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## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAFI</td>
<td>Australian Association of Flight Instructors</td>
</tr>
<tr>
<td>AIP</td>
<td>Aeronautical Information Publication</td>
</tr>
<tr>
<td>AOC</td>
<td>Air Operator’s Certificate</td>
</tr>
<tr>
<td>AOPA</td>
<td>Aircraft Owners and Pilots Association</td>
</tr>
<tr>
<td>AsA</td>
<td>AirServices Australia</td>
</tr>
<tr>
<td>ATC</td>
<td>Air Traffic Control</td>
</tr>
<tr>
<td>ATSB</td>
<td>Australian Transport Safety Bureau</td>
</tr>
<tr>
<td>CASA</td>
<td>Civil Aviation Safety Authority</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer (of CASA)</td>
</tr>
<tr>
<td>CFI</td>
<td>Chief Flying Instructor</td>
</tr>
<tr>
<td>CTAF(R)</td>
<td>Common Traffic Advisory Frequency (Radio)</td>
</tr>
<tr>
<td>DVD</td>
<td>Digital video disc</td>
</tr>
<tr>
<td>GAAP</td>
<td>General Aviation Aerodrome Procedures</td>
</tr>
<tr>
<td>ISG</td>
<td>Information Services Group (of CASA)</td>
</tr>
<tr>
<td>nm</td>
<td>Nautical mile</td>
</tr>
<tr>
<td>OAR</td>
<td>Office of Airspace Regulation (of CASA)</td>
</tr>
<tr>
<td>PIC</td>
<td>Pilot in command</td>
</tr>
<tr>
<td>TCAD</td>
<td>Traffic Collision Avoidance Device</td>
</tr>
<tr>
<td>VFR</td>
<td>Visual Flight Rules</td>
</tr>
</tbody>
</table>
1. Executive Summary

Following two mid-air collisions at General Aviation Aerodrome Procedures (GAAP) aerodromes in the latter half of 2008, the Chief Executive Officer (CEO) of CASA, ordered a review into the efficacy of the teaching of GAAP procedures implemented by flying schools. The review was to establish whether additional GAAP related training material could be developed by CASA to benefit the flying training sector. The review was conducted by a multi-disciplinary, cross-unit team under the auspices of the Flight Training and Testing Office.

In the 35 years prior to 2007, there has been an average of one mid-air collision per year in Australia. This figure is consistent with analysis of collision rates in the United States. However, in the 14 months from December 2007 to February 2009, there have been six mid-air collisions, resulting in 8 fatalities. Three of the accidents occurred at a GAAP aerodrome, although CTAF(R) procedures were in place in one case. During the course of the review, a number of reported near misses have occurred.

Three key themes emerged from this review:

1. Situational awareness training and assessment is not being achieved in a consistent manner, with a lack of formal training tools available to assist instructors develop this safety critical competency;
2. A general lack of standardization, both within an individual flying school and at specific GAAP locations was observed; and
3. A poor understanding of some fundamental GAAP procedural matters was detected.

This review was limited to assessing methodology and effectiveness of current training of GAAP procedures provided to student pilots. A separate review into the utility of GAAP procedures is being conducted by the Office of Airspace Regulation (OAR) and entitled the GAAP Utility Review.

Personnel involved in flying training at or near GAAP aerodromes were interviewed and data gathered and analysed to determine the level of training in, and knowledge of, GAAP procedures currently being delivered. Additionally, the degree of standardisation in practical application of GAAP training within flying schools was assessed.

The key findings of the review indicate greater emphasis on teaching situational awareness is required. The development of additional practical, yet innovative, educational material could be expected to yield safety dividends. Eleven recommendations have been made, predominately concerning the development of additional training materials.
2. Findings and recommendations

Analysis of key data gathered during interviews and from surveys completed by Chief Flying Instructors (CFI), flying instructors and students, revealed a range of issues, predominately involving poor situational awareness. A number of recommendations have been made to address these key issues. The findings and recommendations have been made following an analysis of the survey data and from a review of additional material provided to the review team.

Finding 1 – Situational Awareness

The completed surveys and subsequent discussion with Air Traffic Control (ATC) indicated a lack of formal situational awareness within flying schools, and a lack of formal tools for instructors to be assess a student’s situational awareness.

Recommendation 1

a. CASA develop tools to assist instructors and flying schools in teaching the various elements of situational awareness and make conduct an assessment of a student’s competence. A “Briefing in a Box” type package is one option.

b. Ensure that CFI’s have the requisite knowledge and understanding of the elements of situational awareness. Incorporate this topic into the CFI training course and into the formal assessment of CFI applicants.

c. Develop a DVD that covers threat and error management and managing flight competencies in a flying training context, similar to the CASA education package recently produced entitled ‘safety behaviours’. This should be pitched at the Grade 3/2 flight instructor and would be targeted for use in teaching their students in the normal flying school operating environment.

