Message from Chief Executive

Dear Colleagues, since water flows from top, so I wish to reiterate here the strongest commitment of the Group, our board of Directors and myself towards safety. We earnestly believe that “Safety is good Business”. To achieve the highest standards of safety and security we need to make it part of our company’s culture. Whether it is conscious messages of the safety posters hung on the walls or alertness created through safety meetings and seminar organized by the Safety Department or this newsletter, they all are aimed to develop our corporate culture towards safety.

Safety is never a solo act, but a team effort. One must try to be safe and protected in all respect whether on ground or in the air and unsafe practices around us have direct impact on us. This is why I encourage every employee of this company to completely involve in making this organization a safe and secure place for us all.

Capt. Aijaz Ali Faizi
Chief Executive

Message from Flight Safety Officer

Vision Air International is highly proud to be having carried out successful international Charter Operations for last 18 months. Apart from fleet of B737s, last year we got a B747-200F aircraft on our AOC. With the induction B747 in to our fleet we have carried out plenty of cargo flights around the globe. Vision Air International is in the process of inducting more B747s in to its fleet. The induction of more B747s in to our fleet is going to make Vision Air International a leading international Charter operator in Pakistan with the capacity of further expansion of its business. Bulk of Vision Air Operation originates from Dubai to around the globe. Vision Air International’s stands up to the required international quality/safety and operational standards, which is obvious from the fact that last Vision Air received an exceptional audit evaluation report from IOSA auditors.

With the increase in intensity of our flight operations with international community, we are seriously concerned about our flight safety and quality assurance program. Our Company’s ultimate goal is to be safe and efficient on ground and in the air. To keep our safety and quality standards; Vision Air has incorporated in its Safety management program the inde¬pendent operational and line management activities, which are being closely monitored to identify operational hazards. We also have the process for investigation for internal irregularities, non-conformities, significant safety issues to identify hazards and to arrange corrective training for our crew and staff to avoid human fac¬tors.

Capt. M. Nawaz Asim
FSO Vision Air International

Too much reliance on automation makes you the cockpit manager and not the pilot. As a pilot you cannot afford to sleep in cockpit.

Whether on land or in the air, safety should be practiced everywhere.

Don't be insane, practice safety in the Plane: It is aviation safety which gets you on top.

CONCEPT OF OPTIMUM FLIGHT LEVEL

1. Generally speaking, the higher a jet aircraft flies, the more efficient it will be, and the lower the fuel flow. In other words specific fuel consumption (SFC) will be less. This statement is true up to a particular point, however after a certain flight level called the optimum flight level SFC gets worse as fuel flow increases again. This is due to the increased drag penalty above the optimum flight level as a result of the excessive angle of attack (AoA) required to create enough lift to support the aircraft weight. Eventually a flight level will be reached at which the AoA will reach to stall values.

2. Aircraft normally cruise with a positive nose up attitude, and in swept wing jets this angle is approximately 2-3 degrees is the optimum AoA which provides sufficient lift, while limiting drag to comparatively lower value. You may also have noticed the cabin staff struggling to pull the meal service trolley toward the front of the plane (ie: uphill), which is due to this optimum angle of attack.

3. The other penalty for low altitude flight is that the cruise time is more as the top of descent is delayed, which means operation time at cruise thrust is increased. As compared to this; higher the cruise flight level, earlier is the TOD. This results in flying at idle thrust setting for longer duration during descent and approach, which again provides better conservation.

4. Let's also have some idea of effect of TAS and air density to fly optimum flight levels. Optimum altitude is a function of the fuel flow and the TAS. TAS reduces as the aircraft climbs at a fixed Mach number into the cold air environment, whereas Fuel flow (FF) decreases with altitude up to a point, then increases thereafter, as mentioned above to cater for increased lift dependant drag and form drag (Low-speed flight), which occurs above optimum flight level. Selection of cruise level 1000-2000 feet below optimum flight level is the best option for better fuel strategy. The scientific hypothesis for this concept is:

At low speeds and altitudes, IAS and CAS are close to equivalent airspeed (EAS). TAS can be calculated as a function of EAS and air density:

$$TAS = EAS\sqrt{\frac{\rho_0}{\rho}}$$

Where; TAS is true airspeed
EAS is equivalent airspeed
ρ_0 is standard air density sea level (1.225 kg/m3)
ρ is density of the air in which the aircraft is flying

In above mathematical formula the denominator is the density of the air in which the aircraft is flying, which reduces with increase in aircraft altitude and the overall result is increased TAS. Though there is a decrease in TAS with decrease in temperature at higher altitudes, this drop in TAS due to decreasing temperature is less significant than that of the effect of reduced density with increase in altitude.

Motivation for Fuel Saving Strategy

1. Improving aircraft operational efficiency has recently become a dominant theme in air transportation, as the recent social and political climate has pushed for reduced environmental impact and energy concerns have encouraged decreased reliance on fossil fuels. Mounting scientific evidence of global climate change has spurred increased awareness of the importance of manmade greenhouse gas (GHG) emissions, resulting in significant pressure to reduce emissions.

