

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

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1 Overview

Our Safety Policy, signed by the Chief Executive, clearly articulates this commitment by stating that “safety is our number-one priority” and that we are “fully committed to providing a safe operational and working environment” for all our passengers and staff. It goes on to state that “ultimate *accountability* rests with me as Chief Executive. However, *responsibility* for safety lies with each and every one of us in the airline”.

It’s easy to make these claims, but turning words into actions and delivering results requires a dedicated focus and well-developed and embedded proactive safety systems to ensure that this is achieved. Cathay Pacific has a dedicated Corporate Safety Department (CSD) to ensure that we live up to these exacting standards.

As a business support function, safety management’s goal is to manage the risks of the operation to As Low As Reasonably Practical (ALARP) in order to allow the company to pursue and maintain its commercial activities in a sustainable way. The enduring success of Cathay Pacific depends on CSD monitoring, recognising and mitigating the day-to-day and emerging risks of the complex and dynamic environment in which we conduct our operations. We do this through a sophisticated Safety Management System (SMS), parts of which are highlighted here.

2 Safety Management System

During 2013, we continued to develop our risk-based approach to safety, as managing safety effectively is all about managing operational risks effectively. At Cathay Pacific, this is primarily achieved through a risk-based SMS, which was accepted by the Hong Kong Civil Aviation Department (HK CAD) in 2009. Our SMS defines how we manage operational safety as an integral part of our overall business development.

In 2011, we introduced a number of prescriptive Safety Performance Targets that are split into three categories, comprising Safety Status Indicators, Operational Performance Indicators & Management Performance Indicators. When combined, they give a measure of operational safety, fatigue, occupational health and safety (OH&S) and quality issues. During 2013, we further developed these safety metrics by introducing a new Safety Performance Indicator (SPI) and Risk Index Score (RIS) methodology into the SMS. The purpose of the new SPI methodology is to provide an early warning of emerging problem areas, identify factors that contribute to increasing risks, prioritise safety actions and measure the effectiveness of any mitigations put in place. The RIS introduces a new risk classifications system that allocates a numerical risk value to each incident, with the aim of providing a more meaningful, measurable and transparent mechanism to communicate the operational risks faced.



If we don't know where the risks lie,
we can't mitigate them effectively.