Finding 2 - Aircraft Recognition

Instructors advised that there was generally no formal aircraft recognition training program. Instructors taught aircraft recognition on the job by distinguishing between high wing and low wing – other differences were identified mainly on an opportunity basis. The varying speeds and climb performances of the variety of training aircraft now commonly found in GAAP zones are, in general, not being formally taught. This potentially impinges upon effective situational awareness and traffic management. It also has implications for collision avoidance techniques.

Recommendation 2
a. CASA provide posters on training/light aircraft depicting a table to provide some performance and comparative speed data as well as photographs or graphics.
b. Produce an on-line recognition tool with rotating pictures and questions on the performance for each type as a training aid. An interactive video “game” could then have the various types moving at different angles across the screen and the student could identify the type. Flying schools could use the tool for student assessment.
c. Extend this tool into demonstrating collision avoidance techniques using animation.
d. A pack of playing cards could be produced with various aircraft types on the back with the appropriate details.

Finding 3 – Lack of standardisation in non AIP GAAP procedures

Poor levels of standardisation were observed within schools, or across schools in the same location, for procedures relating to aspects of operating at GAAP aerodromes. For example, few schools had procedures to specify what to do when there is congestion and radio calls can’t be made. Additionally, survey results and discussion with ATC indicated some discrepancy between ATC towers across the country. Existing CASA GAAP training material could be better utilised within schools, and information must be current.

Recommendation 3

a. CASA could facilitate a meeting at each location between flying schools and ATC to develop a location briefing for all schools at that location to deliver to their students.
b. Funding to be made available to update the “Operations in and Around Controlled Airspace” DVD, and make it location specific. Alternatives utilising web technology should also be examined.
c. That any material published by CASA is on a regular update/amendment cycle to ensure that it is always a reflection of current airspace procedures and requirements.

Finding 4 – Practical GAAP training material

There is a lack of common general information on delivering practical training in GAAP procedures.

Recommendation 4

- Develop a package of “methods for teaching operations at GAAP” and promulgate to all flying schools to assist their delivery of this training relevant to their environment/situation.
Finding 5 – Day VFR Syllabus

There is nothing specific in the Day VFR Syllabus requiring formal training in GAAP procedures at GFPT or PPL level.

Recommendation 5

- Include formal GAAP training into the Day VFR Syllabus for all students who either undertake their training at GAAP aerodrome or are trained during their PPL training for that privilege.

Finding 6 – Company operations manual

In general terms, the company operations manual is under utilised in the provision of guidance to instructors or students on how the company requires them to conduct operations at their GAAP aerodrome in situations that are not specifically covered in the AIP or ERSA.

Recommendation 6

- CASA should initiate a campaign to educate training organisations and CFIs in the value of having the appropriate procedures in the company operations manual to address the known risks of operating at a GAAP aerodrome. CASA should provide detailed and practical guidance on developing a risk register and in applying risk principles in practice.

Finding 7 – Incident and occurrence reporting and analysis

It was evident that most flying training organisations did not have a mechanism for maintaining information on incidents and occurrences. Nor was there the ability to analyse this data and use it to identify trends and provide feedback to their organisation for review of training procedures where applicable. The majority of flying schools who did record this information did not consistently provide feedback to the reporter.

Recommendation 7

- CASA should investigate the development of a software application available through the website that can be downloaded to assist in recording incidents and occurrences ideally with an automatic reporting and analysing function.

Finding 8 – GAAP tower hours
The current ATC tower hours were introduced several years ago when there was a downturn in the movement rates at GAAP aerodromes. Discussion with ATC personnel during the review indicated a large reduction in the staffing numbers of each of the GAAP towers. This reduction appears to have resulted from the removal of the surface movement control function. Feedback from operators indicated higher traffic levels for longer periods may indicate that current tower hours may be insufficient.

**Recommendation 8**

a. Refer observations to OAR for their consideration.
b. Refer observation to the OAR that local radar service provides the capability for traffic alerting/information service in and around inbound reporting points, and this service should be considered for increased use.

**Finding 9 – Circuit size**

During the review, it became evident that the AIP recommends a circuit size of \( \frac{1}{2} \) to \( \frac{3}{4} \) nm downwind spacing. This is viewed as being unrealistic with most circuits between \( \frac{3}{4} \) mile and 1 \( \frac{1}{4} \) nm.

**Recommendation 9**

- That the AIP be amended to reflect the more realistic distances.

**Finding 10 – Use of technology airborne to assist with traffic awareness**

A number of operators use devices, such as TCAD, as an aid to increasing situational awareness, and an aid to alerted see and avoid outside the circuit area.

**Recommendation 10**

- CASA consider encouraging flying training operators to fit TCAD, or similar devices, to training aircraft.

**Finding 11 – Review follow-up**

Determine the effectiveness of CASA GAAP Training Review initiatives.

**Recommendation 11**

In 12 months, conduct another similar survey with CFI’s, instructors and students to establish if there has been any change affected by the implementation of the abovementioned recommendations.
3. Terms of Reference

The purpose of the GAAP Training Review was to establish the efficacy of training GAAP procedures implemented by flying schools located at or in the vicinity of GAAP aerodromes.

