



الهيئة العامة للطيران المدني
Civil Aviation Authority of Saudi Arabia
Published Every 2 Months By The
General Authority of Civil Aviation, Kingdom of Saudi Arabia

CIVIL AVIATION

Issue 89, July 2015, Ramadan: 1436



**Council of Ministers Approves
Aircraft Fuel Price Reductions**

Ceramic Matrix Composites (CMCs)





المقاولون المبتكرون للمعايير المتطورة
INNOVATIVE CONTRACTORS for ADVANCED DIMENSIONS



AIRPORT TECHNOLOGY INTEGRATORS FOR THE 21st CENTURY

ABOUT US

ICAD is the leading provider of airport integration services in the Middle East. Our areas of expertise include: Information and Communication Technology Systems, Passenger Processing Systems, Air Traffic Control Systems, Security and Safety Systems, Special and Ancillary Systems, Building Controls and Automation Systems, Lighting Systems, and Passenger Boarding Systems.

ابكاد هي شركة رائدة في مجال تقديم الخدمات المتكاملة للمطارات في الشرق الأوسط. عبرنا لتسمل: تكنولوجيا المعلومات وأنظمة الاتصالات، نظم بيانات الركاب، أنظمة تحكم المرور الجوية، أنظمة الأمن والسلامة وأنظمة الحراسة والتفتيش، وبناء أنظمة التحكم وأنظمة التشغيل الآلي وأنظمة الإضاءة وأنظمة صعود الركاب.

OUR SERVICES

With our highly expertise team we are proficient of delivering the even most complex multiple-system and multiple-vendor installations with the best competitive edge technology requirements to a highest level of standars and expectations starting from engineering, design, installation, commissioning, operation and including maintenance. With our sophisticated in house testing and pre-staging facilities before onsite installation and integration, we maintain our reputation by completing the projects on schedule.

خدماتنا لدينا فريق عمل على درجة عالية من الخبرة والاعتراف، والشاعر على ان يقدم نظم معقدة ومتعددة الماتعين للمنشآت حتى الأكثر تعقيدا مع أفضل متطلبات التكنولوجيا مبره تنافسية على أعلى مستوى من المعايير والمواصفات، والتوقعات تبدأ من الهندسة والتصميم والترتيب والتكليف، بما في ذلك التشغيل والصيانة، مع اختيارنا الداخلية للتطورة والتي جربها قبل اطلاق أي مشروع على الموقع والتكامل ونحافظ على سمعتنا من خلال استكمال المشاريع في الموعد المحدد.

Be **I**nnovation Story
a Part of Our

ICAD HEADQUARTERS
SARY ROAD AND KHALIDIYA STREET
PO BOX JEDDAH 11718B
BUILDING JEDDAH 101, FLOOR 7
JEDDAH, KSA-21391
TELEPHONE: +966-12-616-6771
FAX: +966-12-616-6773

Passenger identification check is mandatory for all domestic flights



Passport Residence Permit Saudi National ID

You are kindly requested to arrive at the airport early to complete your check-in and boarding process in accordance with the following schedules:

Domestic Flights

45
Minutes

Check-in counters will close 45 minutes prior to departure time

15
Minutes

Boarding gates will close 15 minutes prior to departure time

saudiairlines.com





الهيئة 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 89, July 2015, Ramadan 1436

Presiding Editor

Dr. Faisal H. Al-Sugair
VP, GACA

Assistant Presiding Editor

Abdul Aziz A. Al-Angari
Assistant to GACA President for
Administration and Finance

Editor-in-Chief

Dr. Salem A. Sahab

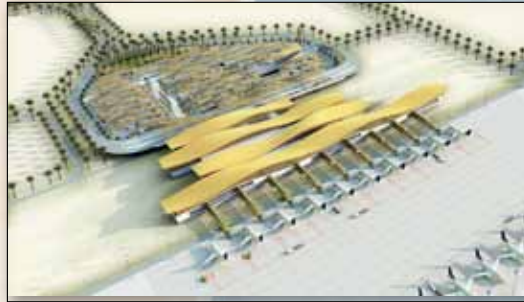
Advisory Board

Dr. Muqbil S. Aldhukair
Dr. Mohamed A. Al Amin
Dr. Mohsen Al-Naggar
Dr. Ali H. Al-Zahrani
Dr. Ali M. Al-Bahi
Khalid A. Al-Khaibari



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

CONTENTS



6

Prince Naif Airport
Development
Project is Underway

7

GACA Board
approves New
Taif International
Airport



8

GACA President Pays
a Visit to ICAO HQ



14

A Crash that should
have Never Occurred!



Open Skies Under Scrutinization

Each policy has its negative and positive aspects as well as its advantages and precautions. However, these values should always be viewed from a relative perspective and not from an absolute one as what some may consider positive others may find it negative and vice versa. Accordingly, it is always necessary to define the angle from which the case under examination is viewed.

The same applies to the civil aviation industry where many policies, regulations, and laws are used each has its own positive and negative aspects, advantages, disadvantages, and precautions depending on the angle from which they are looked at. The open skies policy is not an exception to this general rule as when applied on many countries and geographical areas of the world the common noble goal is to attract air traffic, promote fair competition, and raise the economic returns of all those involved.

Within this context, skies were opened between the Arabian Gulf Region and North America, (USA in particular). Due to foreseen and unforeseen reasons, American air carriers were reluctant to seize available opportunities while Gulf air carriers (led by Emirates, Qatar Airways, and Etihad Airway) tried to get the best out of these opportunities by raising the number of their scheduled flights. For example, Emirates now operates around 90 weekly flights to 10 American cities including New York (two daily flights), Washington, Huston, LA, Chicago, Boston, Dallas, San Francisco, and Seattle. On the opposite side, total number of combined flights operated by all U.S. air carriers to the Gulf Region, probably does not exceed a single digit figure.