Richard Howell

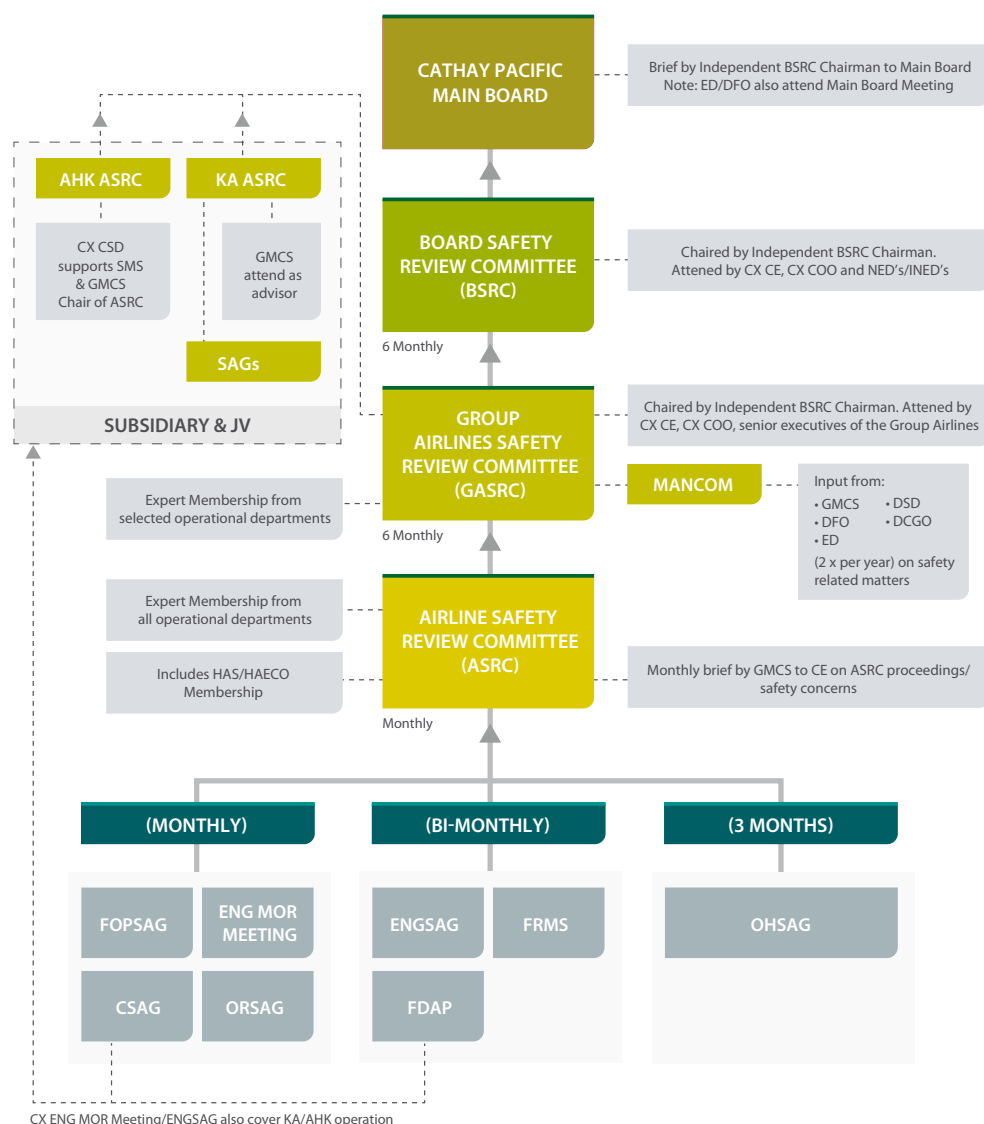
General Manager Corporate Safety

Where possible, these safety metrics are benchmarked against other airlines, industry performance and best practices.

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). Each SAG and the ASRC comprise 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 report directly to the main Cathay Pacific Board. Dr King also observes selected SAG's and the ASRC at least twice a year with a view to assessing their effectiveness on behalf of the main Cathay Pacific Board. Dr King is a retired Chief Inspector of the UK's Air Accidents Investigation Branch (AAIB) and Visiting Professor at Cranfield University.

Our governance structure for safety is represented in the following chart:

CX Aviation Group Safety and Governance Structure



NOTE: WHOLE PROCESS SUPPORTED BY RISK BASED SAFETY MANAGEMENT SYSTEM (SMS)

Charles Haddon-Cave Safety Review – Update

In 2011, Cathay Pacific commissioned a leading international expert on aviation safety, Sir Charles Haddon-Cave, Q.C., to conduct a review of the safety systems and culture within Cathay Pacific, Dragonair, and Air Hong Kong. It was conducted over five intensive weeks in Hong Kong, where he held detailed conversations with all Directors, operational GMs, senior executives and many other staff including operating cabin crew and pilots. Sir Charles also attended various committee and safety action group meetings, including the ASRC and the FRMS Committees, and observed a couple of flights on the way to and from the UK, an experience which allowed him to observe important front-line operations.

During the review, Sir Charles found many areas where Cathay's existing safety procedures were world-class, and that there is a great deal that we do well or very well. Seventy deliverable action points were collated from the Haddon-Cave safety review, covering a range of issues such as operational, technical, organisational, management, planning, risks, co-ordination between departments, staff development and culture. A director was assigned with the responsibility of oversight to each of the actions. One action point that was addressed was the upgrade of the Head of Corporate Safety to General Manager Corporate Safety on 1 January 2012 to reflect the importance of safety within the airline. So far, we have actioned and closed over 80% of those seventy action points. Work will continue until all 100% have been addressed.

