FINAL REPORT

AAIU Synoptic Report No: 2004-013
AAIU File No: 2002/0048
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In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Accidents, Mr Kevin Humphreys, carried out a Field Investigation into this occurrence and prepared a Synoptic Report.

Aircraft Type and Registration:	Boeing B737-800, EI-CSZ	
No. and Type of Engines:	2 x CFM 56 –7B	
Aircraft Serial Number:	32780	
Year of Manufacture:	16 July 2002	
Date and Time (UTC):	13 September 2002 @ 14.30 hrs	
Location:	Charleroi Airport, Brussels South (CRL) Belgium	
Type of Flight:	Scheduled Public Transport	
Persons on Board:	Crew - 6	Passengers - 137
Injuries:	Crew - 1	Passengers - Nil
Nature of Damage:	Nil	
Commander's Licence:	Irish ATPL	
Commander's Age:	Male, aged 57 years	
Commander's Flying Experience:	19,500 hours of which 15,500 were on type	

SYNOPSIS

The aircraft departed Charleroi Airport on a scheduled flight to Stanstead, UK. Shortly after take off the First Officer noted that the Captain had leaned to one side and did not respond to prompting. Realising that the Captain was incapacitated the First Officer advised Brussels ATC that he had a pilot incapacitation problem and requested a return to the departure airfield, Charleroi. An Emergency was declared.

The No. 1 Cabin Crew Member (CCM) (1) was summoned to the cockpit and put a therapeutic oxygen mask on the unconscious Captain. It appeared that the Captain was lifeless. The aircraft returned immediately and landed safely at Charleroi. A husband and wife medical doctor team on board the aircraft attempted to revive the Captain. Eventually with the aid of the airport and Local Authority Emergency Services, the Captain responded to intensive revival efforts and was removed to hospital in a critical condition.

This Report makes three safety recommendations.

FINAL REPORT

NOTIFICATION

This Serious Incident was notified to the Air Accident Investigation Unit (AAIU) by the Irish Aviation Authority (IAA) at 17.30 hrs on 13 September 2002. The Operator furnished additional information on 14 September 2002.

This Serious Incident occurred in Belgium and the AAIU believed that the investigation would be carried out by the Belgian Authorities. Following an approach to the AAIU by the Captain's wife it was established that the Belgian authorities were not carrying out an ICAO Annex 13 type investigation, as the illness of the Captain was from natural causes.

Following a meeting between the Chief Inspector of Air Accidents of the AAIU and the Chief Inspector of Accidents in Belgium, the Chief Inspector of the AAIU decided to carry out an investigation under the provision of S.I. No. 205 of 1997 (Air Navigation Notification and Investigation of Accidents Regulation 1997) to this Serious Incident, and to prepare a Synoptic Report.

1. FACTUAL INFORMATION

1.1 History of the Flight

The Captain of EI-CSZ reported at the normal reporting time for his scheduled flight to Stanstead. His First Officer had not reported due to being delayed in road traffic and had informed the Operator of this. The Captain chatted with the cabin crew and made some telephone calls outside the crew and operations area and seemed to be in good form. A First Officer, who had reported for his first line flight following his line check, was asked to change duties and act as co-pilot on the Charleroi-Stanstead flight instead.

The Captain was the Pilot Flying (PF) and the aircraft departed Charleroi at 14.27 hrs. The departure weather was recorded as, Wind 060°/12kts, CAVOK. The departure was normal from Runway (RWY) 07. After passing 4,000 ft the Pilot-Non-Flying (PNF) changed frequency to Brussels and was cleared on course to COA (COSTA) VOR. At this time the auto-pilot was engaged to Command (A). As the aircraft approached Flight Level (FL) 080 (approximately 8,000 feet), the PNF looked across at the Captain and noticed that the Captain's head was to one side and that he looked completely white. The PNF tried to speak to the Captain but got no response. He took control of the aircraft and then advised Brussels ATC of pilot incapacitation. He requested a turn back to Charleroi and called the CCM (1). He engaged autopilot to Command (B).

The Cabin Crew had just begun the cabin services and were about to move the trolleys into the aisles when the cabin/cockpit interphone called. The CCM (1) went to the cockpit door which was not locked and began to assist the First Officer. The Captain's seat was moved rearwards and his feet moved clear of the rudder pedals. The CCM (1) tried to make the Captain aware of him, he checked the Captain's eyes and hands, and then asked another CCM (2) to bring an oxygen bottle. The CCM (1) again checked the Captain's eyes which he said were up (rolled back) and that he was not responding to any stimuli. The CCM (1) tried to gain the Captain's attention but to no avail. The CCM (1) noted the flow of oxygen in the tube of the mask on the Captain but was unhappy that the Captain was not responding.