This imbalance in favor of Gulf air carriers led a tripartite bloc formed by AAL, United, and Delta Airlines demand the US Administration's inter-



By Dr. Faisal H. Al-Sugair
VP, General Authority for Civil Aviation

vention to end (what they called) the special privileges enjoyed by the Gulf airlines. In short, the tri block urged the government to reconsider the open skies agreement concluded with the Gulf countries or to retaylor it to suit American air carriers who failed to cope with the Gulf air carriers due to what they consider a substantial financial support they receive from their governments. This support allows Gulf air carriers to offer best competitive prices and build advanced aircraft fleets, in addition to render best services such as quality inflight services

or having a wide route network covering most of the Middle East and Far East destinations.

This confrontation was criticized by Mr. James Hogan, CEO of Etihad Airways in his speech in front of the US Chamber of Commerce Forum held on March 17 in Washington. Mr. Hogan warned of tampering with the open skies agreement expressing his astonishment for blaming Gulf air carriers while the US and European air carriers enjoy all the privileges offered by this same agreement from their flights over the Atlantic. In fact, they are carrying many times as much of passengers and cargo.

This hot debate is part of the struggle between the different parties each trying to protect its own interests by looking at things from a different angle driven by different considerations. Our point of view in Saudi Arabia regarding this issue is to ensure a "balanced expansion in opening skies" so that no party gets hurt besides ensuring fair competition. Saudi Arabia has a unique incomparable competition protection system in the Gulf region. The EU realized this when they started discussing the fair competition principle with the Gulf countries. The discussion is still going on and will definitely reach favorable results to Saudi Arabia and all parties involved ■

Council of Ministers Approves Aircraft Fuel Price Reductions

Under the chairmanship of the Custodian of the Two Holy Mosques, King Salman Bin Abdul-Aziz, the Council of Ministers approved on Monday 4th of May 2015 aircraft fuel price reductions for all airlines using the Kingdom airports as follows:

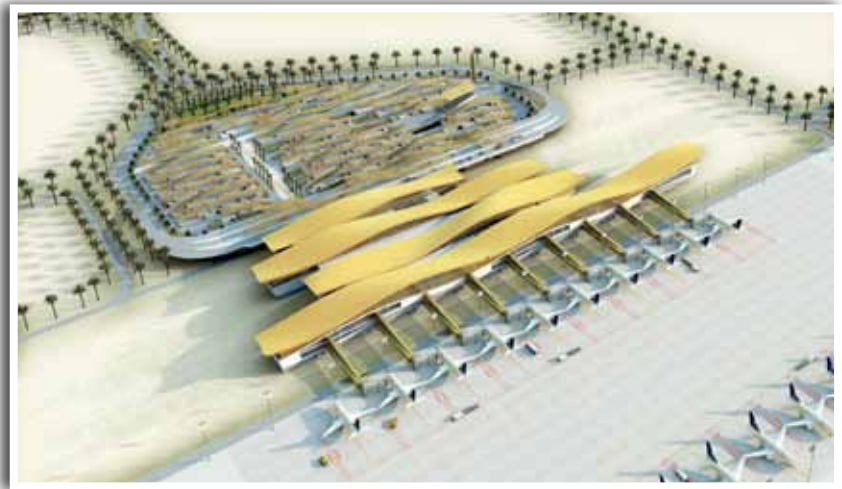
- a price reduction of 15 Hallas / liter in KAIA and KKIA.
- a price reduction of 20 Hallas / liter in the Kingdom's other airports.



Prince Naif Airport Development Project is Underway

Work on Prince Naif Airport Development Project in Gasim is already underway starting 6th June, 2015. The contractor is the Muhiadib Contracting company. It will take 3 years to finish and will cost SR 1,048,893,698. The project will raise the airport's annual capacity to 3 million passengers. The purpose is to accommodate the high increase in the demand for air travel. The new airport's design was inspired by sand dunes and oases which characterize this region.

The airport includes a 60,000 square meters 4-story new passenger terminal building (departure, arrivals, services, and baggage claim) with space for commercial facilities, boarding lounge, 1st class and business



class passengers lounge. Passengers will move from the terminal to aircraft through nine air-bridges. The terminal is linked to a multi-story car parking to ensure easy movement of passengers to and from the car parking. The project also embraces a control

tower, a 3,500 square meters VIP lounge, a 1,600 square meters mosque, new fire station, maintenance building, ANS building, and the airport employees housing. The airport's administration building will be built on a 2,800 square meters area.

New “Watani Project” for Linking the Kingdom’s Outstretched Parts

The General Authority of Civil Aviation (GACA) has decided to launch a project called “Watani” with the aim of linking the different parts of the kingdom by air through the establishment of the so-called “hub” airports in certain areas to serve adjacent airports.

The President of the GACA met with the key officials of national air carriers to discuss GACA’s plans to activate un-served domestic routes. During the meeting Al-Hamdan proposed provision of possible financial support by GACA to the national air carriers which operate regular flights in the those un-served

domestic routes.

Al-Hamdan said that GACA has decided to upgrade Hail Airport to a hub airport to serve airports in the northern parts of the Kingdom to be the northern gateway to international and regional airports. GACA will support this pilot project by providing financial support to the responding operating airlines and also plans to launch similar projects in other parts of the Kingdom if this project proves to be successful. The second phase will be the selection of another airport in the southern or eastern parts of the kingdom.

GACA Board approves New Taif International Airport

In its session held on Sunday May 3rd 2015, under the chairmanship of His Excellency the President, Mr. Salman Al-Hamdan, and the presence of H.E. Dr. Faisal Al-Sugair and the Board’s esteemed members, GACA Board of Directors discussed a number of topics and issued a number of resolutions and recommendations. At the forefront is the decision to announce New Taif Airport as an international airport. The Board also reviewed the regulations of the committee formed for examining the civil aviation regulations violations, formation of an airport security company, and approval of the airport fund regulations. Discussions also covered two reports on transforming KKIA and ANS sector into separate companies beside a number of civil aviation related topics.



