At Cathay Pacific we strive to maintain the highest levels of safety and always put safety first.

1 Safety Policy

The following is the commitment made and signed by the Chief Executive in the Cathay Pacific Safety Policy which is displayed around the operating network.

“Safety is our number-one priority at Cathay Pacific, and I am fully committed to providing a safe operational and working environment. Ultimate accountability for safety rests with me as Chief Executive.

However, responsibility for safety lies with each and every one of us in the airline. All our business partners, suppliers and contractors are all encouraged to share our primary safety goal, which is to have zero accidents or injuries.

This will be achieved by developing an organisational culture where safety comes first...a just culture where non-punitive reporting is encouraged...a reporting culture where all staff are encouraged to raise safety concerns...a learning culture ensuring that we learn from our own mistakes as well as those made by others...and an informed culture by applying appropriate quality and risk management systems and processes as part of our decision making.

We will establish measure and review our safety objectives, safety performance indicators and targets regularly, to ensure that we continually improve our management system and safety performance.

Every individual within Cathay Pacific is responsible for ensuring that safety comes first. You have my personal commitment and support to achieve this goal.”
2 Operations and Safety

IATA Enhanced International Operational Safety Audit (IOSA)

Early in 2014 Cathay Pacific became one of the first airlines to complete an IATA Enhanced International Operational Safety Audit (IOSA) with no findings. The total accident rate for IOSA carriers in 2012 was 77% lower than the rate for non-IOSA operators. As such, IOSA has become a global standard. The enhanced audit ensures conformity through ongoing audits, implementation of IOSA standards and reliability through the integrity of their internal quality assurance programmes against a highly standardised audit.
3 Safety/Risk Management

The Cathay Pacific Safety Management System reactively investigates events and incidents and actively monitors one of the most comprehensive arrays of safety performance indicators in the industry. All safety metrics are reviewed, along with all incidents and safety events, on a monthly basis by functional area Safety Action Groups (SAG’s) and the Airline Safety Review Committee (ASRC) attended by subject matter experts from the respective disciplines. In addition, an independent safety expert, Dr. David King, chairs the Group Airline Safety Review Committee (GASRC) and the Board Safety Review Committee (BSRC) that sit twice a year and reports directly to the main Cathay Pacific board. Dr. King is a former Chief Inspector of the UK’s Air Accidents Investigation Branch (AAIB), visiting professor at Cranfield University and a member of the United Kingdom Civil Aviation Authority (UK CAA) board. The following is a few examples of how the Cathay Pacific Safety Management System addressed risk in 2014.

Cathay Pacific Aviation Group Safety and Governance Structure
Aircraft Tracking

In the wake of the tragic loss of Malaysian Airlines MH370 Cathay Pacific continues to review all the available options for aircraft tracking. All Cathay Pacific aircraft have on board technology that allows their movements to be tracked to some degree. Through its membership and participation in IATA, Cathay Pacific is closely monitoring the work of the International Air Transport Association (IATA) Aircraft Tracking Task Force.

Third Party Supplier Management Programme

Over the recent history of the airline industry there has been a shift to more services being outsourced to third party companies e.g. ground handling, catering, cleaning and engineering. The importance of maintaining standards of safety and quality despite not directly managing these functions has been recognised by the Cathay Pacific supplier management programme. Overseen by the Corporate Quality Department and the high level Airline Safety Review Committee this important initiative is bringing tangible benefits in the safe delivery of external services.
Loading and Load Control

Load integrity and load control is recognised as an industry risk. In 2014 Cathay Pacific launched a review of loading integrity and load control processes to ensure that the latest industry best practice is captured and the risk of these activities is actively managed to as low as reasonably practicable.

Flight Over Conflict Zones

The tragedy of Malaysian Airlines MH17, shot down over Ukraine triggered many airlines to review their risk management of flight over conflict zones. A formal process already in place in Flight Operations to assess routes, with input from Corporate Safety, Corporate Security, International Affairs and advice solicited from an external security expert had determined to stop fights over Ukraine on 1st March. This process continues to be effective, whilst Cathay Pacific, through its membership and participation in IATA, is closely monitoring the IATA Task Force on Risks to Civil Aviation Arising from Conflict Zones.

