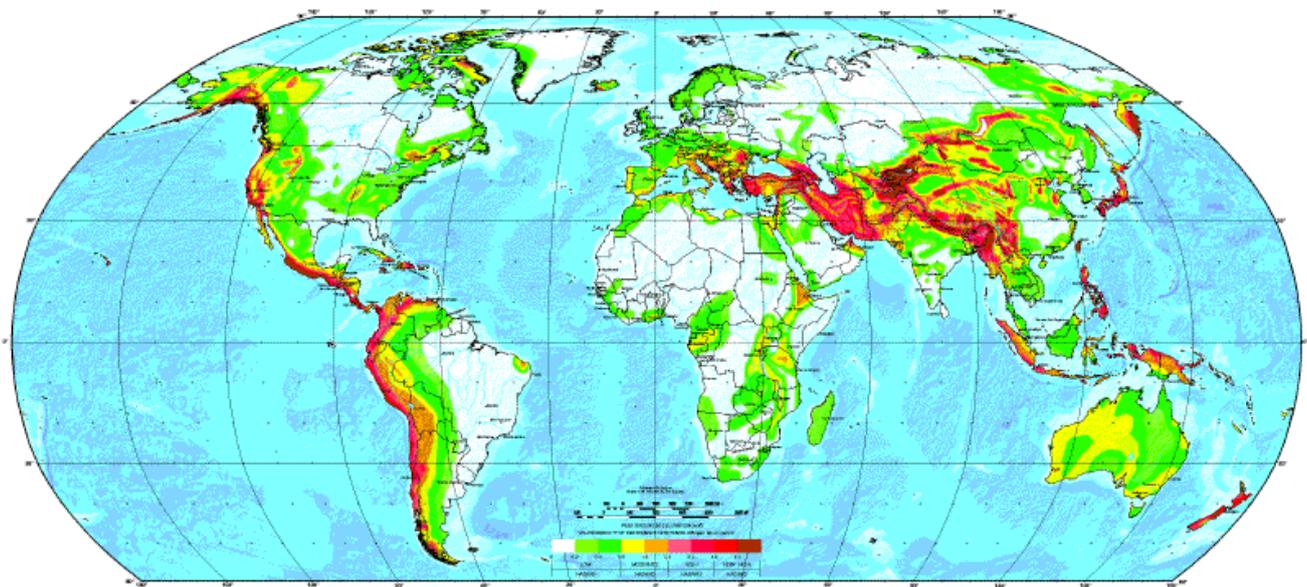


# Earthquakes

## Background

Earthquakes strike without warning, making advance planning important in order to mitigate risks to life and property. This document outlines pre-emptive measures business travellers, expatriate staff and managers can take in order to reduce the impact of an earthquake. It also addresses what to do during and after an earthquake.

## GLOBAL SEISMIC HAZARD MAP



Source: Global Seismic Hazard Assessment Program (GSHAP)

## Risks

The main risk during an earthquake is injury caused by collapsing buildings, falling objects and debris. Earthquakes also pose a number of threats after they have occurred; these include building instability, fires, gas leaks and exposed or otherwise damaged electrical wiring. The event can also trigger tsunamis and landslides. Damaged sewers and water pipes can contaminate water supply, resulting in an increased spread of disease. Damage to infrastructure can continue to have an impact long after an earthquake has occurred; power and telecommunications failures, damaged/closed roads; cancelled or oversubscribed public transport services; and over-stretched emergency services should be anticipated. The level of threat posed by an earthquake is usually compounded by aftershocks, which can be of high magnitude and have significant impact on already damaged infrastructure.

High-impact natural disasters, or those occurring in impoverished or high risk environments, increase the risk of looting and opportunistic crime. In addition, an absence of or delay in the delivery of government aid can lead to localised bouts civil unrest. Bouts of unrest, looting and other unlawful activity carries with it a significant risk of clashes with security forces attempting to reassert control. In already fragile security environments, where the security forces are unable to cope with the scale of the disaster, a severe earthquake can prompt a total breakdown in law and order.

