Question No.: CASA 01

Division/Agency: Civil Aviation Safety Authority
Topic: Ground Proximity Warning Systems, Costs of TAWS-B and TAWS-A
Hansard Page: 48 (28/05/09)

Senator Macdonald asked:

Senator IAN MACDONALD—I am not sure that ignorance might not be bliss in this instance. Finally—and this is not your area but you would know—are all GA aircraft now required to have their own internal radar that sees through rain and cloud?
Mr Russell—No.
Senator IAN MACDONALD—The one that sees mountains is, though, as opposed to other aircraft?
Mr Harfield—It is probably a question—
Senator IAN MACDONALD—I should ask CASA.
Mr Harfield—They will give you their details, but there are certain requirements for certain categories that have to have the ground proximity warning systems involved. They should be able to give you the finer detail.

Answer:

Under current Australian aviation safety regulations, the following detection devices must be carried by the aircraft specified:

- **Weather Radar**

  Aircraft operating under the instrument flight rules engaged in regular public transport or charter operations required to be crewed by two or more pilots (unpressurised turbine aircraft not above 5700kg maximum take-off weight and unpressurised piston engine aircraft are exempt).

- **Terrain Awareness and Warning System (TAWS)/Enhanced Ground Proximity Warning System**

  Turbine engine aeroplanes operating under the instrument flight rules engaged in regular public transport or charter operations with a maximum take-off weight greater than 15,000kg or carrying more than nine passengers must have TAWS Class A fitted; aircraft carrying more than nine passengers but having not more than 5,700kg maximum take-off weight must have fitted TAWS Class-B plus a terrain display (TAWS-B+). There are no requirements for piston engine aeroplanes.

  A TAWS A installation requires a terrain display and a radio (radar) altimeter. A TAWS-B + installation requires a terrain display. TAWS-B provides visual and aural alerts only but must be capable of allowing an optional terrain display.

A visual alert is normally in the form of a red light associated with the aural alert of “PULL UP” and a yellow or amber light associated with the aural alert of “TERRAIN TERRAIN”.

- **Airborne Collision Avoidance System (ACAS)**

  Turbine engine aeroplane engaged in regular public transport or charter operations with a maximum take-off weight greater than 15,000 kg or permitted by aircraft type certificate to have more than 30 seats must have a Traffic Alert and Collision Avoidance System (TCAS II), a type of ACAS-fitted.

Question No.: CASA 02

Division/Agency: Civil Aviation Safety Authority
Topic: OAR Work Programme
Hansard Pages: 69-70 (28/05/09)

Senator Heffernan asked:

Senator HEFFERNAN—In the Australian airspace policy document, on page 19, which lists the safety priorities of the Government, which was given to you nearly two years ago, it says: *NAS—The National Airspace System used in the United States and which has been adopted as the model for reform of the Australian airspace system since 2002.*
Could you confirm that that is still the Government's policy?
Mr Cromarty—That is correct, Senator.
Senator HEFFERNAN—I refer to the *Australian Airspace Policy Statement*, 28 June 2007, under the signature of Mark Vaile. Is the NAS policy as listed in this document still the policy CASA is acting on?
Mr Cromarty—Senator, can I just clarify that? Are you talking about this particular document?
Senator HEFFERNAN—The 2007 Mark Vaile document.
Mr Cromarty—Sorry, what is your question?
Senator HEFFERNAN—Is the National Airspace System as listed in that document still the policy CASA is operating on?
Mr Cromarty—Yes, that is correct.
Senator HEFFERNAN—Which is the US system?
Mr Cromarty—It depends how you—
Senator HEFFERNAN—The US system, I am aware, is changing to satellite from ground.
Mr McCormick—I am new to this position—but that is not to say I am not responsible for it. This document does say it will be modelled on the US system; it does not say we will adopt the US system. There are a few other issues, I think, particularly on page 15 of the document to which you refer—the airspace policy statement signed by the
Hon. Mark Vaile—which says:

5.5 How major changes to airspace will be made

... These steps will include:

• *risk management analysis consistent with the CASA Risk Management System and the Common Risk Management Framework* (see below);

And there are further references to that common risk management framework. My own inquiries have discovered that that common risk management framework has never reached a final version.
Senator HEFFERNAN—This document has, by-and-large, been ignored. Paragraph 5.4 on page 15 of the policy statement says:
The Government expects CASA to establish a work programme that is inclusive of the Government's priorities for airspace reform to progress NAS implementation as outlined in this Statement.
Is that fair enough? CASA established this work program and is it clearly to progress the NAS reforms?
Mr McCormick—Yes, Senator.

Senator HEFFERNAN—Can we have a copy of those documents?
Mr Cromarty—Yes, Senator. We have supplied them to the Minister as well.
Senator HEFFERNAN—So you can supply them to us?
Mr Cromarty—Yes.

Answer:

A copy of the OAR Work Programme is attached.

