

InterPilot



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Fatigue issues re-visited

A layman's look at legalese

September - October 2009



Fatigue: a tiring subject

The subject of fatigue suffered by flight crews and the threat it poses to air safety is one that has been the subject of some focus and discussion for many years. In fact, fatigue was first identified as an issue in aviation safety by Charles Lindbergh in the 1920s. Certainly the subject of fatigue has been at the top of the IFALPA safety agenda for more than 10 years with the Federation arguing for flight and duty limitations to be defined as the result of scientific study. Although it is hard to pin point as a factor in incidents and accidents due to its very nature fatigue is thought of by some sources to be a factor in as many as 20% of air accidents. The fact is that compared with an individual who is well rested, fatigued people think and move more slowly, have memory problems and make more mistakes. Certainly, there is much evidence that fatigue has been a factor in a number of aircraft accidents (see figure x). In an article in its January 2009 edition "Aviation, Space and Environmental Medicine" described fatigue as a "significant problem" in modern aviation because of "unpredictable work hours, circadian disruptions and long duty periods". There can be no doubt fatigue in flight crews has been shown to be a stealthy killer, one which we ignore at our peril.

The problem

In annex 6 ICAO defines fatigue as "A physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness and/or physical activity that impair a crew member's ability to safely operate an aircraft." For those of us with a more hands on experience of the problem the definition might be somewhat shorter "dog tired", "woolley headed", "bushed" the words and phrases abound. Study into the causes of fatigue in flight crews have revealed that for long haul crews, as you would expect, long duty times and multiple time zone crossings top the charts as fatigue gen-

erators. While for those operating short haul flights, sleep deprivation and high workloads as the result of multiple sectors and ever shorter turnarounds are the prominent factors with early starts, night flying, time pressure and insufficient recovery and rest periods equally weighted for both groups. Some disturbing data exists concerning accident risk factor when compared with the number of hours on duty. In a presentation the IFALPA Human Performance Committee, Mick Spencer said that the relative risk of an accident due to fatigue factors increased by a multiple of nearly four for crews on duty for more than 12 hours compared with a duty period of less than seven hours. According to research carried out by NASA into fatigue in regional operations, 80% of the flight crews responding to

the survey revealed that they had 'nodded off' during a flight. Research carried out in 2003 showed that performance began to degrade in test subjects when sleep was reduced by as little as 40 minutes

Incidents & Accidents where fatigue was identified as a key factor

1993	DC8-61F	Guantanamo Bay
1994	737-200F	Coventry
1997	747-300	Guam
1999	MD82	Little Rock
2001	BAe146	Zurich
2002	CL65	Birmingham
2004	747-200F	Halifax
	BAe J31	Kirkville
	Learjet35A	San Bernadino
2005	BN Islander	Machrihanish
2006	CRJ200	Lexington
2007	747-400F	Stockholm
	737-800	Keflavik
2009	DHC8-400	Buffalo*

* investigation ongoing but fatigue cited in interim report

The Samn-Perelli Crew Status Check

The Samn – Perelli Scale provides a seven point subjective scale to indicate fatigue broken down as follows and is used in a number of the figures used in this article.

In addition researchers also use the nine point Karolinska scale which works along similar descriptive lines.

- 1 Fully alert; wide awake
- 2 Very lively; responsive but not at peak
- 3 OK somewhat fresh
- 4 A little tired; less than fresh
- 5 Moderately tired
- 6 Extremely tired; difficult to concentrate
- 7 Completely exhausted

sleep period. Furthermore, this degradation in performance is cumulative. Simply put, human beings have not developed in a way that allows us as a species to operate effectively on 24/7 schedules especially those which demand a high level of alertness.

Long haul factors

Sleep loss due to time zone dislocation is, of course, a well known phenomenon anecdotally but there is also a good deal of empirical data which supports it. Data gathered shows that for transmeridian flying it can take between seven to 10 days to adapt to a 10 hour eastward transition. While the effect on a westward transition is reduced (down to six to nine days) it remains significant especially when the layover between sectors might be only 24-48 hours. What must also be taken into account is the effect on the type of sleep experienced. In a westward transition, for example, the sleep period will tend to be delayed and therefore the onset of sleep at the layover hotel is rapid and for the first few hours deeper than is normal. However as the night progresses so the sleep becomes lighter leading to an early waking for want of a better phrase “the sleepless in Seattle” effect although it could be Stockholm, Singapore or Sydney! In the third 24 hours of the sample (or second day of a layover) the effect is

lessened but significantly, will still result in no good quality sleep for up to 12 hours prior to departure. For eastward transitions the tendency is for an evening departure so it is not unusual for crews to have been awake for more than 16 hours before departure. On arrival, sleep onset is not as abrupt or deep as in a westward transition and tends to be more uniform in nature though of a significantly shallower nature than normal and will be disturbed for a number of days. The important factor is that for long transitions in either direction the sleep is fragmented and/or shorter duration than normal. Data from one trial shows that for a 72 hour layover following a 12 hour transition the average number of sleeps was five with an average duration of 4.6 hours with, significantly less than the nominal eight.

Short haul issues

While it is easy to isolate the elements that predominate in long haul operations it is also worth considering the factors which tend to be more specific to short haul multi sector flying. Fatigue in short haul operations appears to be dictated by the number of sectors flown during the duty day – even when other factors like length of duty and time of day are taken into account. In one study, a six sector day was revealed to be almost twice as tiring as a three sector day. As a rule of thumb the “sector effect” is equivalent to extending the duty day by between 30 and 45 minutes. Furthermore, there is an increase in the fatigue commensurate with the number of consecutive duty days. In other words a four sector day on the 5th consecutive day of flying will be markedly more fatiguing than the same day’s flying on day one or two. This effect is even more pronounced when the duty time is one that impacts on nominal sleep patterns, earlier, later or night flying. Another fatigue factor that has been identified is the effect of workload and hassle experienced by crews. This includes the workload in the air as well as on the ground during turnarounds.

