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SCHOOL OF PUBLIC HEALTH

International Hazard Datasheet on Occupation

Airline Pilot

What is a Hazard Datasheet on Occupation?

This datasheet is one of the international Datasheets on Occupations. It is intended for those professionally concerned with health and safety at work: occupational physicians and nurses, safety engineers, hygienists, education and information specialists, inspectors, employers' representatives, workers' representatives, safety officers and other competent persons.

This datasheet lists, in a standard format, different hazards to which airline pilot may be exposed in the course of their normal work. This datasheet is a source of information rather than advice. With the knowledge of what causes injuries and diseases, is easier to design and implement suitable measures towards prevention.

Who is an airline pilot?

A professional, licensed pilot who is responsible for flying and navigating the flight of a fixed winged aircraft, single or multi-engine on scheduled or unscheduled air carrier routes for transport of passengers, mail, or freight, or for other commercial purposes, during which if designated pilot in control (captain) serves as the legal representative of the aircraft owner and has the responsibility for the safety of the aircraft, the passengers and other crew members whether commercial or airline pilot.

What is dangerous about this job?

- Exposure to poor cabin air quality and reduced in-cabin oxygen concentration;
- Exposure to noise and ionizing non-ionizing radiation (galactic cosmic radiation, energetic solar-article radiation and in-flight radiation as sources);
- Exposure to increase ozone concentration with increased altitude;
- Exposure to in-cabin and cockpit low humidity which may result in dehydration;
- Prolonged sitting and multitasking;
- Heavy workload base on either task, ergonomic layout, hours of duty or other factors that may arise during the flight such as meteorological conditions at point of departure, en route and at the destination, quality and quantity of radio communications;
- Fatigue may result due to long hours of flight;
- Less time for recovery from fatigue due to length of duty periods, amount of flights per period and reserve duty periods;
- Psychological stress from fear of hijacking, bombs and attack on aircrafts;
- Rarely catastrophic accidents due to defective equipment design or equipment failure, human error/

Hazards related to this job

Accidental Hazards 	Accident/crash due to defective equipment design or equipment failure	1
	Accident/crash due to human health failure, e.g. sudden death due to myocardial infarction, epileptic fit or cardiac syncope	2
	Crash due to pilot inexperience or excessive use of alcohol and/or illegal drug use	3
	Transportation of hazardous materials which may cause accident(s)	4
Physical Hazards 	Exposure to ionizing and non-ionizing radiation cosmic and energetic solar and in-flight radiation	5 6
	Exposure to very loud noise from aircraft engine	7
	Potential injury of the back and spinal column from prolonged sitting and multitasking	8
	Exposure to extremely low in-cabin humidity that leads to dry air and likelihood of dehydration and dryness of the eyes, nose, and throat	9
	Motion sickness	10
Chemical Hazards 	Reduced oxygen concentration in breathing air within cabin and poor air quality due to chemical contaminants.	11
	Exposure to high level of ozone with increased altitude.	6 12
Biological Hazards 	Risk of respiratory infections, e.g., colds and tuberculosis, due to close confinement for long periods of time	11 13
	Exposure to infectious diseases, e.g. malaria, from frequent travel to tropical locations	14
Ergonomic, Psychosocial and Organizational Factors 	Stress from fear of hijacking	4
	Ergonomic conditions, confined spaces in the cockpit	8
	Potential injury of the back and spinal column from prolonged sitting and multitasking	8
	Time/shift adaptation for long-distance flying and sudden climatic changes by crossing time zones; circadian rhythms.	15

Preventive measures

1	Careful and thorough investigation of accidents and incidents to improve aircraft development and manufacture.
2	Thorough and regular maintenance of aircrafts and getting old aircrafts off fleet.
3	Careful personnel selection, regular medical examinations, and routine monitor of flight scheduling practices by medical personnel to prevent fatigue-related incidents and accidents.
4	Additional restriction on carriage of hazardous materials by air and increased training of crew members, shippers, and loaders to create more awareness.
5	Reducing monthly and yearly flight time and/or selecting flight that flow at lower altitude, and maximizing the distance from the source of in-flight radiation.
6	Proper monitoring with reliable equipment.
7	Improving the aircraft insulation and the use of ear protection where necessary
8	Redesigning the cockpit to allow for more flexibility, reduction in tasking, and increase in cabin space.
9	Avoid dehydration with adequate intake of water and juices.
10	Sitting towards the front or by the wings of the aircraft or flying more spacious aircraft are some of the preventive measures.
11	Increase airflow and air quality assessment.
12	Avoid certain routes especially in the spring when ozone level usually increases.
13	Be up to date in routine and traveler’s immunizations.
14	Routine disinfection/disinfestations of the aircraft the aircraft and the use of malaria chemoprophylaxis when on flight to the tropics.
15	Sitting towards the front or by the wings of the aircraft or flying more spacious aircraft are some of the preventive measures.

Specialized Information

Synonyms	Airline pilot, commercial pilot, co-pilot, flight engineer, second co-pilot, airline captain, Airline Pilot (Captain), airline transport pilot, captain, check airman, ,commuter pilot, first officer, pilot
Definitions and/or description	Work as part of a flight team with other crewmembers, especially during takeoffs and landings. Use instrumentation to guide flights when visibility is poor. Starts engines, operates, controls, and pilots airplane to transport passengers, mail, or freight, adhering to flight plan and regulations and procedures. Obtains and reviews data, such as load weight, fuel supply, weather conditions, and flight schedule. Plots flight pattern and files flight plan with appropriate officials. Orders changes in fuel supply, load, route, or schedule to ensure safety of flight. Conducts preflight checks and reads gauges to verify that fluids and pressure are at prescribed levels. Operates radio equipment, and contacts control tower for information on takeoff clearance, and arrival instructions and other necessary information. Coordinates flight activities with ground-crew and air-traffic control, and informs crewmembers of flight and test procedures. Holds commercial pilot's license issued by Federal Aviation Administration. At specified heights, conducts in-flight tests and evaluations, in all types of weather to determine receptivity and other characteristics of equipment and systems. Logs information, such as flight time, altitude flown, and fuel consumption. Monitor engine operation, fuel consumption, and functioning of aircraft systems during flights. Inspect aircraft for defects and malfunctions, according to pre-flight checklists
Related and specific occupations	Airline pilot, commercial pilot, co-pilot, flight engineer, second co-pilot, pilot, airline captain, Airline Pilot (Captain), airline transport pilot, captain, check airman, , commuter pilot, first officer, pilot
Tasks	Working; using; guiding; starting; operating; controlling; piloting; transporting; adhering; obtaining; reviewing; plotting; filing; ordering; conducting; verifying; reading; operating; contacting; determining; coordinating; informing; holding; logging; planning; formulating; testing; preparing; giving; monitoring; inspecting
Primary equipment used	Aircraft communication systems (Digital communications display units DCDU; High frequency HF radio communication systems; On-board intercom systems; Ultra high frequency UHF radio communication systems). Aircraft guidance systems (Automatic direction finder ADF radio systems; Distance measuring equipment DME; Satellite-based navigation and guidance systems; Very high frequency VHF direction finders). Aircraft hydraulic systems (Hydraulic actuators; Hydraulic control systems; Hydraulic pressure regulators). Aircraft oxygen equipment (Continuous flow emergency oxygen systems; Diluter demand emergency oxygen systems; Passenger oxygen control systems, Pressure demand emergency oxygen systems). Flight computer systems (Aircraft data loaders; Autopilot systems; Data load selectors; Flight database systems)
Workplaces where the occupation is common	Aircrafts in the airports and while flying on air

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