[CASA 02 – Attachment A]

Question No.: CASA 03

Division/Agency: Civil Aviation Safety Authority
Topic: CASA Statement of Expectations
Hansard Page: 70 (28/05/09)

Senator Heffernan asked:

Senator HEFFERNAN—In line with the Statement of Expectations issued to CASA on 12 March 2007, CASA is to develop a detailed implementation programme for these reform priorities for submission to the Minister by 30 September 2007.
Mr Cromarty—Yes, Senator.
Senator HEFFERNAN—Was this submission of a detailed implementation program given to the Minister by 30 September 2007?
Mr Cromarty—It was, Senator, yes.
Senator HEFFERNAN—Can you provide the details of how and the fact that it was handed over then?
Mr Cromarty—Yes, Senator.
Senator HEFFERNAN—Confirmation by way of paperwork.

Answer:

The Office of Airspace Regulation developed a work programme to address the Minister's Statement of Expectations. This was provided to Minister Vaile on 28 September 2007 by way of Ministerial Submission.

Question No.: CASA 04

Division/Agency: Civil Aviation Safety Authority
Topic: Ground Proximity Warning Systems, Costs of TAWS-B and TAWS-A
Hansard Page: 82 (28/05/09)

Senator Macdonald asked:

Senator IAN MACDONALD—Do you or any of your team have an approximate price of the cost of the supply and fitment of these devices?
Mr McCormick—For the TAWS-B proposal—the one we have just done the notice of proposed rule-making on—we do not have a cost. But I can perhaps get you an industry average cost, if we take that on notice.
Senator IAN MACDONALD—Yes. But are we talking $10,000, $100,000, $1,000? Does anyone have any approximate idea?
Mr McCormick—I am afraid we will have to take that on notice. I would not like to mislead you. Mr Cromarty may have some information.
.....
Mr McCormick—I would not like to mislead you, Senator. That was talking about TAWS-A, and the aeroplanes I think you are talking about are down at TAWS-B, which we do not have the figures for aeroplanes.
Senator IAN MACDONALD—Well, then get me that. Thank you.....

Answer:

Please refer to CASA 01 response.

Question No.: CASA 05

Division/Agency: Civil Aviation Safety Authority
Topic: Ground Proximity Warning Systems, Costs of TAWS-B and TAWS-A
Hansard Page: 82 (28/05/09)

Senator Macdonald asked:

Senator IAN MACDONALD—.....So TAWS-A is what is used on RPT aircraft. Is that generally the case?
Mr McCormick—Much larger aircraft. Yes, that is correct.
Senator IAN MACDONALD—Wasn't it RPT or is it only—?
Mr McCormick—RPT charter, if greater than 10 passengers or greater than 15,000 kilograms max take-off.
Senator IAN MACDONALD—The weights do not mean much to me. So more than 10 passengers, whether it is RPT or charter, has the TAWS-A, and the TAWS-B is six passengers or more?
Mr McCormick—I have got two conflicting figures in front of me about whether it is six passengers or six seats fitted to the aircraft. If I could take that under notice, I will get an answer back to you.

Answer:

Please refer to CASA 01 response.

Question No.: CASA 06

Division/Agency: Civil Aviation Safety Authority
Topic: Ground Proximity Warning Systems, Costs of TAWS-B and TAWS-A
Hansard Page: 84 (28/05/09)

Senator Macdonald asked:

Senator IAN MACDONALD—You are talking to someone that does not understand these things. I understand that on Qantas and Virgin they have something up the front that, if they are running into another plane or a mountain, something shows to them. That is all I am interested in, and, I suggest, all that most of the flying public is interested in. I accept that as being the case on Virgin, Qantas and other RPT carriers. But I am wondering how far down that goes. We have talked about the terrain things. Do your requirements require those 10-seater GA aircraft to also, as well as having the terrain things, have the ability to see another aircraft in front of them in poor visibility conditions?
Mr McCormick—There are three separate systems we are talking about. There is the weather radar. There is a requirement in the Civil Aviation Orders for aircraft of a certain size to have a weather radar fitted.
Senator IAN MACDONALD—That is everyone, isn't it? Even the Baron has a weather radar.
Mr McCormick—I believe the requirement to have the traffic collision avoidance system fitted applies to aircraft which have 30 seats or more, but I will take on notice. I do not have that in front of me. There are three systems that we are talking about. One is the weather radar, one is the traffic collision avoidance system and one is the ground proximity warning system or the TAWS system. With some aeroplanes, if you pay enough money, you can get an instrument that will show you all three of those on the one instrument. Some other aeroplanes will have a separate instrument for each one and they work on different readings.
Senator IAN MACDONALD—What I am really after is: what requirements does CASA put on which aircraft owners to have all three of those systems? That is really what I am after. If you do take an answer on notice, please do not answer in technical terms. I am assuming, and your officers at the table must know this, that everyone has the weather radar?
Mr McCormick—I will take the first part on notice. We will provide you with a detailed breakdown of the numbers of passengers, seats et cetera. They are all in the Civil Aviation Orders, but I will admit they are not something that can be committed to memory. They are far too prescriptive. As far as the weather radar goes, I will take it on notice.

