

# ANNEX A<sup>1</sup>

## Policy and Procedures

This and the other annexes to CAAP 215 provide operators with background information and examples to assist in the writing of procedures for their Operations Manuals. The annexes should be read in conjunction with the 'Explanation of Headings' in the main CAAP 215 document. Operators should tailor the information within the annexes to their specific operational situations, adding any safety critical and additional information as necessary.

### APPENDIX A1

#### How to write Standard Operating Procedures

Standard Operating Procedures (SOPs) take many forms and can be as complex or brief as need be. Procedures should be based on a broad concept of the user's application.

In an aviation context, an operator should develop a process where the key personnel oversee the development of operational policy that directs the operator's functions. These functions include the primary functions of flight and line operations, fleet management and continuing airworthiness control, as well as any functions that support and oversee these operations.

Following the development of policy, the key personnel should develop and implement appropriate policy and procedures into the applicable volumes of the Operations Manual that provide appropriate guidance to operational staff.

This hierarchy of policy and procedure development is the primary mechanism for the development of procedures designed to minimise risk and produce a safe and compliant operation.

#### Considerations

What is the procedure trying to establish?

Who is the target population?

When should the procedure be sequenced?

Where will the procedure be accomplished?

How will the procedure be accomplished?

Why is the procedure required?

The designer of the procedure must list all of the procedure's objectives.

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<sup>1</sup> Please note that the advice relating to security in Appendix A9 has been deleted. Refer see the note on Page 6 of the CAAP.

An example is that many operators SOPs require that a call be made 1 000 feet before assigned altitude. This may be in the context of a multi-crew or single pilot operation. The purpose of this call is to increase the crew/pilot awareness prior to an event. For example, levelling-off:

If not conducted properly an adverse effect will follow (altitude deviation).

The most common call is “one thousand to go”.

The objective of this task is not just to level off, but to level off at an assigned altitude.

Consideration could be given to the two requirements. Some operators have developed a procedure where the pilot flying will verbalise leaving the altitude one thousand feet prior to the assigned altitude. For example: “six thousand for seven thousand”.

Tasks require time, attention and cognitive resources and therefore contribute to workload. The designer should where possible minimise workload and distribute the phases of the tasks in order to avoid high workload activities.

### **Implementing Procedures**

It is important that after a procedure has been developed key personnel review the suitability of the procedure. Trialling a procedure is common practice. Aircraft simulators are an effective way to analyse the effectiveness of a flight crew procedure. Trials limited to a small geographic area are another example.

The procedure must be documented and clearly communicated to the target audience. If procedure changes are just sent as an operation manual amendment with no explanations the implementation rate will be low.

The International Organization for Standardization (ISO) defines the elements of establishing a procedure.

- Policy: Company policy in regard to the subject area, in most cases a general policy statement from the CEO would cover this.
- Purpose: Purpose for procedure or process.
- Scope: The extent or limits of the procedure or process.
- Responsibility: This identifies the person responsible for the procedure or process.
- References: Refers to other documents or manuals required to undertake the procedure or process.
- Records: Identifies any records of forms that need to be completed (e.g. load sheet technical log).
- Process or Procedure: explanation or instructions on how to carry out the task to satisfy the purpose of the process or procedure.

## APPENDIX A2

### Document Control System

The operator requires a management and control system for documentation as part of the Operations Manual process. Key elements of the system should include:

- a means of identifying the version of operational documents
- a distribution process that ensures availability of the current version of applicable Operations Manual volumes
- review and revision processes, as required, to maintain currency of information contained in the manuals
- a method for the retention of documents that permits easy reference and accessibility
- a process for identification and disposal of obsolete documents
- retention and dissemination strategies for documents received from external sources, including manual and documents from ICAO, CASA, Airservices Australia and aircraft and equipment manufacturers.

If the operator uses an electronic system for the management and control of documents, the system must provide for a scheduled back up of files that support the Operations Manual.

Content must:

- be clear, legible and accurately represented; and
- be presented in a usable format that meets the needs of operational personnel.

### Control of operational documents

In practice this means the following processes should occur:

- retention of master copy
- examination and approval prior to issue
- review and revision
- identification of revision status
- retention of revisions for historical purposes
- identification and retention of source materials are identified for historical purposes
- distribution to appropriate operational personnel
- identification and updating of documents of external origin are done as required
- the disposal of obsolete documents.

In practice the control of the Operations Manual should include:

- the assignment of a responsible person to approve contents
- a title page that identifies the document and operational applicability
- a table of contents and applicable sub-parts
- a preface or introduction outlining the general contents of the manual
- a defined distribution process and identification of the recipients
- a record of revisions, both temporary and permanent
- a list of effective pages within the manual
- identification of revised content (commonly a vertical line in a margin).

Best practice means:

- a centrally controlled system to ensure documents conform to a consistent company; standard in accordance with the document philosophy, format and presentation
- daily back-up system of electronic files used to produce the Operations Manual
- the look and feel of electronic records are similar to that of paper
- previous versions of software are retained for retrieval of older documents as required.

## APPENDIX A3

### Example Operations Manual document control system

The (NAME OF COMPANY) Operations Manual is authorised and issued by the Head of Flight Operations.

The instructions, procedures and information contained in the (NAME OF COMPANY) Operations Manual have been devised to ensure safety and standardisation in our procedures. The procedures and requirements contained in this Manual must be adhered to by all (NAME OF COMPANY) Flight Crew.