## Preparedness

### Travellers and Expatriates

- Take time to ensure you and your dependents know what to do in the event of an earthquake. Personnel in high risk zones should consider practicing what to do when an earthquake occurs. Personnel with young dependents resident in high risk zones should practice reacting to an earthquake regularly.
- Most casualties are caused by falling objects and collapsing building materials. Eliminate hazards in accommodation/offices; bolt/strap bookcases, water tanks (use straps for tanks), cupboards, shutters, heavy mirrors and pictures etc to walls. Make sure cupboards have strong latches. Ensure electricity panels and wires, heaters, boilers and furnaces are secured.
- Identify where you could go if you need alternative accommodation or are told by the authorities to evacuate. Choose several alternative locations; these may include friends' or relatives' homes in another town, a public shelter, or hotels. Program the contact telephone numbers of these places into your mobile phone. Ensure you know how to get to your pre-identified accommodation and be aware that you may need to take alternative routes if major roads are closed or congested.
- Prepare a grab bag to take with you in the event a move at short-notice is required. The grab bag should be easily portable and include the following:
  - torch/flashlight with extra batteries;
  - first aid kit, including essential prescription medicines;
  - bottled water and dry snack foods;
  - battery-operated or wind up radio;
  - spare car keys, a road map and directions to reach your alternative accommodation;
  - a small amount of cash (small denomination bills);
  - photocopies of essential documents in a watertight container or bag (these may include passport, visa, driver's license, identity/social security card, list of important phone numbers; insurance policies, proof of residence, birth and marriage certificates, etc.);
  - knife/multi-tool;
  - whistle.
- If resident in a high risk zone, identify a relative with whom you and your dependents can 'check-in' and confirm well-being if you are not together when the earthquake occurs. Where applicable, ensure you are familiar with your company's check-in procedure.
- All forward planning should cater for the possibility of shortages of power, accommodation and transportation as well as communications difficulties.

### Managers

- Companies should ensure that corporate and local evacuation plans are in place, and disseminated to all relevant personnel. Plans should be reviewed for relevance and tested regularly. Companies should consider the extent of their obligations in the event of an evacuation to employee's dependents, and to local-national staff in foreign countries of operation.
- Companies should ensure that members of the corporate crisis management team are identified and a team notification procedure is in place and tested regularly. Responsibilities and information flows within the team should be clearly defined.
- Companies should ensure crisis management and business continuity plans are in place. These should clearly define decision-making responsibility and cater for the possibility of an earthquake affecting multiple members of staff and physical assets. Plans should clearly identify information flows between the crisis management team and company employees and should be kept up-to-date, reviewed regularly and disseminated to all relevant personnel.

- Companies should consider how they would account for large numbers of staff in the event of a major incident. Consideration should also be given to how time-critical security information can be disseminated to personnel, no matter where they are in the country (e.g. at site, at home, or while in transit).
- Management should establish the feasibility of emergency medical evacuation from all areas of operation, and ensure that medical and travel insurance is kept up-to-date for all personnel.
- Where relevant managers should ensure that personnel receive a briefing on the potential risks, earthquake preparedness and what to do in the event of an earthquake occurring. Staff should also be briefed on the available corporate security and medical support and its limitations. Business travellers should receive briefings as well as resident members of staff. Managers may wish to consider providing formal training; this might include muster drills, first aid, and the use of emergency equipment.

### **During an Earthquake**

- If you are indoors, drop under a sturdy table. Hold on, and protect your eyes with your arms. If there is no sturdy table, drop next to an interior wall and cover your head with your arms. Avoid areas close to windows and large mirrors where glass could shatter. Leave your place of shelter only when the shaking has stopped.
- If you are outdoors, drop to the ground, curl into a ball and cover your eyes with your arms. Where possible lie in a place away from buildings, large trees, overpasses, bridges and telephone/electrical lines.
- If you are in a car, slow down and stop in a clear not overhung by buildings, trees or telephone/power lines. Avoid stopping on bridges or in tunnels. Remain inside the vehicle until the shaking has stopped.
- If you find yourself trapped underneath debris, tap on a pipe or a wall or use a whistle to help rescuers locate you.