In a further step, GACA invited interested investors from the private sector to partner with GACA in financing the design, construction, and maintenance of New Taif International Airport, in addition to the operation and maintenance of the existing Taif Airport until the new airport is completed.

GACA hired International Finance Corporation (IFC) as the main project consultant to assist in project structuring and execution. GACA invited all interested parties with interest and capabilities in financing the construction and operation of international airports to submit their prequalification submittals.

GACA President Pays a Visit to ICAO HQ

His Excellency President of the General Authority of Civil Aviation (GACA), Mr. Sulaiman Al-Hamdan, recently paid a visit to ICAO HQs in Montreal, Canada, accompanied by Asst. President for International Cooperation, Prince Turki Bin Faisal Al-Saud and the accompanying delegation. The visit is the first paid by GACA President to ICAO premises.

During the visit the President met the Kingdom's resident delegation to ICAO and was enlightened by the delegation's activities and future projects. The visit also included a meeting between the President and ICAO's Secretary General in which the two parties discussed cooperation agreements in the areas of safety and security as well as availing training opportunities to GACA employees. Moreover, Mr. Al-Hamdan met with the President of ICAO Board, Dr. Olumuyiwa Benard Aliu, and discussed all means for strengthening cooperation ties in the different aspects



of civil aviation in the Region, and in the Kingdom, in particular.

In a speech delivered in front of ICAO's representatives and members, Al-Hamdan shed some light on the Kingdom's achievements in the civil aviation sector and reviewed the different executed projects in the last five years.

Kingdom Airports Record Higher Passenger Traffic Figures

KAIA, Jeddah, issued a report revealing that number of passengers handled by the airport in Q1 this year has increased by 12% compared to the same period last year. Total number of passengers who travelled through the airport reached 8.8 million passengers in Q1 compared to 7.9 million passengers in the same period last year.

KKIA, Riyadh, witnessed a rise in number of passengers in Q1 this year of around 16% compared to the same period in 2014 as the airport's passenger traffic in the first three months this year reached 5.8 million passengers compared to about 5 million passengers in the same period last year. Within this increase, number of domestic passengers rose by 23% to about 3.2 million passengers compared to about 2.6 million passengers in the same period last year. Number of international passengers rose by 8% to around 2.5

million passengers in Q1 this year compared to about 2.4 million passengers in the same period last year.

KFIA recorded an increase in international traffic of 7% in Q1 2015 in view of the continuation of direct flights between the airport and Asia and Europe. In this aspect the airport recorded an increase of 22% in air traffic serving about 2.4 million passengers with plans to attract more than 9 million passengers this year.

As for the Kingdom's domestic airports they witnessed an increase in passenger traffic of 16% in Q1 2015 compared to the same period last year as number of passengers handled by 23 domestic airports during the first three months of this year reached 3.4 million passengers. Furthermore, total number of flights almost reached 30,000 flights of which 21,913 were domestic, 5,193 international, and 2,717 private flights

handled by domestic airports. This represents a total traffic increase of 9% in Q1 compared to the same period last year with international traffic rising by 30%, and domestic traffic by 13% while private aviation rose by 16% in the first three months this year compared to the same period last year.

It's worth mentioning that 10 domestic airports succeeded in accommodating international flights heading to international destinations including Emirates, Kuwait, Bahrain, Qatar, Egypt, Yemen, and Turkey which contributed to the significant increase in passenger and aircraft traffic in domestic airports. This, in turn, facilitated provision of a wide range of quality services to citizens and residents in the different parts of the Kingdom and saved them a lot of time and trouble by enabling them to directly reach neighboring countries by air.



السعودية
SAUDIA

CARGO



Together we grow stronger

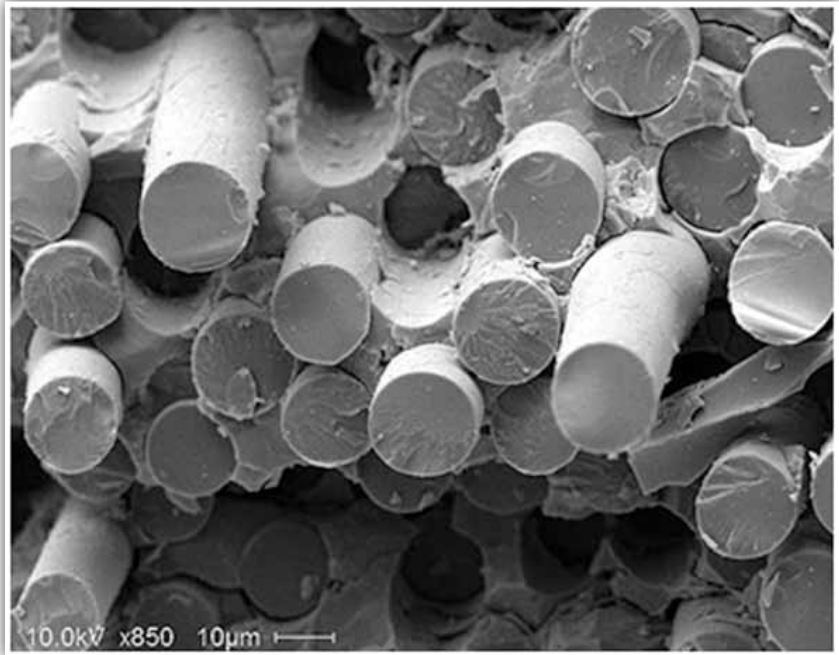
We operate a fleet of 15 freighters and sell the belly-capacity on 145 passenger aircraft spanning a rapidly expanding global network of more than 225 destinations.

Innovative Technologies for Next Generation Engines: Ceramic Matrix Composites (CMCs)

A completely new materials technology promise to revolutionize aircraft engine manufacturing along with advances in additive manufacturing processes. At the top of the list is advanced Ceramic Matrix Composites (CMCs) which consist of microscopic fibers embedded in a bonding matrix system. The combined materials have new and different properties than they would separately.

