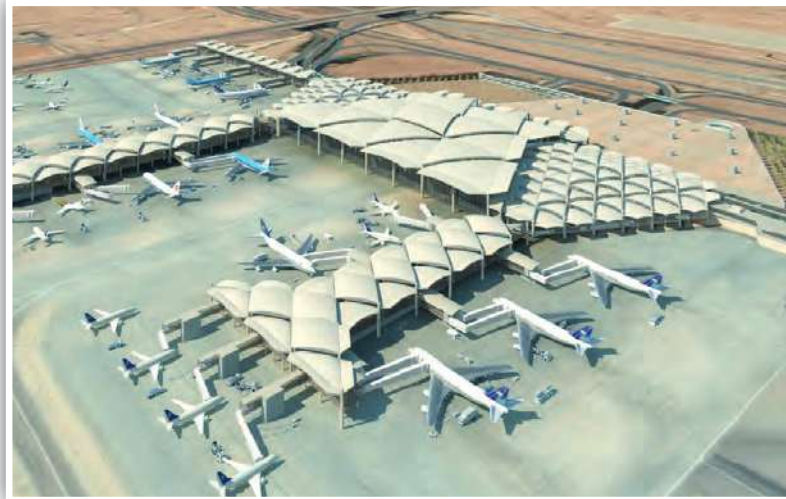
Travel, tourism, and business environment (which the Aviation Industry is considered its spinal cord) is presently witnessing rapid changes that must be carefully studied and monitored in order to be among its first beneficiaries in the Arab World.

To accomplish this goal the General Authority of Civil Aviation is striving hard to upgrade its systems and policies, modify its procedures, improve its services, and develop its airports and facilities. Most important in this respect is to the development of its human resources through better training, and coaching, and by seeking to improve their wages, salaries, and benefits.

This is an integrated success story based on comprehensive studies, vast experiences, application of best practices. Most important is the full support of our wise leadership and the direct supervision of His Highness the President of the General Authority of Civil Aviation ■

* VP, General Authority for Civil Aviation

Prince Fahd Bin Abdullah Signs KKIA Development Contract



His Highness Prince Fahd Bin Abdullah, President of the General Authority of Civil Aviation (GACA), signed last May KKIA Development Project's letter of award with a joint venture company composed of Turkey's TAV Construction and the Al-Arabb Saudi Company. The Project includes Terminal (5) design and construction (Phase One) for a total amount of 1260 million Riyals). The new Terminal (designed for domestic flights) will be built on one hundred thousand square meters with an initial annual capacity of 12 million passengers to increase upon completion of Phase One to (35.5) million

passengers per year. The Terminal is planned to be completed by the end of 2017.

The contract also includes construction of eight gates, aprons, logistic facilities, and a network of roads for linking the new facilities to the city and the existing terminals in addition to construction of a multi-story car park capable of accommodating around 3000 cars.

The Projects period is 22 months after which the traffic will be transferred from the existing

domestic Terminal 3 to the new Terminal 5 before proceeding with the development and expansion of the Terminals 3 and 4.

The remaining two phases of the Airport's main radical development Project include: expansion of Terminals 3 and 4, upgrading and raising the classification of the two runways, taxiways, and aprons, upgrading of utility systems/plants and main roads; and the development and expansion of Terminals 1 and 2 and the airside area separating them.

KSA and USA Sign Open Skies Agreement

The Kingdom of Saudi Arabia and USA signed on Tuesday 18 the 28th of May 2013 in Jeddah a new Bilateral Air Services Agreement that aims to implement open skies policy be-

tween the two States. The new agreement grants each State the right to operate flights to all international destinations in the other State by all its specified air carriers without any restrictions.

The Agreement was signed from the Saudi side by GACA's Vice President, Dr. Faisal Al-Sugair and from the US side by the US Ambassador to the Kingdom, Mr. James Smith.

Source: AACO

International Airport Security Conference in Jeddah

The International Airport Security Conference and Exhibition, organized by the General Authority of Civil Aviation, was opened on Monday 27 May 2013 in Jeddah and lasted two days. The conference was attended by delegations and representatives from Arab and International Organizations and Civil Aviation Organizations, in addition to a number of international and local specialists and experts.

In his opening speech which was delivered on his behalf by GACA's Vice President, Dr. Faisal Al-Sugair, Prince Fahd welcomed the attendees and stated that Air Transport Industry is presently facing a lot of security challenges that require uniting all efforts and working on all levels to come up with necessary actions for enhancing Civil Aviation security and provision of full protection for passengers, aircraft, and airports as well.

This speech was followed by the other speakers as follows:

- Mr. John Pistole, US TSA Administrator, "Keynote Speech".
- Mr. Abdulrahman Albalawi, Director General Aviation Security (GACA), "KSA Experience in Aviation Security".
- Mr. Samuel Lucas, Director Air Services Negotiations, Dept. of Infrastructure and Transport, Australia, "International Standards, Cooperation and Economic Implications".