Answer:

Please refer to CASA 01 response.

Question No.: CASA 07

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: 87 (28/05/09)

Senator Back asked:

Senator BACK—Mr Denby, is this the sort of anomaly that you found when you started the process on 6 April? Are these some of the anomalies that came out of the process?
Mr Denby—We have no anomalies where we have not detected drugs and later found that drugs are in use, no.
Senator BACK—You have had no false negatives?
Mr Denby—We have had no false negatives—and that includes our testing of the machinery using spiked samples. We have control samples provided by laboratories which provide us with controls of both negative and positive samples, and we have had no false negative samples.
Senator BACK—I do not want to get into the technicalities as to how you did the controls, because that is a very complex world, where all sort of anomalies occur—children, adults, men, women, pregnant ladies. But I am sure they will be worked out over time. How long after a drug is used do either your control tests or the field evidence show you that you can detect drugs by an oral swab?
Mr Denby—Much like alcohol-testing, that depends on many things, such as body mass, type of activity undertaken by the person, type of drug used. It is a very complex science. I am happy to submit quite a lengthy document that would give you all those variables, but there is no exact answer for any particular drug or any particular person.
Senator BACK—I would be interested to receive that.....

Answer:

The following paper was prepared by the Civil Aviation Safety Authority, utilising information from numerous research papers.

How long does a drug stay in the human body system (and how long can it be detected?)

When considering the time that it takes for drugs to be cleared from the system it is important to understand the steps in the process and the uncertainties around each of them.

The process starts with intake of the drug. The next step is the absorption of the drug for it to reach the blood. It is then eliminated from the body, or it could be translocated to another body fluid compartment such as the intracellular fluid or it can be destroyed in the blood The removal of a drug from the plasma is known as **clearance** and the distribution of the drug in the various body tissues is known as the **volume of distribution.** Both of these pharmacokinetic parameters are important in determining what is called the half life of a

drug. Half life is the period of time required for the concentration or amount of drug in the body to be reduced by one-half. The testing for substances may be done on plasma, in which case the values will exactly match the levels in the blood, or they can be tested in saliva, in which case there is a process of diffusion, or from urine, in which case the drugs are metabolised and the product tested for may be a metabolite in the urine.

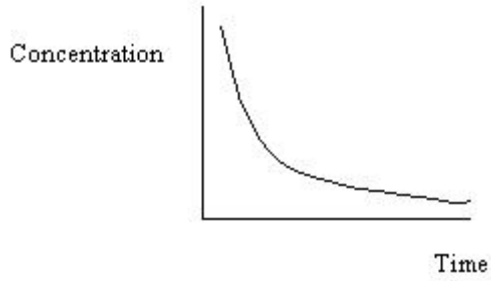
The route of intake is usually referred to as the Route of Drug Administration. These are the following:

1. Intravenous
2. Oral
3. Buccal
4. Sublingual
5. Rectal
6. Intramuscular
7. Transdermal
8. Subcutaneous
9. Inhalational
10. Topical

Depending upon which method is used, the rate of intake will vary, and the time to reach the blood will be different.

How do drugs get eliminated from the blood?

A constant fraction of the drug in the body is eliminated per unit time. The rate of elimination is proportional to the amount of drug in the body. This is called first order kinetics. The majority of drugs are eliminated in this way.



The **Volume of Distribution (Vd)** is the amount of drug in the body divided by the concentration in the blood. Drugs that are highly lipid soluble, such as digoxin, have a very high volume of distribution (500 litres). Drugs which are lipid insoluble, such as neuromuscular blockers, remain in the blood, and have a low Vd.

The **Clearance (Cl)** of a drug is the volume of plasma from which the drug is completely removed per unit time. The amount eliminated is proportional to the concentration of the drug in the blood.

The fraction of the drug in the body eliminated per unit time is determined by the **elimination constant (kel)**. This is represented by the slope of the line of the log plasma concentration versus time.

Cl = kel x Vd

Rate of elimination = clearance x concentration in the blood.

Elimination half life (t1/2): ***the time taken for plasma concentration to reduce by 50%.*** **After 4 half lives, elimination is 94% complete.**

It can be shown that the kel = the log of 2 divided by the t1/2 = 0.693/t1/2.

Likewise, Cl = kel x Vd, so, Cl = 0.693Vd/t1/2.