(NAME OF COMPANY) Flight Crew are also reminded of their obligation to be thoroughly familiar with, and comply with, the *Civil Aviation Act 1988*, *Civil Aviation Safety Regulations 1998*, *Civil Aviation Regulations 1988*, Civil Aviation Orders, Aeronautical Information Publication, Jeppesen Airway Manual and other directives and notices as promulgated by CASA and/or Airservices from time to time.

This (NAME OF COMPANY) Operations Manual is to be read in conjunction with the other volumes of the XYZ Airlines Operations Manual.

The instructions contained in the (NAME OF COMPANY) Operations Manual are to be regarded as mandatory by all crew members.

This document is one of a set of documents that make up the company Operations Manual. Each document in the set has a sponsor nominated for the approval, production, distribution and amendment of the particular document. The Head of Flight Operations is responsible for the control and distribution of this document. To achieve that, the Head of Flight Operations shall ensure all documents reflect the format of the master document and that:

- they are serial numbered and identified as controlled documents
- non-serial numbered documents that may be issued are identified as 'not controlled' and therefore not subject to amendment service
- a master distribution list is maintained showing the recipient of each document and the serial number of the document issued to that person
- copies of the manual, controlled or non-controlled, are reassigned, as appropriate, to new recipients
- all amendments are approved by the sponsor before distribution.

The Head of Flight Operations or his/her delegates are the only people who can authorise revisions to the (NAME OF COMPANY) Operations Manual after such changes have been formally approved by the appropriate committee. Any XYZ Airlines member of staff can initiate amendments to the manual using the Flight Operations Controlled Document Change Request Form attached to this appendix.

The first issue of the (NAME OF COMPANY) Operations Manual is shown in the footer as "Initial Issue"; re-issues are shown as v1.0, v2.0, v3.0 and so on. Subsequent amendments are shown as v1.1, v1.2, v1.3 etc.; or v2.1, v2.2, v2.3 etc. Amendments produced out of the normal amendment cycle are shown as v1.1.1, v1.2.1, v1.3.1 and so on; or v2.1.1, v2.2.1, v2.3.1 etc.

Amendments are marked with revision bars beside the text and summarised in the *Amendment Record Sheet*. The *List of Effective Pages* shows the current version number and issue date of each page in the (NAME OF COMPANY) Operations Manual.

In issuing amendments, the Head of Flight Operations or his/her delegate shall ensure:

- each amendment is identified as an approved document
- adequate instructions are provided for incorporation of the amendments
- each amendment has a sequential number (refer above for details), date of issue, justification and a revised '*List of Effective Pages*'
- a record is maintained of all promulgated amendments
- CASA is supplied with a copy of each amendment.

Incorporation of amendments is the responsibility of each manual holder. Upon receipt of an amendment, the manual holder shall incorporate the amendment in accordance with the instructions and record details of incorporation in the Amendment Record Sheet. Amendments are by page replacement, addition or deletion.

Replace, add or delete pages as instructed in the Delivery Advice. Then complete the table below, indicating the version number and its effective date. The person amending the (NAME OF COMPANY) Operations Manual should write his/her name in the 'Amended by' column, sign the 'Signature' column and record the date on which he/she inserted the updated pages.

**Sample Amendment Record Sheet**

<b>Version Number</b>	<b>Version Effective Date</b>	<b>Amended by</b>	<b>Signature</b>	<b>Date of Insertion</b>
		NB: Add more rows as required.		

### Sample Change Request Form

Use the flight operations department's *Controlled Document Change Request Form* to suggest changes to the (NAME OF COMPANY) Operations Manual. Photocopy the form on the reverse side of this page, and complete and send the copy to the address listed below. Do NOT send the original of this page. Input concerning the structure and layout of this manual or any policies and procedures detailed in it is encouraged. Please send the completed form via internal mail to:

Head of Flight Operations  
XYZ Airlines

**XYZ Flight Operations**  
**Controlled Document Change Request Form**

Member requesting change: .....			
Position: .....			
Member's Phone No.: .....		Member's Fax No.: .....	
Doc. No.: .....		Doc. Name: .....	
Volume: .....	Section: .....	Heading No. / Subsection: .....	Rev. No.: .....
Requested change: .....		(If more space is needed, please attach a change request.) Tick here if a change request is attached : <input type="checkbox"/>	
.....			
.....			
.....			
Reason for change: .....			
.....			
.....			
Notes: .....			
.....			
Signature: .....		Date: ..... / ..... / .....	Form No. : XYZ 150 (2/09)

**Sample List of Effective Pages**

(COMPANY TITLE)

**OPERATIONS MANUAL****CHAPTER 0**

Pg	Version	Date
1	v1.6	30/11/00
2	v1.6	30/11/00
3	v1.6	30/11/00
4	v1.6	30/11/00
5	v1.6	30/11/00
6	v1.6	30/11/00
7	v1.6	30/11/00
8	v1.6	30/11/00
9	v1.6	30/11/00
10	v1.6	30/11/00
11	v1.7	13/08/01
12	v1.7	13/08/01
13	v1.7	13/08/01
14	v1.7	13/08/01
15	v1.7	13/08/01
16	v1.7	13/08/01
17	v1.7	13/08/01
18	v1.7	13/08/01
19	v1.7	13/08/01
20	v1.7	13/08/01
21	v1.7	13/08/01
22	v1.7	13/08/01
23	v1.7	13/08/01
24	v1.7	13/08/01