The following Terms of Reference were approved in December 2008:

1. Determine how flying schools located at or in the vicinity of GAAP aerodromes teach GAAP procedures.

2. Determine the effectiveness of these training procedures, particularly in relation to student pilots.

3. Establish the effectiveness of current educational material provided by CASA and Airservices Australia and how widely used this material is within flying schools.

4. Recommend areas for improvement in training methodology and educational material, if applicable.

4. GAAP Training Review team

A multi-disciplinary, cross-unit team was formed to conduct the review, with membership as follows:

Management oversight:
Roger Weeks  Manager Flight Training and Testing Office
Kerry Nolan  Team Leader Flight Training & Testing

Flight Training and Testing Office staff:
Brian Fooks  Flight Training Examiner
Mike Pottier  Flight Training Examiner

General Aviation Operations Group Regional Office staff:
Bill Cox  Flying Operations Inspector
Mike Colja  Flying Operations Inspector

Personnel Licensing Education and Training Group staff:
Andrew Warland-Browne  Aviation Safety Advisor
Michael White  Aviation Safety Advisor
5. **Locations of interviews**

Flying schools were interviewed at the following locations, during January and February 2009:

- Bankstown
- Camden
- Archerfield
- Coolangatta
- Redcliffe
- Caloundra
- Maroochydore
- Moorabbin
- Essendon
- Point Cook
- Parafield
- Jandakot

6. **Review methodology**

Four surveys, for Chief Flying Instructors (CFI), flying instructors, students and flying schools, were designed to collect data to determine the following:

1. The level of training in GAAP procedures currently being delivered;
2. Establish levels of knowledge relating to some key GAAP procedures;
3. The degree of standardisation in practical application of GAAP training within flying schools; and
4. Identify additional training material that would be beneficial.

The flying school survey was distributed to approximately 170 current flying training Air Operator’s Certificate (AOC) holders. Of note, is that only 15 responses were received.

Personal interviews were conducted in 34 flying schools located at, or in the vicinity of, GAAP aerodromes. The interviews were conducted with three subject groups; CFIs, flying instructors and students. To ensure an open and honest response, all surveys were either anonymous or de-identified.

A number of questions were repeated, in the appropriate context, between the CFI, flying instructor and student surveys, to enable analysis of consistency of responses within a particular flying school.

In summary, the following number of surveys was completed:

- Chief Flying Instructors = 37
- Flying instructors = 83
- Students = 90
From the surveys, 18 key questions were identified where analysis of responses would provide the information required. Information Services Group (ISG) developed a database with response analysis capability. Review team members manually entered the survey responses into the database. Responses were analysed for either the correct answer, in the case of a procedural question and for consistency of application of a particular training program or procedure, between the three subject groups.

A copy of the CFI survey is shown at Appendix 2, the flying instructor survey is shown at Appendix 3, the student survey is shown at Appendix 4 and the flying school survey is shown at Appendix 5.

7. Survey results

The critical questions, with analysis of the answers, are shown:

**Does the flying school formally teach GAAP Procedures**

<table>
<thead>
<tr>
<th>Answer</th>
<th>CFI 86%</th>
<th>Instructor 86%</th>
<th>Student 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>90%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**If yes - how is training conducted**

<table>
<thead>
<tr>
<th>Correct answer (Classroom briefing)</th>
<th>CFI 78%</th>
<th>Instructor 72%</th>
<th>Student 76%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>47%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Has the flying school developed 'in-house' GAAP training material**

- Have in-house material 56%

**Who is responsible for separating aircraft in a GAAP control zone**

<table>
<thead>
<tr>
<th>Correct answer (PIC)</th>
<th>CFI 97%</th>
<th>Instructor 96%</th>
<th>Student 87%</th>
</tr>
</thead>
</table>
Does the flying school teach aircraft recognition

<table>
<thead>
<tr>
<th>Correct answer (Yes)</th>
<th>CFI</th>
<th>Instructor</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>64%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What procedure is taught if a landing clearance cannot be obtained due to radio congestion

<table>
<thead>
<tr>
<th>Correct answer (Go around)</th>
<th>CFI</th>
<th>Instructor</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>73%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What procedure is taught if a clearance to enter the GAAP zone cannot be obtained due to radio congestion

<table>
<thead>
<tr>
<th>Procedure</th>
<th>CFI</th>
<th>Instructor</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orbit right</td>
<td>8%</td>
<td>8%</td>
<td>12%</td>
</tr>
<tr>
<td>Orbit left</td>
<td>11%</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>wide orbit</td>
<td>8%</td>
<td>14%</td>
<td>12%</td>
</tr>
<tr>
<td>continue to zone boundary, then orbit</td>
<td>5%</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>continue to zone boundary then divert to training area</td>
<td>24%</td>
<td>20%</td>
<td>19%</td>
</tr>
<tr>
<td>slow down and alter heading</td>
<td>2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>continue - at 1/2 way turn 90 degrees</td>
<td>9%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>do not orbit</td>
<td>2%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>slow down and then orbit</td>
<td>4%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>keep out of GAAP zone and keep trying</td>
<td>24%</td>
<td>12%</td>
<td>2%</td>
</tr>
<tr>
<td>low wing - orbit - high wing - do 180 turn</td>
<td>19%</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>continue tracking to airfield</td>
<td></td>
<td></td>
<td>1%</td>
</tr>
<tr>
<td>Agreement with CFI</td>
<td>53%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What is the purpose of a “read back” following receipt of instruction from ATC