Asiana Boeing 777 Accident in San Francisco

As a Boeing 777 operator Cathay Pacific was keen to learn when the National Transportation Safety Board (NTSB) made a probable cause statement and published the final report into this accident. The NTSB determined that the probable cause of this accident was the flight crew’s mismanagement of the airplane’s descent during the visual approach, the pilot flying’s unintended deactivation of automatic airspeed control, the flight crew’s inadequate monitoring of airspeed, and the flight crew’s delayed execution of a go-around after they became aware that the airplane was below acceptable glide path and airspeed tolerances. In mitigation to the risks exposed in this accident, Cathay Pacific has strict approach criteria that are applied by flight crew, the application of which is in turn monitored by a flight data programme that feeds back into crew training. In addition Cathay Pacific pilots are provided annually with a full simulator training detail over and above the minimum regulated four sessions during which they can be exposed to a range of scenarios not covered in mandatory training and checking.

Boeing Aircraft Fire Resilience

In 2014, Boeing commenced a series of workshops to review ideas for improving the design of aeroplanes to be less vulnerable to on board fire, in particular lithium battery fires. Cathay Pacific was a key participant to represent the risks and mitigations associated with this hazard.
4 Safety Promotion

To promote safety and a wider understanding of the safety management system (SMS) an SMS handbook was published for all staff in 2014. Safety highlights of the work of the monthly safety action groups is now shared in a monthly safety newsletter which complements the more detailed quarterly safety magazine.
5 Fatigue Risk Management System

Cathay Pacific has a very complex passenger and freighter network with pilots based all over the world living in vastly different time zones. This has created a very challenging task in pilot rostering and fatigue management. Consequently, managing pilot fatigue risk is an important component of Cathay Pacific’s SMS. Therefore, during 2014, we continued to develop and mature the Fatigue Risk Management System (FRMS) that was established in 2011.

The aim of the FRMS is to complement the existing Hong Kong Civil Aviation Department (HK CAD) Approved Flight Time Limitations Scheme (AFTLS), which itself aims to ensure that crew members are adequately rested prior to commencing a duty period, and that the duration and timing of individual duty periods will enable them to operate to a satisfactory level of efficiency and safety in all normal and abnormal situations.

The FRMS complements the AFTLS by introducing an evidence-based, data-driven system with reactive, proactive and predictive elements that are used to continuously monitor and control fatigue-related safety risk to a level that is ‘As Low as Reasonably Practical’ (known as ALARP).

The FRMS provides a mechanism by which appropriate measures, supporting procedures and training ensure that flight crew are not subjected to unacceptable levels of work-related fatigue. Employees also have a personal obligation to minimise fatigue so that they are fit for duty, and shall not perform any duty if they consider their fatigue level to be unacceptable.

There are currently no HK CAD regulatory requirements for local aircraft operators to have this additional FRMS. Nevertheless, Cathay Pacific has implemented a system that far exceeds current HK CAD regulations pertaining to the management of pilot fatigue.
2014 FRMS Initiatives

In 2014, the FRMS continued to mature by enhancing the use of our fatigue modelling software, using actigraphy to study sleep and fatigue, increasing internal and external communication and improving training and documentation.

Fatigue software (FAST) continues to be used proactively to model new roster patterns and potential mitigations before they appear in the rosters. The tools and procedures used for proactive modelling were improved resulting in faster, easier and more accurate analyses and as a result there was an increase in the number of proactive analyses conducted in 2014.

Fatigue-related safety risks were identified via fatigue reporting (Air Safety Reports – Fatigue (ASR-Fs)), and extensive FAST analysis and changes were made to rostering practices to mitigate these risks. Due to a significant and ongoing mismatch between the data from fatigue reporting and FAST analysis on a particular duty, an actigraphy study of the duty commenced in November 2014. The study involves crew who operate the duty wearing an Actiwatch (wrist-worn activity data recorder) to provide objective sleep data and completing a diary to provide subjective sleep and fatigue data. The study will continue until February 2015.

