**SPORT AVIATION (ASAC[1]) COMMENT ON ISSUES PAPER**

**TOWARDS A NATIONAL AVIATION POLICY STATEMENT**

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Sport Aviation is pleased to have the opportunity to make input to the Green Paper this early in the process.

Overall, current aviation policy settings are largely sufficient to provide for the needs of Sport Aviation and Sport Aviation is keen to see these policy settings retained. However, Sport Aviation has some concerns regarding the implementation of some of these important policies and these concerns will be highlighted throughout this document.

This response will firstly highlight these existing essential policy settings. The document will then introduce significant issues not directly covered in the discussion paper and then deal with those specific questions raised in the discussion paper of relevance to the needs and views of Sport Aviation.

## A THE IMPORTANCE OF SPORT and RECREATIONAL AVIATION

Sport and Recreational Aviation is 15% of the total Australian aviation operation and 40% of the 'not for hire and reward' or 'recreational' GA operation. Almost all of this operation takes place in low density airspace – currently classified Classes E and G.

This largely rural industry attracts a substantial number of Australian participants as well as significant numbers of international participants. Some 150,000 individuals participate in Sport and Recreational Aviation every year. Sport and Recreational Aviation is a significant contributor to the rural economy and – in the words of the locals – Sport and Recreational Aviation 'drought proofs' a number of important rural centres.

It is true to say that the good aviation safety record enjoyed by the Australian aviation industry has depended significantly on the fact that pilots involved in the Air Transport Sector have had extensive experience of aviation and the necessary safety culture before entering this sector of primary importance. Unfortunately, at this time, the Air Transport sector faces a serious lack of experienced trainee Air Transport pilots. Sport and Recreational aviation is a growing component of the industry able to provide pilots with considerable and very significant aviation experience.

[1] ASAC – Australian Sport Aviation Confederation is the FAI representative in Australia and represents some 150,000 individuals who participate in Sport Aviation in Australia every year. ASAC represents the following organisations - gliding (GFA), hang gliding (HGFA), Parachuting (APF), Ballooning (ABF) and model aircraft (MAAA) but, while the needs and interest are very similar, does not include recreational aviation (RAAus).

Sport aviation promotes aviation interests and provides an affordable entry level in a diversity of locations throughout Australia.

For a number of reasons, it is true to say that a strong, safe Sport and Recreational Aviation industry is important to the overall health of the Australian Aviation industry.

## B CURRENT AVIATION POLICY OBJECTIVES

### 1. OVERALL POLICY OUTCOMES

Sport Aviation understands and supports the Government priority for the optimum development of efficient and effective aviation infrastructure and, when it comes to safety regulation, the priority for protection of the travelling public. Sport Aviation believes that, once the safety needs, particularly, of the Air Transport Industry are met, aviation policy and regulation must provide for equitable access for all other users of airspace and infrastructure.

Unfortunately, it is true to say that the easy way to provide for the safety needs of the Air Transport sector is via blanket requirements and restrictions placed on other airspace users. If all sectors of aviation are to flourish the imposition of requirements and restrictions on other airspace users must be strictly subject to a risk management and, where appropriate, a cost benefit justification. Experience shows that, not only does this approach lead to equitable access, but the targeting of services and protection to the areas of identified need delivers better safety outcomes to the travelling public and more efficient service provision to the Air Transport sector as well.

This approach is an existing policy for the regulator. The success of this risk management approach obviously depends on the quality and reliability of the risk assessment and risk management processes. Accordingly, the industry and particularly the regulator must have access to a centre of excellence on risk assessment and management. It is the view of Sport Aviation and many others in the industry, that resources available to the regulator have not always been adequate. This paper will return to this matter as a specific topic below.

### 2. EQUITABLE ACCESS to AVIATION INFRASTRUCTURE AND AIRSPACE

### MAKING ROOM for SPORT, RECREATIONAL AND GENERAL AVIATION – AIRSPACE and INFRASTRUCTURE NEEDS

Sport Aviation points out that Australia has the lowest overall air traffic density of any developed country, with traffic densities, even in the so called 'J' curve (which contains our higher density airspace), typically one quarter that in equivalent airspace in other developed countries[2]. (Outside the 'J' curve Australian traffic densities are more like one fiftieth of that in other countries.) Accordingly, Australia has large amounts of very low density airspace significant amounts of which are over terrain which is not remote and is benign to aviation. Other countries, including the US and South Africa, by way of example, have some low density airspace, but much of this airspace in over remote and dangerous terrain. In this, Australia is sufficiently different to be regarded as different in type and, to this extent, Australia is unique.

This airspace represents a unique national and international resource for Sport Aviation particularly, but also Recreational and General Aviation. Many sport aviators around the world regard Australia as a Mecca for their chosen sport.

[2] The Australian aviation industry is one twentieth of that in the US. Australian airspace is approximately equal in size to that of the US. Approximately 80% of Australia has little or no air traffic. Accordingly, traffic densities in equivalent airspace in Australian have been estimated by a number of sources to be no more than one quarter that in equivalent airspace is the US.

The airspace and infrastructure needs and desires of Sport and Recreational Aviation are often different, and sometimes diametrically opposed, to that of the rest of the industry and, particularly, the Air Transport sector. An important aim of aviation policy needs to be the simultaneous optimum development and protection of all segments of aviation.

This can be achieved only by a strict adherence to a risk management and, where appropriate, cost benefit justification; recognising that protection of the travelling public must take first priority, but that, once this is assured, efficient and equitable access to airspace and infrastructure for all, including specifically, Sport, Recreational and General Aviation is essential to the overall health of the aviation industry.

The current Government policy as applies to the regulation of Airspace by the Office of Airspace regulation (OAR) embodies this approach and recognises the primacy of the safety of the travelling public but allows for equity of access by requiring a risk management and where appropriate a cost benefit justification and is essential to airspace reform.

Recognition must be made here of the high level of cooperation by the military. Sport Aviation is grateful and trusts this encouraging trend will continue. Operational decisions by the military are always made on a risk management basis and cooperation is made a central issue in any negotiations. Unfortunately, such professional approaches are not always forthcoming from some other sectors.