3 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 2013, 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 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 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.

In 2013, the FRMS continued to mature by increasing training, improving documentation, enhancing the use of our fatigue modelling software and increasing internal and external communication.

With regards to training, staff involved in safety investigations were trained to identify fatigue as a potential contributory factor and utilise the expertise of the Assistant Airline Safety Manager – FRMS when this is the case. The Flight Crew Fatigue Training Course was also updated, providing crew with updated training on sleep, fatigue, fatigue countermeasures and the CX FRMS.

A revised Air Safety Report – Fatigue (ASR-F) was issued, the key enhancement of which was simplifying and streamlining the data collected via the form. A fillable PDF version of this ASR-F was issued, enabling crew to complete the form on a computer or tablet and submit it electronically. The key enhancements included increased availability to crew, faster and more secure transmission to CSD, and increased data accuracy.

Fatigue software (FAST) continues to be used proactively to model new roster patterns and potential mitigations before they appear in the rosters. Fatigue related safety risks were identified via fatigue reporting, and extensive FAST analysis and changes were made to rostering practices to mitigate these risks.

The FRMS section of the CSD Operations Manual was revised to reflect enhanced FRMS policies and procedures.

Tailored crew communications continued via the FRMS Bulletin – a regular newsletter to update crew on FRMS activities were issued in May and December and articles in the May and September issues of Kai Talk, the CX Flight Safety Journal on napping, debunking fatigue myths and explaining the data driven nature of the FRMS.

Cathay Pacific's FRMS experience is much sought after by industry groups. In 2013, CX continued to serve on the International Air Transport Association (IATA) FRMS Taskforce and on a panel at 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 2014 and for many years to come.

Dragonair continued to implement the KA FRMS in 2013. The FRMS is fully incorporated into Dragonair's SMS and serves to complement the company-approved AFTLS. The Cockpit Fatigue Report was updated to allow crew to provide more information. Reporting of fatigue increased slightly throughout 2013 and changes were made to rostering to address issues identified via fatigue reporting. Regular issues of the 'FRMS Newsletter to Pilots' keep flight crew informed on the KA FRMS. KA will commence roster analysis using the FAST fatigue software in 2014.

4 Emergency Response System

In terms of emergency response, the Cathay Pacific Crisis Management Centre is prepared to manage an emergency or accident event involving CX aircraft anywhere around the world, should the need arise. In such situations, the Emergency Plan takes immediate effect and triggers the assembly of the Crisis Management Team. This activates a central telephone enquiry centre, the Family Call Centre, where phone lines are on standby 24 hours to link up calls from any outport. These can be accessed by the public to ensure information is disseminated immediately to passengers and their families involved in an incident.

Volunteers from the Care Team are also on hand to offer humanitarian support to passengers and their families during and after a crisis, including making arrangements for travel, accommodation, financial and referral services. The team now comprises approximately 650 members worldwide, taking advantage of the many languages and cultures in the network. Before being certified, each team member receives two days of intensive training, which is led by the company staff psychologist and emergency response specialists.



Care team training exercise



A new Incident Management protocol was added in 2012 enabling all incidents to be classified and responded to with the same, scalable Incident Management Team. All ports in the Group participated in at least one emergency event simulation over the 24-month period ending in 2013, testing their local response plans.

The Customer & Commercial Control (CCC) team was created in 2011 to provide a coordinated response during disruptions, helping to better manage customers' experience. They also provide support and consistency across the network and outports. Where the Integrated Operations Centre (IOC) tends to look at operational issues such as crew rostering, engineering and flight planning, the CCC is dedicated to focussing on the passenger experience, such as passenger protection and hotel arrangements.