- Mr. Mohammed Jamil, Director Civil Aviation Security, Jordan, "ICAO's USAP Program".
- Mr. Arthur Garcia, Assistant Director Facilitation and Airport IT (ACI), "The Importance of Applying Facilitation Standards at Airports".
- Mr. Tarik Altalbi, Specialist Aviation Security, Morocco, "Challenges in Implementation Regulations and Security Programs in Airports – Air Cargo as a Study Case"

The Conference activities were concluded in the morning of Tuesday with an appreciation to GACA for sponsoring the Conference. The Conference's most important recommendations are:

- 1-Emphasis of Saudi Arabia to apply ICAO's recommendations and regulations related to Civil Aviation Security.
- 2-The attendees commended the efforts exerted by the Kingdom in fighting acts of unlawful interference in Civil Aviation

within the context of its anti-terrorism efforts.

- 3-The importance of familiarizing Aviation Security staff with international treaties and agreements related to Civil Aviation Safety and Security through organizing intensive training workshops and coordinating with professional centers offering such courses.
- 4-Encourage adoption of the "one checkpoint principle" through international agreements among countries to facilitate transit passengers' traffic.

A number of international and local companies specializing in Airport security equipment and systems have participated in this event. Moreover, the Exhibition has displayed a number of the latest technologies, services, and programs used around the world in the area of Airport security, passenger traffic, and safety of Air Cargo Sector.

GACA hosts the 2nd Meeting of Civil Aviation Officials in the ME Region (DGCA-MID/ 2)



The Second meeting of the Director Generals of Civil Aviation in the ME Region and North African Arab Countries (DGCA-MID/2) organized by ICAO's Regional Office, was opened in Jeddah on Monday 20th of May 2013.

Vice President of GACA, Dr. Faisal H. Al-Sugair, on behalf of HH President of GACA, welcomed in the opening speech the attendees and expressed the Kingdom's pride of hosting such a meeting which aims to enhance communication among the civil aviation authorities and organizations and, in turn, to raise the standard of safety, security, and services in the air transport industry. This is

destined to open new horizons for more communication and co-operation between all the parties participating in the air transport industry. It also aims to improve ANS, Aviation Safety and Security, environmental concerns, and Air Transport in view of the rapid developments and excessive pressure experienced by Air Transport Industry.

The meeting was attended by Presidents and Director Generals of Civil Aviation in the ME Region and in a number of North African Arab Countries beside ICAO, ACAC, AACO, IATA, and some of the international organizations specializing in Civil Aviation.

The meeting discussed a number of issues related to the improvement of Air Navigation Safety in the ME Region. 46 working papers were presented by the participating delegations and personalities.

This important gathering was concluded on the second day with issuance of a number of recommendations including improving cooperation between member states to overcome the challenges facing the Region's Civil Aviation Sector at the forefront of which comes the rapid increase in Air Traffic, activation and improvement of cooperation in the areas of safety, security, and services rendered to passengers, opening new horizons for communication and interaction between the parties involved in Air Transport Industry to cater for the common interests of all States in the Region.

The Kingdom's delegation in this meeting was headed by the Vice President for International Organizations, His Highness Prince Turki Bin Faisal.

KFIA Concludes an Agreement for Improvement of Express Cargo

King Fahd International Airport (KFIA) recently signed an agreement with UPS company, an Air Mail and Cargo company, to build offices for the company in the Airport with the aim of promoting its air cargo operations. As regards the Agreement, KFIA Director General, Eng. Khalid

Al-Mizael, explained that one of the elements of the Airport's approved marketing plan is to attract courier companies to have offices in the Airport in order to enhance air cargo activity and to avail more employment opportunities. He pointed out that this goal goes in line with the diversification of resources of income

for the Airport and opening the door for the private sector to seize investment opportunities available in the Airport.

Eng. Al-Mizael added that the Airport has recorded an increase of 25% in the volume of air cargo handled by the Airport last year compared to a year ago.

Source: AACO

Early Aircraft Retirement: Passing Fad or Permanent Trend?



“One of the plane types that retire at an early age - Lufthansa Boeing 737-500”