He changed oxygen bottles but there was no visible change in the Captain's condition. The aircraft was now nearing final approach to RWY 25 at Charleroi for an ILS approach to land. The First Officer made a public address announcement to the passengers to the effect that the Captain was unwell and they were returning to Charleroi. He requested the cabin crew to prepare the aircraft for landing. The control tower personnel at Charleroi were aware of the crew incapacitation and alerted the Airport Rescue Services and the Local Authority Rescue Services.

The aircraft landed safely on RWY 25 and, as the nosewheel steering tiller in this aircraft type is on the Captain's side, the First Officer stopped the aircraft on the runway and shutdown both engines at 14.44 hrs. The CCM (1) made a public announcement for a doctor and a husband and wife team came forward to the cockpit. The male doctor entered the cockpit and the First Officer asked for assistance. The doctor opinioned that the Captain was dead but that he should be removed from his seat and stretched out on the aircraft floor.

The doctor furnished the Investigation with a written account of the event in French. This report was translated by the translation unit of the Irish Department of Foreign Affairs. The report states inter alia:

*"A trained surgeon and a former accident and emergency physician, I cleared the respiratory tract and began mouth-to-mouth resuscitation while my wife carried out cardiac massage. The pilot was not in complete mydriasis but cardio-respiratory arrest was complete. Very soon we had the backup of two firemen who were able to replace my wife for the massage. They had an ambu (*bag*) and I was then able to ventilate the patient with a resuscitator bag. A few minutes later, the Mobile Accident Unit arrived and the resuscitation doctor recognised me immediately because he had been a student doctor at the Soignies surgical unit where I worked and we continued resuscitation together. The pilot was intubated and I continued ventilation with a resuscitator bag on the intubated patient, my wife assisted with putting on a drip, the firemen and nurses took turns for the cardiac massage and the resuscitation after injecting the appropriate drugs starting with attempts at defibrillation. The fifth or sixth time was successful. The respirator could be plugged in and evacuation envisaged. The whole procedure lasted a good 30 minutes.*

The following are my comments and estimates.

I estimated at six to eight minutes the time which elapsed between the pilot's attack and our initial resuscitation manoeuvres. I estimated at three minutes the backup obtained from the two firemen and at five minutes the backup of the Mobile Accident Unit. At no time was the pilot in absolute mydriasis. Six to eight minutes of cerebral anoxia is a long time and inevitably leaves marks. It is a pity that we could not have intervened a little sooner but I fully understand that the First Officer had a tremendous responsibility [particularly since he had to carry out the return manoeuvres beside a clinically dead pilot!"

The First Officer and cabin crew were stood down from duty after the event.

The Captain remains seriously ill in a nursing home near his residence in Ireland.

1.1.2 Witness Information

The First Officer and the cabin crew were interviewed by the Investigation at the Operators base at Dublin Airport, the personnel having been brought from their various outstations to Dublin.

The First Officer confirmed to the Investigation that the Captain was the pilot flying and that he had been in good form. This was the First Officer's first line flight with the Operator since his training. He had, however, been a B737 captain himself with a former employer and had a total of 12,000 hours of which 9,500 were on type. When the aircraft had passed 4,000 ft on the departure the Captain engaged autopilot Command (A) between 6,000 ft and 6,500 ft. Whilst climbing the First Officer noticed the Captain's head to one side. The First Officer levelled the aircraft, engaged autopilot Command (B) and called for the cabin attendant. He then informed ATC and turned back for Charleroi. He said the Captain's feet were not on the rudder pedals and that the Captain posed no threat to the controllability of the aircraft.

The CCM (1), who put the portable oxygen on the Captain, estimated in interview that the Captain was receiving oxygen within 30 to 40 seconds of his entering the cockpit when first called. The First Officer estimated that oxygen was applied to the Captain within 1 minute of his collapse. The CCM (2) who assisted CCM (1) estimated that it was perhaps 1 to 1½ minutes.

The CCM (1) decided that, as the aircraft was returning immediately to Charleroi, that attempting to remove the Captain and bring him to the cabin was not practical or feasible and would probably cause distress to the passengers.