And t1/2 = 0.693 x Vd / cl

The rate of elimination is the clearance times the concentration in the plasma

Roe = Cl x Cp

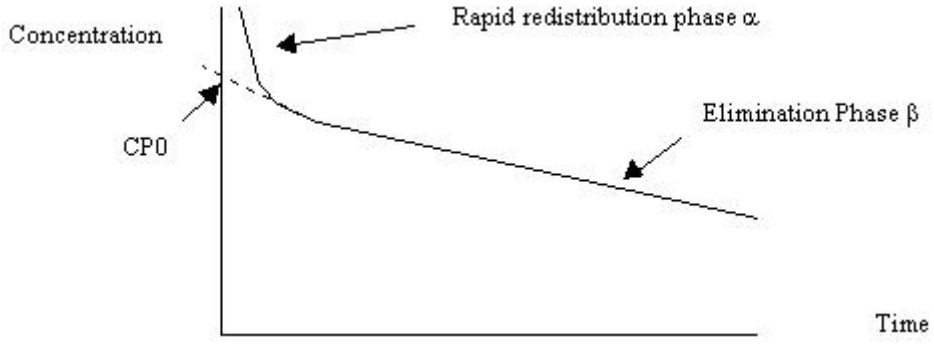
Fraction of the total drug removed per unit time = Cl/Vd.

If the volume of distribution is increased, then the kel will decrease, the t1/2 will increase, but the clearance won't change.

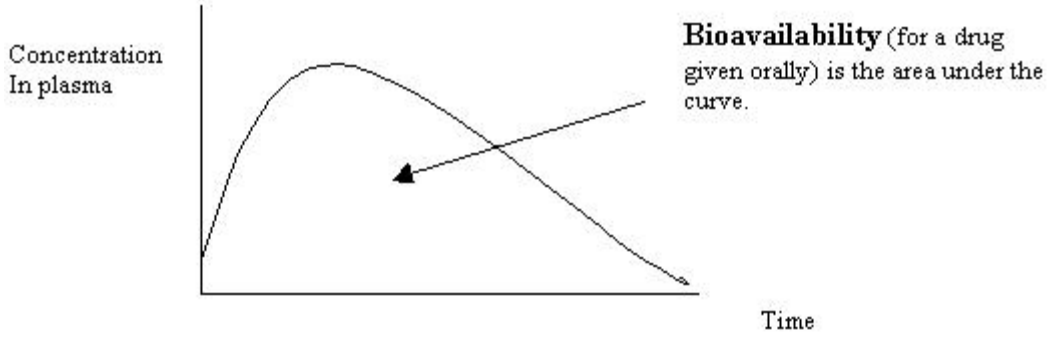
What is described above is a single compartment model, what would occur if the bloodstream was the only compartment in the body (or if the Vd = the blood volume). But the human body is more complex than this: there are many compartments: muscle, fat, brain tissue etc. In order to describe this, we use multi-compartment models.

What happens is that, initially the drug is all in the blood and this blood goes to "vessel rich" organs; principally the brain. After a few minutes the drug starts to venture off into other tissues (fat, muscle etc) it **redistributes**, the concentration in the brain decreases. The drug thus redistributes into other compartments.

Please look at the graphic representation of this phenomenon. There is an initial rapid fall in blood concentration, a plateau, and then a slower gradual fall. The first part is the rapid redistribution phase, the plateau is the equilibrium phase (where blood concentration = tissue concentration), and the slower phase, is the elimination phase where blood and tissue concentrations fall in tandem. This is a simple two compartment model



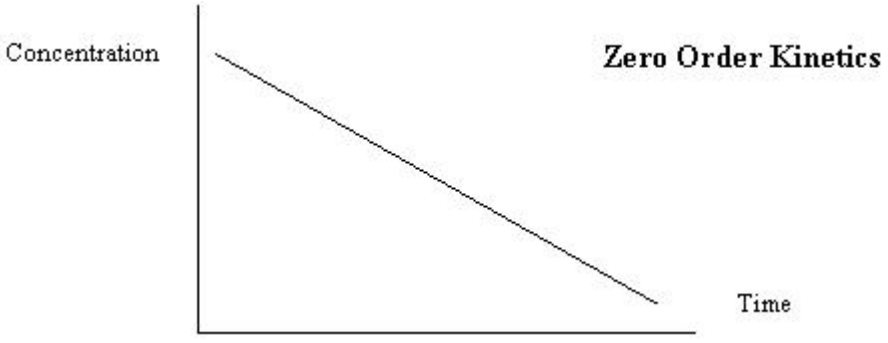
Bioavailability is the fraction of the administered dose that reaches the systemic circulation. Bioavailability is 100% for intravenous injection. It varies for other routes depending on incomplete absorption, first pass hepatic metabolism etc. In a plot of plasma concentration against time, the bioavailability is the area under the curve.



Zero Order Elimination

We know that if a person has 10 pints of beer before midnight she will fail a breathalyser test at 8 am the following morning. Either this is due to alcohol having a very long half life (which it does not) or that alcohol is cleared in a different way.

What happens is that the metabolic pathways responsible for alcohol metabolism are rapidly saturated and that clearance is determined by how fast these pathways can work. The metabolic pathways work to their limit. This is known as zero order kinetics: a constant amount of drug is eliminated per unit time. Because of high doses this is very slow to clear.