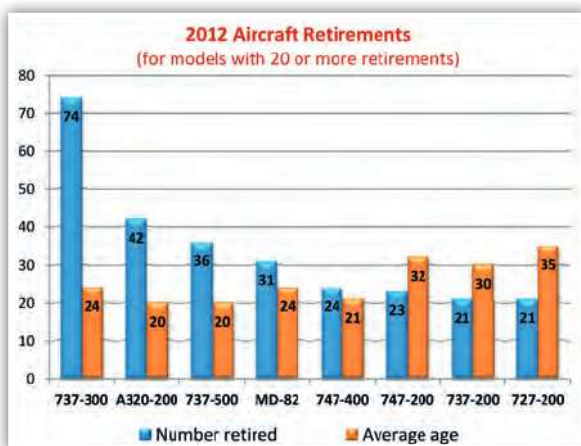
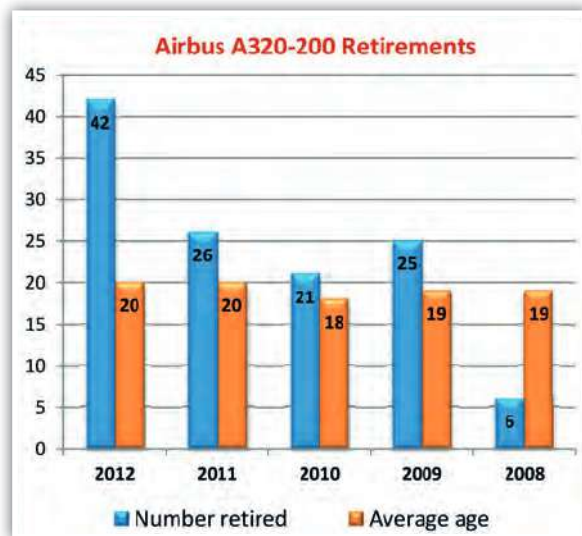
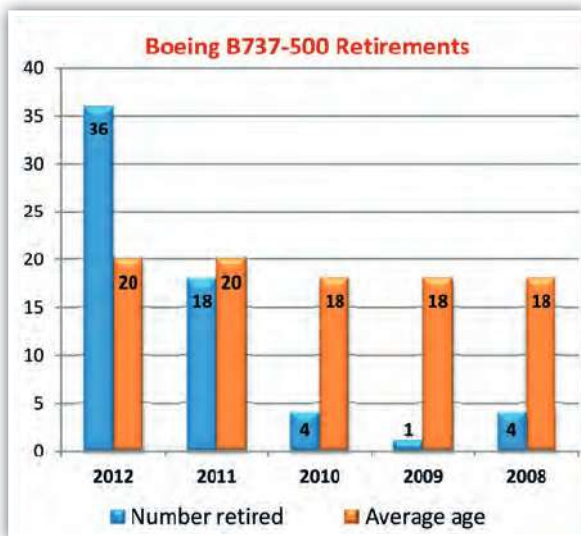
There is no doubt that during the past few years, the aviation business saw to it that more and more aircrafts went through early retirement. This was due to several factors. One of which was that new aircrafts promised savings of 15% or more on fuel costs. The financing required to obtain new aircrafts was easy due to lower interest rates and readily available export credit agency assistance. On the other hand, it was more difficult to obtain financing for used aircrafts. Used aircrafts are easy to retire since this can be done once their lease expires.

By Eng. Ahmad Nada*

Retired aircrafts are usually reused in the cargo domain as freighters. Throughout the past few years, passenger traffic picked up quite a bit but the cargo market recovery is too slow to allow for old aircrafts to be reused in that domain. This ongoing trend of retiring aircrafts earlier than usual is not universally agreed upon. For example, Boeing and Ireland-based aircraft lessor, Avolon believe that this is only a passing fad and won't last very long. According to these two companies, early retirement (less than 25 years) will increase

financing costs, lower aircraft valuations and increase their depreciation. Currently, aircraft are typically depreciated to a 15% remaining value over a 25-year period.

According to an analysis of Aviation Week Intelligence Network's fleet database, the average retirement of aircrafts in 2012 was 23 years. Between 2009 and 2011, the average retirement age was 27, and between 2006 and 2008 it was 29 to 30 years. The trend is clearly towards earlier retirement which is usually linked to the aircraft engines that



decide on the value the aircraft will result in after it gets parted out.

Some aircrafts were affected more than others during this early retirement phase. The existing Airbus 320 and Boeing 737NG families of aircraft are being highly debated on. The new A320-NEO and the 737 MAX have new engine designs and are more fuel efficient. It would make sense to simply bring in the new aircrafts, but what can be done with the existing large fleets? Boeing and Avolon do not think it is an issue since it will take 8 years for the new aircrafts to build 35% of their respective family fleets, which is when the old fleets could start to retire.

Bert van Leeuwen, the managing director of avia-

tion research for DVB Bank, does not believe value is only impacted by replacing a certain percentage of the old fleet. DVB's recent research found that the value of 10-year-old A320 aircrafts dropped 79% of their new value in 2000 to 43% in 2012. Lease rates are falling from 85% of the lease rate for a new A320 to 54%. For 737-800s, the value of 10-year-old aircrafts is dropping to 54% from 67% in 5 to 6 years.

Aviation Week's Fleet and MRO Forecast estimates about 250 A320 retirements throughout the next five years. IBA Group's commercial director, Owen Geach, foresees a potential restriction on A320 retirements since there would be an overload of them in the market and this would decrease their part-out value to the point where early retirement does not make sense anymore from a financial perspective.

Boeing B737-300s, -400s and -500s that are being retired increased by about 40% in 2012. This was mostly the case for the -300s (under 24 years) and the -500s (under 21 years). The demand for 737-500s is less than for the other 737s because they are smaller, which means that they have high fuel costs, and they cannot be converted to freighters.

At this point we can only ask: Is early aircraft retirement a passing fad or a permanent trend? Only time will tell!

* Reference: Aviation Week

System Maintenance Engineers (SME) “Those Behind the Scene”



View (1): Clicking on one of the stations in red will reveal view (2) which shows the status of the building units (boards) of the faulty station following the same color scheme



View (2): Based on this view, the SME will dispatch a maintenance technician equipped with a replacement board to that shown in red

Background

Due to the large number of Aviation systems scattered around the Kingdom territory with systems variance in complexity and importance, it becomes essential to devote a central maintenance monitoring position intended solely for “watch keeping” on the status and performance of all equipment and services of the Air Navigation System (ANS).