For instance, GE is developing jet engine components made up from CMCs containing silicon carbide ceramic fibers and ceramic resin that are lighter weight, more durable and can withstand hotter temperatures than their metal substitutes. Consequently, more fuel efficient and fatigue resistant engines are expected to be flying soon.

In recent years, composite materials have been at the forefront of advanced materials on newer aircraft. The CMCs are to be for the first time on GE's "the LEAP (Leading Edge Aviation Propulsion)" in 2016 on the Airbus A320neo and in 2017 for the Boeing 737MAX. An example of where this new technology would be implemented is on the high-pressure turbine shrouds in the hot section of the engine which will be made from CMCs. The latter is expected to be more common on many other parts (such as turbine nozzles and combustor liners) that are to be found in the future GE9X in its debut year



Microscopic picture of Ceramic Matrix Composites internal structure

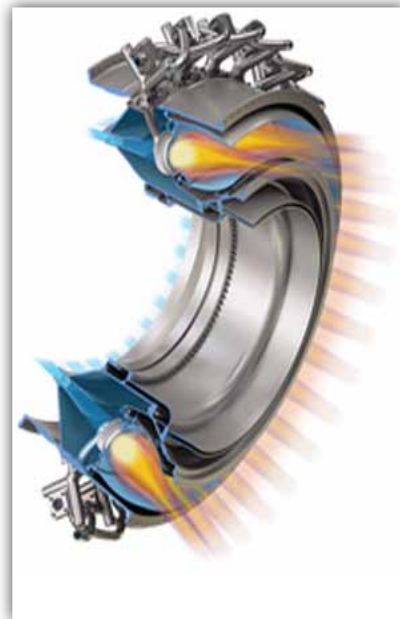
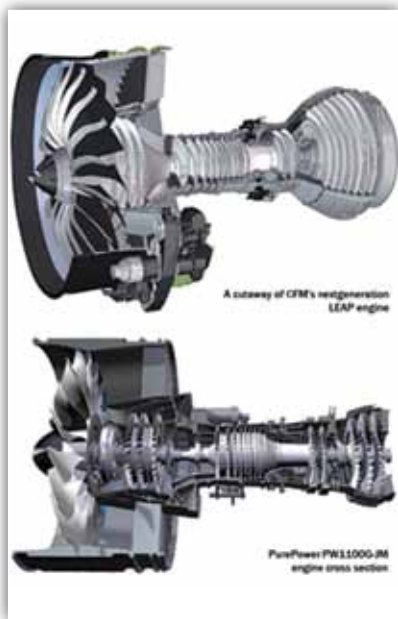


By Dr Mostefa Bourchak*

2020 that is expected to power Boeing 777X airplane.

CMCs have emerged from decades of research and study to commercial applications. They are lightweight, hard and stable to high tem-

peratures which make them ideal for aircraft engine components. They usually comprise a ceramic matrix reinforced by a refractory fiber such as silicon carbide. In the past CMCs were limited to missile structures, radomes and exhaust systems for fighter jets. However, with recently improved varieties of manufacturing processes CMCs can now be produced much easily. These materials are expected to be more resistant to crack propagations and creep especially when nano-size fillers are also embedded such as NAFEN™ from ANF Technology Ltd. SiC CMCs can withstand temperatures greater than 1316°C which means they require less cooling. Removing cooling air allows a jet engine



GE Aviation LEAP Engine

to run at higher thrust and/or more efficiently. Combined with their reduced weight (one-third the weight of nickel super alloys) CMCs would result in improved combustor efficiency and reduction in fuel consumption. With hundreds of kilos of engine weight saved, thrust would be improved by 10%.

Other research and development activities in CMCs are also taking part. The FAA Continuous Lower Energy, Emissions, and Noise (CLEEN) program is funding research to develop turbine blade track and acoustic engine exhaust nozzle to speed the reduction of aircraft engine fuel burn, emissions and noise. Tests on a Rolls-Royce Trent 1000 engine rig that had a CMCs nozzle were carried out in 2013. The nozzle performed as expected during the 73-hour engine test, with no thermal or structural stress issues. Although the specifications asked for 55,000 hours of service life it was predicted that the nozzle could continue in

service well above that. Boeing then successfully flight-tested the innovative nozzle on its ecoDemonstrator 787 Flight Test Airplane in 2014. The nozzle is expected to enter the commercialization phase later this decade with certification starting at the end of 2015. Contrary to GE and Rolls-Royce, Pratt & Whitney surprisingly are not so keen on CMCs for now and questioned the maturity of CMCs for aircraft engines in terms of cost benefits in the short and medium terms. However, Pratt & Whitney do believe that there is a future for CMCs in their plans especially when they have more confidence in CMCs reliability and cost issues.

Other CMCs for aircraft engines development programs are also happening worldwide. Some of which are vanes for high-pressure turbines, advanced nuclear reactor components, self-healing CMCs for aircraft engine blades and vanes, structures for reusable thermal pro-

tection systems and more. However, the challenge is how many of these programs will result in commercial applications? It is thought that the risk of introduction is the biggest roadblock while the biggest part of that is the customer having confidence in the material system. Fortunately, it maybe just a matter of time since it took time to go from metal to Polymer Matrix Composites, it will take time for the aviation community to build confidence in these materials. At the moment, many customers are put off by the time and cost associated with CMCs processing. Nevertheless, this is now beginning to change with GE investment that is signaling a changing tide for CMCs where everyone is hoping will get the processing time down and will open up a number of applications ■

** Associate Professor - Aeronautical Engineering Department - King Abdulaziz University*

Aviation Communications Glossary

ACARS ® : Aircraft Communications Addressing and Reporting System. It is an air/ground, character - oriented digital data link system. It was initially used by airlines to automatically record and report basic aircraft movement messages. In 1989, its use was expanded to include air traffic service communications



By Dr. Mohamed
Elfatih Elamin*

ADS: Automatic Dependent Surveillance. A data link method of automatically transmitting an aircraft's position, altitude, air speed and other data. The aircraft acquires position information through a navigation receiver from a global navigation satellite system such as GPS and then uses a transponder to transmit that information, along with other data from the flight monitoring system, to air traffic control and additional aircraft.