Hepatic clearance

Many drugs are extensively metabolised by the liver. The rate of elimination depends on 1) The liver's inherent ability to metabolise the drug, 2) the amount of drug presented to the liver for metabolism. This is important because drugs administered orally are delivered from the gut to the portal vein to the liver: the liver absorbs up a varying chunk of the administered drug (pre-systemic elimination) and less is available to the body for the effect of the drug. This is why users give a higher dose of morphine, orally, than intravenously.

Hepatic drug clearance

1) The Intrinsic clearance (Clint)
2) Hepatic blood flow

These two factors are independent of one another, and their combined effect is the proportion of drug absorbed: the extraction ratio.

For drugs that have a low intrinsic clearance, this effect can be increased by giving a second agent that boosts the effect of the liver's enzyme system; these are enzyme inducers. Examples of such drugs are cigarettes, antiepileptics (carbamazepine & phenytoin), rifampicin, griseofulvin, alcohol and spironolactone (CAR GAS) [also barbiturates]. Consequently if a drug addict is given rifampicin for tuberculosis, a higher dose of heroin is required for the same effect. Enzyme inhibitors have the opposite effect: examples are flagyl, allopurinol, cimetidine, erythromycin, dextropropoxyphene, imipramine, (the) pill.

Likewise, if the blood flow increases, the liver has less chance to absorb the drug, and the extraction ratio falls. This is particularly the case, if the intrinsic clearance is low.

Distribution of the Drug

When a drug is introduced into the body, where it ends up depends on a number of factors:

1) blood flow, tissues with the highest blood flow receive the drug first,

2) Protein binding: Most drugs bind to proteins, either albumin or alpha-1 acid glycoprotein (AAG), to a greater or lesser extent. Drugs prefer to be free, it is in this state that they can travel throughout the body, in and out of tissues and have their biological effect. When they are free they are easy prey for metabolising enzymes.

Highly-bound drugs have a longer duration of action and a lower volume of distribution. Generally high extraction ratio drugs' clearance is high because of low protein binding and, conversely, low extraction ratio drugs' clearance is strongly dependent on the amount of protein binding.

Therefore if a drug is highly protein bound, a high dose is needed to get the effect. But if another agent starts to compete with the drug for the binding site on the protein the amount of free drug is increased. This is really important for drugs that are highly protein bound: if a

drug is 97% bound to albumin and there is a 3% reduction in binding (displaced by another drug), then the free drug concentration doubles; if a drug is 70% bound and there is a 3% reduction in binding, this will make little difference.

3) lipid solubility and the degree of ionisation, this describes the ability of drugs to enter tissues (highly lipid soluble / unionised drugs can enter them easily. Highly ionized drugs cannot cross lipid membranes and un-ionised drugs can cross freely. Morphine is highly ionised, unlike fentanyl is the opposite, and so morphine has a much slower onset of action.

The amount of metabolite from the liver, that is sent to the kidney is excreted in a linear manner – except that urinary output depends upon water intake and external variables which affect the degree of hydration. Similarly, salivary output is dependent upon a large number of variables as well.

In an addition to all these variables, we have the problems of variable doses (some people my use much more than others) and of tolerance. This can mean that regular users have variable rates of metabolising the drugs. Therefore two individuals with a different habit could have completely different rates of metabolism for the same quantity of the drug.

Approximate durations for detection of drugs in urine and saliva are shown in the table below (this data is pooled from various sources and is at best very approximate):

Drug	Urine	Saliva
Amphetamine	2 - 4 days	1-3 days
Methamphetamine	2 - 4 days	1-3 days
Cocaine	1 - 3 days	1-3 days
Heroin/morphine/codeine	1 - 3 days	1-3 days
Marijuana (chronic use)	Up to 30 days	4 -12 hours
Marijuana (occasional use)	1 - 3 days	4 -12 hours

Question No.: CASA 08

Division/Agency: Civil Aviation Safety Authority
Topic: Port Macquarie on OAR Work Programme
Hansard Pages: 75-76 (28/05/09)

Senator Heffernan asked:

Senator HEFFERNAN—In 6.2, the policy states:
CASA is to undertake by June 2008 the assessment of the following NAS 3(b) Characteristics, and determine as appropriate an implementation programme according to the outcome of the analytical and consultative process outlined in Part 5 of this Statement.
Have we complied with that undertaking in the policy?
Mr Cromarty—Yes.
Senator HEFFERNAN—Is there a chance that we can bring class E down to 1,200 feet?
Mr Cromarty—Yes.
Mr McCormick—In 6.2 25, it says: *Low Level Class E Corridors: this NAS characteristic deals with low level Class E corridors, where required, above 1,200FT …*
We cannot go around making corridors between nebulous places, and I do not think there has been an industry requirement or a submission to us requesting a corridor of class E airspace at that height. That may go somewhat to the work program of the Office of Airspace Regulation.
Senator HEFFERNAN—I understand the issues, the workload and the priorities, but this is the beginning of this exercise, not the finish of it. I understand that characteristic 23, 'Class E terminal airspace to be introduced at specific locations,' could mean that in places like Port Macquarie the airspace would be upgraded from uncontrolled G to controlled E and the airlines would be given full air traffic separation, whereas at the moment they fly in uncontrolled space. Has anything been done about this?
Mr Cromarty—Yes.
Senator HEFFERNAN—What has been done?
Mr Cromarty—We consider the use of NAS characteristics on every review that we do. For example, at Karratha, we are specifically looking at this solution.
Senator HEFFERNAN—Which is quite a busy place.
Mr Cromarty—Which is similar to Port Macquarie.
Senator HEFFERNAN—So Port Macquarie is likely to be done?
Mr Cromarty—Port Macquarie will be on our work program. I cannot tell you exactly where it is on our work program at the moment, but I could take that one on notice for you.
Senator HEFFERNAN—Yes, fair enough.