Handling disruptions at the Hong Kong International Airport

5 Safety Occurrences

One of Cathay Pacific's safety goals is zero accidents and zero 'high risk' incidents. In 2013, there were no events classified as an accident, which was the same as in 2012. There were eight 'high risk' safety incidents in 2013, compared to one in 2012. Five of these concerned cargo issues, loading or load integrity on the freighter fleet. One involved the collapse of an airport passenger bridge at the Hong Kong International Airport. Of the remaining two, one involved a "near miss" with a military aircraft/drone in Chinese airspace, and the other a passenger attempting to carry a large number of lithium batteries in a checked-in suitcase from Hong Kong.

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, to prevent the carriage of lithium batteries in checked baggage, airport security targeted certain flights for increased baggage screening. This resulted in several shipments of batteries being discovered, off loaded, confiscated and the person responsible warned about their conduct.

There were 0.64 'moderate risk' safety incidents per 1,000 sectors in 2013, a reduction from 0.72 events/1,000 sectors in 2012. The majority of these were cargo/ramp related events on the ground, which in part are the result of a maturing reporting culture. CSD view any increase in reporting as a healthy positive indicator of a safety culture, where staff feel comfortable reporting to the company in order to facilitate safety actions. It demonstrates an excellent pro-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.

6 Health and Safety

Passenger Safety

In 2013, Cathay Pacific and Dragonair flew approximately a combined 30 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 was one staff fatality and zero serious work-related injuries in 2013. A Cathay Pacific employee was fatally injured while working on the ramp at JFK Airport, New York, in the United States. The year saw work advancing on Occupational Health & Safety (OHS) for all staff groups, with a focus on manual handling.

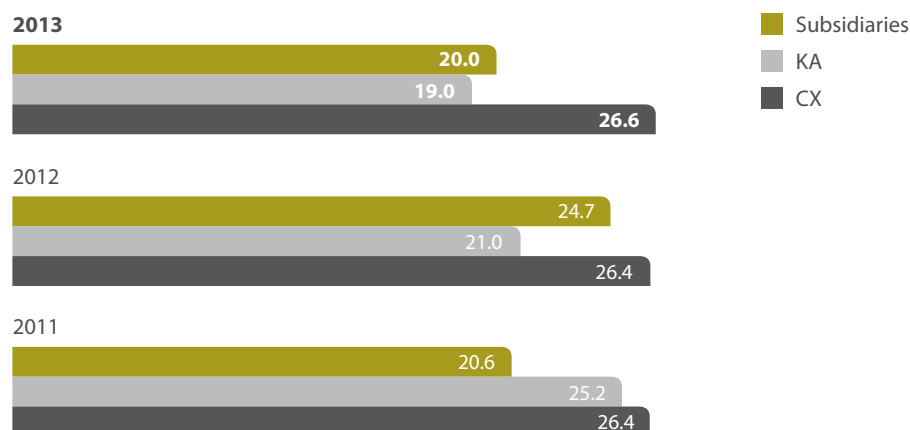
One staff group that continually needs attention as a consequence of the specialist working environment are our cabin crew. Therefore, the Inflight Services Department (ISD) employs an Assistant Manager Inflight Safety and Standards, who is an Occupational Specialist to ensure OHS principles are continuously applied and considered in training and policy development within ISD. ISD has also actively engaged all its Inflight Service Managers (ISM's) through an annual Inflight Service Managers Forum, training them on how their leadership and supervisory role can further reduce cabin injuries.

All new joining crew complete an e-learning module related to OHS as part of their induction training and an annual half-day training session on manual handling skills. ISD regularly issues internal Cabin Crew Safety Newsletters to all cabin crew, which has monthly safety and OHS updates and communications to refresh and share important safety information.

As a result of the work to improve OHS and reduce crew and staff injury, the overall Lost Time Injury Frequency Rate (LTIFR) has stabilised following a slight reduction. In 2013, we conducted a safety campaign called “Think Safe” which is our injury preventive initiative for cabin crew handling passenger’s baggage. Our cabin crew are not encouraged to handle passenger’s baggage for OHS reasons. However, should they be required to assist passengers with special needs (such as passengers who are frail or infirm, the elderly, minors travelling alone and passengers travelling with infants or small children), they should always assess the weight of the baggage by conducting a “lift check” before any manual handling. If the weight of the baggage is beyond their capacity, they should always seek assistance from a fellow cabin crew or try an alternative such as breaking the load, or having the baggage offloaded to the cargo hold. It is important that our cabin crew look after themselves whilst providing excellent service. More intervention to drive injuries lower is planned for 2014.