## 3. REGULATORY APPROACHES – SELF ADMINISTRATION

Sport Aviation in Australia has a long and proud history of effective self administration – starting with the Gliding Federation more than half a century ago. This approach has delivered international benchmark safety outcomes for these sectors, with the GFA – by way of example, as the sport activity which is most closely similar to GA – achieving accident frequencies (quantified as fatalities per 100,000 hrs) half that of GA and about equivalent to that achieved in Charter Ops. This despite the fact that Sport Aviators face significantly greater hazards than GA. Other self administering Australian Sport Aviation Confederation member sports, such as parachuting, hang gliding, ballooning etc, have similar experiences.

This approach has also saved considerable cost to the Nation and the regulator – allowing the regulator to concentrate on protection of the travelling public and the Air Transport sector – while delivering the Nation these superior safety outcomes in Sport Aviation.

This success is largely due to the fact that self administration allowed the Sport Aviation organisations to implement modern approaches to safety regulation which place the primary responsibility for good safety outcomes with the individual operator (pilot). For various reasons CASA and the rest of the industry have been required, or have chosen, to depend more on centrally imposed, mandatory regulations which are readily enforceable. Experience shows that this approach, if applied to Sport Aviation, delivers very poor safety outcomes and Sport Aviation needs to rely on pilot responsibility for good safety outcomes, backed by effective pilot training and education and assured by peer supervision and surveillance.

A further important reason for the success of self administration of, particularly, Sport Aviation is that the devices operated by the members of these organisation require a very different rule set to those relied on by GA and the rest of the Industry. The expertise to determine the necessary standards and procedures to achieve the best safety outcomes resides within the Sport Aviation organisations. It is not efficient, nor would it ever be as effective, to require CASA to buy the necessary expertise to determine these standards and procedures ‘in-house’. It is much more

effective and cheaper to authorise the organisations to determine these standards and procedures on behalf of CASA. CASA must have and, under current and proposed arrangements, does have, the authority and mechanisms to ensure that the decisions made by Sport Aviation are made to achieve the best safety outcomes.

All this has been implemented by accrediting the Sport Aviation Organisations as 'self administrating organisations'.

Further, it is an essential part of the accreditation of these organisations that, while the regulatory approach is very different, the outcomes achieved mesh seamlessly with that of other airspace users ensuring that other operators 'see' no difference in operating procedures etc.

Self administration is NOT successful because it provides a cheaper solution for the organisation themselves. The cost of pilot training and education and the safety management system outweighs the putative savings. (If Sport and Recreational aviation have lower costs it is because of very professional and unstinting volunteer involvement in these essential components of the safety management system.)

This approach has very significant advantages for Sport Aviation. Individuals become involved in Sport Aviation because of the challenge involved – particularly the challenge involved in doing the things we do safely. This sense of challenge is fostered by a system which depends on pilot responsibility, skill and knowledge, combined with an essential element of "peer pressure" to conform to acceptable safety standards. This outcome is inhibited by a centrally imposed rule set which attempts to transfer responsibility for safe outcomes from the individual operator to the regulator. This centralised approach not only delivers poorer safety outcomes – particularly in the environment of sport aviation – but severely detracts from the challenge and hence the enjoyment of this sport.

It is this combination of improved safety outcomes and the challenge of personal responsibility for good safety outcomes which make this sector so vibrant and it is this which provides the reason why recreation aviation under RAAus is expanding and GA is not.

It is the view of Sport Aviation that the most significant single action which could be taken to stimulate GA would be to implement a modern safety management system (SMS) for GA operations similar to that which exists in Sport Aviation. In Sport Aviation this approach achieves international benchmark safety outcomes while maximising the challenge afforded and hence the enjoyment and attractiveness of this recreational and or sport aviation. GA would derive similar benefits from such an approach.

While CASA could run the necessary SMS essential to good safety outcomes from this approach, it might be that this would be best achieved via a self administrating organisation specifically set up to run this necessary SMS covering GA.

## 4. THE CLASSIFICATION of ACTIVITIES

Central to the implementation of the Government's and the regulator's (CASA) priorities for protection of the fare paying passenger, is the classification of activities. This policy has recently been rewritten based wholly on a risk management approach. This revised classification policy has been welcomed by the whole of the industry as one of the major successes of the current review of aviation regulation.

The revised policy depends heavily on the intentions and expectations of those involved in any specific operation, distinguishing between a fare paying passenger and a risk informed participant[3]. Based on this policy the regulator will require a flexible range of Air Operator's Certificate (AOC). The primary purpose of an AOC is to require processes and documentation which will ensure the agreed levels of safety are always in place. Operation without an AOC does not necessarily mean a lower level of safety, but rather, a simpler level of external (auditable) accountability.

This policy allows the regulator to impose the highest standards where required to protect the travelling public without unnecessarily inhibiting or even precluding participation in other forms of aviation.

Sport Aviation is deliberately and specifically organised to provide services to risk informed participants (only). Accordingly, these organisations do not require an AOC. Safety standards remain the highest possible and meet international benchmark outcomes but without the unnecessary cost and limitations which would inevitably be imposed by a requirement for an AOC. In this case surveillance and audit are by peer review which is not easily compatible with the normal requirements of an AOC.

Other legitimate segments of aviation – for example Warbirds – would not be possible without this enlightened approach.

## B NEW ISSUES

### 1. A CENTRE of EXCELLENCE for RISK ASSESSMENT AND RISK MANAGEMENT

The regulator (CASA and the airspace regulator – now the Office of Airspace Regulation; OAR – but previously the AERU) have, for some time now, had as a policy, risk management justification of all significant regulations, requirements and restrictions placed on the industry.

If this approach is to be relied upon to deliver world benchmark safety outcomes; risk assessment, and the resulting risk management outcomes, must be of the highest quality and reliability.

To date, the regulator (CASA and now the OAR) have had significant 'in-house' risk assessment capability, but these have been restricted by resources available to the regulator. Accordingly, frequently, when a significant project is under way the regulator has had to outsource this risk assessment and risk management decision to external contractors.

In some cases this approach has been seen to have the advantage of being 'independent'.

This approach has not been successful.