AOC: Aeronautical Operational Control. The applications for communications between an aircraft and its operating agency or service partners.

ATIS: Automatic Terminal Information Service. A prerecorded announcement about current airport operations that is broadcasted over a VHF voice frequency. The aircraft

flight crew listens to the ATIS broadcast to find out about weather conditions, communications equipment information, active runways and other routine information before departing from or arriving at an airport. See also D-ATIS.

CAA: Civil Aviation Authority. The national body that has regulatory oversight of aviation within a country. For example, the Federal Aviation Administration (FAA) in the United States.

CNS/ATM : Communications, Navigation, Surveillance/Air Traffic Management. It is the collective term for the set of solutions for modernizing outdated processes and procedures that were identified from the FANS (see below) evaluations and recommendations. The solutions include the use of digital

data link for communications, a global satellite system for navigation, and automatic position reporting for surveillance.

CPDLC: Controller-Pilot Data Link Communications. Direct communications between air traffic control and an aircraft pilot via data link text messages viewed on a cockpit display. In contrast to voice communications, CPDLC allows for reliable and efficient communications over oceanic regions.

D-ATIS: Digital Automatic Terminal Information Service. A data link service that provides automated delivery of ATIS information such as destination weather and terminal conditions. With Digital ATIS, information is delivered to the cockpit via data link instead of through VHF voice, allowing the flight crew to recall and review the information when needed.

DCL: Departure Clearance. The exchange of departure information between the pilot and air traffic control authorizing an aircraft to begin take-off. Known as Pre-Departure Clearance in the United States.

FANS: Future Air Navigation System. It is the result of an International Civil Aviation Organization (ICAO) initiative that began in 1983 to evaluate air traffic management systems and procedures, and to make modernization recommendations. The FANS concept became the plan for revamping air navigation processes for the 21st century. This was conducted primarily through a shift to using satellite technology instead of depending on ground-based technology.

FL: Flight Level. Airspace at a particular altitude in thousands of feet—for example, 29,000 feet is FL290.

GPS: Global Positioning System. A global navigation satellite system used by persons or equipment with GPS receivers to determine accurate location and time. In aviation, GPS has enabled the use of more-efficient air routes such as with RVSM.

HF: High Frequency. Radio frequencies between 3 and 30 MHz. Our HF service is branded as GLOBALink/HFSM.

HFDL: High Frequency Data Link. It is a segment of ACARS® used to exchange air-

line operational control and air traffic services messages between aircraft end systems and corresponding ground-based HFDL ground stations. Using the unique propagation characteristics of high-frequency radio waves, the ground stations provide data link communications to properly equipped aircraft operating anywhere in the world. To use the service, an aircraft only needs a communications management unit and an HFDL data radio. HFDL is the only data link technology that provides coverage in the polar regions.

PDC: Pre-departure Clearance. See DCL.

RGS: Remote Ground Station. Unit that provides the aircraft with access to the air/ground network.

RVSM: Reduced Vertical Separation Minimum. The concept of reducing the vertical distance maintained by aircraft in flight from the original 2,000-foot separation to 1,000 feet in flight levels between 29,000 and 41,000 feet—or FL290 to FL410. A 2,000-foot separation had been the standard since the beginning of jet age flight. The separation reduction was made possible by the more-accurate equipment on board modern

aircraft; however an aircraft and its equipment must be certified as RVSM-compliant in order to fly in RVSM airspace. After evaluation studies in the 1980s, RVSM was implemented in various parts of the world beginning with the North Atlantic airspace in 1997.

SATCOM: Satellite Communications. This service is branded as GLOBALink/SatelliteSM.

TCAS: Traffic Alert and Collision Avoidance System. System onboard an aircraft that alerts the pilot of a potential mid-air collision with another aircraft, providing that both aircraft are equipped with the appropriate position-interrogating transponders.

VDL Mode 2: VHF Digital Link Mode 2. It was developed in the early 2000s to provide a much-needed increase in capacity for aeronautical operational control messages. It improves on VHF ACARS® data link by providing 10 times the bandwidth. VDL Mode 2 is the enabling technology for controller-pilot data link communications and the future-free flight environment. Our VDL Mode 2 service is branded as ■

* *Technical Advisor - GACA/ANS/SED/COMMUNICATIONS*

Asiana Airline Flight OZ214

A Crash that should have Never Occurred!

On July 6, 2013, a clear and sunny day in the Bay area, Asiana Airline Flight OZ214, a Boeing 777-200ER (extended range) registered HL7742 plane inbound from a transpacific flight from Incheon International Airport South Korea crashed during landing on San Francisco International Airport's runway 28L. The plane, carrying 307 passengers, was the first B777 crash with fatalities since the line's first inaugural commercial flight in 1995. Three passengers died upon impact, one severely thrown out of the plane and killed by an oncoming fire truck en route to the scene. Over 180 passengers suffered a range of injuries and three flight attendants were thrown out of the jet while still strapped into their seats when the tail section collided into the seawall short of runway 28L.



By **Mohamed Eltahir***

Captain Lee Jung Min, the pilot in command (PIC) was seated on the right seat of the cockpit and though he was an experienced PIC, it was Captain Min's first time instructing a more junior pilot. Seated on the left seat of the cockpit was Captain Lee Kang Guk who had flown nearly 10,000 hours on other planes, yet had an accumulation of only 43 flight time hours on the B777. The two pilots took control of the plane just an hour prior to landing and when Captain Min instructed Captain Guk to take control of the plane and land it via

instrument flight rules (IFR). Captain Guk asked if he could land the plane via visual flight rules (VFR) instead given the weather was very clear and no cross winds had been reported at the time. Captain Min gave the junior pilot a thumbs up to proceed using VFR.