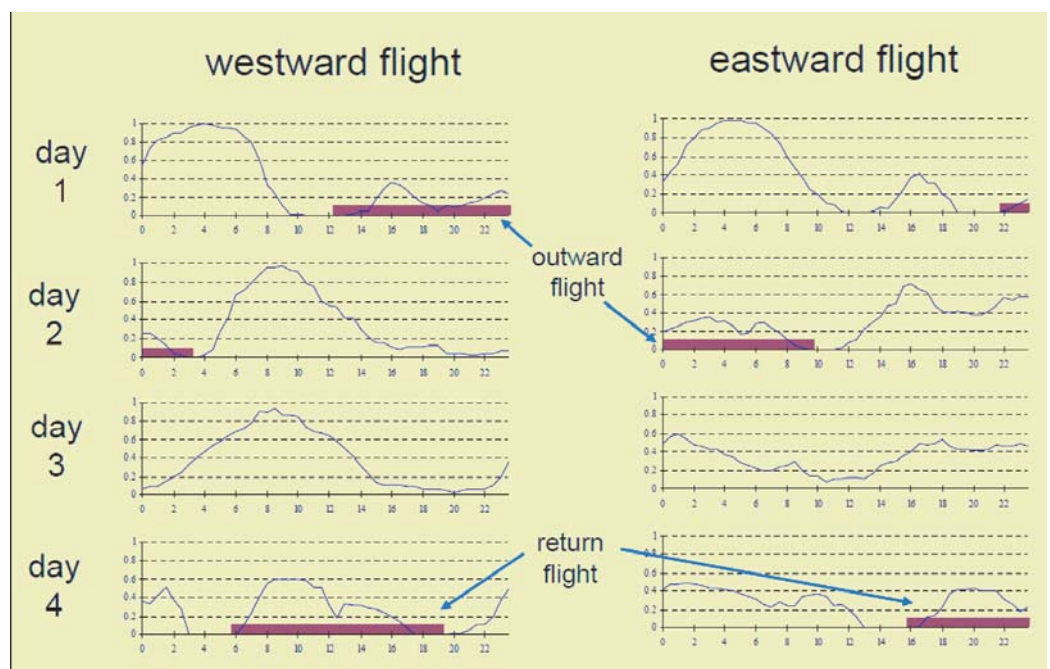


Fig 1: Sleep patterns after east and west bound flights

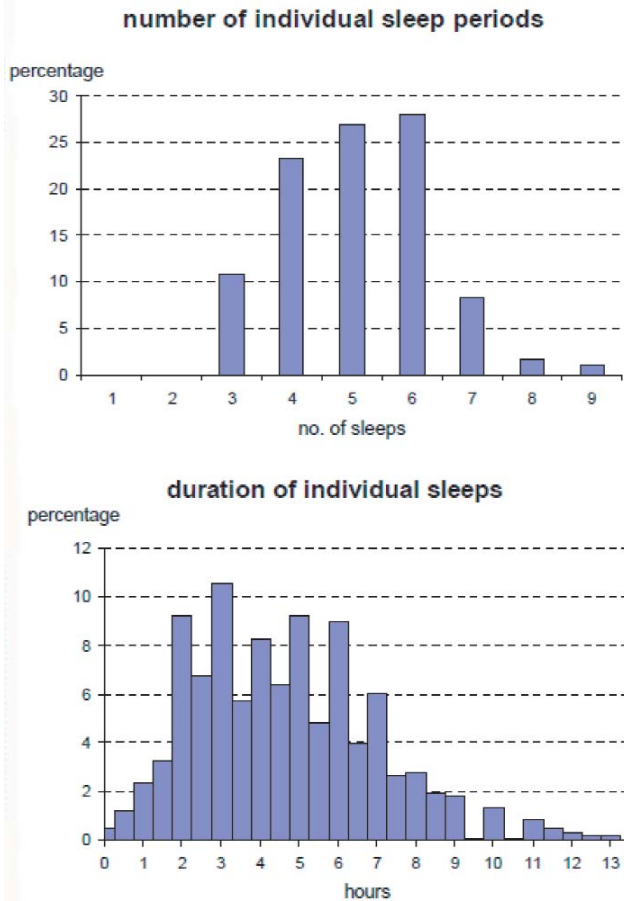


Fig 2: Sleep frequency and duration during a 72 hour layover

Night operation specifics

Interestingly, for consistent night operations, for example night freight, the additional fatiguing effect of late finishes was not replicated. Research shows that fatigue is at its highest on the first night of a duty period compared with the second and subsequent nights.

Common fatigue factors

There are however a number of factors which are common to both long and short haul flying. Clearly the length of duty day will have an impact on fatigue, although as was mentioned above the impact of the duty day may be modified by other factors. As seen in short haul operation the hassle experienced by crews in the air and on the ground adds fatigue. A significant fatigue factor that must be considered is the impact of the time of day a duty started. Studies have shown that prior to an early start time crews will go to bed earlier than normal but not enough to compensate fully for the earlier start. This effect is made more acute because the onset of sleep will be slower. As a rule of thumb it is estimated that sleep is reduced by around 30 minutes for every hour the report time is earlier than 09:00 local. Likewise, in a late start pilots are unable to compensate fully by delaying their waking time prior to duty. Furthermore, data shows that after a late start for duties ending between the hours of 03:00 and 05:00 sleep is limited to an average of five hours which drops to four hours when the duty day concludes between 06:00 and 08:00.