The external contractor has no ongoing responsibility for the decisions made. Also, the external contractor must look to repeat contracts and to avoid the most serious outcome possible – that of an extraordinary, unpredictable and hence not truly preventable, chance accident which was

[3] A fare paying passenger is an individual who is partaking of the services of the industry to do something other than be involved in aviation – such as travel from A to B – and who relies on the service provider to ensure the highest level of safety. A risk informed participant is an individual who choses to participate in some form of aviation for its own sake and is informed of, and willing to accept, the risks involved. Intermediate between these two are situations where individuals decide to participate in an occupation or employment which necessarily involves aviation. This intermediate case involves some level of choice and knowledge of the risks involved – but not to the degree applying to a risk informed participant.

apparently allowed because the contractor recommended something – anything – less than the most complete and restrictive level of protection conceivable.

The results, rather than being safe and equitable, have been excessively conservative and restrictive. These excessively conservative and restrictive outcomes don't even deliver the best safety outcomes – they minimise the risk to the contractor and not the travelling public.

This situation did not apply during the short time that the AERU (Airspace and Environmental Regulatory Unit within Airservices) was responsible for airspace regulation while the OAR was being created. This department of Airservices had access to the full 'in-house' expert risk assessment and risk management resources and expertise available to the service provider and was capable of reliable and expert risk assessment and risk management which had the confidence of the industry.

This facility was also backed by effective industry consultation and involvement.

Underpinned by this reliable risk assessment process, the AERU implemented the policies, now signed into law, for the primacy of the protection of the traveling public and safety in general, but once sufficient was done to ensure this outcome, equitable access for all. Detailed understanding of the operation of the Australian ATM system combined with the insights provided, particularly, by the mechanistic traffic modeling and conflict pair determination in the Airspace Risk Model, allowed the AERU team to sort the real needs from the 'we would like to haves' in the stakeholder interviews. This not only underpinned a rational approach but engendered a respect throughout the industry which created a cooperative, rational approach from the industry – all be it in some cases, reluctantly.

It is fair to say that, during this short period much progress was made towards a cooperative approach to airspace regulation – unparalleled over the time since airspace reform was commenced in 1991 with the AMATS project.

This success is attributable to the combination of consultation and industry involvement and expert 'in-house' risk assessment and risk management ability.

Further and perhaps most importantly, where this expert 'in house' risk assessment ability has not been available, experience shows that the sensible and essential requirement for risk assessment, was subverted by poor and/or biased risk assessment, into a means of providing pseudo scientific validity to the views and agendas of sectional interests. It is clear that this has been a major, if not the major, reason for the failure of airspace reform over previous decades.

It is the very strong recommendation of Sport Aviation that the regulator (CASA and the OAR) continue to consult with the industry and be given the necessary resources to create an 'in-house' centre of excellence for risk assessment and management and that the regulator not be required to outsource this work which is fundamental to the safety outcomes achieved.

The AERU proved that this resource need not be particularly expensive. One senior experienced risk engineer, with expertise in complex risk modelling, attached to the resources already within the OAR with access to the traffic data available in Airservices could achieve this outcome.

The Government should give strong consideration to a requirement for CASA and Airservices to set up such a joint facility as this may not happen if left to the individual Governmental instrumentalities.

## 2. AIR TRAFFIC MANAGEMENT (ATM) STRATEGIC PLANNING

Strictly this question is raised within the discussion paper (comment on page 14) but it is a topic of considerable importance to the development of ATM services and investment in new technology and, since this was not highlighted in the actual questions proposed in the discussion paper, this comment is treated as a new topic in this discussion.

Other countries put considerable Governmental resources into a professional approach to ATM strategic planning. Australia has been content to allow a volunteer group (ASTRA) take this National responsibility. Sport Aviation does not wish to imply any criticism of those who took on this onerous job – rather the opposite – but, rather, to point out that this is too large and important a job to leave to a volunteer committee with only those resources they can divert from their employers.

The result is that the best data on ATM capacity needs in Australia come from international studies. These show that only a very small amount of airspace in the 'J' curve will actually require next generation ATM technology to meet the air traffic management demand by 2025.

The resulting ATM Strategic Plan, prepared by ASTRA, is verbose and repetitive to the extent that the meaning is obscured. It is difficult to discern exactly what the document proposes but so far as can be determined, there is no analysis of the needs of the Australian ATM system and the current plan represents a wish list driven by technical feasibility and excellence, not justified need.

The limitations of this plan reflect the resources available to this group – which are few indeed. This strategic plan is much too important to Australian air safety to be developed in this unprofessional manner and the Government must take responsibility for this important process.

Further comments are made on this topic below.

## 3. CONSULTATION

Experience has shown that change management requires that the whole of industry be involved. This applies particularly, but by no means exclusively, to airspace regulation.

Consultative processes need to be well managed if they are to assist. Poorly managed consultative processes tend to inhibit progress.

The process needs to be:

1. Open, transparent, and multilateral.
2. To try to reach a consensus when this is possible.
3. But must document different views when this is not possible and honestly record these different views and their origin to pass on to the decision makers.
4. Agree a risk management and cost benefit basis for all decisions,
5. which would be applied even if consensus is achieved,
6. and which would be the arbiter where consensus could not be achieved.
7. Bilateral negotiations must not be allowed to upstage multilateral consultation.

The forum needs to be:

1. At least as good as the SCC (Standards Consultative Committee).
2. Run by industry.
3. With an independent chair.

4. and an inclusive, industry representative composition but as small as possible consistent with this requirement.
5. Members should be prepared to represent their sector not individual companies or organisations.
6. Representation should be at a high level capable of representing the views of their sector.
7. Meeting processes should be open and transparent with position papers available with adequate time before the actual meeting.

### 4. ACCESS to and AVAILABILITY of REGIONAL and COUNTRY AIRFIELDS

The issues paper asks a number of very important questions regarding access to and the development of major airports. Sport aviation is aware of major difficulties in this area and supports strong action by the Government to deal with these unintended consequences of privatisation of these airports.

However Sport and Recreational as well as General Aviation are suffering ongoing loss of smaller airports as local Councils see the land as a valuable resource for other development.

It is not clear what the Government can do to address this matter, but it is having a very negative effect on the development of Sport, Recreational and General Aviation.

Serious consideration needs to be given to a coordinated approach to this problem as it is fundamental to the health of the smaller end of the aviation industry.