**1.1 CHAPTER 1**

Pg	Version	Date
i	v1.6	30/11/00
ii	v1.6	30/11/00
1	v1.6	30/11/00
2	v1.6	30/11/00
3	v1.6	30/11/00
4	v1.6	30/11/00
5	v1.6	30/11/00
6	v1.6	30/11/00
7	v1.7	13/08/01
8	v1.6	30/11/00
9	v1.6	30/11/00
10	v1.6	30/11/00
11	v1.6	30/11/00
12	v1.6	30/11/00
13	v1.6	30/11/00
14	v1.6	30/11/00

**CHAPTER 2... etc**



**Sample Operations Manual Distribution Sheet**

(Company Title)

**OPERATIONS MANUAL**

Copy No: \_\_\_\_\_

- Copy No:     1 (show person, position or location)  
                   2 CASA  
                   3 etc.

**AMENDMENT RECORD**

Amendment No.	Part Amended	Amendment Date	Actioned By	Date Actioned

**Note:** Pages other than originals must be given amendment number and date

## Sample Compliance Acknowledgement Sheet

(Company Title)

### OPERATIONS MANUAL

#### COMPLIANCE REQUIREMENT – SIGNATURE SHEET

The instructions, procedures and information contained in this manual have been devised to ensure safety and standardisation in the conduct of (Company Name) operations. They are to be observed by all operating personnel. Personnel are also reminded of their obligation to comply with the *Civil Aviation Act 1988*, Regulations and Orders and such other directives, aeronautical information and notices that CASA and Airservices may publish from time to time.

Where, in the light of operating experience, errors are found in the manual or deficiencies in the manner in which (Company Name) operations are conducted, recommendations for amendment action shall be submitted to the chief pilot.

#### Instructions

1. All flight and operating crew and personnel associated with flight line management must sign this sheet as evidence of having read, understood and agreed to apply the procedures and data contained in this Operations Manual.
2. Each member required to sign must do so at intervals not exceeding six months and when an amendment has been made.

Printed Name	Signature	Date	Printed Name	Signature	Date

## Operations Manual Bulletins

Bulletins are amendments that are issued out of the normal amendment cycle. Bulletins are summarised in the Record of Bulletins table shown below.

The Head of Flight Operations or his /her delegates are the only people who can authorise bulletins to the (NAME OF COMPANY) (Title of Manual) after such changes have been formally approved by the appropriate committee.

Insert bulletin pages facing the page to which they refer. Then complete the Record of Bulletins table below, indicating the bulletin details, title and insertion date. An amendment supersedes bulletins issued during the previous amendment cycle.

**Record of Bulletins**

Bulletin Details			Title of Bulletin	Insertion Date	Removal Date
No.	Chap.	Page			
				/ /	/ /
				/ /	/ /
				/ /	/ /
				/ /	/ /
				/ /	/ /
				/ /	/ /
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## APPENDIX A4

### Supervision of Company Operations

Addressing the points in this appendix should help operators develop suitable instructions on operations supervision for inclusion in their Operations Manual.

#### General

The operator shall establish and maintain a method of supervision of flight operations approved by CASA. The Head of Flight Operations (HFO) is responsible for the overall supervision of flight operations, and as such co-ordinates and supervises the operational departments and appoints their managers. During the HFO's absence, the supervision of the operation must be delegated to a suitable delegate (e.g. Flight Operations Manager, Senior Base Pilot). Supervision requires oversight of company personnel, equipment and operations.

#### Crew licence and qualification validity:

The supervision of licence and qualification validity is ensured by:

- Following up qualifications, licences validity, flight activity, duty and rest time of the crew members and other operations personnel.
- Checking that crew members assigned to fly have a valid medical, flight licence, ratings and endorsements appropriate to company operations.

Each licence entitles its holder to exercise its privilege, as long as it remains valid. It is the holder's responsibility to perform the required checks and tests for revalidation, but the operator's responsibility to confirm that flight crew remain eligible to carry out company operations.

Flight crew qualifications and recency validity should be checked regularly by the person or department in charge of rostering to ensure that qualifications remain valid and to schedule timely training and checking.

Operations personnel competencies are referenced in CAR 208 and CAO 82.3 and 82.5.

Supervision of the competency of operations personnel is achieved by:

- Ensuring that the personnel assigned to, or directly involved in, ground and flight operations are properly instructed and have demonstrated their abilities in their particular duties.
- Ensuring that the personnel can communicate in a common language and that they are fully conversant with those parts of the Operations Manual which pertain to their duties and responsibilities.

#### Monitoring competency

Monitoring of flight crew members is carried out during proficiency and line check flights or simulator sessions by the Chief Pilot, Flight Operations Manager, Training Manager or their delegates, and in some cases by a dedicated Safety Manager.

Monitoring of ground personnel is by appropriate checks conducted by department managers. For certain positions (e.g. dispatchers), a specific licence or qualification ensures the required competence is achieved.

Supervision and monitoring of the competence of operations personnel should be used to adapt their recurrent training.