Tailored crew communications continued via the FRMS Bulletin (a regular newsletter to update crew on FRMS activities) which was issued in May and November. FRMS articles also appeared in each of the four 2014 issues of Kai Talk, the CX Flight Safety Journal, regarding the proactive elements of the FRMS, fatigue related incidents and accidents in the industry and providing updates on ASR-Fs received and the action taken.

The Flight Crew Fatigue Training Course was updated, providing crew with new material on sleep, fatigue, fatigue countermeasures and the CX FRMS. The FRMS section of the CSD Operations Manual was also revised to reflect enhanced FRMS policies and procedures.

Cathay Pacific’s FRMS experience is much sought after by industry groups. In 2014, CX continued to serve on the International Air Transport Association (IATA) FRMS Taskforce and participate in the international FRMS Forum. Cathay Pacific is one of the industry leaders in FRMS and we will continue developing and maturing the CX FRMS in 2015 and for many years to come.

Dragonair

The FRMS programme is proving to be highly successful in identifying fatigue issues around the Dragonair network. The nature of the Dragonair network and operations has changed quite significantly in the last two years from a 9-to-5 airline to one with an increasing number of night flights to destinations such as Busan, Kolkata, Dhaka, Kathmandu, Bengaluru and most recently Beijing.

Through the Dragonair FRMS process, the FRMS review committee has been successful in identifying a cluster of roster patterns and a night flight pattern that were changed as a result of fatigue data and reports. Furthermore, this year marked the successful launch of the Dragonair Controlled Rest procedure as part of the fatigue mitigation program with the HK CAD.
6 Emergency Response System

The Cathay Pacific Crisis Management Centre is a wholly dedicated facility with logistical capabilities to manage a global response effort.

A regularly tested corporate emergency plan includes a centralised command protocol, customised local response teams, telephone enquiry and support centres, and biennially trained special assistance volunteers. All services can be activated by a 24/7 notification system.

More than 600 airline staff members comprise its CARE Team with a single focus on assisting passengers and their families during a crisis. For significant events, another 8,000 specially trained volunteers are available to supplement the CARE Team through the airline’s membership in the Family Assistance Foundation.

The more than 100 ports in the Group participated in at least one emergency exercise simulation over the 24-month period ending in 2014, thereby testing their local response capabilities.

An Incident Management protocol enables all incidents to be immediately classified and managed by the scalable Incident Management team.
7 Safety Occurrences

One of Cathay Pacific and Dragonair’s safety goals is zero accidents and zero ‘high risk’ incidents. In 2014, there were no events classified as an accident, which was the same as in 2013. In 2014 there was one ‘high risk’ safety incident, compared to eight in 2013 for Cathay Pacific and none for Dragonair. This concerned a lithium battery fire in a mail bag on the ground in a warehouse in Singapore.

These events were investigated by CSD, with a view to learning and preventing recurrence. Mitigating actions have been put in place to prevent any repeat occurrences. For example, the consignee involved in transporting the lithium batteries illegally in the mail was subjected to greater scrutiny with no further problems detected and the Singapore authorities increased their surveillance.

There were 0.83 ‘moderate risk’ safety incidents per 1,000 sectors in 2014, an increase from 0.64 events/1,000 sectors in 2013. The majority of these were cargo/ramp related events on the ground. The conclusion that more reports means an airline is less safe is false, as it in fact the reports represents a strong reporting culture, which is a sign of a healthy safety culture. Cathay Pacific and Dragonair staff members are encouraged to report freely to the company in order to facilitate safety actions for the benefit of learning and improving the overall safety of operations. A flow of safety reports generally demonstrates an excellent active reporting culture.

Note: High risk events are significant risks that require immediate attention. Moderate risks are significant risks that require appropriate mitigation and monitoring.

Safety Reports 2014

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IRF – Injury Report Form
MSQDR – Engineering reports on maintenance, safety, quality and defects
ASR-F – Air Safety Report – Fatigue
GSR – Ground Safety Reports
ASR – Air Safety Report
CSR – Cabin Safety Reports

Note: Safety Report Overview not included this year.
8 Health and Safety

Occupational Health and Safety Policy
Our philosophy is that we do not compromise safety while we strive to achieve our business objectives. As far as is reasonably practical, all operations are to be carried out in a manner that safeguards the health and safety of all employees, customers, contractors, and the wider community.