To assist the SME in performing his intended task, monitoring devices for each of the equipment / services is installed and furnished in the SME position

Upon fault occurrence, the SME shall:-

- Log the fault and time of occurrence.
- Alert the maintenance team according to specialty.
- Update the log book in case of failure clearance.

Other administrative tasks include:-

- Liaison with maintenance sectors supervisors
- Collection of failure reports
- Follow-up of failure clearance procedures
- Follow-up on Preventive and cor-

rective Maintenance schedules

- Coordination of maintenance activities with Aviation related agencies

The accuracy of the above tasks depends to a large extent on the ability of the monitoring unit to trace the fault down to the lowest level of equipment design elements.

It is prudent to relate the performance level of the ANS System and hence the Aviation safety level to the SME position equipment and staff awareness.

System monitoring

Almost all modern ANS systems are equipped with advanced system monitors designed to facilitate the ease of trouble shooting and fault tracing. By means of these devices a fault can be located down to the smallest building unit (board). The SME will pass this information to the



**By Dr. Mohamed
Elfatih Elamin***

maintenance technician who will visit the faulty system with the right tools and the proper spare unit. The advantage of this feature is the reduction of the Mean Time To repair (MTTR) factor. This will in-turn increase the system availability.

Typical views

The concept of remote monitoring is shown in the following two views where view (1) shows A general view of a number of remote radio sites. Radio sites shown in green color are operating normally while those shown in red indicates a station failure ■

* Technical Advisor - GACA/ANS/ SED/COMMUNICATIONS

A320NEO Family: A New Generation of Aircraft

By: Mrs. Khdiya Tareq*

As the global population increases, the demand for increased efficiency is being met by Airbus, which has announced plans for its latest airliner design: the A320NEO (new engine option).

Six new designs will be introduced in the coming year. The first A320NEO aircraft will be available for use by Qatar Airways, in October 2015.

Following the launch of this first aircraft, the Pratt-powered A319 and the very first CFM Leap-1A-powered A320 will be available in mid-2016. The Leap-1A-engine powered A319 will follow in the latter half of the year, with the two newer versions of the A321 being introduced shortly after the first of the two, PW110G, will make its appearance as 2016 comes to a close; and the second, Leap-1A, in early 2017. According to reports, there will not be an A318NEO aircraft.

Airbus plans to build eight prototypes, including two A319NEO, two A321NEO, and four A320NEO, each incorporating the new engines, with the first A320NEO to take flight in the fall of 2014. The new engines are the primary innovations being made to the Airbus aircraft. The development of these new engines has been undertaken by CFM as well as Pratt

and Whitney, and though the planned release of the new aircraft is over a year away, Airbus intends to maintain its production schedule of 42 aircraft per month. This may prove to be a financial challenge for the company, as the majority of these aircraft will feature the current model engine and not the NEO, since the latter has yet to be officially released, although it is already in high demand. Airbus, for example, currently has around 1579 orders for NEO aircraft.

As the plan stands, the current engines will continue to be built until 2018; thereafter, only the NEO engine aircraft will be manufactured. The company seeks to produce around 2400 aircraft in the next five years, the vast majority of which - 2000 - will include current model engines.

The stats for the new engine option aircraft far out-do the current models in performance and efficiency. Klaus Roewe, senior vice president for the Airbus A320NEO, believes that the new aircraft designs are “more than meeting our predictions as far as high-speed and fuel burn are concerned”. The company promises that the NEO aircraft will burn 15% less in fuel on 800nm sectors, in comparison with the current A320’s fuel burn rate, due mainly to the

improved wing design which incorporates shark lets, new winglets which will be standard on the NEO airliners.

In addition to the new aircraft’s significant improvement in efficiency and eco-friendliness in terms of fuel burn, it will also outdo predecessors in terms of range capability.

Though they have been worried about a new interface when operating the NEO aircraft, Airbus reassures us that the interface will remain similar to that of the current Airbus aircraft, and that the changes in the cockpit will be minimal, incorporating the new engine design in a way that will not be difficult for flight staff to adjust to. Roewe clarifies that “Airlines want to operate mixed fleets that include both the CEO (the current engine) and the NEO, so they want the same man-machine interface.” He also states that the changes in the interface will require only minimum transition training from the current type to the new one ■

* English Instructor and Writer
Bachelor’s of Liberal Arts in English -
(University of Louisiana at Lafayette)

Sources:

www.pdxlight.com/neomax.htm
www.a320neo.com
www.airbus.com
AviationWeek Magazine

The Dreamliner: Return with a Vengeance!



Ethiopian Airlines was the first to put Dreamliner back in service

As of May, 20th 2013, the Dreamliner was back flying and no longer grounded due to the infamous lithium-ion battery failures. Ethiopian Airlines was the first of eight Dreamliner operators to put the aircraft back in service. Boeing was able to convince the FAA that the battery fix is efficient. Tests carried out by Boeing included intentionally driving original battery packs and new ones to failure.