<table>
<thead>
<tr>
<th>Purpose</th>
<th>CFI</th>
<th>Instructor</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>53%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What are instructors expected to do if students do not give a required 'read back'

<table>
<thead>
<tr>
<th>Correct answer (give student 2nd chance)</th>
<th>CFI 43%</th>
<th>Instructor 37%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>62%</td>
<td></td>
</tr>
</tbody>
</table>

What is the purpose of a downwind radio call at a GAAP aerodrome

Agreement with CFI 74%

Does the flying school have a method of assessing instructor or student fatigue

<table>
<thead>
<tr>
<th></th>
<th>CFI</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow reaction times</td>
<td>41%</td>
<td>20%</td>
</tr>
<tr>
<td>repeating mistakes</td>
<td></td>
<td>12%</td>
</tr>
<tr>
<td>Not listening</td>
<td>8%</td>
<td>1%</td>
</tr>
<tr>
<td>Lack of interest</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Forgetfulness</td>
<td></td>
<td>2%</td>
</tr>
<tr>
<td>Perspiration</td>
<td></td>
<td>4%</td>
</tr>
<tr>
<td>Performance decrease</td>
<td>43%</td>
<td>48%</td>
</tr>
<tr>
<td>Errors increase</td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Student quiet</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Agreement with CFI</td>
<td>66%</td>
<td></td>
</tr>
</tbody>
</table>

What are students taught to do if, after being cleared to land, an aircraft enters and holds position on the runway

<table>
<thead>
<tr>
<th>Correct answer (Go around)</th>
<th>CFI 94%</th>
<th>Instructor 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>95%</td>
<td></td>
</tr>
</tbody>
</table>
What method is used by CFI to determine an instructor's ability to assess student situational awareness prior to solo

<table>
<thead>
<tr>
<th>Instructor to put up student assessed ready for solo</th>
<th>CFI 94%</th>
<th>Instructor 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>63%</td>
<td></td>
</tr>
</tbody>
</table>

How does the flying school manage, investigate and correct ESIR or reported adverse events

<table>
<thead>
<tr>
<th>Correct answer (formally record and review at safety meeting)</th>
<th>CFI 37%</th>
<th>Instructor 27%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>84%</td>
<td></td>
</tr>
</tbody>
</table>

Are there risk treatment measures included in the company operations manual

<table>
<thead>
<tr>
<th>Correct answer (Contained in safety management system)</th>
<th>CFI 21%</th>
<th>Instructor 39%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>65%</td>
<td></td>
</tr>
</tbody>
</table>

What is the role of and Air Traffic Controller at a GAAP aerodrome

<table>
<thead>
<tr>
<th>Correct answer (provide take-off and landing clearance and traffic sequencing)</th>
<th>CFI 70%</th>
<th>Instructor 74%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement with CFI</td>
<td>83%</td>
<td></td>
</tr>
</tbody>
</table>

What are the main risks associated with operating at a GAAP aerodrome

<table>
<thead>
<tr>
<th>Traffic density</th>
<th>CFI 78%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students sent solo too early</td>
<td>5%</td>
</tr>
</tbody>
</table>
8. Review of current CASA GAAP education material

CASA produces a range of education materials that are available to flying schools, instructors and students. This material is either specifically related to GAAP aerodromes or contains GAAP location specific information within a wider context.

The review engaged Professor Ross Telfer of the University of Newcastle to conduct an educational review to assess pedagogical efficacy of existing CASA GAAP related material. The following training materials were supplied to Professor Telfer:

- Aerodrome Safety Instructor Pack. CASA, 2008
Six areas for improvement in training methodology and educational material were recommended:

1. **Expand the educational approach of the multi-media packs.**

   The packs cater for both individualized and adult learning, while ensuring the quality of instruction. Strengths of the approach (see, for example, *Operations in and Around Controlled Airspace*) are the orientation of the material from a pilot’s viewpoint, and the standardization of content. The pilot’s-eye visuals facilitate learning by removing the need for the reader to make the adaptation. Showing actual landmarks (the Bahai temple or Prospect Reservoir, for example) as seen from the cockpit, or providing a graphic of the Cairns taxiway, assist the pilot to understand, apply and recall the information.

2. **Expand the integration of real-life scenarios, incidents and accidents as concrete bases for adult learning.**

   They are motivational, too, adding intrinsic interest for pilots.