Passenger Safety
In 2014, Cathay Pacific and Dragonair flew in the region of 32 million passengers. There were zero fatalities.

Inflight Medical Support
All Cathay Pacific aircraft are able to call for aero-medical advisory assistance 24/7 through the use of the inflight phone system. This system ensures that, regardless of where the aircraft is flying, there is generally access to emergency medical specialists who can offer assistance with the diagnosis and treatment of any passenger or crew illnesses and injuries. All crew are trained in basic first-aid, cardio-pulmonary resuscitation, and we carry automated external defibrillators on all our aircraft, which all crew are trained to use.

Food Safety
Cathay Pacific strives to serve meals that meet the highest levels of food safety and hygiene. Caterers are charged to create well-balanced meals, minimizing the use of trans-fats, and to implement a policy of no monosodium glutamate. Our policies on food safety and hygiene are based on recognised standards, such as the World Food Safety Guidelines for Airline Catering. Our caterers must comply with our strict food safety requirements and they are measured and monitored through the Cathay Pacific robust audit programme.
Staff Safety

There were no staff fatalities and zero serious work-related injuries in 2014. Through various initiatives in Cathay Pacific and by carefully managing the rehabilitation of staff back to work after an injury the number of lost days due to injury reduced by 28% year-on-year. The total number of lost time injuries reduced by 27.6% from 2013 to 2014. The target is to continue this downward trend in injuries and time lost in 2015.

Lost Time Injury Frequency Rate

- LTIFR is computed as (# of injuries resulting in lost time/total workforce hours) x 1,000,000.
- We have revised the LTIFR figures for CX to better report on cabin crew and flight crew lost days and work hours by including data from our outports.
Occupational Health and Safety Management in 2014

To manage and mitigate potential injuries to cabin crew the Inflight Services Department (ISD) re-established the Occupational Health and Safety (OHS) Injury Prevention Working Group to champion injury prevention initiatives in the cabin. This included improved care and oversight through In-flight Service Managers (ISMs) – the most senior cabin crew working in the cabin. At their annual ISM Forum, training was given to use their leadership role to further reduce cabin injuries. Their role was formalised by requiring them to comment on and sign for cabin crew injuries to promote shared responsibility for prevention. When cabin crew are injured, they are given professional support to ensure that they receive the best possible rehabilitation by a third party company. To prevent injuries caused by cabin crew lifting passengers’ bags into overhead lockers, ISD launched “Think Safe” which was an injury prevention initiative.

In our headquarter building, Cathay City, the facilities management company carried out a Fire, Health and Safety Audit along with routine air quality surveys. The Engineering Department commenced a training and equipment programme for engineers carrying out inspections at height as part of their training programme. The Corporate Safety Department carried out a trial of the LEAN based “5S good housekeeping methodology” – Sort, Systematise, Shine, Standardise, Sustain. The management of Display Screen Equipment Ergonomic Assessments was enhanced by the creation of a SharePoint database of forms, allowing the completion of the assessments to be entirely electronic and stored in a centrally located and locally accessible repository. In June, the Ramp Safety Review Group was established to look at ramp risks including OHS hazards and risks. During the year, all the First Aiders at Cathay City received refresher training to ensure they were up to date on First Aid and maintained the ratio of 1 to 150 staff in Cathay City. A Corporate Safety monthly newsletter was launched in 2014 and included a regular section on OHS reminders to staff.