2. Aviation currently contributes 3% of transportation GHGs, this fraction is expected to increase as other transportation modes more easily adopt environmentally sustainable practices. Additionally, air transportation is growing at a rapid pace of approximately 5% per year, further adding to the importance of aircraft emissions and corresponding pressure to reduce them (IATA, 2010). Transportation's increasing thirst for fossil fuels has simultaneously generated substantial concerns about the future of the world's energy supply, driving up the cost of petroleum. Environmental concerns have resulted in government pressure to reduce fuel consumption, and increased fuel prices have pushed aircraft operators to find margins for performance improvements. These factors have resulted in efforts to improve the efficiency of air transportation system. Operational improvements, however, remain a viable means of improving environmental performance in the near term. One operational improvement technique involves increasing the fuel efficiency of flights by improving current cruise flight trajectories.

3. For fuel saving strategy, generally the focus is made on optimization of the descent phase and very little is done to examine the altitude and speed trajectory performance in cruise. Aircraft performance is tightly linked with airspeed and altitude, so improvements in these dimensions can potentially provide significant increases in efficiency without dramatic changes in infrastructure or routing. Technical and operational barriers will limit the actual success of such measures and must also be considered. The potential benefit of various vertical and speed improvement strategies provide useful insight into the available improvement potential of such measures, and could help increase fuel efficiency by trading for winds with improved speed and altitude effects of fuel saving. This write up made for the following goals:

A. To establish an upper hand on the performance benefits attainable in today's airspace system through changes in the cruise speed and altitude trajectories.

B. To quantify the potential benefits of various cruise speeds and altitude trajectory improvement strategies.

C. To identify barriers that may restrict the effectiveness of these strategies.

4. The purpose of this research is to identify a pool of potential benefits that can be gained from speed and altitude trajectory improvements. This effect research primarily attempts to quantify benefits of cruise flight operational improvements to the speed and altitude dimensions. In this regard, a benefit is meant to imply a reduction in fuel burn due to a speed or altitude improvement relative to the actual unimproved flight. As it is directly related to the amount of fuel burned, reduction in fuel consumption implies a reduction in carbon emissions as well.

5. Let's see how much can fuel burn and carbon emissions be reduced in cruise flight if aircraft are operated nearer to or at their optimum speed and altitude? While an analysis comparing generic trajectories to improved ones would provide some insight, inclusion of actual flight path data is critical in determining how far the system really is from optimal. The key aspect of this research is a detailed comparison between actual flight trajectories and corresponding more efficient trajectories, thus giving the most realistic estimate of improvement potential. Identification of implementation barriers helps establish which optimization techniques are most promising for the near term. These considerations are meant to develop results which are practical and directly applicable to the air transportation system.

AIR SAFETY REPORTING SYSTEM

Welcome to the ASRS Database Online! Vision Air International has introduced an Air Safety Reporting System (ASRS). In this regard a form has been introduced and kept in Operations room and on board airplane library. This form can also be off loaded from our company website and sent to flight safety officer on his official email address. The ASRS is the world's most effective and largest repository of voluntary, confidential safety information provided by aviation's frontline personnel, including pilots, controllers, mechanics, flight attendants, and dispatchers. The database collected through ASRs and actual accidents/incidences provides a foundation for exploring potential aviation related safety issues. ASRS's database includes the narratives submitted through Air Safety reports. These narratives provide an exceptionally rich source of information for policy development; human factors, research, education and training in order to eradicate potential safety hazards.

Safety Trend Analysis Program

Safety trend analysis is a method adopted by the safety department to find the safety state inclination. There could be a downward trend or an upward trend. Upward safety trend is the indication of improvement in the safety standards, which is achieved by being pro-active. After receiving Occurrences / incidences reports through ASRs and from different other sources; the Flight Safety Occurrence Management System does an analysis on the basis of received data. The following diagram describes the method of inferential statistics used by Flight Safety Department. Descriptive write-up is the part of statistics which describes the problems, measures taken to address the issues and conclusions from the analysis made about incidences/occurrences. The below mentioned two charts have been prepared, which will display trends in our safety standard right from the beginning of our air operations:

Statistical Averages

Year	2007	2008	2009	2010	2011	2012	Total	
Reports Fields	0	0	0	0	02	06	08	

Mean = (0+0+0+0+02+06) / 10 = .8

Several types of averages can be defined, the most common being the (arithmetic) mean, the median and the mode. Table for Occurrences by stage of operations

Occurrences by Stage operations	2006	2007	2008	2009	2010	2011	2012	Total	Causes of Occurrences / Incidence
On Ground	---	---	---	---	---	---	02	**02**	
During Taxi	---	---	---	---	---	---	01	**01**	
On Take-off	---	---	---	---	---	---	---		
In Flight	---	---	---	---	---	01	01	**02**	
On Landing	---	---	---	---	---	01	02	**03**	

Credits: Captain Muhammad Nawaz Asim : Flight Safety Officer
Captain Muhammad Nawaz Asim : Editor
Manager IT Muhammad Arif : IT Support
Flight Safety Foundation : Content Support