The First Officer who was positioning the aircraft for a landing at Charleroi did not call for a doctor as his priority was to get the aircraft back safely on to the ground. He also stated that though the Captain was grey in colour, he was not blue which is the colour he would associate with lack of oxygen. The CCM (1) stated that after the aircraft landed, and the medical attention was given by the doctor to the Captain, he was breathing and moving.

The Investigation was informed by several witnesses that the Captain was having some animated telephone calls whilst awaiting the arrival of his co-pilot, outside the operations office.

The Investigation has established that the Captain telephoned a colleague in operations outlining some difficulties that he had concerning his terms and conditions of employment with the company. He also spoke to his wife about these matters. Both the Operations Officer and the Captian's wife confirmed to the Investigation that he had taken these matters routinely and that he was not angry or frustrated before the flight merely disappointed and somewhat annoyed.

1.1.3 Flightcrew Flight/Duty Time

1.1.3.1 Captain

Flight time last 90 days: 238.33 hours
Days off last 90 days: 32 days
Flight Time last 28 days: 81.31 hours
Days off last 28 days: 10 days

Previous Duty Period ended 20.32 hrs on 12 September 2002
Duty Period began at 13.10 hrs on 13 September 2002.

1.1.3.2 First Officer

Flight time last 90 days: 188.01 hours
Days off last 90 days: 35 days
Flight Time last 28 days: 94.31 hours
Days off last 28 days: 11 days

Previous Duty Period ended 20.57 hrs on 12 September 2002
Duty Period began at 13.10 hrs on 13 September 2002

1.2 Flight Recorders

1.2.1 Cockpit Voice Recorder

The contents of the CVR were not available to the Investigation.

When the AAIU launched an investigation into this incident, the aircraft had already returned to service, without removal or downloading of the CVR. Thus the contents of the CVR relating to this incident were over-recorded by the subsequent flights.

CVR's, of the type fitted to EI-CSZ record up to 2 hours of Cockpit Area Microphone (CAM) input. The recording automatically starts when aircraft power is switched on, and continues to do so until aircraft power is switched off. At any time only the last 2 hours of CAM input are retained in the recorder memory. For the CAM data of an accident to be retained, one of the three following actions must be accomplished within 2 hours of aircraft's operation subsequent to the incident.

1. *The CVR circuit breaker must be pulled.*
2. *The aircraft has to be powered down and left in this condition until the CVR is removed and downloaded.*
3. *The CVR is removed from the aircraft.*

As none of these actions were accomplished on EI-CSZ within the 2 hour time frame, the CVR information relating to this incident were over-recorded.

It is quite common for the CVR contents to be unavailable to investigators, for example where either of the crew are incapacitated the relevant contents of the CVR maybe lost or overwritten.

The **AAIU Report 2004-006** (published 20/02/2004) issued the following Safety Recommendation (SR No. 16 of 2004) following a serious incident in Charleroi on 29 November 2002, involving an aircraft of this Operator.

"The Operator should amend Chapter 11 of its Operations Manual, Handling of Accidents and Occurrences, to include advice to aircrew to de-activate the CVR in the post accident/incident situation, in compliance with IAA requirements" **(SR No 16 of 2004).**

The Operator accepted this Safety Recommendation.

1.2.2 Flight Data Recorder

FDR was downloaded by the Operator and concurs with the reconstruction of the flight from the First Officer's account and the information supplied by the Authorities.

1.3 Medical Information

1.3.1 General

Both pilots had valid medical certificates issued in accordance with JAR-FCL-3. Examination of the Captain's medical file indicated that he had been identified some years previously as suffering mild hypertension. For a period of approximately one year, (between 1999-2000), he had an endorsement on his licence to act "as or with a co-pilot". This endorsement was rescinded in August 2000 and he was taking medication for the control of his hypertension up to the time of the incident. The Captain had bi annual medicals with ECG, the last being one month before the incident. He is a non smoker since 1988.

1.3.2 Cardiac Arrest

1.3.2.1 General

According to the American Heart Association, 250,000 people die from sudden cardiac arrest (SCA) every year. In fact, more die from SCA than from breast cancer, prostate cancer, AIDS, house fires, handguns and traffic accidents combined.

When sudden cardiac arrest strikes, the electrical system of the heart short-circuits, causing an abnormal rhythm known as ventricular fibrillation. Shocking the heart – known as defibrillation – is the only way to effectively treat this abnormal heart rhythm. Cardiopulmonary resuscitation (CPR) can buy time for someone in cardiac arrest, but only a defibrillator can deliver a potentially life saving shock.