3. **To promote higher order cognitive learning, psycho-motor and affective learning, continue the design strategy of The Aerodrome Safety Pack, providing instructors with suggested methods, pacing and materials.**

4. **Integrate and coordinate GAAP in the flight syllabus, ground school, flight training, checking and testing.**

   In order to obtain higher level cognitive, psycho-motor and affective learning, the full range of aviation instruction and training has to be utilized in a sustained and structured way. GAAP materials for instructors should stress their key role as models and motivators for the affective and psycho-motor domains.

5. **Continue to assist the pilot who seeks understanding rather than simply factual knowledge.**

   GAAP materials are most successful when they provide the *why* as well as the *how*. Other sources of information (including *Flight Safety Australia* articles) could be listed for pilots who wish to explore the topic. Detail further reading, videos, and seminar or conference presentations on the topic.
6. Provide and promote GAAP discussions, such as the current Safety Seminars, which facilitate deep and affective learning.

Facilitate peer contributions and presentations. These enable deep learning for adults and promote the development of attitudes and values.

A copy of the full report is shown at Appendix 1.

9. **Australian Transport Safety Bureau**

The Australian Transport Safety Bureau provided assistance to the review in the following manner:

1. Provision of data of accidents and incidents that occurred at GAAP aerodromes during the past 10 years;

2. A briefing for review team members and the Office of Airspace Regulation (OAR) on the ongoing investigations of the Moorabbin, Bankstown and Parafield mid-air collisions, as well as the wider context of mid-air collision occurrences; and

3. Ongoing liaison with review team members.

10. **Airservices Australia**

Airservices Australia (AsA) provided assistance to the review and GAAP location specific briefings were conducted by GAAP Tower Managers for review team members. These briefings were designed to inform members of particular GAAP location operations, and to seek feedback on common incident types and contributory factors.

11. **Industry Associations**

Three key stakeholder associations were invited to make submissions to the review:

1. Royal Federation of Aero Clubs of Australia (RFACA);

2. Australian Association of Flight Instructors (AAFI); and

3. Aircraft Owners and Pilots Association (AOPA).

Both the RFACA and AAFI provided submissions, however a response was not received from AOPA. In summary, both the RFACA and AAFI indicated their support for the current educational material produced by CASA. Both
submissions contained views relating to GAAP procedures and these have been provided to the OAR for consideration in the GAAP Utility Review.

12. GAAP Utility Review

Coincident to the CEO instituting this review, OAR were tasked to conduct a review into the utility of GAAP procedures, as part of their wider airspace management review. Selection of an external provider was finalised during the conduct of this review and the successful contactor, Ambidji/Lloyds, were provided with a briefing on the progress of this review. Liaison between both groups responsible for undertaking these reviews has been maintained.

13. Conclusion

The review team would like to express appreciation to all who freely and positively contributed to the review. The cooperation of the ATSB and AsA is also appreciated.

In general terms, the current education and training material provided by CASA is positively accepted by flying schools although not always well-utilised. A number of survey participants were unaware of the range of existing educational materials.

Three key themes emerged from the review. Predominately, situational awareness training and assessment is not being achieved in a consistent manner, with a lack of formal, but practical, training tools available to assist instructors develop this safety critical competency within students. Secondly, a general lack of standardization, both within an individual flying school and at a specific GAAP location was observed. Finally, a poor understanding of some fundamental GAAP procedural matters was detected.

A range of additional educational materials, constructed in a manner which aligns with the recommendations proposed by Professor Telfer, could be expected to yield safety dividends. Eleven recommendations are made – these predominately relate to the development of additional training materials.

14. Recommendation

That the CEO notes the contents of this report, and consider approving the recommendations.
Should the recommendations be approved, tasking, staff resourcing and funding for implementation will be required. At this stage, no analysis of resource implications or costs has been made.

Roger Weeks
Manager
Flight Training and Testing Office
1 Establishing the Effectiveness of Current Educational Material provided by the Australian Civil Aviation Safety Authority (CASA) and AirServices Australia (AsA).

1.1 Criteria for GAAP Training

The effectiveness of GAAP training could be demonstrated by the number of incidents and accidents occurring in aerodrome procedures or the extent to which educational methods and materials are of sound instructional design. Alternatively, the content and presentation of GAAP training materials can be compared with those derived from valid pedagogical and androgogical research. This report takes the latter approach, evaluating GAAP educational material against authoritative learning and training theory.

1.2 The Learning and Training Involved in GAAP

Like much of flight training, GAAP involves all three domains of learning: cognitive (knowledge), skills (psychomotor) and attitudes (affective). In GAAP, a pilot needs to:

- know, recognise, recall and implement what is required for confident and safe use of the aerodrome,
- be able to coordinate multiple demands while manipulating the aircraft appropriately, and
- place a high value on attitudes such as situational awareness, safety and airmanship.