### **Flight operations supervision - referenced under CAR 216**

Supervision of flight operations is achieved by:

- Ensuring operations comply with the operator's AOC and any associated conditions.
- Ensuring that the aircraft is operated in compliance with the terms of its Certificates of Airworthiness and within the approved limitations contained in its Approved Flight Manual.
- Setting up operational procedures and instructions for all types of operation both on ground and in flight which define duty for ground staff and crew members (contained within the Operations Manual).
- Setting up a checklist system to be used by crew members under normal, abnormal and emergency conditions to ensure that the operating procedures of the Operations Manual are adhered to.
- Checking, analysing and storing flight and maintenance records and pilot and cabin crew reports for the statutory periods.
- Ensuring the Safety Manager and, if necessary, CASA get analysis of flight records showing deviations from the rules set in the Operations Manual, and implementing suitable corrective actions and training programs and issuing relevant Operations Manual Bulletins.

## **APPENDIX A5**

### **Operational Control**

Operational control is the monitoring of the whole operation and the exercise of authority to carry out normal operations and to recover from operational irregularities. It also comprises the exercise of authority over the initiation, continuation, diversion, termination or cancellation of a flight. The required procedures should be defined in the company Operations Manual.

The Head of Flight Operations is legally responsible for establishing all operational policies, procedures, instructions and guidance given in the Operations Manual.

For larger organisations the operational control of individual flights lies initially with the dispatch officer on duty. He or she coordinates with the maintenance department the availability and the status of the aircraft and supervises the progress of the flight preparation.

In larger operations, the PIC becomes responsible for operational control on acceptance of the aircraft from the dispatch officer and the engineering department, in accordance with procedures in the company Operations Manual.

In smaller operations, the PIC has responsibility for operational control, including the preparation and continuation of a flight in accordance with CAR 224 and relevant procedures in the company Operations Manual.

## APPENDIX 6A

### Safety Management System (SMS)

ICAO has mandated that national aviation organisations and operators implement satisfactory safety management systems to deliver a better safety culture and continuing improvements in safety. This is based on the fact that safety is best achieved through strong interwoven systems, rather than individual processes or practices. *CASA is working with industry to embed a safety management system culture in Australian aviation.*

A safety management system shall clearly define lines of safety accountability throughout an operator's organisation, including a direct accountability for safety on the part of senior management.

The framework below includes four components and twelve elements representing the minimum requirements for SMS implementation. The framework should be commensurate with the size of the organisation and the complexity of the services provided.

1. Safety policy and objectives
  - 1.1 Management commitment and responsibility
  - 1.2 Safety accountabilities
  - 1.3 Appointment of key safety personnel
  - 1.4 Coordination of emergency response planning
  - 1.5 SMS documentation
2. Safety risk management
  - 2.1 Hazard identification
  - 2.2 Safety risk assessment and mitigation
3. Safety assurance
  - 3.1 Safety performance monitoring and measurement
  - 3.2 The management of change
  - 3.3 Continuous improvement of the SMS
4. Safety promotion
  - 4.1 Training and education
  - 4.2 Safety communication

Detailed information on developing and administering an SMS is set-out in relevant CAAPs as referenced in the body of CAAP 215.

## APPENDIX A7

### Crew Health Information

Any air crew member should commence flight duty in good physical and mental condition, so that he or she remains fully alert during the assigned duty period to ensure the safety of the flight. The pilot-in-command has an overall responsibility for ensuring that all of the crew is fit for duty, even if a report of sickness is not received.

Flight duty is prohibited when a crew member's capacity for work is reduced because of illness or general physical condition. Decrease of fitness includes the effects of disease, injury, alcohol, drugs, fatigue etc. Decrease of fitness under the influence of mental stress may also occur. It is the responsibility of the crew member to decide whether or not he/she is fit for flight duty in such circumstance.

Crew members should not be on duty knowing that they have a physical impairment or mental condition that would render them unable to meet the requirements of their current medical certificate. There should be no medical condition that prevents crew members from discharging their responsibilities to a safe standard and ensuring the safety of the aircraft and its occupants.

Crew members should not undertake flying duties whilst under the influence of alcohol, narcotics, drugs or any medicine that was not approved by the medical department for use for crew members like sleeping tablet.

### Incapacitation

Incapacitation of crew members is defined as any condition which affects the health of a crew member during the performance of duties which renders them incapable of performing the assigned duties. Information on recognising and responding to the incapacitation of flight crew is set out in Appendix B5 *Emergency operating procedures*.

### Drugs, alcohol, medication and any pharmaceutical preparations

Note that CASR Part 99 provides for drug and alcohol management plans and testing for persons involved in 'safety sensitive aviation activities'.

Any crew member should not undertake flying duties while under the influence of any drug that may adversely affect their performance.

Some medications obtained over the counter at pharmacies, or through prescription, may contain ingredients that are the same or similar to targeted substances in a drug test. If you are taking these substances and you provide a sample for a drug test, the test may indicate that the sample is positive for a targeted substance either on-site or through laboratory analysis.

This is one of the reasons CASA requires, by regulation, a MRO to examine all positive results following laboratory analysis. MROs have the necessary knowledge and experience to determine whether in fact a positive sample may be the result of consumption of over-the-counter or prescription drugs.

There are a range of over-the-counter or prescription drugs that may result in a positive sample, and as a member of the Australian aviation workforce subject to a drug testing regime you should always seek the advice of your doctor, other prescribing health professional or pharmacist before using any medications or therapeutic substances.