1.3.2.2 Prior Symptoms

There are risk factors for sudden cardiac arrest, including age (45 and over), smoking, poor diet, and lack of exercise, among others. But the fact is that most SCA victims have never shown any prior symptoms of heart disease. This is true for 50% of the men, and for 63% of the women who die from sudden cardiac arrest. In rare cases, sudden cardiac arrest can also result from accidents such as drowning, electrocution, choking and trauma.

1.3.2.3 The 10-minute Survival Window

For defibrillation to be effective, the electric shock must be delivered within the first few minutes of collapse. In fact, for every minute that goes by without defibrillation, a victim's chance of survival decreases by 7-10%. And after 10 minutes, it is unlikely that the person will survive.

1.4 Organizational and Management Information

Examination of the file of the CCM (1) indicated that there had been an error between the Training Department and the In-flight Services Department in that whilst the CCM had been recognised as suitable and recommended for promotion to CCM (1), he had not carried out the 1 day's training required for upgrade from CCM to CCM (1). One element of this training was pilot incapacitation. Another anomaly was noted in that the CCM had been line checked over a 3 day period on the duties of CCM (1).

The signing off of the Line Check Form indicated to the In-Flight Services Department that he was a qualified CCM (1) and led to his inadvertent rostering as such for the subject flight. Examination of his file indicates that he had carried out successfully his recurrent training the month previous to the serious incident.

The Operator in question has a large fleet of single type aircraft in 2 different versions. It draws its employees from all over the world and recognises that as a result of the differing cultures and backgrounds of its staff that compliance with universal Standard Operating Procedures (SOP) and Standard Emergency Procedures (SEP) is vital for the safe operation of its fleet. In this case it is interesting to note that the six crew members on the day were from five countries, Ireland, Portugal, Belgium, Italy and Sweden.

The Standard Emergency Procedure at the time of this incident is presented as **Appendix A** to this Report. The revised procedure is presented as **Appendix B** to this Report. It is noted that there is no difference in the required action for both procedures.

1.5 Additional Information

1.5.1 The carriage and use of Automatic Emergency Defibrillators (AED) is routine with some air carriers particularly on long haul flights.

The Federal Aviation Administration of the United States of America (FAA) has made new requirements of Part 121 Operating Requirements (Public Transport) carriers with regard to the carriage, training and use of enhanced first aid kits including the training of personnel in the use of AEDS.

The regulations are as follows.

1.5.1.1 Section 121.803, states:

(a) "No person may operate a passenger-carrying airplane under this part unless it is equipped with the emergency medical equipment listed in this section.

(b) Each equipment item listed in this section:

1) Must be inspected regularly in accordance with inspection periods established in the operations specifications to ensure its condition for continued serviceability and immediate readiness to perform its intended emergency purposes;

2) Must be readily accessible to the crew and, with regard to equipment located in the passenger compartment, to passengers;

3) Must be clearly identified and clearly marked to indicate its method of operation; and

4) When carried in a compartment or container, must be carried in a compartment or container marked as to contents and the compartment or container, or the item itself, must be marked as to date of last inspection.

(c) For treatment of injuries, medical events, or minor accidents that might occur during flight time each airplane must have the following equipment that meets the specifications and requirements of Appendix A of this part:

1) Approved first-aid kits.

2) In airplanes for which a flight attendant is required, an approved emergency medical kit.

3) In airplanes for which a flight attendant is required, an approved emergency medical kit as modified effective April 12, 2004.

4) In airplanes for which a flight attendant is required and with a maximum payload capacity of more than 7,500 pounds, an approved automated external defibrillator as of April 12, 2004".

1.5.1.2 Section 121.805, states:

<u>Crew member training for in flight medical events</u>

(a) "Each training program must provide the instruction set forth in this section with respect to each airplane type, model, and configuration, each required crewmember, and each kind of operation conducted, insofar as appropriate for each crewmember and the certificate holder.

(b) Training must provide the following:

1) Instruction in emergency medical event procedures, including coordination among crewmembers.

2) Instruction in the location, function, and intended operation of emergency medical equipment.

3) Instruction to familiarize crewmembers with the content of the emergency medical kit.

4) Instruction to familiarize crewmembers with the content of the emergency medical kit as modified on April 12, 2004.

5) For each flight attendant.

(i) Instruction, to include performance drills, in the proper use of automated external defibrillators.

(ii) Instruction, to include performance drills, in cardiopulmonary resuscitation.

(iii) Recurrent training, to include performance drills, in the proper use of an automated external defibrillators and in cardiopulmonary resuscitation at least once every 24 months.