Apparently, some available test results data showed that the original packs failed after an hour with the entire battery cells venting leading to a breach in the casing and eventually causing fire with temperature reaching around 300 °C. Unlike the original battery pack, the new battery pack however, reached an average of around 80 °C under the extreme test conditions and when it did eventually fail, only few cells vented and

there was no fire. Boeing teams were then sent worldwide to implement the new fix on existing Dreamliners and those aircraft are now flying again. However, Boeing admits that the root cause of the initially reported battery failures has not really been understood and the new fix created a logistical nightmare making the job rather tedious. Nevertheless, airlines around the globe are still interested in acquiring the Dreamliner.



By Dr. Mostefa
Bourchak*

After the successful return to service of the Dreamliner, things have started to get better for the Boeing Company. New production deliveries have resumed at a faster rate of seven aircraft per month which would increase to ten aircraft per month by the end

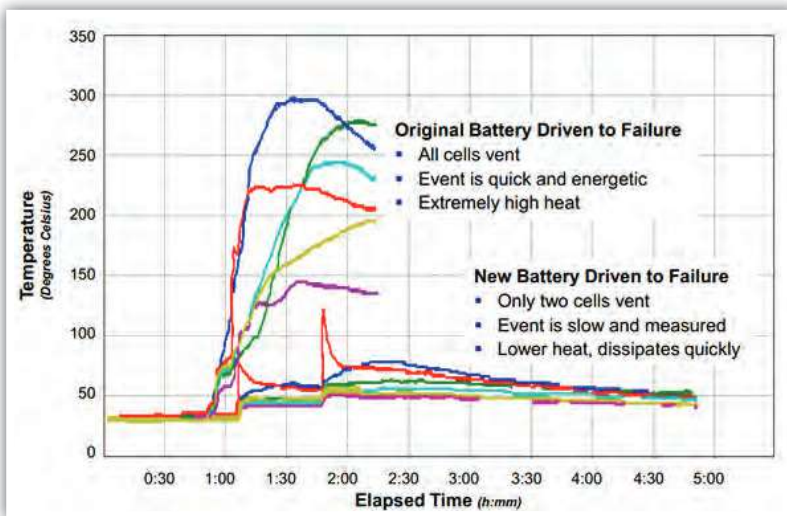


Chart showing original battery pack overheating after one hour whereas the new battery pack showing little increase in temperature after almost 5 hours



Boeing technicians displaying the lithium-ion battery fix kit prior to installation

of this year. So far 114 Dreamliners have been built, more than 50 Dreamliners delivered to customers worldwide and the program has 800 unfilled orders with 58 customers worldwide. Airlines around the world have already started inaugurating new Dreamliners. China Southern launched the country's first Dreamliner on the 7th of June 2013. Another Chinese airline company, Hainan Airlines will also inaugurate its first Dreamliner this year with

both companies expecting six more aircraft by the end of this year. Also, the Australian Jetstar airliner company who has 14 Dreamliners on order is expected to receive its first one in September. Additionally, Thomson Air was the first British customer to receive the Dreamliner last May with British Airways to follow suit at the end of June of this year with two Dreamliners. New orders are also coming thick and fast with Air New Zealand being

on course to be the first customer to receive the latest version of the Dreamliner the 787-9 next year. This version accounts for 40 percent of all Dreamliner orders. The 787-9 Dreamliner is a slightly bigger version of the 787-8 with more seats and a longer range.

And the good news do not seem to end. Singapore airlines announced recently a conditional order for 30 787-10X version of the Dreamliner. This order is conditional upon Boeing formally launching the 787-10X. Singapore airlines chose Rolls Royce engines for their anticipated Dreamliners. On a side note, this year's Paris Airshow will feature Boeing and Qatar Airways Dreamliners as one of the show star aircraft especially with the absence of the Dreamliner direct competitor the Airbus A350.

Unfortunately, due to the high publicity of the launch of the Dreamliner and the consequent troubles it suffered, all eyes are now focused on future technical glitches if any. During the month of June two All Nippon Airways Dreamliners suffered technical difficulties with one aircraft engine failing to fire up before take-off while the other aircraft had to return shortly after takeoff due to weather system malfunction. However, with Boeing forecasting a demand for more than 35,000 new aircraft, commercial aviation is always ready to weather any downturns to keep its growth rate on an increasing trend.

* Aeronautical Engineering Department - King Abdulaziz University

Top 30 World Airports

Air traffic movements (2012) PRELIMINARY (Last update: April 24, 2013)