Some over-the-counter or prescription drugs may result in a positive sample, for example:

*preparations that contain codeine can test positive for opiates (e.g. Panadeine, Codis, Codral Cold and Flu, Nurofen Plus); as can preparations containing morphine (e.g. MS Contin) preparations containing dexamphetamine can test positive for amphetamine-type stimulants some preparations used during ear/nose/throat surgery can also test for cocaine.*

This is not intended to be an exhaustive list of substances that could result in a positive sample. As a result of taking over-the-counter or prescribed drugs, the best way to avoid an inadvertent positive sample is to speak with your doctor, prescribing health professional or pharmacist. Your doctor, prescribing health professional or pharmacist are in the best position to authoritatively determine whether a substance contains an ingredient which may result in a positive sample and they can recommend alternative options.

Further information on alcohol and drug management can be found on the CASA website at <http://casa.gov.au/aod/>

### **Antihistamines**

Histamines are natural chemicals produced by the body in response to allergic reactions or injury. Antihistamines are drugs that are designed to block the effects of histamine release. They are used for the treatment of hay fever, runny nose, sneezing, insect bites and stings, nausea and vomiting, travel sickness and allergies. They may be used by illicit drug users when other drugs are not available or to block withdrawal symptoms.

### **Antihistamines and safety**

Antihistamines may cause drowsiness and/or dizziness, which could potentially impact on safety. The effects of antihistamine use may impair the user's ability to react appropriately in safety-sensitive situations, and they may also fail to notice something that they would have noticed if not for the effect of the antihistamines.

Long-term and short-term effects of antihistamine: Even in low to moderate doses, antihistamine use may cause:

- Drowsiness
- dizziness
- loss of concentration
- impaired motor coordination
- lassitude (weariness or disinterest in exerting oneself)
- sedation or insomnia
- mild euphoria
- blurred vision
- ringing in the ears
- tremors.

Users may report palpitations and headaches, and experience reduced blood pressure, heart rate and depression. There may be gastric discomfort, loss of appetite and a physical feeling of heaviness. High doses can be hallucinogenic.

When overdose occurs, a period of hyper-excitability, including delirium and convulsions, may occur. This may end in severe central nervous system depression and death from respiratory arrest and/or cardiovascular collapse. Prior to this, coma may occur. Generally, death results from a combination of antihistamines and other drugs.

## Alcohol

The alcohol in alcoholic beverages is ethanol or ethyl alcohol. The alcoholic content is different for different types of alcoholic drinks. Alcohol can be measured in terms of standard drinks. A standard drink differs in size according to the type of drink, as shown below:

**Figure 1: Standard Drink Sizes**



Using standard drinks makes it possible to predict what a person's blood alcohol concentration (BAC) will be, based on the number of drinks they have had.

## Short-term effects of alcohol

The short-term effects of alcohol are different depending on the amount someone has had to drink, their drinking experience and a number of other factors. The likely effects are described in the table below in terms of a person's blood alcohol concentration (BAC).

**Table B1 – Likely effects of different concentrations of blood alcohol**

<b>BAC (g/100ml)</b>	<b>Effects</b>
< .05	Experience increased confidence Feel more relaxed Talk more than usual
0.05-0.08	Talk more than usual Act more confidently Become less inhibited Become less co-ordinated Make poor decisions
0.08-0.15	Slur their speech Have slower reflexes Problems with balance and co-ordination Nausea
Over 0.15	Loss of memory Sleepiness Loss of bladder control Inability to stand

The emotional and behavioural effects of alcohol intoxication include:

- Aggression
- Risk taking - due to poor decision making and a lack of inhibition
- Unpredictable emotion - although when they start drinking alcohol may appear to make people happier, continued drinking can lead to experience of strong negative emotions.

Alcohol is known to have a number of effects on abilities necessary for safe work practices and likely to affect performance of safety sensitive tasks. These are summarised below.

### **Alcohol – effects on performance**

Performance on a number of tasks is affected as soon as a person's blood alcohol concentration (BAC) rises above zero.

Performance on most tasks is affected by the time a person's BAC reaches 0.05 g/100ml.

The amount of alcohol consumed affects task performance but this effect varies according to the specific task that is being undertaken. Performance on complex tasks is more likely to be affected by low doses of alcohol compared to performance of simple tasks.

A comprehensive review of the effects of different doses of alcohol on various mental and physical tasks demonstrated that some tasks tend to become impaired when a person's blood alcohol concentration (BAC) rises above zero. Those tasks include:

- Driving
- Flying

- Divided attention (attending to two sources of information at the same time).

At a BAC of 0.05 g/100ml, most of the studies reported alcohol induced impairment. Tasks affected at 0.05 g/100ml BAC include:

- Vigilance (paying attention to something for a long time)
- Reaction time
- Perception
- Processing of visual information
- Skills combining mental and physical tasks
- 'Tracking' or following movement
- Purely mental tasks.

Given the wide range of tasks that can be affected by alcohol, even at a low BAC, safety sensitive tasks, particularly those that are complex (e.g. monitoring various sources of information, tasks that require adequate decision making and cognitive input, and tasks that require coordinated motor functions such as driving a vehicle, or flying an aircraft) should be avoided after consuming alcohol.