The three domains of learning overlap. For example, to learn a skill such as a cross-wind landing, a pilot needs to know about primary and secondary effects of controls. The next stage involves imitation of an instructor, supervised practice with feedback, and then solo practice for consolidation of the skill. Finally, a cross-wind landing becomes automated. Experienced pilots no longer have to think about separate responses and control inputs needed for the changing aircraft attitude and position. They simply do what is needed to align the aircraft with the runway and descent path. This skill automaticity frees up processing space so the pilot can now also handle additional processing tasks such as radio calls, maintaining situational
awareness, and exercising judgement. Similarly, GAAP training needs to cover all three domains of pilot learning. These domains have been progressively refined over the past fifty years so that it is now possible to identify a hierarchy of learning within each. Instruction can be planned so that learning ascends a sequential ladder (Anderson and Krathwohl, 2001; Anderson and Sosniak, 1994; Eisner, 2002). For trainees with existing learning, testing enables instructors to pitch their briefings at the appropriate level on the hierarchy in each domain.

Training based on the three domains results in an instructional design which links performance objectives, exercises or lessons, and testing (Telfer and Biggs, 1988). The implications of this theoretical structure is that GAAP methods and materials need not only to cover all three domains, but to ascend as high as possible on the ladder of learning within each domain (Telfer, 1993).

These ladders or hierarchies rank learning in order of difficulty. The bottom levels are easiest to attain. Many pilots using GAAP instructional materials will have existing knowledge, skills and attitudes. They will be at different levels on the learning ladders in each domain. Efficient instruction pitches training at the unknown, having established the known by questioning and testing. GAAP materials need to cater for this range of pilot abilities and experience.

1.3 Criteria of the Educational Effectiveness of GAAP Materials

Thus there are two criteria to be applied to GAAP training material and methods:

- **Inclusion of all three domains of learning; and the**
- **Maximum level of learning in each of the hierarchies.**

Tables 1.8, 1.9, and 1.10 (pp5-6) summarise the three hierarchies of learning involved in GAAP training. They provide the sequenced levels of difficulty in each domain, from the most difficult to the least difficult. They are a means of identifying the level of learning sought by GAAP training materials and methods.

For example, in the knowledge hierarchy the bottom two levels (*knowledge* and *comprehension* of GAAP) will be achieved from briefings then *ab initio* to solo in flights under instruction at the training base. The next level (*application*) does not occur until the trainee goes solo. The top three levels come only with command experience in procedures at several different airports. **These are unattainable from GAAP training materials.**
So, instructional materials providing GAAP information for trainee pilots can be expected to provide knowledge of airport procedures and assistance which lead to understanding. For experienced pilots and instructors (at a seminar, perhaps), further learning can be stimulated by a video or poster detailing problems in implementing the procedure at specific airports, or a case analysis of an incident in GAAP. That will provide a lead towards the top levels of the hierarchy.

In the same way, it is possible to identify at which level(s) of the affective and psycho-motor domains the GAAP training materials are pitched. After the position of the GAAP materials is located in each of the three hierarchies, their educational efficacy can be assessed. Other criteria also apply to training materials intended for adult learners, and pilots in particular. Details of these criteria follow.

1.4 Deep and Surface Learning

Australian research has identified successful approaches to learning used by experienced pilots (Telfer and Moore, 1997. P.7). These have application to GAAP materials.

- **A Surface Approach** is used by pilots who rote-learn textbooks or their class notes. At its most superficial, the surface approach is used for test preparation where the trainee is in fear of failure and is doing the minimum necessary to pass. A trainee who uses only a Surface Approach will usually forget the information once the test is over.

  However, it has a place in training. Professionals make use of the approach for specific purposes, as when there is a need to retain key information such as aircraft performance figures or radio frequencies.

- **A Deep Approach** is used by pilots who seek to understand and apply, rather than simply to remember for a while. Deep learners ask questions, read widely, discuss aspects with instructors and colleagues, look for examples and applications, and make their own notes and summaries.

- **An Achievement Approach** derives from a highly competitive motivation and the will to win. The achiever seeks to be the best.

This Australian research showed that successful pilots used all three approaches. Characteristically, they followed the Deep Approach, but had elements of the Achievement and Surface Approaches. The Achievement element provided the motivation. The Surface Approach was used when needed to retain key facts and figures. Successful pilots characteristically sought understanding and application to line flying.

This provides another criterion applicable to GAAP educational material.

- **How well does it cater for Deep Learning?**
1.5 Adult Education

Adult learning (andragogy) is demonstrably different to the way children learn (pedagogy). The significance of these differences (Burns, 1995; Tennant, 2005) and their application to aviation training have been shown (Henley, 2003). In brief, maturation and experience mean that adult learners need different instruction to that provided in schools. The backgrounds and individual differences of adults will be greater; they have a different self-concept; their goal is the ultimate one (a pilot licence and flight competence), not just successfully completing a test or exercise; they need to know how their instruction is relevant to flying and they need individualized learning activities to cater for their self-direction. They are active and collaborative participants in learning: not passive recipients.

Such adult learning activities include case studies, scenarios, critical incidents, discussions, seminars, simulations, accident analysis and use of the actual environment as a basis for learning. Adult education provides another criterion, related to the approaches in the concrete/abstract hierarchy discussed below.