Without wishing to be seen as critical, it is particularly disappointing to see that the questions in this area relate to the major airports only.

## C RESPONSES TO SPECIFIC QUESTIONS

Many of the questions raised by the discussion paper have no relevance to Sport Aviation. Partly because of this, those questions which are relevant to Sport Aviation can be best dealt with in an order different from that in the discussion paper. For clarity, the relevant question in the discussion paper will be identified.

### AVIATION SAFETY Section 3 – Question on p17

***Are there ways in which the approach to Safety management Systems could be enhanced?***
***How can CASA strengthen the way it relates to industry while meeting the community expectations of a firm regulator?***
***What steps can the aviation industry as a whole take to ensure it maintains safety standards as it grows and diversifies?***
***What issues should a 21st century regulator be focussed on?***

Sport Aviation will firstly respond on behalf of the needs of Sport Aviation only and then with some general comments.

## 1. SPORT AVIATION CONCERNS

### 1.1 Financial Support for Self Administration.

To a significant extent the amount of safety promotion etc. that the Sport Aviation organisations can carry out depends on funds available. While all Sport Aviation organisations have a policy of funding all necessary safety related actions and charging members accordingly – safety promotion and related functions, which have a positive effect on safety, but cannot strictly be designated 'necessary' will unavoidably be limited by available funds.

The Sport Aviation organisations carry out two functions on behalf of CASA – those which for the rest of industry are funded out of the public purse (referred to here as 'public purse functions') and those which are not covered by the public purse and are cost recovered from the Industry (referred to here as 'cost recovered functions').

Cost recovered function carried out by the organisation on behalf of CASA are 100% funded from members funds

Those functions carried out by the Sport Aviation organisations, which, for the rest of the industry are 100% funded from the public purse (public purse functions), are currently subject to part funding by CASA. This level of funding represents about 15% of the real cost to the organisation. The cost of these functions, if carried out by CASA, would be much more than the cost to the Sport Aviation organisations because of heavy reliance on very professional and competent volunteer personnel who donate their time to their chosen sport.

Overall, based on figures from CASA, Sport and Recreational Aviation do 40% of the 'recreational' or 'not for hire and reward' flying but receive 2% of the funding.

The Sport Aviation Organisations would wish to insist on the continuation of this part funding and would wish to see the level of funding of their real costs increased. Sport aviation understands that this could never, and should never, reach 100% of their own costs but ca 15% is very low. Better safety outcomes could be achieve as a result of better and more proactive safety promotion etc.

If required, Sport Aviation would be happy to justify such additional expenditure on a case by case basis but it is clear that, at very small increased cost to the public purse, significant and ongoing improvement in safety outcomes could be achieved.

### 1.2 CASA Audit.

It is an important part of self administration that CASA has the capability to carry out routine audits of the Safety Management Systems used by the Sport Aviation Organisations. Resources to carry out this function have been reduced and while the organisation do not see any consequence of this reduction in resources at this time, it is important that this function remain effective. External audit by CASA of the organisation SMS is important to maintenance of standards.

### 1.3 External Audit by ATSB

Currently it is Government policy that the ATSB must concentrate on accident analysis affecting the travelling public. Sport Aviation understands this priority – but the application of this priority over many years now is that NO accidents involving Sport and Recreational Aviation are investigated by ATSB. This applies to fatal accidents as well.

This creates two problems.

Firstly, functions carried out on behalf of CASA and under the Act require the Sport Aviation Organisation to investigate accidents and respond to improve safety. Unfortunately the organisations do not have the authority or the necessary indemnity to carry out these investigations. Obviously the organisation do what they can but they remain exposed in this function.

Secondly, if the only accident investigation is by the organisation themselves, this means that the organisations are investigating themselves, and there is no external audit.

External audit by ATSB is also important to the maintenance of standards in the long term.

The Government must devote a small proportion of the accident investigation budget to the investigation of chosen, critical accidents in the overall field of Sport Aviation of relevance to ongoing safety standards. In the context of the total ATSB budget the total cost of this additional work would be very small indeed.

Australia has had the embarrassing situation of a fatal accident involving a foreign national for which no cause could be determined because ATSB did not investigate and the police at that time were not aware of the important steps necessary to maintain the evidence. Police action is now much improved but the current situation remans unsatisfactory.

## 2. CONCERNS OF GENERAL INTEREST

Firstly, in dealing with these questions the basic justification for any initiative is its ability to produce the very best possible safety outcomes based on a modern risk management and cost benefit justification.

Some see the requirement for cost benefit justification as promoting a lower standard ('affordable safety') but international experience shows that this approach targets protection to the identified hazards and produces better safety outcomes. Failure to justify actions taken produces poorer targeting of risks and delivers poorer safety outcomes.

Sport Aviation believes that there are very significant changes which could be made to address these questions.

It is specifically because Sport Aviation believes that a different approach is essential to the best safety outcomes that Sport Aviation is so strongly attached to self administration (see above). The effect of this change in approach is much more significant on safety outcomes in Sport Aviation than in other aviation sectors – but the improved outcomes still apply for other aviation sectors, especially in the case of GA.

Put simply the changed approach recommended recognises, from the ground up, that the primary responsibility for good safety outcomes rests with the pilot (participant) in command. This new approach puts this principle into action at all levels, starting with the underlying regulations

### 2.1 Modern Safety Regulation

In the mid to late 1990s the OH&S regulator transitioned from a dependency on a centrally imposed, mandatory rule set to a modern risk management approach which transfers the primary responsibility for good safety outcomes from the regulator to the individual operator at every level. With this transition the regulator becomes responsible to ensure appropriate operator Training and

Education (T&E) and minimum competence and to create a rule set which imposes responsibility for safety outcomes on the operator.

This change was made because it delivers better safety outcomes.

Recent discussion suggests a general lack of understanding within the Australian aviation industry of the essential nature of this transition and the improved safety outcomes achieved.

### 2.1.1 The Essential Nature of this Change

The essential change which this transition introduces is the transfer of primary responsibility for good safety outcomes from the regulator to the individual operator at all levels.

It is commonly known that this change was triggered by the investigation of the Piper Alpha disaster involving an explosion on a North Sea gas rig. This investigation determined that a major, if not the major, contributing factor for this accident was a dependency on a centrally imposed rule set.