Answer:

The Port Macquarie airspace review will be completed shortly.

Question No.: CASA 09

Division/Agency: Civil Aviation Safety Authority
Topic: CASA Board
Hansard Page: Written Question

Senator Heffernan asked:

1. Has a new CASA Board been appointed? If no, when will this happen, if YES, who is on the Board and what is their background/experience?
2. Without compromising air safety, what steps will CEO introduce as to strive for better efficiency?
3. CEO stated *"we are not in the business of putting general aviation out of business by putting excessively onerous requirements on them"*, can I inform you that I receive quite a few complaints from pilots and aviation companies stating the CASA regulators can be quite overbearing, if regulators don't like a certain person or they disagree with something, they tend to take that as a personal vendetta against that person who ultimately suffers the consequences of a unfair and unjust decision-making process, how do you think you will address these "prejudices" and/or strive for a workable balance of regulation between operator and CASA?
4. CEO stated CASA *was good organisation with a good reputation but that it needed "a bit of direction" in terms of governance*, could you expand and explain this statement?

Answer:

1. Yes, a new CASA Board was announced by the Minister for Infrastructure, Transport, Regional Development and Local Government on 29 June 2009. The Minister's media release can be found at:http://www.minister.infrastructure.gov.au/aa/releases/2009/June/aa318_2009.htm.

2-4. CASA's structure is being refined to more closely align it with the requirements of the Civil Aviation Act and to streamline accountability and reporting lines. The changes will come into effect from 1 July 2009. Governance will be strengthened with the establishment of the new CASA Board and the creation of an Office of the Director of Aviation Safety. This Office includes CASA corporate support functions, knowledge and information management and risk management. There will be a new Safety Program operating from the Office of the Director of Aviation Safety to bring Australia into line with an International Civil Aviation Organization requirement.

There are six operational areas in the new structure:

- ***Standards Development and Future Technology*** including regulatory development and the majority of engineering functions.
- ***CASA Operations*** combining the current Air Transport Operations and General Aviation Operations groups into a single area. Current field offices will form the core of this area including a strengthened presence in Northern Australia. The field offices

will progressively become 'one-stop-shops' for the oversight of all operational functions within their geographic area of responsibility.

- ***Safety Analysis and Education*** providing data analysis of safety information for a national perspective on risks as well as being a source of comprehensive safety education and training to industry and to CASA staff.
- ***Industry Permissions*** acting as a combined service centre to deliver and manage certificates, licences and registrations and provide advice and support to delegates and authorised persons in the aviation. This will allow mean better management of services to the aviation industry while at the same time ensuring a consistent application of entry control processes and procedures.
- ***Airspace and Aerodrome Regulation*** **and** ***Legal Services*** areas remain unchanged.

The changes outlined above will strengthen CASA's overall governance and decision making. In addition a Governance Manual is being developed under which all policy and procedures will draw their authority and describe their application. This manual will put a clear framework around CASA's activities and enhance consistency in decision making. It will include areas such as:

- Surveillance
- Project initiation, continuation and termination
- Staffing priorities
- Quality Assurance
- Safety Management System application
- Allocation of financial resources
- Risk management

These changes will improve decision-making and reporting and enhance service to industry as well as allowing CASA staff to focus on the core business of aviation safety.

Question No.: CASA 10

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

How many random drug tests has CASA carried out in the last twelve months?

Answer:

From 8 April 2009 to 29 June 2009, CASA has conducted 48 drug tests across the majority of Safety Sensitive Aviation Activities (SSAA).

Question No.: CASA 11

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

Where have these random drug tests been carried out?

Answer:

Random drug tests have been carried out in various States and Territories across Australia.

Question No.: CASA 12

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

How long has the current system of random drug testing been in effect?

Answer:

The current system was implemented in June 2009.

Question No.: CASA 13

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

Does CASA provide advance notice that random drug testing will be carried out? If so, how much advance notice is given?

Answer:

The regulations do not require CASA to provide any advance notice of the random testing. For the purposes of access, CASA may at times advise the key Drug and Alcohol Management Program (DAMP) contact approximately an hour before the commencement of testing. This also provides some ability to manage to greater level matters of safety, logistics and privacy and minimise any potential inconvenience to the travelling public.