- How well do the GAAP materials cater for adult learners?

1.6 Concrete/Abstract

GAAP materials can also be assessed in terms of the extent to which they provide a foundation for learning. Ultimately, the purpose for learning is to provide standardised, safe piloting of aircraft using aerodromes. Thus, the top rung of the concrete/abstract learning ladder is the situation in which a trainee pilot is seated next to an instructor in an aircraft implementing GAAP, and receiving immediate and accurate feedback. This is the most concrete learning. In contrast, the least concrete (or most abstract) learning is when a trainee pilot is reading the Visual Flight Rules Guide. This is the most distant from actual flight into or out of an aerodrome.

The full concrete/abstract hierarchy follows.

1.7 Extent to Which a Foundation for Learning is Provided

<table>
<thead>
<tr>
<th>High</th>
<th>GAAP Experience with immediate and accurate feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Solo GAAP</td>
</tr>
<tr>
<td></td>
<td>Instructor demonstrates GAAP in aircraft</td>
</tr>
<tr>
<td></td>
<td>GAAP in simulator</td>
</tr>
<tr>
<td></td>
<td>GAAP in procedural trainer</td>
</tr>
<tr>
<td></td>
<td>GAAP shown with model aircraft and aerodrome</td>
</tr>
<tr>
<td></td>
<td>Video/film of GAAP</td>
</tr>
<tr>
<td></td>
<td>Slides/PowerPoint of GAAP</td>
</tr>
<tr>
<td></td>
<td>Charts/diagrams of GAAP</td>
</tr>
</tbody>
</table>
Visual symbols (mnemonics, runway/taxiway ID)

Low       Verbal symbols (text)

This concrete/abstract hierarchy provides another criterion of GAAP instructional materials.

- **How concrete is the learning foundation provided by the GAAP materials?**

Earlier, reference was made to the three learning domain hierarchies. These now follow.

1.8 Ladder of Objectives - Knowledge

**Most Difficult** - Evaluation...Judging value (e.g. separation; go-round)
Synthesis...Combining parts (e.g. circuit; communicate/navigate)
Analysis...Separating parts (e.g. too high on finals)
Application...To new situation (e.g. solo in training area/solo aerodrome)
Comprehension...Understand meaning (e.g. incipient stall)

**Least Difficult** - Knowledge...Remembering facts (e.g. pre-landing check list)

- **Where do the GAAP materials locate in this hierarchy?**

1.9 Ladder of Objectives - Skill

**Most Difficult** - Automatic use of the skill (e.g. stall recovery)
Combining separate skills (e.g. circuits)
Precision in the use of skill (e.g. heading/speed/height)
Manipulating correctly (e.g. climb)

**Least Difficult** - Imitating (Instructor and student hands-on standard turn)

- **Where do the GAAP materials locate in this hierarchy?**

1.10 Ladder of Objectives – Value or Attitude

**Most Difficult** - Consistent value, part of character (walk-around, fuel check)
Organizing; no conflicts in values (accepts need for fuel check)
Valuing...Becomes an important value (Observes instructor walk-around)
Responding...Obedient, trying (Conducts walk-around when told)

Least Difficult – Receiving; willing to listen (Pays attention to safety brief)

- Where do the GAAP materials locate in this hierarchy?

2. The Range of CASA Material Relevant to GAAP Aerodromes

2.1 Materials Provided

CASA provided the following GAAP training materials.
- Aerodrome Safety Instructor Pack. CASA, 2008

These materials are in the form of:
- A manual (Visual Flight Rules Guide),
- CDROM/DVD (Operations in and around Controlled Airspace),
- DVD (On Track, etc.) and,
- Booklets (Archerfield, Jandakot, Melbourne, Parafield, and Sydney Basin).

Within the materials, there are variations in approach from the didactic, to the presented views of experts, simulations, scenarios, case studies, graphics, critical incidents and actual flights. The GAAP materials have variability in both media and structure.

2.2 Visual Flight Guides

Each of the five Visual Flight Guides has similar design. They commence with a personalized (fill-in-the-blanks) section covering aircraft details, safety, pre-flight check, fuel and use of a GPS. They then focus on a specific aerodrome (including layout, GAAP operations, other operations, radio contact, lanes and circuits). The treatment of GAAP includes an introductory reference for more detailed information, followed by GAAP information for the specific aerodrome.
For example, the *Sydney Basin* booklet includes GAAP information for Bankstown and Camden Aerodromes. Coverage of Bankstown GAAP Operations occupies four pages that start with detail of control zone, circuit entry or zone transit, runways and tower frequencies, and circuit direction. The Control Zone dimensions are specified. The responsibility of the pilot-in-command for maintaining separation is made explicit. The status of operations, specifically the restriction or unrestriction of VFR Operations, is described. Three items, with read-back phraseology items applicable at Bankstown, are detailed. Pilot responsibilities are listed. This responsibility is re-emphasized after the next section on Traffic Information. Five instances are given in which a clearance is required before operating the Bankstown CTR. Airways clearance requests and use of the ATIS are described. Prior to the sections on Circuit Operations and Go-Arounds, ATC phraseology is clarified. Then follow sections on arrivals and departures, detailing routes, altitudes, holding fuel, and taxiing. The Bankstown GAAP Operations section concludes with coverage of runway holding points, transit of Bankstown CTR, flight in proximity of Bankstown and noise abatement.