Rank	Airport	Total Passengers	% Change
1	ATLANTA GA, US (ATL)	95672104	▲ 3
2	BEIJING, CN (PEK)	81908740	▲ 4.1
3	LONDON, GB (LHR)	70051902	▲ 0.7
4	TOKYO, JP (HND)	67824747	▲ 8.5
5	CHICAGO IL, US (ORD)	67124607	▲ 0.4
6	LOS ANGELES CA, US (LAX)	63849335	▲ 2.8
7	PARIS, FR (CDG)	61478475	▲ 0.6
8	DALLAS, TX, US (DFW)	58887570	▲ 1.8
9	DUBAI, AE (DXB)	58392171	▲ 13.2
10	JAKARTA, ID (CGK)	57839056	▲ 13.2
11	FRANKFURT, DE (FRA)	57320367	▲ 1.2
12	HONG KONG, HK (HKG)	55814909	▲ 3.6
13	DENVER CO, US (DEN)	53275923	▲ 0.9
14	BANGKOK, TH (BKK)	52514625	▲ 8.3
15	SINGAPORE, SG (SIN)	51262500	▲ 9.1
16	AMSTERDAM, NL (AMS)	50997025	▲ 2.2
17	NEW YORK NY, US (JFK)	49497828	▲ 3.3
18	GUANGZHOU, CN (CAN)	48068336	▲ 5.4
19	ISTANBUL, TR (IST)	45548478	▲ 19.7
20	MADRID, ES (MAD)	44740981	▼ 9.5
21	SHANGHAI, CN (PVG)	44661726	▲ 6.6
22	SAN FRANCISCO CA, US (SFO)	44424931	▲ 7.7
23	LAS VEGAS NV, US (LAS)	41615617	▲ 0.3
24	CHARLOTTE NC, US (CLT)	41372060	▲ 5.4
25	PHOENIX AZ, US (PHX)	40468878	▼ 0.1
26	KUALA LUMPUR, MY (KUL)	40053443	▲ 6.3
27	HOUSTON TX, US (IAH)	40036960	▼ 0.3
28	INCHEON, KR (ICN)	39519877	▲ 11.6
29	MIAMI FL, US (MIA)	39467400	▲ 2.3
30	MUNICH, DE (MUC)	38290832	▲ 1.2

Total passengers enplaned and deplaned, passengers in transit counted once.

Rank	Airport	Total Cargo	% Change
1	HONG KONG, HK (HKG)	4120348	▲ 5.2
2	MEMPHIS TN, US (MEM)	4053865	▲ 3.3
3	SHANGHAI, CN (PVG)	2969554	▼ 2.5
4	ANCHORAGE AK, US (ANC)	2470147	▼ 1.6
5	INCHEON, KR (ICN)	2461229	▼ 1.9
6	DUBAI, AE (DXB)	2294614	▲ 5.1
7	LOUISVILLE KY, US (SDF)	2186937	▲ 0.1
8	FRANKFURT, DE (FRA)	2067698	▼ 5.5
9	TOKYO, JP (NRT)	2014500	▲ 4.1
10	PARIS, FR (CDG)	1940850	▼ 6.7
11	MIAMI FL, US (MIA)	1936706	▲ 5.1
12	SINGAPORE, SG (SIN)	1845696	▼ 2.3
13	BEIJING, CN (PEK)	1834393	▲ 10.6
14	LOS ANGELES CA, US (LAX)	1782028	▲ 4.8
15	TAIPEI, TW (TPE)	1600212	▲ 0.5
16	LONDON, GB (LHR)	1550846	▼ 0.8
17	CHICAGO IL, US (ORD)	1524331	▼ 3.4
18	AMSTERDAM, NL (AMS)	1519511	▼ 1.1
19	BANGKOK, TH (BKK)	1332625	▲ 0.6
20	NEW YORK NY, US (JFK)	1284856	▼ 4.8
21	GUANGZHOU, CN (CAN)	1272345	▲ 9.3
22	INDIANAPOLIS IN, US (IND)	944056	▲ 3.5
23	TOKYO, JP (HND)	910826	▲ 3.5
24	SHENZHEN, CN (SZX)	880045	▲ 9
25	LEIPZIG, DE (LEJ)	855172	▲ 14
26	DOHA, QA (DOH)	844961	▲ 3.4
27	NEWARK NJ, US (EWR)	741426	▼ 7
28	COLOGNE, DE (CGN)	731298	▲ 0.3
29	OSAKA, JP (KIX)	723903	▼ 1.7
30	KUALA LUMPUR, MY (KUL)	707092	▲ 1.2

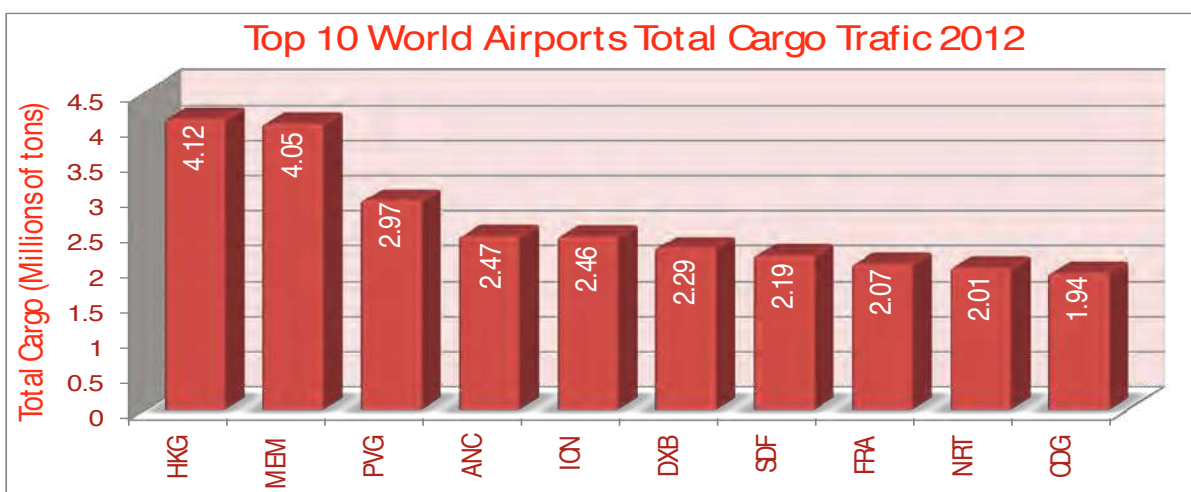
Total Cargo: loaded and unloaded freight and mail in metric tones.