Countermeasures

So how best to deal with the impact of fatigue on our performance as pilots? The first and most effective solution would be for flight and duty time limits to be based on the extensive research carried out by the scientific community. As obvious as this measure sounds we seem as an industry to be stuck using prescriptive rules first developed when the industry was in its infancy and today's operating environment the stuff of science fiction. For a time it seemed that the European Union was to address this issue when it undertook to frame new FTL rules issued by EASA based on independent scientific study. However under pressure from airlines and in specific the Association of European Airlines (AEA) it seems that these undertakings are to be forgotten (see stop press).

Rest options

Bunk rest – For long haul, very long haul and ultra long haul operations, bunk rest will deliver the best form of in flight rest provided the rest area has been well designed in terms of minimising noise and other disturbance factors. Sleep periods of up to six hours have been recorded. The key to the amount and time of sleep is predicated mainly by the time of day and the length of the rest period – it's less likely that deep sleep will be achieved in a shorter rest period.

In cabin rest – While better than nothing, studies have shown that sleep taken in a reclining cabin seat is at best only 75% as effective has rest taken in a bunk. Thanks to the cabin environ-

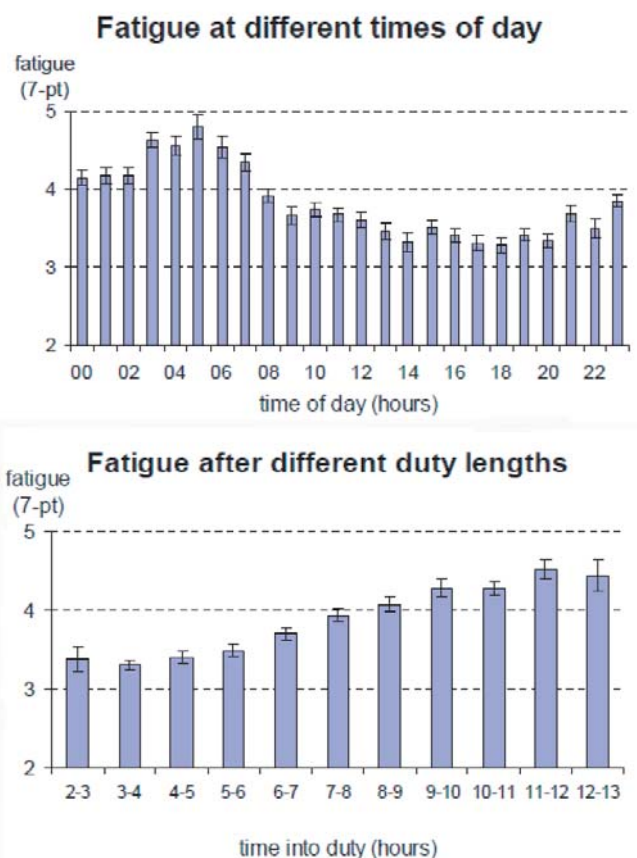


Fig 3: Effects of fatigue according to duty length and time of day

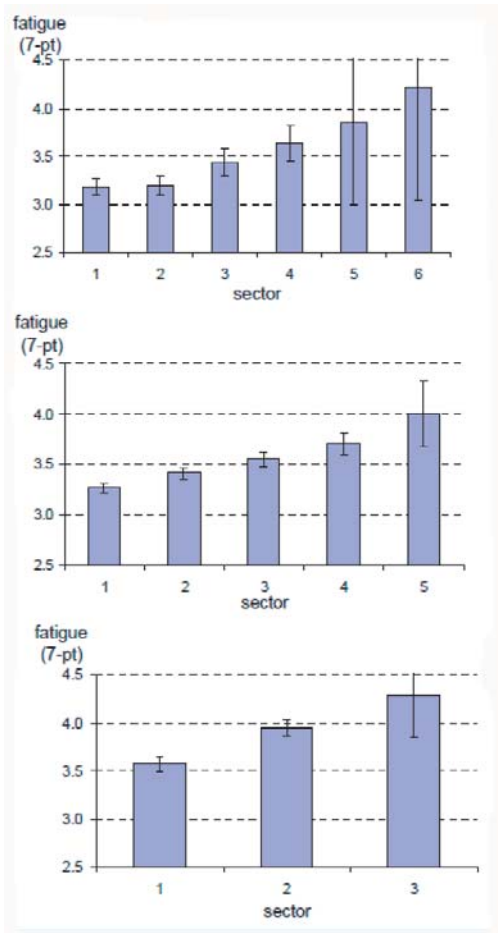


Fig 4: A comparison of the fatigue experienced for three, five and six sectors on a given duty period.

ment, noise disturbance from passengers and cabin crew moving about the cabin, especially on 'day' flights, the likelihood is that more often than not rest of even this quality will not be achieved

In seat napping – In situations where other options are not available a number of studies have shown that a short nap of approximately 25 minutes (the so called NASA nap) can significantly boost alertness and response times when compared with not taking any rest. In one study, the test group that was allowed a planned 40 minute nap opportunity displayed significantly more alertness and better psychomotor response test performance and fewer mistakes in the last 90 minutes of flight when compared with a group allowed no rest. While at present a technique not sanctioned widely, operational testing by a number of airlines including Air New Zealand, Air France, British Airways, Emirates, Finnair and Qantas have yielded positive results.

Two rest periods – On ultra long sectors in excess of 18 hours the strategy of having two rest periods has been shown to yield benefit by reducing the time spent continuously the controls and also by making it more likely that some sleep will be achieved.

Cockpit lighting – The use of lighting to aid adaption to time zone changes and shift circadian rhythms is well known indeed there are a number studies that recommend its use to adjust pre and post flight sleep patterns. However it has also been shown that exposure to bright light also has an immediate effect in the form of increased alertness and performance. This has interesting possibilities for changing an environment where low light, steady background noise, reduced mobility and limited social interaction is ripe for inducing a soporific state. Provided that use of brighter lighting in the flight deck does not impair night vision there may be much to recommend it use.