### 2.2.2 Safety Management Systems and EASA Maintenance Rules.

CASA has made much progress with the introduction of this approach – specifically with the introduction of the EASA approach to maintenance regulations which relies on outcomes based regulations and the concept of an Acceptable Means of Compliance (AMC) and with the proposed introduction of Safety Management Systems (SMS) for all aviation organisations.

If implemented appropriately, this deals effectively with maintenance issues and the regulation of organisations – but leaves the matter of regulation of individual pilots (Part 91) not addressed.

### 2.2.3 Regulation of Operations by Individual Pilots and Particularly, GA

The essence of the change is the transfer of primary responsibility for good safety outcomes from the regulator to the individual operator.

The process for implementation of the transfer of responsibility in the rules for individuals is by the development of outcome or performance based regulations. However, despite some progress, the regulator and the Australian industry remain significantly, to substantially, reliant on a centrally imposed prescriptive rule set.

Recent discussion regarding proposals to mandate specific calls at untowered airfields showed that, while, when pressed, there was an industry consensus that movement to fully outcomes based regulations was desirable, the Airline Industry and the regulator apparently believes that the Australian Industry was ‘not yet ready’.

Specifically, that an Australia specific culture and approach exists which may be summarised in the following four nested statements or attitudes.

‘If it is important to safety outcomes then CASA must mandate it’.
‘If it is not mandated then it is, clearly, not important and compliance is optional.’
‘Accordingly, pilots cannot be relied on to comply with a requirement that is not mandated.’
And finally, ‘If pilots will not comply, the only action which can be taken is to mandate the requirement and this will be successful.’

This culture clearly places the regulator with primary responsibility for good safety outcomes and – while, as implemented in Australia, it has delivered good safety outcomes, this approach will not deliver the best safety outcomes.

Experience shows clearly that centrally imposed, mandatory, prescriptive rule set backed by enforcement rather than pilot training and education is not working to produce the best safety outcomes.

Put simply – a centrally imposed mandatory rule set makes the regulator and those responsible for safety outcomes feel good – but a modern risk management approach which makes the operator (pilot) responsible for good safety outcomes backed by operator (pilot) training and education delivers the best safety outcomes.

This issue has been addressed by Sport and Recreational aviation via application of self administration and hence strictly this matter is not of significance to Sport aviation.

However the following are some views prompted by the experience of a fully outcome based and SMS approach by Sport Aviation.

### 2.2.4 Sport Aviation Views on The Rules for Individual Pilots – and GA

While most, when pressed, agree that an approach which makes the individual responsible for good safety outcomes is the desirable ‘end state’, as it were, two objections are being used to delay or limit the implementation of these changes.

Firstly, the Australian aviation industry 'is not ready yet'.

This is a damning admission and will mean that Australia will continue to deliver poorer safety outcomes than would be possible under a modern approach to safety regulation. But, more importantly, this is not a logical response. The necessary first step in making this transition, taken by all regulators which have made this transition, is for the regulator to take the lead and carry out the necessary national campaign to MAKE the industry ready. The industry will never be made ready by giving in and making some rules centrally imposed mandatory rules because they are 'too important' and the industry is ‘not yet ready’.

Secondly – ‘All regulatory systems must have some centrally imposed mandatory rules’.

Outcome or performance based regulations will contain some centrally imposed mandatory rules but these will be limited to requirements for competency and operator training and education (T&E) as well as a few quantitative requirements such as speed limits and loading capacities etc. and minimum equipment requirements and usage These rule sets will NOT contain centrally imposed mandated procedures which take back responsibility for safety outcomes into the regulator, especially if it is 'because this situation is too important'. Such exceptions support the view that, if it is really important, the regulator will take responsibility and mandate the procedures and hence whole approach will be undermined. This will produce dangerous confusion as to who is really responsible for what.

Either we make the change and do the pilot T&E; or we do not.

In fact we have no real choice as the best safety outcomes depend on this approach.

This change will require a National campaign backed by both the Government and the regulator.

### 2.2.5 A Safety Management System for Individual Pilots (GA)

If outcome based rules for individual pilots are to be progressively evolved to achieve ongoing improvements in safety then some organisation must implement a Safety Management System for this rule set.

While the details of a SMS can be complicated the essentials of the system can be summarised as a five step procedure involving four identifiable processes.

The first step involves monitoring of the operation – this includes accident and incident monitoring and, in second generation SMS, compilation of individual operator expertise as to potential hazards etc.

The second step involves collation of this data to define trends and issues.

The third step is to define the causes involved. The raw trend is the symptom. Action needs to address the cause not the symptom.

The fourth step is to decide and implement effective action required to address the concerns identified in step 3.

The fifth step is the same process as the first step – it is monitoring of the operation to assure implementation of the fix was successfully achieved.

**Implementation**

It is precisely because of the need for such an SMS that Sport and Recreational Aviation organisations exist. Their primary purpose can be defined to be to operate the necessary SMS essential to the good safety outcomes achieved by these organisations.

An SMS for GA could be run by the regulator. The details are for the regulator to determine but the following would seem logical from experience in Sport Aviation.

The first step in this process has already been taken with the introduction of the Field Safety Officers. This approach should be enhanced. Appointment of volunteer officers to assist this initiative should be considered.

Experience in Sport Aviation shows that Instructor standards are at the core of the necessary SMS.

A National Training School should be set up with responsibility for Instructor and instructing standards. This organisation should contain a joint Industry/CASA National Safety and Training Panel with the responsibility to recommend competency standards and instructional techniques and oversee this changed level of responsibility. This panel should consist of appropriate CASA personnel, experienced currently active instructors and the field safety officers.

This Safety and Training Panel would be responsible for running the SMS for GA and/or for the rules for individual pilots (Part 91). The field safety officers and all instructors would be the eyes and ears of this panel providing the field monitoring essential to this SMS.

This organisation could exist within CASA or be formed as a self administrating body to operate the required SMS (as do the Sport and Recreational Aviation Organisations).

**Compliance, Surveillance and Enforcement**

This SMS depends heavily on individual operator involvement and frank and honest exchange of problems and failings in the current system which is incompatible with reliance on enforcement as a primary process of achieving compliance. The cooperation of pilots must be obtained and it must be clear that enforcement will only be used in cases of recalcitrant behaviour.