We continue to work closely with our work injury rehabilitation provider to better manage any injuries that occur, and to better understand the reasons for any injury. We also continue to take steps to minimise the amount of excess baggage being brought into the aircraft cabin and educate our customers on the problems that can be caused by excess cabin baggage.

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 outposts.

Ground Transportation

Our parent company, Swire Pacific Limited, issued a Transportation Safety Policy in 2013 to protect staff when travelling on company transport. It is applicable to staff and crew buses operated by Hong Kong Airport Services (HAS), a Cathay Pacific subsidiary, as well as the buses provided by our contractor, Kwoon Chung Limited. The policy also applies to crew transport in outstations. It has been adopted by Cathay Pacific, and communicated to our Airline Purchasing Department and local managers, who will ensure that it is included in all contracts. The policy includes maintenance and driver standards, prohibits smoking and consumption of alcohol, and encourages all staff to wear seatbelts whenever travelling.

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 work place 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.

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 International Air Transport Association (IATA), the World Health Organisation and local governmental health agencies. 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 steps taken as appropriate. We have a periodic schedule to test the water supply (in both water heaters and tanks) as well as the air quality in our headquarter buildings.

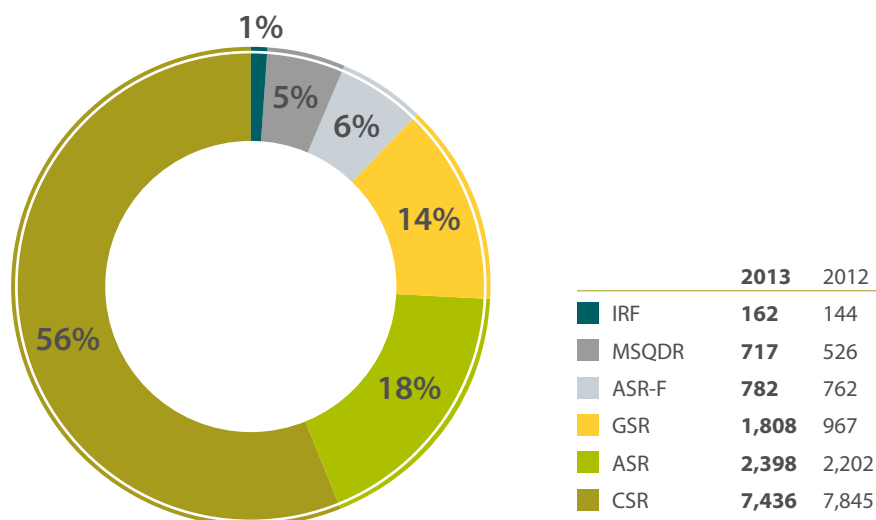
Indoor Air Quality

We spend more than 70% of our time at homes, in offices and other indoor environment. 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, 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' 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.

Safety Focus 2013 (%)



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.

7 Cathay Pacific Safety Performance Targets

Achievements Against CX Safety Performance Targets

Key Performance Indicators (KPI) (2013)

	Target	Actual
Accidents	Zero	Zero
High Risk or Severe Incidents	Zero	8
Moderate Risk Incidents	Below 1/1,000 sectors	0.64/1,000
IATA Operational Safety Audit (IOSA)	Maintain 100% conformance	IOSA renewed in 2012
Regulatory Report Rates	Below 4/1,000 flights	4.6/1,000
Line Operational Safety Audit (LOSA)	Every 4 years	Completed June 2013
Simulate an Emergency Response	Each port every 24 months	Yes