Usually, no more than 1 hour.

Rural and Regional Affairs and Transport Legislation Committee

ANSWERS TO QUESTIONS ON NOTICE

Budget Estimates May 2009

Infrastructure, Transport, Regional Development and Local Government

Question No.: CASA 14

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

What proportion of tests is returned with a positive result?

Answer:

As at 30 June 2009, there have been no confirmed positive tests recorded**.**

Rural and Regional Affairs and Transport Legislation Committee

ANSWERS TO QUESTIONS ON NOTICE

Budget Estimates May 2009

Infrastructure, Transport, Regional Development and Local Government

Question No.: CASA 15

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

What testing methods are used?

Answer:

Currently the testing of both drugs and alcohol requires both an initial (screening test) and, if required, a confirmatory test, which is conducted to evidential standards. The initial testing for alcohol is conducted using a Lion SD 400 which registers a positive or negative result. If the initial test is positive, the donor is required to wait at least 15 minutes before being tested on the Lion Intoxilyzer 8000 (which meets the Pattern Approval Specifications for Evidential Breath Analysers (NMI R 126)). If the result is over the permitted level the Lion Intoxilyzer 8000 will record the concentration of alcohol in the donor's breath.

The initial testing for drugs is a two-step process. A donor will be initially tested on a DrugWipe 5+ device and the test strip is assessed by the approved tester to determine if it is positive for one of the testable drug groups or negative for all. If the test is negative for all drug groups no further action is taken. If the DrugWipe 5+ is determined to be positive for any of the testable drug groups, the second initial step is undertaken using the Cozart DDS. If a person is positive on drug wipe and negative on Cozart the initial test is negative and no further action is taken, however, a de-identified sample is sent to a laboratory for quality control purposes.

If a donor tests positive for any drug on the DrugWipe 5+ and for *any* drug (which might be some drug other than the one which was positive on the Drug Wipe) on the Cozart, a third specimen is taken and sent to an approved laboratory for confirmation.

Question No.: CASA 16

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

What proportion of tests is conducted using oral swabs?

Answer:

The regulations only provide for the CASA random drug testing to be conducted using oral fluids (oral swabs).

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Question No.: CASA 17

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

How reliable are oral swabs in random drug testing?

Answer:

With the introduction of the two step initial testing procedures the specificity (false positive rate) is expected to be about 2.4% of all positive tests (less than 1% total false positives/total tests conducted.

Question No.: CASA 18

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

What drugs can be detected using oral swabs? Are there any drugs that cannot be detected using oral swabs?

Answer:

All the drugs which are covered by Part 99 of the Civil Aviation Safety Regulations 1998 can be tested using oral swabs.

Testable Drug Group	**Testable Drug**
Amphetamines Group	Amphetamine Methylamphetamine Methylenedioxymethylamphetamine Methylenedioxyamphetamine
Cannabis Group	Δ9-tetrahydrocannabinol
Cocaine Group	Cocaine Benzoylecgonine Ecgonine methyl ester
Opiate Group	Morphine Codeine 6-Acetyl morphine

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Question No.: CASA 19

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

How long after a drug is used will it still be detectable using oral swabs?

Answer:

This is extremely variable. The approximate range is 1 to 3 days.

Question No.: CASA 20

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

Do other drug testing authorities (for example police and road traffic authorities) use oral swabs in drug testing?

Answer:

The methodology adopted by CASA mirrors that of all the jurisdictions in Australia where drug testing is carried out.

Question No.: CASA 21

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

In the event of a positive test, what immediate action does CASA take?

Answer:

In the event of an initial positive test drug test or confirmed positive alcohol test the donor is required to cease performing their SSAAs immediately. This information is given to the donor by the approved tester both verbally and in writing.

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Question No.: CASA 22

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

1. Are secondary tests carried out in the event that an initial test returns a positive result?
2. If not, why not?
3. If so, how and when are the secondary tests carried out?

Answer:

1. If the result is an initial positive drug test a split sample (sample A and sample B) is sent to the approved laboratory for confirmatory testing. Laboratory-based confirmatory testing will prove the definitive test result.

2. See above.

3. The secondary test is carried out by obtaining a second sample of oral fluid from the donor and sending this split sample (sample A and sample B) to an approved laboratory to be testing using High Pressure Liquid Chromatography/Mass Spectrometry.

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Question No.: CASA 23

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

1. Do you keep records on the number of false positive records in the course of tests?
2. If not, why not?
3. If so, how many false positive have been returned in the last twelve months?

Answer:

In the first round of testing carried out in April 2009, two (2) false-positive results were recorded. After this, the methodology was reviewed and modified. After testing recommenced in June 2009, no further false positives have been returned.

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Question No.: CASA 24

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

I refer to the random drug testing that was carried out on 8 April 2009 on students and pilots of the Royal Victorian Aero Club at Moorabbin Airport in Melbourne. A number of tests were carried out that returned negative results, but the chief pilot falsely tested positive to cannabis and was immediately suspended from Safety Sensitive Aviation Activity. The next day, CASA issued a clearance, but not before the chief pilot's activity for the following week were cancelled, damaging the club's reputation and causing financial losses.