It must be clear that enforcement will be used vigorously in such cases but no operator must ever be given reason to fear enforcement action where that operator is conscientiously attempting to be part of the safety system.

While, clearly, enforcement remains an important part of the regulator's job, it is also an essential part of this change that the emphasis between compliance and enforcement actions alters as the regulator and individual operators cooperate to achieve improved safety outcomes.

It is important to remember:

**Compliance** is the outcome,
**Surveillance** is how you achieve certainty that compliance levels are adequate
and **Enforcement** is what you do after it has gone wrong.

In regulatory systems dependant on centrally imposed mandatory rules where the regulator is seen as responsible for ensuring good safety outcomes, the regulator often relies on enforcement as a major or perhaps even the primary means of ensuring compliance, with little attempt at a cooperative and educative approach to good safety outcomes. 'If pilots won't do what is necessary, then what else can we do but mandate it and enforce it'.

**Two Independent Surveillance System**

Surveillance of operations occurring within an aviation organisation with its own internal SMS would occur as now – with the regulator monitoring the effectiveness of the operation of this internal SMS.

Primary responsibility for surveillance of GA would lie with the Field Safety Officers – who would be an important component of the GA SMS and would be effectively equivalent to the internal SMS in operations under the control of an organisation. The Field Safety Officers would not invoke enforcement until actions such as education and counselling fail to produce compliance. This counselling would be backed by the explicit or implicit threat that failure to comply will result in the matter passing to enforcement.

Independent surveillance and enforcement of the effectiveness of this GA SMS would be provided by separate actions by the regulator.

This would effectively lead to two separate surveillance programmes – one run by the field safety officers aimed at achieving (cooperative) compliance and collecting data on trends etc. essential to the first step on the GA SMS and a second arm monitoring the effectiveness of this SMS (as for the rest of the industry) leading to possible enforcement action – with both arms cooperating to ensure th best safety outcomes.

**AVIATION SAFETY SECTION 3 Continued (Questions on p17)**

***Is self administration a key factor in the growth of GA. Is there more scope …? What are the opportunities and risks in self administration?***

Self administration in Sport and Recreational Aviation is much misunderstood. As the above illustrates – self administration is NOT a cheap option for segments of aviation where the exposure is such that the risk to the Nation in not great.

Self administration in Sport and Recreational Aviation allows the several Sport Aviation organisations and Recreational Aviation Australia to operate an SMS allowing the implementation of a modern safety management system in these sectors which is essential to the good – world benchmark – safety outcomes achieved. This has been forced by the fact that while a centrally imposed rule set can achieve adequate safety outcomes for the rest of the industry, the level and types of hazard faced by sport aviators are such that, this centralised approach delivers safety outcomes which would be unacceptable to Sport Aviation and the Nation.

Also, this approach is essential to the satisfaction achieved from the challenges involved in and essential to enjoyment of these sports.

The same advantages would accrue to GA if self administration was applied as it is to Sport aviation – as described above.

Put simply GA, would benefit from the creation of a self administrating organisation to operate an SMS for GA (above). This is the only acceptable reason for implementation of self administration by any sector of the aviation industry. It MUST be justified by the safety outcomes achieved, not cost savings to the sector involved

(CASA might suggest this approach so the regulator can further concentrate its resources on the fare paying public but the reason for the industry sector involved must be to achieve better safety outcomes – otherwise safety will be compromised and the concept tarnished.)

The major risk is that self administration will be implemented as a cost saving mechanism – without the necessary SMS. This would result in the loss of control by CASA without the replacement of this control with the necessary SMS and potentially serious safety outcomes.

It cannot be repeated too often or emphasised too much that the reason for self administration is NOT financial saving but the development of a sustainable SMS underpinned with appropriately skilled people and a culture that will continue to deliver and improve safety outcomes.

**AVIATION SAFETY SECTION 3 Continued (Questions on p17)**

***Should the governance arrangements for CASA be strengthened to better support the role of safety regulator?***

Two issues pertinent:

Firstly, CASA must be answerable to a Board which determines aviation safety policy and which supports the CEO and Aviation Safety Director. This arrangement would avoid frequent approaches to the Department and the Minister.

Board members must both be, and be seen to be, free of sectional interests. Accordingly the CASA CEO and the Board should appoint members of an industry based group, similar to the

current ASF, to provide expert input on matters of industry concern for consideration by the Board and the CEO. This second group should have no decision making powers and hence should contain members of the industry with expert knowledge in all significant aviation sectors.

Secondly, once the regulatory review is complete, a smaller Standards Consultative Committee which is truly Industry representative, should be retained to overview implementation of the new rules and progressive changes to those rules. Members of this committee must be required to represent their sector not their personal or individual organisation views.

See general comment on the requirements of effective consultation above.

**AVIATION SAFETY SECTION 3 Continued (Questions on p17)**

***How can the Australian Government and industry ensure CASA completes its long-running regulatory reform process as soon as possible…?***

At this time, the significant impediment to completion of this programme is the lack of drafting resources in OLDP. This delay makes any delay within CASA and the Industry in achieving agreement on the detailed content of the new regulations seem miniscule.

Some means of streamlining this drafting process must be found. If OLDP cannot meet the needs then CASA must be allowed to draft its own regulations.

**INFRASTRUCTURE SECTION 2**

**AIRSPACE REGULATION AND AIR TRAFFIC MANAGEMENT SECTION 2.2 p 13/14**

**1. Overall Approach**

**Risk Management Justification**

Equitable access to airspace is critical to the overall health of the aviation industry. Sport Aviation views regarding current policy have been outlined above.

Current policies which make Class G the default airspace classification with a risk management and, where appropriate, a cost benefit justification for additional services or restrictions is essential to achieving this outcomes.

However, Sport Aviation believes that current implementation of this important risk management approach is being limited by access to adequate 'in-house' risk assessment and risk management skills. Sport Aviation reiterates that, arguably, the single most significant new initiative for CASA would be the establishment of a centre of excellence for risk assessment and risk management. It is in the area of airspace regulation that the use of poor or biased risk assessment processes has had a very negative effect on regulatory reform. (See general comments on this topic – above.)