Rank	Airport	Total Movements	% Change
1	ATLANTA GA, US (ATL)	930091	▲ 0.3
2	CHICAGO IL, US (ORD)	878009	▲ 0.2
3	DALLAS/FORT WORTH TX, US	652744	▲ 1.1
4	DENVER CO, US (DEN)	611285	▼ 2.4
5	LOS ANGELES CA, US (LAX)	604338	▼ 0.3
6	BEIJING, CN (PEK)	557721	▲ 4.4
7	CHARLOTTE NC, US (CLT)	552737	▲ 2.1
8	LAS VEGAS NV, US (LAS)	526522	▼ 1.1
9	HOUSTON TX, US (IAH)	508789	▼ 3.6
10	PARIS, FR (CDG)	495635	▼ 3.4
11	FRANKFURT, DE (FRA)	479684	▼ 1.6
12	LONDON, GB (LHR)	472876	▼ 1.6
13	PHOENIX AZ, US (PHX)	449048	▼ 2.6
14	PHILADELPHIA PA, US (PHL)	442753	▼ 1.4
15	AMSTERDAM, NL (AMS)	436391	▼ 0.3

Total Movements: landing + take off of an aircraft.

Rank	Airport	Total Movements	% Change
16	TORONTO ON, CA (YYZ)	434481	▲ 1.3
17	MINNEAPOLIS MN, US (MSP)	426854	▼ 1.3
18	DETROIT MI, US (DTW)	426670	▼ 3.3
19	SAN FRANCISCO CA, US (SFO)	423818	▲ 4.5
20	NEWARK NJ, US (EWR)	414361	▲ 0.5
21	NEW YORK NY, US (JFK)	402448	▼ 1.7
22	MUNICH, DE (MUC)	395518	▼ 3.3
23	MIAMI FL, US (MIA)	391683	▼ 0.9
24	MEXICO CITY, MX (MEX)	378124	▲ 6.9
25	JAKARTA, ID (CGK)	371331	▲ 7.2
26	NEW YORK NY, US (LGA)	370777	▲ 1.2
27	GUANGZHOU, CN (CAN)	369355	▲ 4.8
28	MADRID, ES (MAD)	368627	▼ 13.5
29	ISTANBUL, TR (IST)	368222	▲ 12.2
30	HONG KONG, HK (HKG)	361834	▲ 4.6

Airports participating in the ACI Annual Traffic Statistics Collection



Forthcoming Aviation Conferences, Exhibitions & Seminars

15 July – 15 September 2013

15 July

Indonesia Airports Sector
Scoping Report Briefing
London, UK
adsgroup.org.uk/articles/35557

16 July

ACC/TSA Security Capabilities
Day
Arlington, VA, USA
[acconline.org/c/e/
ACCTSA_Security_Technology_Day/
Security_Capabilities_Day.aspx](http://acconline.org/c/e/ACCTSA_Security_Technology_Day/Security_Capabilities_Day.aspx)

16 - 18 July

National Motor Vehicle and
Aviation Exposition
New Orleans, LA, USA
fedfleet.org/

21 - 23 July

13th Annual AAAE/NEC
Winter Operations & Deicing
Conference
Denver, CO, USA
[events.aaae.org/sites/130701/
index.cfm](http://events.aaae.org/sites/130701/index.cfm)

Routes CIS

Donetsk, Ukraine
[routesonline.com/events/163/
routes-cis-2013/](http://routesonline.com/events/163/routes-cis-2013/)

21 - 24 July

Southwest Chapter AAAE
Annual Conference & Exposition
Phoenix, AZ, USA
swaaae.org/

22 - 23 July

AAAE/ALA Summer Legislative
Issues Conference
Washington, DC, USA
[events.aaae.org/sites/130702/
index.cfm](http://events.aaae.org/sites/130702/index.cfm)

23 - 24 July

CFO Summit
St. Louis, MO, USA
aci-na.org/event/2825

25 - 28 July

Great Lakes Chapter AAAE
Annual Conference & Exposition
Rapid City, SD, USA
glcaaae.org/

28 - 31 July

44th Annual FAC Conference
and Exposition
Orlando, FL, USA
[floridaairports.org/meetings/
meetings.asp?id=48](http://floridaairports.org/meetings/meetings.asp?id=48)

29 - 31 July

ACI World/Latin America-
Caribbean Airports Economic
Regulation Conference
Mexico City, Mexico
[aci.aero/Events/Upcoming-
Events/Airports-Economic-
Regulation-Conference](http://aci.aero/Events/Upcoming-Events/Airports-Economic-Regulation-Conference)