Pre & post flight strategies

Healthy sleep – wherever possible getting the right amount of good quality sleep on a daily basis may be the best weapon to use against fatigue. The question is how much is the right amount? While some people can perform well on less, the rule of thumb is eight hours per night. There are strategies you can use to help determine the right amount for you. For example if add an hour to your normal sleep pattern for a period of seven days and then ask the question do I feel better? Has it improved my alertness, mood and mental agility? Another option is on your next vacation keep a sleep diary recording the time of sleep onset and the time you wake up (no alarm clocks!) calculate the average sleep period and then use this as a target on the return to work.

Circadian adjustment strategies – these are largely based on rapidly adjusting to the new local time as soon as possible which may include exposure to light changing eating patterns and making effort to optimise sleep during the available periods.

Exercise – those who exercise regularly show improved sleep quantity and quality. It is important to consider the type of exercise as well as its duration. Some research has suggested that only heavy exercise (like a brisk jog, fast cycling, rowing or swimming) will deliver changes in performance. However more recent data indicates that benefit is also seen when more moderate exercise is taken. Care should be taken not to do exercise too close to a planned sleep period with most studies recommending a two hour buffer between exercise and sleep.

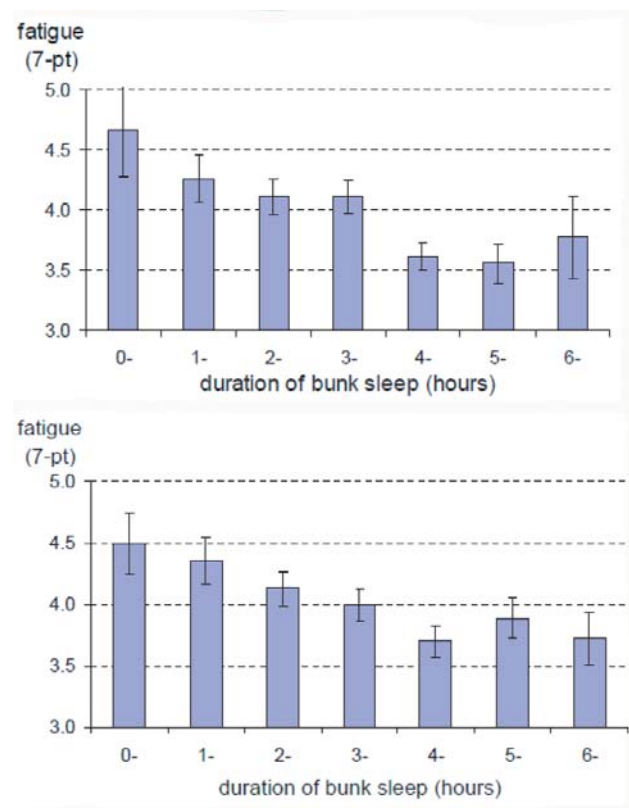


Fig 5: The effect of bunk sleep on fatigue

Nutrition – eating a meal just before a sleep period is not recommended although it is important to maintain good nutrition so if you have to eat before sleep (hunger does not aid sleep) favour foods like grains, pastas, breads and fruits and avoid high fat or acid meals.

The way forward...

Fatigue and its effects have been significant factors in a number of incidents and accidents. Scientific studies have shown that the debilitating effects of fatigue are every bit as dangerous as alcohol. As professionals we have to take responsibility for our own performance by trying to stick to a lifestyle that will deliver optimum alertness. But the airlines and regulators also have a responsibility too in ensuring that our work patterns are based in science rather than custom. They also have a responsibility to make sure that we also have the right environment for rest both on layovers and in the air.



Stress from time and commercial pressures on turnarounds especially on multi sector days have been shown to be a major contributors to fatigue

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European Action Day - 5 October

IFALPA's representative body within Europe the European Cockpit Association has called a European Day of Action on Monday 5 October. The reason is to highlight the very real threat that fatigue poses and why it is important that legislators implement Flight & Duty Limitation (FTL) rules based on scientific principles.



When it began the process of reworking its FTLs, the European Union seemed to accept that the only logical way to develop a regulation that is logical and more importantly, safer due to being based in sound scientific data was to commission an independent study into fatigue, its effects and propose FTL that would limit the effect of fatigue.

The resulting study, the "Moebus report", was duly delivered in September of last year. The report made a number of recommendations for changes to the present FTLs which it argued would significantly reduce fatigue among flight and cabin crews. Almost as soon as the report was published a number of European airlines via their industry bodies began a lobbying campaign aimed and discrediting the report and its findings. As a result, and despite an undertaking by the EU, to formulate new rules based on scientific data, the institutions of the European Union have failed to keep their word and move swiftly to develop effective legislation.

Worse has followed, in September, the European Air Safety Agency (EASA) published draft rules that have completely disregarded the Moebus report. Even more worrying is that under these proposed rules EASA will take away the sovereign right of member states to devise and implement legislation of a higher standard than that provided for by EASA regulation. What that means is FTL systems such as the Scandinavian model or the UK's CAP371 which were both developed based on scientific principles will disappear. In other words, this ill advised system will result in a reduction in safety for the travelling public. That's correct, a new ruling from a body set up to regulate and improve air safety will actually make air travel less safe.

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Madness, sheer madness.

On its website EASA says that it "promotes the highest common standards of safety and environmental protection in civil aviation in Europe and worldwide. It is the centerpiece of a new regulatory system which provides for a single European market in the aviation industry". Accordingly, it must act now and deal decisively with this issue.