Lost Day Rate

- Lost Day Rate = Total lost days multiplied by 200,000 and then divided by the total hours worked.
- The factor 200,000 is annual hours worked by 100 employees, based on 40 hours per week for 50 weeks a year.
Occupational Health and Safety Initiatives in 2015

In 2015, Cathay Pacific will commence a three year programme of proficiency based manual handling training with the renowned Pristine Condition, a specialist in OHS from the UK. This will target three staff groups, namely cabin crew, Hong Kong International Airport terminal staff and Hong Kong Airport Services staff who handle bags, mail and cargo on a daily basis. In addition to the lifting injuries seen in the airport terminal, the training will also address slips and trips which are also prevalent there. A wider slips and trips and manual handling awareness campaign will be run throughout 2015 for all Hong Kong staff. With a comprehensive record database of Display Screen Equipment Workstation Ergonomic Assessments in place, any workstation adjustments required will be consolidated and followed up in 2015. A network of Departmental Safety Officers is being re-established in Cathay City to represent OHS issues locally. In support of this initiative, an OHS guide for managers and staff is scheduled for release in 2015.

Alcohol & Other Drugs Policy

Cathay Pacific has a responsibility to manage workplace safety to very high standards. Safety may be impacted by many factors, including the use of alcohol and psychoactive drugs. The aim of our Alcohol and Other Drugs Policy and Programme is to educate employees and managers on issues related to alcohol and other drug use, as well as to promote and maintain workplace safety. A balanced programme is one that creates a supportive environment for those in need of help; but also demands a workplace free from the influence of alcohol and other drugs, delivering benefits in terms of safety, productivity and morale. The Programme supports employees and managers so they can fairly and effectively deal with issues related to employee alcohol and other drug use before they affect workplace safety, result in an accident or incident, damage Company reputation, or significantly affect employee health and work performance. In 2014, the Corporate Medical team continued to prepare for the possible launch of random testing through staff education and promotion.
Public Health

Cathay Pacific monitors public health outbreaks closely to ensure that we protect the health and safety of our front line employees as well as the travelling public. We monitor infectious disease outbreaks on an on-going basis and provide educational information as appropriate. We follow closely guidance issued by IATA, the World Health Organisation and local governmental health agencies. In 2014, this was put into practice to ensure that our staff were fully briefed and equipped with the latest information with respect to the Ebola outbreak in Africa. A cross-departmental taskforce may be activated in situations where there is potentially high risk and preventive steps are taken to ensure that any impact to our operations, staff and customers are minimised. Infectious disease related incidents involving staff or passengers are investigated, including food borne illnesses, and action taken as appropriate. We have a schedule to periodically test the water supply (in both water heaters and tanks) as well as the air quality in our headquarter buildings.

Indoor Air Quality

We spend more than 70% of our time at homes, in offices and other indoor environments. Poor indoor air quality can lead to discomfort, ill health (e.g. headache, itchy eyes, respiratory difficulties, skin irritation, nausea and fatigue), and in the workplace, absenteeism and lower productivity. Children, the elderly and those with existing respiratory or heart disease are more susceptible to the effects of poor indoor air quality. Good indoor air quality safeguards the health of the building occupants and contributes to their comfort and well being. As a participant in the Hong Kong Clean Air Charter Certification Scheme, we conduct yearly indoor air quality monitoring of our headquarter buildings Cathay City and Dragonair House, and have been receiving a ‘Good Class’ rating since 2008.
Cabin Air Quality

All passenger aircraft are fitted with high efficiency particulate air filters that remove more than 99.7% of particulates, allergens and airborne microbes (bacteria and viruses). The filters are maintained and changed regularly according to the manufacturer’s guidelines. Air circulation within the cabin is continuous with outside air flowing into and out of the cabin. This replenishes the cabin air constantly, keeping carbon dioxide and other contaminants below standard limits, and keeps cabin air quality at comfortable levels for passengers.
9 Cathay Pacific Safety Performance Targets

Achievements Against Cathay Pacific Safety Performance Targets

Key Performance Indicators (KPI) (2014)

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<th>Target</th>
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<tr>
<td>Accidents</td>
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<td>High Risk or Severe Incidents</td>
<td>Zero</td>
<td>One*</td>
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<td>Moderate Risk Incidents</td>
<td>Below 1/1,000</td>
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<td>Maintain 100%</td>
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<td>Regulatory Report Rates</td>
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<tr>
<td>Simulate an Emergency Response</td>
<td>Each port every 24 months</td>
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* Refer to Safety Factsheet p.10