## **Cannabis**

Cannabis is also known as: Hash, hemp, weed, marijuana, dope, grass, pot, and ganja. Cannabis is a plant that is used to produce hemp fibres for clothing, paper, rope, and other materials, while its flower and leaf are the most commonly used illicit drug in the world.

Different parts of the cannabis plant are used and have varying levels of delta-9-tetrahydrocannabinol (THC), the psychoactive ingredient of cannabis. There is evidence that the concentration of THC in cannabis plants has increased since the 1980s due to improved methods of cultivation, harvesting and preparation.

The most common methods of use for cannabis are smoking or eating it as an ingredient added to food.

In general the psychological effects of cannabis include:

- Feelings of euphoria, a "high"
- Greater tendency to be amused
- Loss of inhibitions
- Increased sociability
- Enhanced sensory perception of sounds and colours
- Feelings that one's imagination is enhanced
- The passage of time appears to slow down.

A cannabis user may or may not experience all of these effects at the same time or every time they use cannabis.

The physical effects of cannabis use include:

- Blood-shot eyes
- Dry mouth
- Relaxation

- Increased appetite
- Increased heart rate
- Bronchodilation (widening of the large airways in the lungs).

At lower concentrations of THC, cannabis can enhance sexual responses and sensations.

At higher concentrations of THC, cannabis can depress sexual arousal.

There are a number of adverse effects associated with cannabis use. Negative short-term effects include:

- Mild paranoia
- Confusion
- Hallucinations.

Cannabis is known to have a number of effects on abilities necessary for safe work practices and likely to affect performance of safety sensitive tasks.

### **Cannabis – Effects on performance**

Cannabis is a commonly used illicit drug in Australia. Its main active component is delta-9 THC and it is often used to achieve relaxation and euphoria. Receptors in the brain that respond to cannabis use are found in regions including those associated with memory, motor control (i.e. muscular control), and brain circuits concerned with the experience of reward. Due to the range of brain regions cannabis influences, it can be expected that effects other than those desired will occur. Along with acute negative consequences such as bad reactions to the drug, changes in the ability to perform many every day and work-related tasks can be expected.

Although there are some exceptions, the majority of experimental studies looking at the effects of cannabis on task performance have found cannabis leads to poorer performance on a number of physical and mental tasks.

Cannabis use can lead to:

- Learning and memory (particularly short-term memory) related difficulties
- Slowed reactions and difficulty preventing inappropriate responses
- Impaired attention (including divided attention – attending to two sources of information at the one time), increased tendency to get distracted, and slowed 'tracking' or the ability to follow movement
- Slowed sensory information processing (particularly in chronic cannabis users)
- Reductions in verbal fluency (the ability to produce words)
- Impaired performance on driving tasks involving vehicle control and car following
- Impaired mental and self-monitoring function.

It has been suggested that cannabis users, particularly experienced users, can overcome some of the negative effects of cannabis on some mental and physical tasks by making extra effort. However, this is not the case for all tasks. In addition, the ability to use extra effort may not be possible in complex tasks that already require extra effort, including complex multi-tasking. For example, when driving under the influence of THC, drivers may drive in a more cautious manner to reduce risks but this behaviour is unlikely to outweigh the impairments caused by the THC.

**Does combining cannabis with other drugs lead to greater impairment?**

A great concern regarding cannabis use is the increased risk associated with combining THC and other drugs. Studies which have looked at the effects of THC in combination with other drugs such as alcohol have consistently found an additive effect of the two drugs, leading to relatively severe performance impairment even in relatively low concentrations of the drugs.

These findings suggest that cannabis should be avoided while completing safety sensitive tasks, and particularly when used in combination with other drugs such as alcohol.

Are the effects of cannabis use on task performance relevant to safety?

With the range of effects cannabis has on mental and physical performance, even at low doses, it can be expected that safety sensitive tasks will be affected. Complex tasks such as the ability to drive a motor vehicle safely, pilot an aircraft or operate heavy machinery may be compromised.

Simulator studies and on-road studies have found that cannabis leads to impaired vehicle control and response to changes in the road environment, which may lead to road crashes. The doses of THC in these studies were relatively low compared to what may be consumed by a typical cannabis user.

Additionally, as THC has a dose-related effect on performance (i.e. greater effects with greater doses), it can be expected that the performance on safety-sensitive tasks will be further reduced with greater THC intake.

**Tranquilliser, Antidepressants and Psychotic Drugs**

All these types of drugs preclude a crew member from flight duties because of the underlying condition for which they are being used as well as the possible side effects resulting from them. Flight duties should not be resumed until treatment with these types of drugs has been discontinued and until the effects of the drugs have entirely worn off. This can take several days in some instances.

**Antibiotics**

The underlying condition for which antibiotics are being taken may prevent a pilot from flying. However, most antibiotics are compatible with flying. Obviously, where any hypersensitivity is feared, the suspect antibiotic must not be used. A pilot should have previous experience of the antibiotic prescribed, or, alternatively, have a trial of it for at least twenty four hours on the ground before using it during flight duties.

**Analgesics (Pain killers)**

With a lot of analgesics and anti-inflammatory agents, there is risk of gastric irritation or haemorrhage. Ideally doctor's advice should be sought before using them.

**Steroids (Cortisone etc.)**

Use of steroids, with few exceptions, precludes flight duties.