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All laws are not created equal

Gavin McKellar reports from Orlando

In mid-September I travelled to Florida to attend the 40th Annual International Society of Air Safety Investigators conference. As you might expect this annual gathering of the world's air accident investigators would be quite an attraction and over 200 attendees took part in the conference. These included representatives from pilot associations specifically IFALPA, my home association ALPA-SA, ALPA Japan, ASPA de Mexico, VNV and ALPA International there were also representatives from the Air Canada Pilots Association. While the three days of formal conference sessions included a number of high profile presentations notably from US NTSB Chairman Deborah Hersman, Paul-Louis Arslanian, Director of the French BEA and David Miller, Deputy Chief Investigator, UK AAIB, it's the Training Seminars, and in particular the one dealing with criminalisation, that I want to focus on in this article.

As many of you are aware one of the Federation's hot topics is the criminalisation of accident investigation. This is a question which extends across the remits of the Accident Analysis & Prevention Committee as well as the Legal Committee. The main question is should error, which may lead to an accident or endangerment, be prosecuted by the criminal investigation process and the findings carry the risk of criminal sentencing? Our view, together with ICAO is a clear and deafening 'no'. Many states do not currently share this view. Unfortunately, we as pilots have to operate in States with varying legal systems. We need to have an understanding of these systems and how they may affect accident investigations, data protection and prosecution of the crews involved.

Before I go any further, and first of all, I'm not a lawyer; my expertise is in flying aircraft and investigating accidents, understanding why they happen, and preventing their recurrence what follows is my understanding of the issues at hand, you should investigate the questions further for yourself and see if you agree with my interpretation.



Napoleon said of the civil code that bears his name "My true glory is not to have won 40 battles...Waterloo will erase the memory of so many victories. ... But...what will live forever, is my Civil Code."

An imperial past

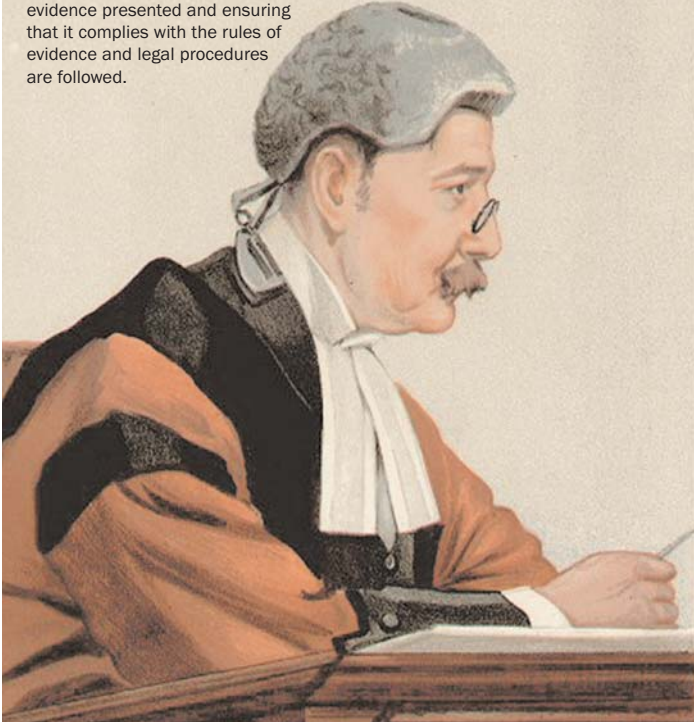
As we look at the world's legal systems, we can see the traces of past empires. The Common law system is found predominantly in countries which were either former colonies of the British Empire or came within its sphere of influence. Meanwhile, in counties influenced by the other superpower of the 18th and 19th Centuries, a Civil Law system based on the Napoleonic code holds sway. There is one interesting anomaly, the US state of Louisiana (a French colony until the Louisiana Purchase treaty of 1803) although bound by common law remains a civil-law state through its civil code of 1825, revised in 1870 and still largely in force today which was closely connected with the Napoleonic Code.

By and large Common law is based on an adversarial system of justice with where cases are argued on the basis of legal precedent and the facts as presented by each side, in higher courts the decision will be determined by a jury. The role of the judge more as an arbitrator or referee, listening to the evidence presented and ensuring that it complies with the rules of evidence and legal procedures are followed. The judge may ask for clarifications of evidence on behalf of the jury and give direction to jury but they do not gather evidence or make judgements.

In lower courts, the decision may be taken by a Judge or a small panel of lay judges. In some countries (the UK for example) these are called magistrates but these lower courts are irrelevant for the purpose of this article.

The primary principle of the common law system is the presumption of innocence; The British Judge, Lord Sankey, called the principle "the golden thread that is always to be seen throughout the web of English criminal law". In other words, the burden of proof in any case is on the prosecution. They must prove, beyond a reasonable doubt that the accused is

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guilty of the crime.

In these countries, the common law is divided into criminal and civil functions. The civil function concerns itself with cases where one side is seeking compensation from the other on the basis of either some failure to perform a service or negligence. In the main, these cases deal with individuals seeking financial compensation from organisations or companies. There can of course be cases against the individual, famously in the case of OJ Simpson where the actor/football player was found not guilty of the murder of his ex-wife and her lover in the criminal trial but liable in the subsequent civil proceeding. A trend that has recently been observed in the USA is that plaintiffs (or more accurately their legal counsel) are filing civil cases much earlier than in the past often while the NTSB investigation is still ongoing. This presents a number of problems not least the protection of accident data since there will be efforts by the plaintiff's lawyers to get access to CVR and FDR data as they build their case. This is particularly relevant since witnesses interviewed in the course of an investigation by the NTSB do have the right to legal counsel and since the data gained may be used in a civil case it's probably a good idea to have legal advice if you are ever called as a witness by the NTSB.