29 July - 4 August

EAA Air Venture Oshkosh
Oshkosh, WI, USA
airventure.org

31 July - 1 August

2013 Deicing and Stormwater
Management Conference
Arlington, VA, USA
aci-na.org/event/2905

1 - 2 August

II Baltic Business Aviation
Forum
Jurmala, Latvia
events.ato.ru/eng/events/bbaf/

4 - 6 August

AAAE/SC Chapter AAAE Airports
Conference of the Americas
Palm Beach, Aruba
[events.aaae.org/sites/130807/
index.cfm](http://events.aaae.org/sites/130807/index.cfm)

9 - 11 August

Abbotsford International
Airshow
Abbotsford, Canada
abbotsfordairshow.com/

12 - 14 August

AIAA Aviation Technology,
Integration, and Operations
(ATIO) Conference
Los Angeles, CA, USA
[aiaa.org/EventDetail.
aspx?id=16562](http://aiaa.org/EventDetail.aspx?id=16562)

Airfield Pavement, Evaluation

and Analysis Workshop
Arlington, VA, USA
[acconline.org/c/e/
InstituteEvents/Airfield_
Pavement/PavementDesign.aspx](http://acconline.org/c/e/InstituteEvents/Airfield_Pavement/PavementDesign.aspx)

12 - 15 August

Public Safety & Security
Conference
Toronto, Canada
aci-na.org/event/2747

13 - 15 August

AAAE/Northwest Chapter
AAAE Airfield and Facilities
Management Conference
Spokane, WA, USA
[events.aaae.org/sites/130803/
index.cfm](http://events.aaae.org/sites/130803/index.cfm)

2013 Second Annual Asia-Pacific

Flight Standards Meeting
Washington, DC, USA
[faa.gov/news/conferences_
events/2013_asia_pac/](http://faa.gov/news/conferences_events/2013_asia_pac/)

15 August

5th Annual BALA: Business
Aviation in Latin America
Sao Paulo, Brazil
aeropodium.com/cp/bala.html

17 - 20 August

Air Carriers Purchasing Conference (ACPC)
Orlando, FL, USA
<http://www.acpc.com/>

17 - 21 August

55th NEC/AAAE Annual Conference
Pittsburgh, PA, USA
neconference.org/cfiles/home.php

19 - 22 August

AIAA Guidance, Navigation and Control and Co-Located Conferences
Boston, MA, USA
aiaa.org/Boston2013/

20 - 21 August

AACO 6th Aviation Fuel Forum
Dubai, UAE
aaco.org/events/details.aspx?pageid=4430

25 August

Iowa Aviation Museum
Greenfield, Iowa
flyingmuseum.com/opening.aspx

27 August - 1 September

MAKS - International Aviation and Space Salon
Moscow, Russia
aviasalon.com/en/

28 - 29 August

Operational Efficiency & Cost Management Workshop
Geneva, Switzerland
iata.org/events/Pages/oecm-gva.aspx

28 - 30 August

ASQ Forum Americas
Punta Cana, Dominican Republic
aci.aero/Events/2013/8/28/2013-ASQ-Forum-Americas

30 August

Airline Cost Conference
Geneva, Switzerland
iata.org/events/Pages/airline-cost.aspx

4 - 6 September

Future Travel Experience Global
Las Vegas, NV, USA
futuretravelexperience.com/fte2013/

5 - 8 September

China Helicopter Exposition
Tianjin, China
helicopter-china-expo.com/

9 - 10 September

AAAE Airport Social Media Summit
Dallas, TX, USA
events.aaae.org/sites/130907/index.cfm

Ground Handling Russia & CIS 4th International Conference and Exhibition
Moscow, Russia
events.ato.ru/eng/events/groundhandling

9 - 11 September

NEXTGEN AHEAD: Air Transportation Modernization Conference
Washington, DC, USA
events.aviationweek.com/current/nextgen/index.htm

U.S.-China Aviation Symposium
Beijing, China
events.aaae.org/sites/130906/index.cfm

International Flight Services Association - IFSA Annual Conference & Exhibition
Anaheim, CA, USA
ifsanet.com/

10 - 12 September

ASQ Forum Asia / Middle East / Africa
Doha, Qatar
aci.aero/Events/2013/9/10/2013-ASQ-Forum-Asia--Middle-East--Africa

Airline Engineering & Maintenance Asia Pacific
Singapore, Singapore
airlineengineering-asiapacific.com/

11 September

Business Aviation Forum 6th International Conference
Moscow, Russia
events.ato.ru/eng/events/business_aviation

11 - 12 September

ATW's 6th Annual Eco-Aviation Conference & Awards
Washington, DC, USA
atwonline.com/atw-s-6th-annual-eco-aviation-conference-and-awards

Business Aircraft Europe
London, UK
miuevents.com/bae2013

11 - 13 September

9th Maintenance Cost Conference 2013
Dublin, Ireland
iata.org/events/Pages/maintenance-cost.aspx

12 September

Business Aviation Regional Forum
Chicago, IL, USA
nbaa.org/events/forums/20130912/

12 - 13 September

9th Annual Latin America Airfinance Conference
Rio de Janeiro, Brazil
euromoneyseminars.com/Calendar.aspx?CategoryID=0

Flight Safety
London, UK
flightglobalevents.com/flightsafety2013

13 September

2nd Annual Mediterranean Business Aviation
Sliema, Malta
aeropodium.com/cp/mba.html