Shortly after, Flight 214 was cleared for visual approach to runway 28L and was told to maintain an airspeed of 180 Knots (330km/h) when reaching a distance of 2.5 kilometers to the runway and assisted by the runway's precision approach path indicator (PAPI) at which time it was given a final "clear to land" call from the air traffic controller (ATC).

San Francisco International Airport had previously issued a notice to Airmen notifying that the precision ILS approach should not be attempted as the Instrument landing system's (ILS) vertical guidance at runway 28L (glide slope) was out of service for maintenance.

Eighty two seconds before im-



pact and at an altitude of 1,600 feet, the plane's approach was too low and too slow. The auto pilot feature was disengaged and the throttle was set to idle as trainee Captain Guk was struggling to manually land the plane. Instead of following the correct and safe protocol in the situation which was to engage the auto-land configuration, his ego got the better of him knowing other fellow pilots were

able to land the B777 manually.

Three seconds to impact, Captain Min called for a "go around" and "abort landing" command but it was a little too late. The main landing gear hit the seawall short of the runway at an air speed of 103 Knots; 1.5 seconds before impact the crew was trying to perform a "go around maneuver" 34 knots below target approach.

The warning sound of imminent stall could be heard four seconds before impact on the cockpit voice recorder (CVR) when the plane was at an airspeed of 103 Knots.

After the crash, the National Transportation Safety Board (NTSB), Boeing, Asiana, and other parties participated in an investigation to determine the cause of the crash. Boeing blamed the inexperienced pilot and Asiana who initially ruled out any mechanical failure, later recanted, blaming Boeing's complex avionics system.

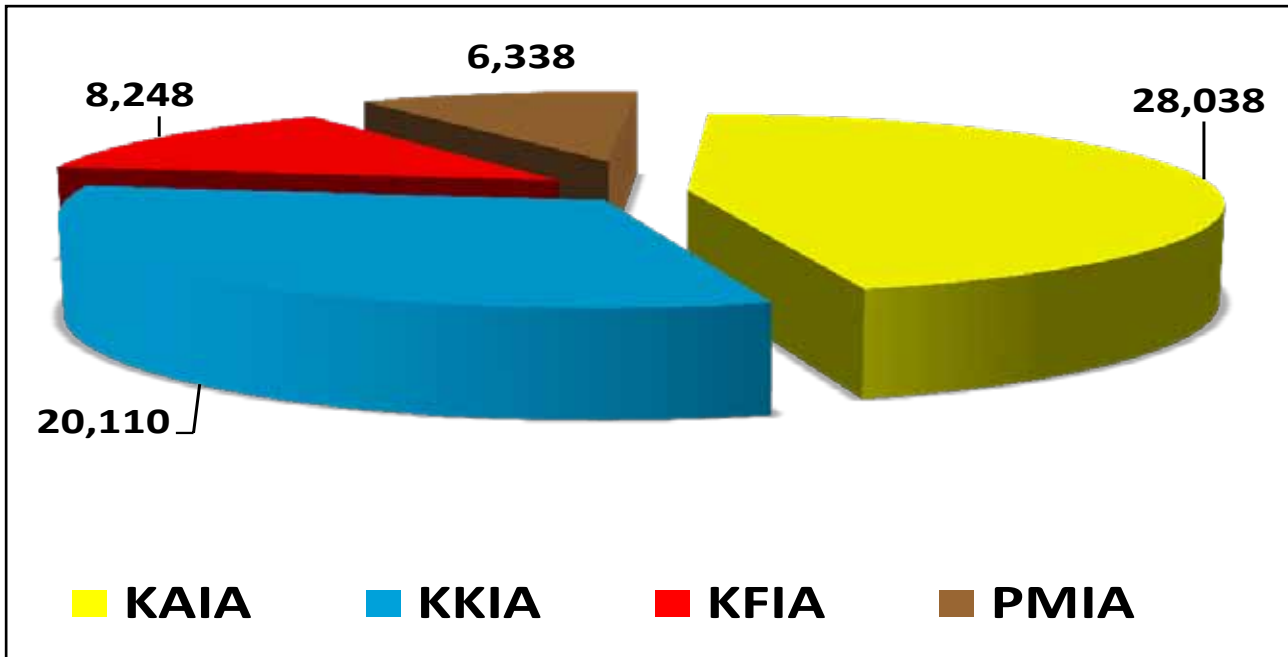
The NTSB determined that the flight crew relied too heavily on the automated system which they thoroughly did not understand and further suggested that Boeing consider modifying flight control on its B777 line in addition to 27 other safety recommendations ■