Not tonight Josephine

The Napoleonic Code (originally called Code civil des Français) was established by Napoleon Bonaparte (at the time Napoleon I) in 1804 in an attempt to standardise the French legal system along French revolutionary principles and replacing a mix of feudal, royal and local laws that were confusing and contradictory. Like its Common law alternative, the Code was adopted in countries that were occupied by France at the time of the Napoleonic wars or came within French influence later. In addition, a number of countries in Europe and around the world adopted the code voluntarily either wholesale or as the basis of a legal system. The Napoleonic Code is in essence an inquisitorial system with the power vested in the

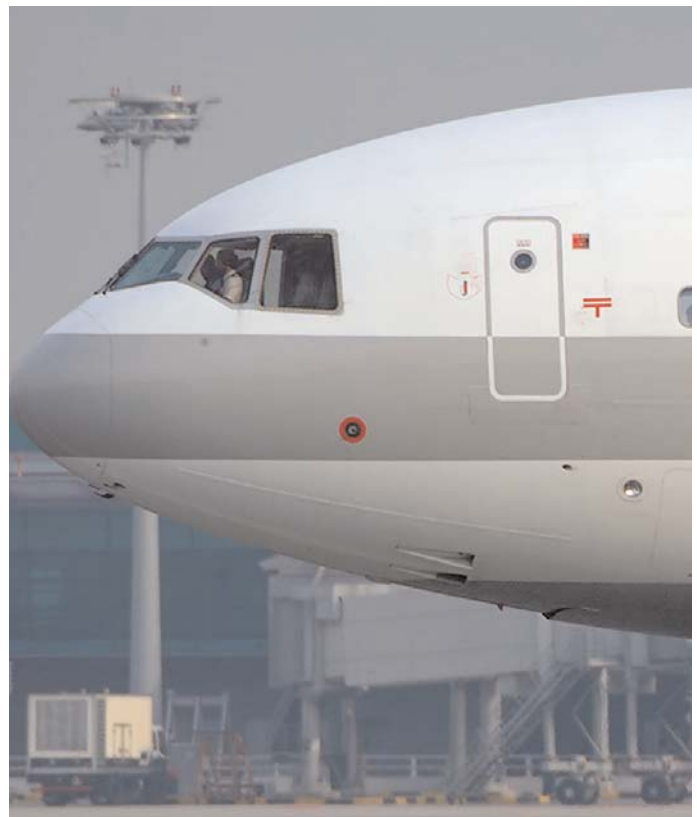
judiciary to get at the facts and via an individual judge or a tribunal of judges determine guilt. Supporters of the inquisitorial system argue that it is less biased than the adversarial system since judges supervising the cases are independent and are bound by law to direct their enquiries without favour or bias compared to prosecutors in the adversarial system whose re-appointment may depend on the number of successful prosecutions brought. A common misconception about the Napoleonic code is that there is no presumption of innocence. In reality the burden of proof remains with the prosecution. The misunderstanding probably stems from that, in general, civil law based legal systems avoid the use of the word innocent since it carries a moral charge distinct from the phrase "not guilty". As a result, it is more like that a qualifying phrase will be used "not guilty for lack of a crime", "not guilty due to lack of evidence" and so forth.

What does this mean for air safety?

From the air safety standpoint there are some problems with a codified legal system. First of all the ICAO Annexes are not considered law in civil law and some countries have filed their differences. Another element is that in civil law if a death occurs as the result of an accident a judge must open a criminal investigation followed by a technical one. That is why we often see the judges having control of the CVRs etc.

Confiscation of this type of important evidence needed for the technical investigation has resulted in delays in the safety lessons from an investigation being learned and shared with the industry. Equally, past experience has shown that the investigating Judge may decide to release CVR & FDR data to the media.

Civil law requires an individual to act professionally using caution so even if a small error is shown as resulting in a death, you can expect a prosecution and there may be punishment. As a civil law example we see in France that liability



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Past, and in some cases painful, experience has shown that the investigating Judge may decide to release CVR & FDR recordings and data to the media.



applies to clumsiness, carelessness, inattention, negligence, breach of safety, and obligation by laws or regulations which directly or indirectly caused or could have caused damage. It about says it all and that is why we see a simple error could lead to prosecution. It may not be so much as why the error was caused but more importantly the link the error has with the damage or death. The more indirect the causal link, the more serious the error must be to qualify. As the prosecutions connected with the crashes of Air Inter 148 and AF4590 demonstrate, although it must be noted that in the Air Inter 320 case, those charged were found not guilty, we will have to wait until at least March of next year to discover the fate of the five indicted in the AF4590 case.

In Japan, there are two good examples, the JAL706 & 907 cases where actions shown to have been the correct ones in averting major catastrophe have lead to prosecutions as the result of injury or death of an individual. The problem is, Civil law tends also to look at the outcome or result of an action rather than its intent and this can lead to legal action being taken against a large number of individuals, some remotely connected with the accident. There are of course similarities in the two systems - both, as mentioned earlier, place the burden of proof on the prosecution. Similarly both systems allow the concept of manslaughter. Additionally, Common law allows the concept of wilful or criminal negligence. Further common law allows prosecutors more latitude in the decision to prosecute or not – a prime example being the announcement in the UK recently by the Director of Public Prosecutions that those helping terminally ill friends or relatives to commit assisted suicide in countries where this is legal will not face prosecution on their return. Although technically they have committed a crime this might be considered as equating to the latitude granted to examining judges under the Napoleonic code system - a judge may decide to find a defendant, although prosecuted, not guilty due to extenuating circumstances.

How does this square with a just culture?