### **After an Earthquake**

#### **Expatriates and Travellers in Affected Areas**

- Anticipate aftershocks; these are a normal and expected occurrence. While they are usually less powerful than the initial quake, they can be strong enough to cause further damage to already weakened structures.
- Be aware of the risk of tsunamis occurring in coastal areas. If on the seafront, move to higher ground when the shaking has stopped. Although tsunami warnings are routinely issued and frequently retracted, take all warnings seriously.
- Be aware gas leaks may have occurred; during a blackout only use a torch/flashlight for emergency lighting – never use candles, matches or lighters. Turn off the building's gas supply.
- Turn off electrical equipment you were using when the power went out. If you use a generator, connect equipment you want to power directly to the outlets on the generator. Never connect a generator to a building's electrical supply.
- When power comes back, do not operate light switches if you suspect there has been a gas leak. Gas, electricity and water supplies to your home should be certified as safe by an accredited professional prior to use.
- Be alert to dangers posed by structural damage to buildings and bridges.
- Monitor radio for local and national developments.
- If undertaking road travel be aware that routes may be blocked by debris or subject to closure by the authorities with little or no notice. Ensure that your vehicle is appropriate for the terrain, and always carry adequate communications systems, full spares, and enough fuel to complete your return journey. Overland travel in areas where there is little or no infrastructure, or where there is a high risk of crime or terrorism may require stringent journey planning and management.

## Planning Travel into Effected Areas

- Following a high impact earthquake personnel should carefully consider their need to travel to the affected area given the operational difficulties they are likely to encounter. Travellers should liaise closely with local sources prior to making a decision to deploy, and travel should only be undertaken with careful forward planning.
- Forward planning should cater for a likely shortage of power, basic supplies (including food, water and fuel), accommodation and transportation as well as communication difficulties. As far as possible travellers should aim to be self-sufficient. Personnel should ensure that they have adequate back-up communications systems in place should landline/mobile/internet networks fail.
- Be aware that access to medical services may be limited or non-existent. Full medical kits should be taken. Travellers should consult their medical provider prior to travel regarding appropriate vaccinations and the health/medical challenges posed by deployment to the area.
- Travellers should ensure that they are fully briefed on the security situation prior to deployment, and necessary mitigating measures. Be aware that the security force sensitivities may be heightened; treat members of the security forces you encounter with patience and respect.
- Personnel should register with their embassy and ensure that adequate information sources are in place prior to deployment. In severely affected areas this should include access to and close liaison with international and local sources of information and an ability to verify the accuracy of information received.
- Reconfirm flight bookings and continue to liaise closely with your airline; airports may be closed if damage has occurred to the airport buildings, infrastructure or runway and civilian flights may be cancelled to allow military or aid flights to land.

## Managers

- Account for all local employees, travellers and expatriate staff. Provide assistance where possible by activating support to staff who require medical or other assistance. Managers should not rely on support from local emergency services as these may be overstretched.
- Managers should activate the crisis management team if necessary, and review evacuation and business continuity planning. Consider whether evacuation of staff from effected areas is necessary – any evacuation should only be undertaken with careful security planning.
- If evacuation is not necessary, managers may wish to consider an ordered withdrawal of non-essential personnel from the area until operational difficulties have eased. Consider whether a temporary relocation of staff and operations to a safer location within the country or to a neighbouring country is feasible.
- Ensure that offices, facilities and corporate accommodation is secured. Arrange an audit of structural damage and safety checks to gas, water and power supplies.
- Managers should establish a travel policy to co-ordinate travel to effected areas. Prior to deployment, personnel should receive security and travel briefings on potential medical, security and logistical difficulties. Personnel should know what to do in the event of aftershocks. Staff should also be briefed on the available corporate security and medical support and its limitations.

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