**Anti-malarial**

Most anti-malarial preparations used for prevention and taken in recommended dosage are considered safe for flight duties.

**Anti-diarrhoeas**

As a lot of medications used in treating symptoms of gastritis and enteritis (diarrhoea) may cause sedation, blurring of vision etc. great care must be exercised in their usage by crew members. In most cases grounding for a time may be necessary.

**Appetite Suppressants**

These preparations can affect the central nervous system and should not be taken during flight duties.

**Anti-hypertensives (Drugs for treating blood pressure)**

Certain therapeutic agents are compatible with flying activity. They should be prescribed only by a doctor experienced in aviation medicine, and sufficient time must be allowed to assess suitability and freedom from side effects before resumption flight duties.

**Immunisation**

It is essential to seek medical advice concerning the period to be observed before returning to flying duties following immunisation.

All crewmembers are responsible for the validity of their vaccination certificates. All data concerning the period of validity of a vaccination are given in the respective document. All crewmembers shall present their vaccination certificates to the appropriate authorities when required to do so.

**Deep diving**

Flying in pressurised aircraft after deep diving can result in the bends (decompression sickness). A crew member should not dive to a depth exceeding 10 metres within 48 hours before a flight assignment.

**Blood donation**

Following a blood donation the volume of blood lost is made up in a matter of some hours but the cellular content can take some weeks to return to the previous level. Crew members should not volunteer as blood donors whilst actively flying.

A crew member should not donate blood within 24 hours before a flight assignment.

**Meal precautions prior to and during flight:**

Cases of acute food poisoning in the air continue to occur sporadically and surveys of incapacitation of flight crew in flight show that of these cases, gastro-intestinal disorders pose by far the commonest threat to flight safety.

No other illness can put a whole crew out of action so suddenly and so severely, thereby immediately and severely endangering a flight, as food poisoning.

Any food, which has been kept in relatively high ambient temperatures for several hours after preparation, should be regarded with extreme suspicion. This applies particularly to the cream or pastry, which is commonly part of a set aircraft meal. The re-heating process usually used in aircraft for the main course of a meal rarely destroys food poisoning organisms and the toxins they produce. These toxins are tasteless and cause no unpleasant odours.

Since the most acute forms of food poisoning frequently come on suddenly 1-6 hours after contaminated food is eaten, common sense rules should be observed as far as practicable in respect of meals taken within six (6) hours of a flight.

For any crew member, before and during flight it is essential to avoid eating easily perishable foods as well as foods and drinks served cold. This is most important with milk and cream products, mayonnaise, sauces, salads, meat pies and other meat products.

In order to eliminate, as far as possible, the risk of food poisoning, the captain and first officer should not partake of the same dishes before or during a flight.

### **Symptoms and treatment of poisoning**

The character and severity of the symptoms depend on the nature and dose of the toxin and the resistance of the patient. Onset may be sudden. Malaise, anorexia, nausea, vomiting, abdominal cramps, intestinal gurgling, diarrhoea and varying degree of prostration may be experienced. Bed rest with convenient access to bathroom, commode or bedpan is desirable. Severe cases should be hospitalised. Treatment is mostly symptomatic and all cases should be seen by a medical doctor.



## APPENDIX A8

### Accidents and Incidents - handling and reporting

An immediately reportable matter is any serious transport safety matter that involves death, serious injury, the destruction of, or serious damage to aircraft or property or when any such accident nearly occurs. Under section 18 of the TSI Act, immediately reportable matters must be reported to a nominated official by a responsible person as soon as is reasonably practical. The reason for such a requirement is the need for ATSB investigators to act as quickly as possible. This is often paramount in order to preserve valuable evidence and thus to determine the proximal and underlying factors that led to a serious occurrence.

The list of immediately reportable matters for each mode of transport is contained in the TSI Regulations. There is also a list of routine reportable matters.

### What is a routine reportable matter?

A routine reportable matter is a transport safety matter that has not had a serious outcome and does not require an immediate report but transport safety was affected or could have been affected. Under section 19 of the TSI Act a responsible person who has knowledge of a routine reportable matter must report it within 72 hours with a written report to a nominated official.

The list of routine reportable matters is contained in the TSI Regulations. Routine reportable matters only exist for aviation and would include a non-serious injury or the aircraft suffering minor damage or structural failure that does not significantly affect the structural integrity, performance or flight characteristics of the aircraft and does not require major repair or replacement of the affected components.

### Written Reports:

A report must be written and contain the following information:

- Name and contact details of the person making the report.
- The person's role in relation to the aircraft concerned.
- They type, model, nationality, registration marks and flight number (if any) of the aircraft.
- The name and owner of the aircraft.
- The name and contact details of the operator of the aircraft.
- If the aircraft was under hire when the reportable matter occurred, the name of the hirer.
- The name and nationality of the pilot, and the type and licence number of the licence held by the pilot.
- The name and nationality of each other flight crew member (if any), and the type and licence number of the licence held by each of them.
- The day and local time when the reportable matter occurred.
- If, when the reportable matter occurred the aircraft was in flight:
  - The place where the flight started
  - The place where the flight ended, or was intended to end
  - The purpose of the flight