In a just culture, which is a vital part of any safety improvement programme, the aim is to draw a line between what is an

acceptable error and unacceptable behaviour. In other words, acceptance that sometimes people, while doing their job to the best of their ability, will make mistakes or decisions which have unintended consequences. This is opposed to a situation where an individual or organisation fails to exercise reasonable care to avoid mishap which is described as negligence. Worse is when the individual or organisation is aware of a problem or flaw in a system or decision and continues with the course of action regardless of the risk. Even so, while civil liability could be found in these examples, a criminal action is not warranted since although negligent there was no intent to do harm. Without intent there is no crime.

Just culture principles argue that error is non-criminal and should be with threat of prosecution (working on the basis that people are less likely to report flaws or errors in the system before they lead to accidents if there is fear of sanction or prosecution). But at the same time if there is wilful negligence then the individuals involved should face punishment. So then the myth that a just culture is a 'get out jail free' card is busted, a just culture in fact recognises that there is a need for victims to be compensated.

So how do we go forward?

Clearly, there is no way we can persuade one nation or another that one legal system is better than another one and that therefore they should drop hundreds of years of practice and change. Our challenge is to keep looking for the balance between what is good for the safety of the travelling public and their rights to justice information. Legislation is needed in a number of countries which allows for protection of safety data. It might be that Annex 13 may need to be altered, specifically 13.5.12 to more closely protect data from being used as part of prosecutions and more importantly, its release to the public at large. This is vital to keep the flow of preventative safety data as freely flowing as possible.

In countries where the form of the ICAO Annexes are seen as legally unacceptable within their judicial system then we must work to get governments to understand the spirit of ICAO's Standards and Recommended Practices (SARPS) in order to draft legislation that allows the technical investigation to have primacy over criminal prosecution or at least to allow the work of the technical investigation to be complete before embarking on a criminal prosecution. Part of that process might be to define in law where the line between what is a simple error and what is wilful recklessness or negligence. Another element in improving the situation is to more closely engage the legal community in just culture and accident prevention matters. This might include prosecutors, lawmakers, judges and to an extent the public at large, thus fostering a greater understanding of the daily decision making process that we, as pilots, undertake.

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In July this year the United Nations Aviation Arm, the International Civil Aviation Organisation (ICAO) Regional Office for Asia and Pacific hosted a seminar call the “Socio-Economic Dynamics of Civil Aviation in the Asia and Pacific Region”. This seminar help celebrate the 60 years of operation of this Asia and Pacific office in Bangkok. The seminar consisted of 10 presentations from participants including ICAO Head Office, seven member States in this Region and two international organisations. Each presentation provided a brief review, mostly predictable in part, and all presenters took the opportunity to provide a glimpse of the future from their point of view. A theme that was common to all the presentations was the concept of a “new dawn” with the demand for aviation remaining high and her products sought after in the search for value and the contribution to economic growth.

The opening presentation from Mr. Roberto Kobeh González, President of the Council of ICAO included remarks about some of the remarkable changes in aviation changes over the last 60 years, many of which those of us who have been in the business for a number of years have witnessed first-hand. The speech went on to talk about the changes at ICAO head office in Montreal to be “performance driven” and “results based” and therefore be more responsive and valuable to member States. The use of regionalisation has become a reality with the example of Indonesia sited as a point. The work in Indonesia last year was designed to address weaknesses in the air transportation system with a team returning this month to access progress.

Liquids Aerosols and Gels, or LAG’s were identified as a source of concern and annoyance to all involved in this process and the President

was pleased to announce that work has begin to activate the process to remove the restrictions on LAG’s. Mention was also made of the shortage of skilled personnel in aviation primarily resulting from retirements and specialisation. These are interesting comments given the New Zealand Human Rights law and the lack of legal instruments to mandate retirement.

A snapshot of the presentations

Of the seven member States presentations I will feature three striking pitches to the audience. Firstly China, this was a twenty two slide presentation from the Department of International Affairs of the Civil Aviation Administration China (CAAC). The point that got my attention was the CAAC forecast for traffic growth over the next 10 years. As you can see in Fig 1, even though the CAAC expect the growth rate to moderate from the current 14.5% to a more conservative 11% for the 10 years to from 2010 to 2020 this will still mean traffic growing in the region by nearly three times compared with today’s figures. Likewise, the CAAC expects Cargo growth which has slowed in the region over the last two years to be 13% for 2010 before falling back to around 11% per annum for the 2010 to 2020 period again a rate which will see volumes nearing triple today’s figures.

The Japanese presentation was very interesting in that the presenter was Mr. Yoshiro Taguchi, Deputy Director, Air Transport Division, Japan Civil Aviation Bureau (JCAB), a very well educated generation X person. His delivery invoked

	2010 Forecast	Growth Rate	2020 Forecast	Growth Rate
Total traffic tonne/kilometres (billions)	50	14%	140	11%
Passengers (millions)	270	14.5%	770	11%
Cargo & Mail (million tonnes)	5.7	13%	16	11%

Fig 1: Civil Aviation Administration China (CAAC) forecast growth 2010-2020



The author (right) with Mr. Yap Ong Heng, Director General CAAS, Singapore

Japan calling for a establishment of “full economic integration” but recognised that this will take time so “we should facilitate movement of people, goods and information” and “ensure a ‘level playing field’ among airlines ” by the use of “Technical support for capacity building in developing countries; Harmonisation of policy, standards and air traffic management as well as strengthened representation of the regional interests at ICAO forums. According to Mr. Taguchi, “ Japan is pursuing liberalisation with eight countries and working with China to make it the ninth country. This would result in the need for more capacity in Japanese airports with the extensions to New Tokyo (Narita) airport scheduled to be completed by October this year to allow 747-400 and 777-300 operations on the eastern runway with an additional 20,000 slots of yearly capacity. Haneda airport is to get a 4th runway due for use by October 2010 which will provide over a 100,000

a passion for development that is not often witnessed in an International forum and was titled “level playing field” in Asia Pacific. The opening part to his presentation reviewed the demand for air travel and cargo in Asia Pacific and then focused on Japan. Again the regionalisation issue arose with