(c) The crewmember instruction, performance drills, and recurrent training required under this section are not required to be equivalent to the expert level of proficiency attained by professional emergency medical personnel".

2. ANALYSIS

The sudden incapacitation of an airline pilot whilst seated at the controls of his aircraft is a known, if somewhat an uncommon occurrence. It is not unknown for pilots to collapse or die at the controls, see **AAIU Report 1999/019**. Consequently all airlines carry out incapacitation drills accentuating both sudden and insidious incapacitation. The general rule of thumb being that if a Captain or First Officer does not respond to two prompts that he or she is considered to be incapacitated. Such events are generally associated with hypoxia and call for the donning of oxygen masks which are located overhead the pilot's seats.

This particular case of incapacitation was sudden and was quickly recognised by the First Officer. His action of moving the Captain's seat rearwards, alerting ATC, informing the cabin crew, taking command of the aircraft, and returning to land as quickly as possible, was logical, prioritised, effective and commendable.

The action of the cabin crew was appropriate and, in the given situation, was as much as they could do. Some discussion about an event such as this would suggest that medical attention for the Captain should have been the first priority. However, given the stage of the flight, the proximity of the airport, the lack of a defibrillator and the danger posed to the safety of the aircraft and passengers, in trying to extricate the Captain from his seat whilst the aircraft was in the descent and approach phase, negate this view.

It was fortunate, that medical expertise was on board in the form of a husband and wife team and combined with the response of the First Officer, the cabin crew, ATC and the emergency services contributed to an outcome which though bad could have been worse. The medical aspects of this case are notable in that the Captain had high blood pressure and was taking prescribed medication for its control over a period of years.

This medication maintained his blood pressure well within the prescribed limits contained in JAR FCL 3. Civil pilots are obliged to have a medical examination carried out by an approved air medical examiner under the direction, in Ireland, of the Civil Aviation Medical Board, which monitors the Joint Aviations Requirements (JAR-FCL-3) medical requirements for pilot licensing purposes.

Pilots above the age of 40 must have this examination every six months. If the Medical Board so require examinations can be at more frequent intervals, e.g. monthly, in order for the pilot to retain his or her licence. Minimum requirements must be attained in eyesight, hearing, blood test, E.C.G., mobility and general health. However, wavers or endorsements can be granted in the case of eyesight, and medical treatments or conditions.

The Captain in this case had such an endorsement i.e.*"to have corrective lenses available"*.

Where a pilot becomes incapacitated due to the effects of hypoxia, the Standard Operating Procedure for the crew and passengers is to don oxygen masks and for the aircraft to be descended to a lower level where the use of oxygen can be dispensed with. In the case of an incapacitation for a medical reason e.g. heart attack, food poisoning, stroke, diabetes, haemorrhage, whilst the resuscitation of the pilot is desirable, the safe navigation and control of the aircraft must be the primary concern of the surviving crew. In short haul operations such as this case, a descent and landing at the nearest airport is the optimum course of action. If however, the aircraft is in the cruise and the nearest airport is some hours away then obviously all efforts should go towards the resuscitation and comfort of the affected crew member or indeed passenger. In a heart attack case such as this, the requirement to get the heart pumping again is paramount, (only a defibrillator can do this) within a relatively short timeframe.

3. CONCLUSIONS

Findings

3.1 The crew were properly licensed and qualified to carry out the flight and were medically fit in accordance with JAR-FCL-3. The Captain had an endorsement *"to have corrective lenses available"*.

3.2 The Captain suffered cardiac arrest shortly after take off.

3.3 The First Officer carried out the published safety and emergency standard operating procedures for pilot incapacitation.

3.4 The First Officer controlled the aircraft and landed as quickly as possible.

3.5 The cabin crew assisted the First Officer by rendering what assistance they could to the Captain in accordance with the Operators SOP for pilot incapacitation.

3.6 ATC facilitated the rapid return of the aircraft to Charleroi and alerted the appropriate emergency services to render assistance to the Captain.

3.7 The husband and wife medical team provided an excellent response to the on board emergency.

3.8 The Captain responded to intensive resusitation efforts by the Doctors and the Emergency Services, including defibrillation, before he was removed from the aircraft to Hospital.

3.9 The action of the First Officer, the cabin crew, the emergency services, A.T.C., and the doctors on board probably saved the Pilot's life.

3.10 The availability of a defibrillator on board could have improved the on board response to the incapacitation.

3.11 The CCM (1) had not carried out the required 1 day's training for upgrade to CCM (1)

3.12 Lack of co-ordination between the Training Department and the In-flight Service Department permitted the rostering of the CCM as a CCM (1).