** Lawyer and aviation consultant*

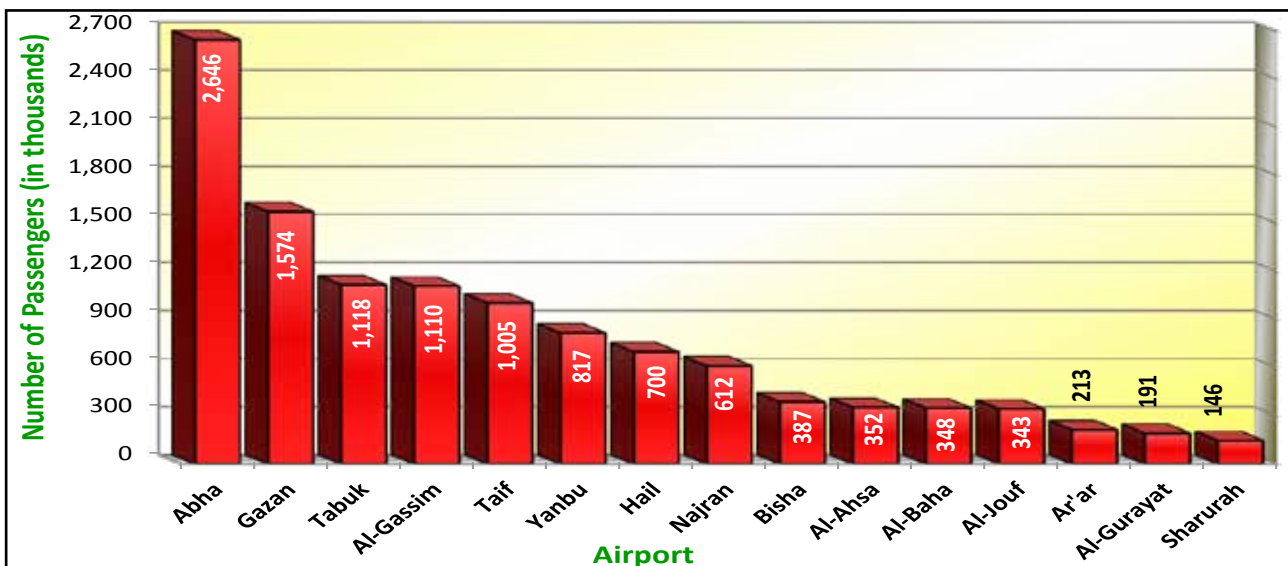
Air-Traffic Airports Statistics in Saudi Arabia 2014

Rank	Airport	(000') PAX	# of Flights	Cargo in Tons	% Change		
					PAX	Flights	Cargo
1	KAIA (JED)	28,038	182,458	499,910.8	▲5.5	▼2.7	▲7.0
2	KKIA (RUH)	20,110	163,383	381,545.1	▲8.2	▲1.3	▼15.0
3	KFIA (DMM)	8,248	79,284	115,829.7	▲12.8	▲8.8	▼4.8
4	PMIA (MED)	6,338	50,848	9,390	▲24.6	▲23.7	▲20.1
5	Abha(AHB)	2,646	22,221	3,190.7	▲13.8	▲10.5	▼16.9
6	Gazan (GIZ)	1,574	11,888	2,731.6	▲22.1	▲25.3	▲11.2
7	Tabuk (TUU)	1,118	9,556	1,941.8	▲10.0	▲11.5	▼4.5
8	Al-Gassim (ELQ)	1,110	10,122	923.4	▲17.2	▲10.2	▲1.6
9	Taif (TIF)	1,005	8,488	328.4	▲9.1	▲9.2	▼19.9
10	Yanbu (YNB)	817.4	7,874	243.6	▲6.7	▲2.2	▼11.4
11	Hail (HAS)	700.1	5,927	1,143.8	▲21.6	▲17.9	▲4.7
12	Najran (EAM)	612.4	6,139	494.6	▲5.8	▲4.0	▼6.3
13	Bisha (BHH)	386.9	3,734	131.4	▲6.5	▲4.5	▲6.0
14	Al-Ahsa (HOF)	352.2	6,510	354.7	▲89.6	▲18.5	▲110.6
15	Al-Baha (ABT)	348.4	3,012	107.6	▲6.1	▲5.4	▼17.3
16	Al-Jouf (AJF)	343.2	3,731	582.6	▲3.6	▲1.3	▼9.1
17	Ar'ar (RAE)	212.9	2,171	342.4	▲5.4	▲2.5	▼4.8
18	Al-Gurayat (URY)	190.9	1,897	300.6	▲13.5	▲14.0	▼4.3
19	Sharurah (SHW)	146.2	1,924	88.1	▲11.7	▼0.9	▲7.9
20	Al-Qaisumah (AQI)	133.8	2,211	138.1	▲3.2	▲2.1	▲16.7
21	Wadi Al-Dawaser (WAE)	109.5	1,989	9.7	▼0.8	▲0.4	▼3.3
22	Wedjh (EJH)	58	1,031	18.3	▲15.3	▲0.1	▼28.2
23	Rafha (RAH)	57.4	983	33.3	▲8.9	▲6.6	▲14.5
24	Turaif (TUI)	56.3	966	21.0	▲6.8	▼1.7	▼14.3
25	Dawadami (DWD)	22.1	417	2.4	▲3.4	▼3.9	▼70.5
26	Al-Ula (ULH)	14.2	408	0.8	▲56.4	▲88.0	▼29.3
27	Rabigh (RGB)	0.1	44	0.0	▼2.0	▲29.4	▼100.0
Total		74,749	589,216	1,019,805	▲9.7	▲9.7	▲4.2

Air Traffic at the Kingdom's International Airport (passengers in thousands 2014)



Top 15 Domestic Airports (Ranked by Passengers 2014)



Note: In the last issue, there were some inaccurate numbers. We re-publish the whole statistics here.

Source: Information Center & Statistical Studies (GACA)



Forthcoming Aviation Conferences, Exhibitions & Seminars

15 July –15 September 2015

16 July

NZ Airports Forum

Wellington, New Zealand
nzairports.co.nz/w/airports-forum-16th-july-2015/

16 - 17 July

ACC Airports Technical Workshop

Washington, DC, USA
aconline.org/c/e/Airports_Technical_Workshop/ATW.aspx

19 - 21 July

AAAE General Aviation Issues & Security Conference

Portland, OR, USA
events.aaae.org/sites/150706/index.cfm

20 - 21 July

AAAE/ACI-NA Summer Legislative Fly-In

Washington, DC, USA
events.aaae.org/sites/150701/

20 - 26 July

EAA Airventure Oshkosh

Oshkosh, WI, USA
eaa.org/en/airventure

21 - 22 July

AAAE/AMCG Sponsor Assurances, Leasing Policies & Minimum Standards Workshop

Portland, OR, USA
events.aaae.org/sites/150707/index.cfm

25 - 28 July

Northeast Chapter AAAE Hub Airports Winter Operations & Deicing Conference & Exhibition