Old Airways over South China Sea



Fig 2

New Airways over South China Sea



Fig 3

Old Airways over Bay of Bengal



Fig 4

New Airways over Bay of Bengal

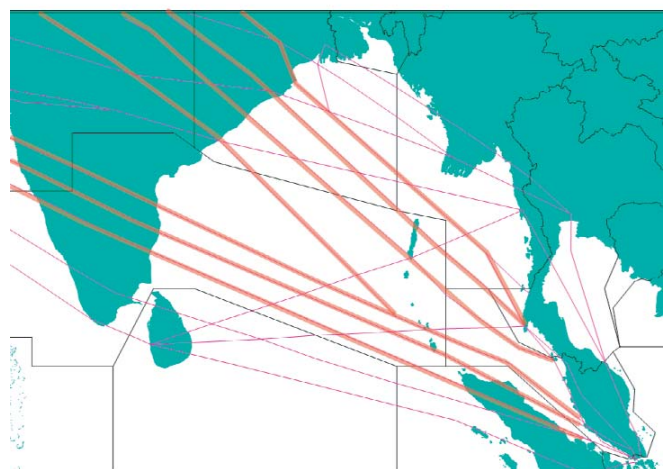


Fig 5

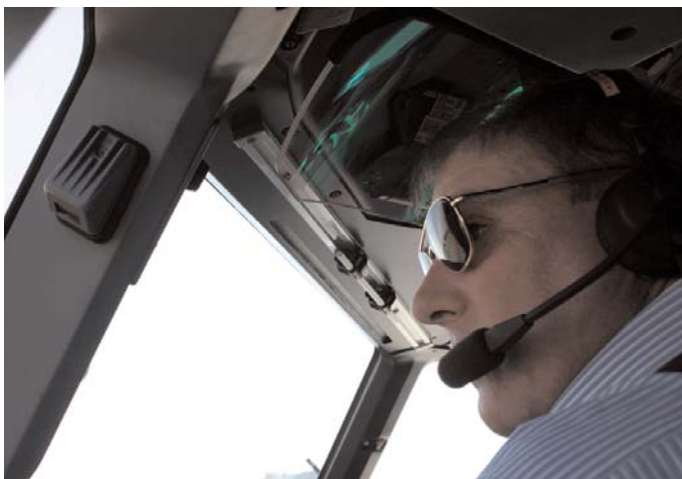
new slots 60,000 of which will be allocated to the international operations. This work will be further discussed in Osaka as Japan is hosting this year’s Asia Pacific Director Generals Civil Aviation (DGCA) Meeting.

The last presentation that I will feature is from Singapore. Again the flavour of this presentation was the economic impact of aviation to a country. They referred to the 2.2 billion passengers that travelled last year using 2000 airlines operating 23,000 jets. However the slides that I took pride in was the work that my IFALPA colleagues have contributed to in the reorganisation of the air routes in the South China sea and in the Bay of Bengal. These images show the changes and improvements in efficiency. Fig 2 and 3 show the improvements in the South China Sea. While in the Bay of Bengal my team has helped move the air routes from as depicted figures 4 and 5.

In summary the day of presentations provided some very positive outlooks for aviation with the final slide from Singapore summing up the day nicely. Looking ahead to 2020 it argued that the Asia Pacific region will be home to the world's largest aviation market. Accordingly, the region must stay at the forefront of aviation development by overcoming the challenges and taking advantage of the opportunities presented by growth and finally ensure a safe, efficient and sustainable industry playing its vital part in the region's socio-economic development, which, it argued, will only be possible through close collaboration and partnership between all the region's stakeholders.



Stu Julian is a Captain with Air New Zealand flying 767s, he also serves as IFALPA Executive Vice President Asia Pacific.



Have an idea for an article or want IFALPAnews to cover your story? Contact Gideon Ewers, IFALPA Media and Communications Officer Tel. +44 1932 579041 or email gideonewers@ifalpa.org

Dates for your Diary

October

5-6

Legal Committee Meeting

Marrakech

Contact: Donna Fogden donnafogden@ifalpa.org

7-8

Administration & Finance Committee Meeting

Marrakech

Contact: Heather Price heatherprice@ifalpa.org

9-10

Industrial Committee Meeting

Marrakech

Contact: Donna Fogden donnafogden@ifalpa.org

14-16

Air Traffic Services Committee Meeting

Las Vegas

Contact: Carole Couchman carolecouchman@ifalpa.org

26-28

Dangerous Goods Committee Meeting

Playa del Carmen

Contact: Sacha Whitehead sachawhitehead@ifalpa.org

29-31

Human Performance Committee Meeting

Playa del Carmen

Contact: Sacha Whitehead sachawhitehead@ifalpa.org

November

5-7

Aerodrome & Ground Environment Committee Meeting

Las Vegas

Contact: Carole Couchman carolecouchman@ifalpa.org

9-11

Aircraft Design & Operations Committee Meeting

Las Vegas

Contact: Arnaud du Bedat arnauddubedat@ifalpa.org

12-14

Asia Pacific Regional Meeting

Dhaka

Contact: Carole Couchman carolecouchman@ifalpa.org

19-21

Accident Analysis & Prevention Committee Meeting

Chiang Mai

Contact: Arnaud du Bedat arnauddubedat@ifalpa.org

December

7-9

Caribbean & South America Regional Meeting

Grand Cayman

Contact: Carole Couchman carolecouchman@ifalpa.org