- Unless the reportable matter occurred at an airport, the location of the aircraft immediately after the occurrence of the reportable matter, including the geographical coordinates of that location.
- The number of persons on board the aircraft when the reportable matter occurred.
- The nature of the reportable matter, including:
  - Its outcome or effect on the flight of the aircraft
  - The phase of the aircraft's flight when the matter occurred
  - The weather conditions
  - The airspace designation
  - The altitude at which the matter occurred
  - If the matter occurred at, or in relation to, an airport, the name of the airport, and if it occurred on, or in relation to, a runway, the runway number
  - If the matter involved a collision with an animal, including a bird – the nature of the collision
  - The causes of the occurrence (if known), including any human performance issues
  - Any safety action carried out to prevent a recurrence of the matter
  - The nature and extent of any damage to the aircraft
- The physical characteristics of the area where the reportable matter occurred (e.g. terrain, vegetation cover, and existence and location of any buildings, runways or aerodromes).
- The flight rules under which the aircraft was operating at the time of the reportable matter.
- The type of aircraft operation the aircraft was engaged in at the time of the reportable matter.
- If the matter resulted in a fatality or serious injury, and the aircraft carried an emergency locator transmitter:
  - the manufacturer and model of the emergency locator transmitter
  - whether it was fixed or portable
  - its location in the aircraft
  - whether it was deactivated
- If the pilot has died:
  - the pilots date of birth
  - the pilots total flying hours on all aircraft and flying hours on the same type of aircraft
- If any crew members have died or been seriously injured as a result of the reportable matter, how many, and their names and nationalities.
- If any passengers have died or been seriously injured as a result of the reportable matter, how many, and their names and nationalities.
- If any other persons have died or been seriously injured as a result of the reportable matter, how many, and their names and nationalities.

## Accident procedures

Immediately after an accident and following the evacuation of any passengers from the aircraft, the PIC, senior crew member or a passenger delegated by the crew, where needed, subject to safety considerations and the prevailing situation:

- advise or have someone advise emergency authorities of the situation
- secure the aircraft in as safe a condition as possible
- account for all persons who were on board the aircraft
- attend to the needs of any injured persons
- set apart and cover the remains of any deceased persons
- take steps to protect the ongoing well-being of survivors until emergency services arrive
- contact the operator if possible.

The wreckage of the aircraft must be preserved for access by authorised persons. An authorised person is any person nominated by the accident investigation authority or regulatory authority, and usually includes police, fire and rescue services. Unauthorised persons should not be allowed access to the wreckage. It is important to prevent unauthorised people from entering an accident site to ensure:

- respect for casualties
- protection of valuable and important or classified equipment
- preservation of evidence that may be required to establish the factors that contributed to the accident
- prevention of exposure to hazards.

You do not require the ATSB's permission to:

- ensure the safety of persons, animals or property
- move the aircraft, or the wreckage of the aircraft, to a safe place if the wreckage poses a risk to the public, or if there is a risk that significant evidence could be lost
- protect the environment from significant damage or pollution.

## Preservation, production and use of flight data

Following an accident, the operator must attempt to preserve all Flight Data Recorder and Cockpit Voice Recorder data and make it available to the investigating authority. Aircraft incident procedures

## Example post-incident procedures

It is the pilot in command's responsibility to initiate the incident reporting procedure.

The incident report must be raised within 48 hours by the aircraft pilot-in-command to the company.

The appropriately appointed position in the organisation will:

- Assess the severity and implications of the incident based on information received.
- If required, contact all concerned management staff (or their proxies).
- Correlate and disseminate all relevant information.

- Ensure that all appropriate documentation is collected and completed within a reasonable time frame.
- Ensure that all requirements are being addressed if any responsibilities have been delegated.
- Ensure that adequate communication is established and maintained with the aircraft pilot-in-command.
- Ensure that all DFDR and CVR data is preserved should it be required for internal or external investigation.

### **Ground Safety Incidents**

When safety incidents involving ground service personnel occur (e.g. opening of cargo doors with engines running, ramp manoeuvring traffic violations, misuse of ground support equipment) the PIC or other crew member should:

- inform ATC if the incident is subject to ground movement control
- complete an Aviation Accident or Incident Notification Form
- inform the company as soon as possible using the most expeditious means.

### **Crew debrief and support**

Conduct a debrief with the crew on the circumstances of the event as soon as possible:

- If there is a Company policy in relation to providing professional counselling services.
- If the incident may have been caused by negligence, carelessness or inattention to duty – suspension from duty policy pending investigation.

### **Accidents and incidents involving Dangerous Goods**

*Dangerous goods accident* means an event involving dangerous goods that occurs in the course of the goods being carried, or consigned for carriage, on an aircraft and results in:

- a fatal or serious injury to a person; or
- serious damage to the aircraft or any cargo carried on the aircraft.

*Dangerous goods incident* means an event (other than a dangerous goods accident) involving dangerous goods that occur in the course of the goods being carried, or consigned for carriage, on an aircraft and that:

- results in:
  - the escape of smoke or flames from the container or package in which the goods are contained; or
  - breakage of the container or package in which the goods are contained; or
  - any escape of the goods or part of them from the container or package in which they are contained; or
  - leakage of fluid or radiation from the container or package in which the goods are contained; or
- seriously jeopardises, or is likely to seriously jeopardise, the aircraft or its occupants.

Dangerous Goods accidents and incidents should be reported according to the procedures for reporting other accidents and incidents and CASR 92.065.