Dallas, TX, USA
events.aaae.org/sites/150704/agenda.cfm

26 - 29 July

Southwest Chapter AAAE Annual Conference & Exposition

San Jose, CA, USA
swaaae.org/?SummerCon2015

46th Annual FAC Conference & Exposition

Boca Raton, FL, USA
floridaairports.org/meetings/meetings.asp?id=59

30 July

AACO Aviation Fuel Technical Group Steering Board Meeting

Beirut, Lebanon
aaco.org/EventsDetails.aspx?pageid=53961 - 2 August

1 - 2 August

Quesnel's International Airshow

Quesnel, Canada
quesnelskyfest.ca/

3 - 5 August

The CAPA Australia Pacific Aviation Summit

Sydney, Australia
capaevents.com/ehome/apas15/australiaaviationsummit/?&

6 - 7 August

The Australasian Airports Real Estate & Commercial Conference (AAREC)

Queensland, Australia
aarec.net/

6 - 9 August

Great Lakes Chapter AAAE Annual Conference & Exposition

Cedar Rapids, IA, USA
glcaaae.org/index.php?main/events/2015-conference/

7 - 9 August

Abbotsford International Airshow

Abbotsford, Canada
abbotsfordairshow.com/

10 - 12 August

AAAE/South Central Chapter Airports Conference of the Americas

San Juan, PR, USA
events.aaae.org/sites/150801/index.cfm

11 August

7th Annual BALA: Business Aviation in Latin America

Sao Paulo, Brazil
aeropodium.com/bala.html

14 August

Rocky Mountain Airshow & Fly In

Englewood, CO, USA
globalair.com/calendar/aviation-events-in-August-2015.html

14 - 15 August

Michigan Air Rally

Jenison, MI, USA
miairrally.org/

15 August

International Fly-In Lspg

Geneva, Switzerland
fly-in.casgp.com/

15 - 19 August

Northeast Chapter AAAE Annual Conference & Exposition

Baltimore, MD, USA
necaaae.org/cfiles/home.php

18 - 21 August

The 41st Annual Virginia Aviation Conference

Bath County, Virginia, USA
virginiaaviationconference.com/

22 August

AOPA Fly-In Minnesota

Minneapolis, MN, USA
aopa.org/airports/KANE

23 - 25 August

AAAE/Northwest Chapter AAAE Airfield and Facilities Management Conference

Salt Lake City, UT, USA
events.aaae.org/sites/150804/index.cfm

25 - 26 August

AAAE Airport Credentialing and Access Control Conference
Seattle, WA, USA
events.aaae.org/sites/150708/index.cfm

26 August

AAAE/ACC Airport Technologies Workshop
Salt Lake City, UT, USA
events.aaae.org/sites/150805/

26 - 27 August

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

South Carolina Aerospace Industry Conference & Expo
Columbia, SC, USA
saeu.sc.edu/reg/aerospace/

27 - 29 August

Air Capital Aviation Expo
Wichita, KS, USA
aircapexpo.com/

28 - 29 August

Airshow of the Cascades
Madras, OR, USA
cascadeairshow.com/

29 August

Land of Enchantment Fly In - Wings Seminars
Albuquerque, NM, USA
eaal79.org/land-of-enchantment-fly-in/

29 - 30 August

Olympic Peninsula Air Affaire
Sequim, WA, USA
olympicpeninsulaairaffaire.com/

29 August - 1 September

Air Carriers Purchasing Conference (ACPC)
New York, NY, USA
acpc.com/

30 August - 1 September

20th Annual International Aviation Forecast Summit
Las Vegas, NV, USA
aviationforecastsummit.com

31 August - 2 September

ACI-LAC/World Annual General Assembly, Conference & Exhibition
Panama City, Panama
aci-waga2015.com/

1 - 3 September

Air Cargo Handling Conference
Bangkok, Thailand
evaint.com/our-events/air-cargo-handling-conference

2 - 4 September

Indonesia International Airport Technology (I2AT), Exhibition & Conference
Jakarta, Indonesia
inatechairport.com/web/

8 - 11 September

6th Airfield Engineering & Maintenance Summit
London, UK
equip-global.com/6th-airfield-engineering-and-maintenance-summit-2015

9 September

Business Aviation Forum
Moscow, Russia
events.ato.ru/eng/events/4012/detail/

9 - 10 September

Airline Engineering & Maintenance: China & East Asia
Hong Kong, China
asianaviation.com/event/183/Airline-Engineering-Maintenance-China-East-Asia

9 - 11 September

ACI Airport Service Quality Forum Montreal
Montreal, Canada
aci.aero/Airport-Service-Quality/ASQ-Forums

Future Travel Experience Global

Las Vegas, NV, USA
futuretravelexperience.com/fte-global/

9 - 13 September

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

10 - 12 September

International Exhibition Jet Expo
Moscow, Russia
2015.jetexpo.ru/en/about/general-info

13 September

Northwest Chapter AAEE Annual Conference and Exposition
Denver, CO, USA
nwaaae.org/?page=NWAAEAnnual

14 September

World Financial Symposium
Barcelona, Spain
iata.org/events/Pages/financial-symposium.aspx

Annual Aviation Industry Suppliers Conference

Toulouse, France
speednews.com/aviation-industry-suppliers-conference-in-toulouse

15 September

CAPA LCC Airports Congress Asia
Bangkok, Thailand
capaevents.com/ehome/index.php?eventid=128838&

APATS 2015 - Asia Pacific Airline Training Symposium

Bangkok, Thailand
halldale.com/apats-2015/overview#.VYE333nbIic

Aviation Festival

London, UK
terrapinn.com/conference/aviation-festival-europe/

Airline Engineering and Maintenance Safety

London, UK
flightglobalevents.com/flightglobalsymposium2015