1. Does CASA bear any liability with respect to loss of business in cases like these?
2. CASA's response to the RVAC mentioned *"it should be appreciated that the implementation of drug and alcohol testing is still new and there will be a need to improve processes and practices over time."*
3. What steps is CASA taking to improve the accuracy and effectiveness of the random drug testing system?

Answer:

1. The regulations are quite clear and CASA does not bear any liability with respect to loss of business or reputation. This short stand-down period after the initial test is not dissimilar to what is required by other jurisdictions.

2-3. To ensure that the specificity of the testing met the standards acceptable to CASA, a second step was added to the initial testing procedures.

Question No.: CASA 25

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

What other means of testing are available to CASA?

Answer:

Under current regulations, the only testing media available to CASA are breath for alcohol and oral fluid for drugs.

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Question No.: CASA 26

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

1. Is urine or blood testing feasible for random drug testing?
2. How reliable are urine and blood tests?
3. How long does it take for the results of urine and blood tests to be returned?

Answer:

1-3 With regards to blood and urine testing for CASA random testing, there are a number of issues. Firstly, the collection of blood for a voluntary random test is a highly invasive procedure and to CASA's knowledge is not undertaken in any other jurisdiction that undertakes drug testing for the purposes of industrial safety. For the purpose of enforcement under the CASA testing regime, urine as a testing matrix is problematic for a number of logistic reasons. The length of time it takes for the return of an oral fluid, urine or blood test is the same.

Question No.: CASA 27

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

If testing with oral swabs returns false positives, is it not possible that it also returns false negatives?

Answer:

It is possible to return both false positives and false negatives on any screening test involving a biological specimen. This is well known in the health care environment and is an accepted risk of any testing. The aim has to be to have best outcomes in terms of low false positives without reducing false negatives (not detecting true cases). CASA has introduced a quality control system to monitor the level of false negative test results.

Question No.: CASA 28

Division/Agency: Civil Aviation Safety Authority
Topic: Alcohol and Drug Testing
Hansard Page: Written Question

Senator Nash asked:

Is there any way of knowing how many false negatives have slipped through the cracks of the random drug testing system?

Answer:

A false negative is a test that is reported as being negative on testing, but is actually positive. CASA has introduced a quality control system for monitoring purposes and will be able to make a (de-identified) estimate of the false negatives based on our quality.

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Question No.: CASA 29

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

I understand Airservices Australia has been running an air-traffic situational awareness trial called Unicom. I understand this was an initiative of Air Services Australia and has been conducted at Dubbo, Wagga Wagga in late 2007 and then expanded to include Port Macquarie, Hervey Bay and Olympic Dam. I further understand that it is an attempt to provide an alternative arrangement for regional airports catering for higher capacity jets now using aerodromes in regional Australia without the expensive infrastructure associated with licensed air traffic controllers and control towers.

Is this a correct summary?

Answer:

Yes.

Question No.: CASA 30

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Can you provide more information about the trial?

Answer:

Please refer to Airservices Australia's responses [AA 10 – AA 20] to the same question.

Question No.: CASA 31

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

I further understand that the trial concluded on 31 March 2009. Is that correct?

Answer:

Yes.

Question No.: CASA 32

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Has Airservices Australia completed its report analysing the trial?

Answer:

Yes.

Question No.: CASA 33

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Has the report been submitted to your organisation for its consideration?

Answer:

Yes.

Question No.: CASA 34

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Has CASA determined its view on the trial?

Answer:

The report from Airservices Australia is being considered.

Question No.: CASA 35

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

What are its views?

Answer:

Not applicable.

Question No.: CASA 36

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Has CASA completed a report on the trial?

Answer:

No.

Question No.: CASA 37

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Civil Aviation Safety Authority (CASA) for its policy consideration? (No further information provided).

Answer:

Not applicable.

Question No.: CASA 38

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Will the report on the Unicom trial be made publicly-available?

Answer:

Yes.

Question No.: CASA 39

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Will your analysis be made publicly-available?

Answer:

Yes.

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Question No.: CASA 40

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

Will CASA be adopting Unicom as a permanent service to be included as part of the suite of third party air traffic services and provided to industry?

Answer:

A Unicom service is a non-regulated function which has been available for some years. The Airservices trial provided a service that was enhanced by providing a limited traffic information service. CASA is reviewing the graduated services that can be provided in Class G airspace and which include Unicom, Flight Service, Directed Traffic Information and Certified Air Ground Radar Service. CASA continues to encourage the use of Unicom as per the Australian Airspace Policy Statement.

Question No.: CASA 41

Division/Agency: Civil Aviation Safety Authority
Topic: Trial of Unicom System
Hansard Page: Written Question

Senator Nash asked:

When?

Answer:

See response to CASA 39.