This could be a joint facility, funded and managed jointly by the regulator (CASA) and the service provider (Airservices). This facility could have application outside the Aviation sector – in a manner similar to ATSB.

**2. Regular Review**

Much effort is put into review of airspace and infrastructure to provide for increased demands, however, it is important to develop processes for regular reviews which recognise the changing needs and allows specifically for removal or down grading of classification, services or level of protection.

Frequently this is seen as 'too hard' as it is seen by some as a reduction of safety which leaves everybody exposed to the chance accident. Specific Government direction that this process of justified downgrading of services or classification is expected to occur would greatly assist this important often neglected function. Justified down grading must be approached with great caution but must be possible along side any justified upgrading of protection or services.

**3. ICAO Compliance**

Australian must remain ICAO compliant to the extent that Australian airspace must be transparent to international operations – but it needs to be remembered that ICAO must necessarily concentrate on conditions prevailing in the higher traffic density airspace typical of other countries – Europe and the US. Australia must apply this risk management and cost benefit approach even to ICAO requirements and, where indicated, file a difference so that requirements appropriate to high density airspace are not implemented automatically in Australia with detriment to access for other airspace users.

**AIRSPACE REGULATION AND AIR TRAFFIC MANAGEMENT SECTION 2.2 (p 13/14)**

***Are we effectively aligning airspace classifications and the level of services and facilities provided to reduce the risk to passenger transport operations? Can we better identify risk factors?***

***How effectively have Australian regulatory agencies been in pro-actively assessing the Australian air traffic management system and setting clear risk based safety and efficiency outcomes requirements having regard to international developments?***

In low density airspace, the simple answer to these questions No and Poor.

In this airspace, Australia has relied on blanket mandatory non-ICAO requirements which attempt to allow the regulator to take primary responsibility for good safety outcomes rather than the pilot. This Australia specific approach has not delivered the best safety outcomes.

In this type of airspace, the US, by way of comparison, has concentrated on sensible levels of regulation coupled with good pilot training and education and developed a system which depends on pilot responsibility. This approach is not only consistent with modern safety regulation approaches, but the US system delivers a 30% lower mid-air collision rate than that in Australia despite traffic densities approximately four time that in equivalent airspace in Australia.

The essential feature of regulation of low density airspace is to identify and target the small areas of risk – largely the terminal airspace.

A classical example of the failure to align airspace classifications with demonstrated risk levels is the implementation of a higher classification of airspace (Class C) in the steps down to the control zone at Class D tower aerodromes.

The analysis done to justify this showed that there were some 1500 conflicts per year which needed to be dealt with in the Class D zone at these airfields and only 44 per year in the whole of the Class C steps down to these aerodromes. Clearly, we have a larger volume of higher classification airspace dealing with a much smaller hazard.

The regional airlines strongly supported this outcome during the NAS 2b roll-back. However, at the same time the RAAA argued for removal of the tower at Albury and examination of the need for other Class D towers. If the RAAA is successful in having these towers removed the Class D zone and associated Class C steps would disappear and be replace by a untowered aerodrome in Class G airspace.

Clearly, the airspace in these Class C steps are not made more hazardous by the presence of the Class D tower.

Only one of these approaches is the right answer and this is a classical example of the need for rigorous, reliable risk assessment and risk management available to the regulator.

Unfortunately, this confused and contradictory approach to airspace regulation is typical of much of what is now in place and derives from a historical approach and a lack of trust in, and reliance on, responsible risk assessment and management. It derives from approaches typified by the statement 'It must be safer if ….'

As in the example quoted above, without an objective risk assessment process, it is inevitable that the reaction to any proposal will be strongly influenced by where the costs of implementation fall.

The only rational solution to these problems is reliable risk assessment and risk management and, as argued above, the risk assessment expertise must be within the regulator and not outsourced.

**AIRSPACE REGULATION AND AIR TRAFFIC MANAGEMENT SECTION 2.2 (p 13/14)**

***How can Australia's air traffic management system best take advantage of new and emerging satellite navigation technologies? What is the role of government…? Are there any impediments to maximising the use of new emerging surveillance and navigation technology?***
***How do we enhance both air traffic management safety and capacity and efficiency?***
***How do we ensure the development of Australia's air traffic control systems is compatible with global and regional systems?***

**1. Overall Comment**

The primary and common answer to these questions lies in the effective implementation of current Government policy on airspace regulation. Strict implementation of the requirement for risk management and cost benefit justification based on competent 'in-house' risk assessment and risk management.

This approach has been undermined by a well meaning push for what is seen as 'safety' and an associated desire for the implementation of technology because it is so effective.

Currently, Australia is facing the possibility of a 'lose lose' situation which will presumably be resolved before even the green paper is available. Namely, having spent the R&D funds to be 'at the leading edge' Australia may well be close to last to implement because of the failure to abide by the requirement to rely on a risk management and cost benefit justification.

How did we get here?

The reason is simple – the fix is not.

This situation is a direct result of very poor, or no real, R&D management. Industry wide planning of the two projects dealing with GPS based avionics (GNSS Nav. and ADS-B) were left in the hands of middle management R&D engineers – who wish to be involved in the leading edge development; middle management regulators – who wish to achieve the 'control' which would result; and airline pilots – who see themselves as benefiting from the technology with no need to be concerned about the costs.

The approach was technology driven and justified by the desire to 'reap the benefits of being at the leading edge'.

Competent R&D management makes clear that;

a) Unless you are the market leader and/or can protect the technology; there are NO advantages of being at the leading edge – only risks. Clearly, such technology, rather than being capable of protection, must be harmonised internationally. If you are a small player, it is cheaper and less risky to wait until the technology has been developed and international decisions made regarding implementation before attempting implementation in a small part of the market.

   Numerous example of this abound both in the aviation industry and other industries.

   and that:

   b) Technology is only as good as the problem it solves.

R&D management decisions must be made starting with the problem which needs to be solved and the most cost effective approach taken to solving this problem.

The decisions and particularly the timing of implementation must take full account of the fact that the ATM industry must be harmonised and that final decisions will be decided by market forces in other countries – not logic or technical excellence – and are essentially unpredictable.

Such decisions crucial to the development of the Australian ATM industry as well as the whole of the aviation industry must be made in the context of an overall ATM strategic plan – which in turn must start with as detailed an estimate of future ATM needs as is possible.