3.13 Given the nature of the emergency (pilot incapacitation) the CCM's lack of upgrade training is not considered to be of significance to the assistance provided to the Captain.

3.14 The published Safety and Emergency procedure calls for the use, inter alia of the pilot's oxygen mask, which deploys from overhead his seat.

3.15 The CCM (1) assisting the First Officer in the procedure used portable therapeutic oxygen from the cabin. Given that both systems require that the recipient is breathing, the use of one or the other had no bearing on the outcome, without defibrillation.

4. SAFETY RECOMMENDATIONS

It is recommended that:

4.1. The Operator should review the co-ordination between the Training Department and the In-flight Services Department to ensure that rostered personnel are properly trained and qualified for their specific duties. (**SR 28 of 2004**) **Operators Response:** The Operator has accepted and implemented this recommendation at the Draft Report stage.

4.2 The International Civil Aviation Organisation (ICAO) should make the US FAA proposals with regard to the carriage and use of Automatic External Defibrillators (Section 121.803 as contained in para 1.5.2 of this report) a standard for all carriers under ICAO, Annex 6. (**SR 29 of 2004**)

4.3 The International Civil Aviation Organisation (ICAO) should make the US FAA proposals with regard to the training in the use of Automatic External Defibrillators (Section 121.805 as contained in para 1.5.3 of this report) a standard for all carriers under ICAO Annex 6. (**SR 30 of 2004**)

Appendix A

Pre-Event

ABNORMAL & EMERGENCY PROCEDURES

Information relates to all aircraft.

FLIGHT CREW INCAPACITATION:

1. Remove the pilot from the controls.
2. Ensure seat belt is fastened and shoulder harness is secured.
3. Engage inertia reel lock.
4. Slide seat fully aft, using lever marked H (horizontal).
5. Remove pilot's feet from rudder pedals, cross them behind the yoke.
6. Cross the pilot's arms and secure them behind the shoulder harness.
7. Assist operating pilot.
   The remaining pilot will decide whether or not the incapacitated pilot should be removed from their seat. A competent CSA will be required to read the landing check lists, and should take the first observer, centre, jumpseat. At the pilot's request, the items on the check list should be read clearly. Move on to next item on the check list only after a response to the previous one has been received.
   After a response to the last item, the CSA should say 'check list complete'.
   The pilot will then explain any other assistance required.
8. Administer first-aid.

NOTE: The pilot seat must be returned to the fully upright position before sliding the seat aft.

ADMINISTERING FIRST-AID TO AN INCAPACITATED PILOT:

If oxygen is required, flight crew have their own independent 100% pure oxygen system and face mask located adjacent to their seats. The system is on demand and provided the pilot can breath independently, pure oxygen is provided to the mask if 100% is selected. A constant flow of pure oxygen is available by selecting 'EMERGENCY'.

Appendix B

Post Event

PILOT INCAPACITATION DRILL

1 Remove the pilot from the controls.
2 Ensure seat belt is fastened and shoulder harness is secured.
3 Cross the pilot's arms and secure them behind the shoulder harness.
4 Engage inertia reel lock.
5 Slide seat fully aft.
6 Remove pilot's feet from rudder pedals, cross them behind the yoke.
7 If the pilot is unconscious or is having difficult in breathing.
    Don flight deck 0_2 immediately.
    Check ABCs.
    If no pulse is found, remove pilot from seat with the help of two ABPs and commence CPR immediately at forward of aircraft.
8 If the pilot is conscious assist the operating pilot (the operating pilot may not require any assistance).
    The remaining pilot will decide whether or not the incapacitated pilot should be removed from their seat. A competent CSA will be required to read the landing check lists, and should take the first observer, centre jumpseat. At the pilot's request, the items on the check list should be read clearly. Move on to next item on the check list only after a response to the previous one has been received.
    After a response to the last item, the CSA should say, 'check list complete'.
    The pilot will then explain any other assistance required.
9 Administer first aid.

NOTE: The pilot seat must be returned to the fully upright position before sliding the seat aft.

ADMINISTERING FIRST-AID TO AN INCAPACITATED PILOT

If oxygen is required, flight crew have their own independent 100% pure oxygen system and face mask adjacent to their seats. The system is on demand and provided the pilot can breath independently, pure oxygen is provide to the mask if 100% is selected. A constant flow of pure oxygen is available by selecting **EMERGENCY**.