**2. ATM Strategic Plan**

These projects and decisions cannot exist in isolation – they are an important part – but must be, by their very essence, a part, nevertheless, of the overall strategic plan for the ATM and overall aviation industry development. If these decisions are to be placed – as they must be – on a rational basis starting with the need and/or problems to be solved, then these decisions must be made as part of this overall strategic plan for the industry.

What is needed firstly is a prediction of the real ATM needs of the Australian industry. Not just expected traffic or passenger numbers. International planning processes have estimated the need for ATM services around the world. These studies show:

1 Australian aviation traffic is expected to increase substantially over the next few years.

2. But international prediction of ATM capacity needs show that very little of Australian airspace will actually need updated technology by 2025 for capacity reasons.

3. Whereas some airspace in the US and Europe will not cope with the predicted capacity even using this next generation technology (GPS based technology).

4. The largest ATM capacity needs affecting Australia are not actually under our control and occur in the regions around Singapore.

This crucial information does not mean that we do not need to do anything – but it does mean that our needs are dominated by costs and international compatibility, not ATM capacity.

Safety issues are also very important – but here again hard nosed planing and justification are needed. Much of the push for ADS-B is driven by a desire to have third party separation in airspace where this cannot be justified on a risk management and cost benefit basis. Currently this push is behind the discussion over the ADS-B OUT mandate which is threatening to delay implementation of GPS based technology till 2028.

**IN SUMMARY**

Leaving this ATM strategic plan to well meaning volunteers is not, and was never, appropriate.

What is needed is a coherent strategic plan and overall concept of operation which will produce a risk management justified system delivering the highest level of safety to the travelling public, and an efficient and equitable aviation industry.

Clearly, this is the final responsibility of Government. Input from the service provider, the regulator and the industry is essential and a body such as ASTRA (properly constituted to be industry representative) should provide that input – but the resources and final responsibility must come from the Government.

**2. Business Decisions**

Many of these decisions are not safety decisions but business decisions. Controlled airspace run either as procedural airspace, based on SSR or ADS-B are run to the same safety standards (by setting appropriate spacing of aircraft etc.). The difference is capacity and cost.

Australia has made no publicly available attempt to determine capacity needs for the Australian ATM system. The best data publicly available was generated by international interests and shows that only a small part of the so called ‘J’ curve will require next generation (GPS based) technology for capacity reasons by 2025.

If Australia is to achieve the optimum safety, efficiency and capacity outcomes from this technology then the Government must insist on hard nosed, professional R&D management of these projects and a risk management and cost benefit justification of the extent and timing of implementation of

this technology in Australian airspace – taking full account of the traffic levels and real hazards in this airspace. If the best outcomes are to be achieved Australian must NOT fall into the traps of the past and implement broad blanket requirements in the name of 'safety'. This approach is not only wasteful but does not deliver the best safety outcomes.

**4. Basis of Implementation Decisions**

The ASAC organisations understand that GPS based technology – including GNSS navigation and ADS-B – is important new technology for the provision of ATM services which, if applied appropriately, are capable of significant cost savings and improved services and safety.

Australia has spent significant sums of public and/or industry money developing this technology. Accordingly, the ASAC organisations believe that it is important that appropriate implementation of this technology be expedited so that the expected cost savings can be achieved.

Unfortunately, it appears that appropriate implementation of some aspects of this technology is being delayed by what seems to be an almost ideological push to achieve a very wide ADS-B mandate from the very outset. It appears that this objective is forcing an attempt to implement these changes as a single project making the decision an all or nothing outcome. No other nation is taking this 'big bang' approach. It is our view that this 'big bang' approach is delaying implementation of clearly cost beneficial aspects of this technology while the controversial aspects of a wide ADS-B mandate are debated.

Further to this and equally importantly, debate on these initiatives remains technology driven rather than outcomes based. That is, proposals for the implementation of this technology are based on the existence and success of this technology, not on the need to achieve an identified and justified business objective.

Implementation of this and other ATM technology should be progressive. Individual business objectives need to be clearly identified and pursued as separate projects so that those which are ready and/or urgent can be implemented as soon as appropriate – not delayed by other more controversial objectives – so that the momentum in this project is not lost.

These decisions must be made in the context of an overall ATM strategic plan.

All decisions must take account of the priority of the safety of the travelling public but, once this is assured, efficiency and equity of access must also be integral to these decisions.

In order to achieve this, these decisions must be strictly based on a risk management and cost benefit justification based on an 'in-house' centre of excellence for risk assessment and risk management.

Sport Aviation has given the commitment that, if this approach in reliably used, we will abide by the outcome – Sport Aviation looks to the rest of the Industry to give the same commitment.

**AVIATION SECURITY SECTION 5**

Sport Aviation understands the need for effective, realistic security provisions required to protect the travelling public.

Sport Aviation believes that their operations do not impose a security threat, specifically because of the nature of those operations. Accordingly, Sport Aviation argued for and received an exemption from these requirements. Sport aviation is grateful for this outcome and trusts that this will not be subject to any change.

However, a consequence of this exemption is that sport aviators are frequently denied access to many aerodromes etc. Where the security requirements are justified Sport Aviation accepts that this is the consequence of this exemption which is so important to our operation.

However, Sport Aviation would point out that the implementation of many of these requirements has been arbitrary to say the least. Owners of airfields – often local councils are simply asked whether they wish security protection – and if this is requested, funding is provided.

The result is many airports with no need of this protection have areas classified for restrictive access and fences built – in some cases only part the way around the airfield.

Because many of these installations are not justified, many – or even most have organised means of circumventing the protection provided which are well known to the locals. These approaches have been implemented so widely that it would be surprising if these actions have not been taken at airports where security actions are justified.

Accordingly, these fences simply serve to prevent access to water and facilities etc. by itinerant pilots.

This whole approach has brought this initiative in to disrepute and has had a very negative effect on the overall level of security protection resulting.

What is ungently needed is a rational risk management approach to this significant problem. The implementation of the whole system outside the major airports needs to be reviewed. Clear risk management criterion need to be generated and these need to be implemented successfully where the risk indicates need and restrictions on the use of airports where such protection is not justified must be removed.

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