**Throughout the manual, text is appropriately supported by relevant graphics. Interspersed with sections are safety reminders and advice about sources of assistance available.**

### 2.3 The Visual Flight Rules Guide

This publication is more comprehensive in coverage, designed to “help VFR pilots fly safely anywhere in Australia” (p. ii). Of its 445 pages, 22 (pp246-267) focus on GAAP. The GAAP coverage includes a general introduction, departure, arrival, pilot responsibilities, separation, ATC traffic information, clearances, light signals, taxi procedures, ATIS, listening watch, and taxi clearance. The *Outbound* section includes departure into adjoining CTA and Take-Off Procedures (holding point, runway departures and departure procedures). The *Inbound* section includes arrival procedures, ATIS, altitude, tracking requirements, inbound reporting points, inbound report, entry to the circuit, inbound radio calls, landing procedures, circuit procedures, landing clearance, go around procedure, taxiing after landing, sartime cancellation, and transit of and flight in proximity to a GAAP CTR.

**The text follows a logical sequence and is well supported by relevant graphics and read-back records.** Readability is enhanced by the style of the *Visual Flight Guide*. It utilizes coloured and bold type, and a page layout structured by headings and sub-headings. Within the manual, sections are colour coded for ease of use and quick reference.
2.4 Aerodrome Safety Instructor Pack

CASA has produced an instructional pack for instructors (CASA, *Aerodrome Safety Instructor Pack, 2008*) consisting of two booklets (*Aerodrome Safety – A Pilot’s Guide*, and *Aerodrome Safety – A Teaching Aid*) with an associated CD of a PowerPoint Presentation (annotated in the Instructor Booklet) and a DVD to amplify the booklet’s coverage of Bankstown, Cairns, Jandakot, Moorabbin, Parafield, and signage.

The media cover runway incursions, taxiing safely, planning, situational awareness, and applications of GAAP procedures. As the titles suggest, one booklet has a focus on the pilot, the other on the instructor. Useful guides are provided for instructors. **The CD and DVD provide visual rather than textual instruction.**

2.5 Controlled Airspace Operations

This CDROM/DVD covers operations in and around controlled airspace at Launceston, Cambridge, Jandakot, Darwin, Bankstown, Parafield, Moorabbin, Cairns and Archerfield. It combines video with a narrator, charts, slides of terrain and landmarks, and an on-screen directory/menu. A pilot can select, for example, a particular inbound or outbound route. In the exposition, pilot eye views are provided.

Pilots are advised to plan carefully, not to place dependence on technical equipment such as a GPS, and to utilize current documentation. **Hotspots are highlighted for selection on maps.** Spoken and written details follow, linking with the *Visual Pilot Guide*.

2.6 On Track/Remote Aerodromes

This DVD is a re-release of four CASA videos (*On Track, Safety on the Ground, Oxygen First, and Remote Aerodromes*). The first and last are most relevant to GAAP.

**On Track provides both a narrative and supporting flight scenarios to emphasise the safety aspects of flying.** Coverage includes violations of controlled airspace, lookout, and situational awareness. It links with the *Pilot Guides*.

**Remote Aerodromes** has a similar approach, with effective scenarios dealing with hazards such as weather, dust, animals, and surfaces. It links with CASA Guidelines and commercial aspects. Emphasis is placed on safety: the need for preparation and planning; the responsibilities of aerodrome owners, the importance of check and training in pilot competence; and the need for pilots to know their destinations and to keep current.

3. Flying School GAAP Training Material

No other materials from Flying Schools were evaluated.
4.0 The efficacy of CASA and/or AsA educational material

4.1 Variability

The range of material and media for learning about GAAP is an asset for both flight training and adult education. Variability is recognized as a characteristic of effective teaching (Telfer, 1993. P.223). Individuals respond differently to the printed word. Some prefer audio-visual media, others the spoken word.

Similarly, some pilots prefer to undertake self-guided learning while others prefer to work in discussion groups or to be taught by an instructor. The GAAP materials enable a range of approaches which cater for individual differences and for adult learners.

For example, the CASA Instructor Pack is a versatile teaching and learning medium. It provides a range of methods for learner and instructor, making it adaptable for learning styles and environments. The suggestions for instructors on presentation (including timing, questioning, sequence and so on) helps to standardise the quality of the briefing, while leaving room for personal styles in instruction and learning.

4.2 Concrete/Abstract

When real-life flight scenarios and actual pilot-eye views are provided, GAAP materials get as close as possible to actual flight experience. In their structure, the contents of Instructor Pack incorporate these features, which locate them high in this learning hierarchy. They have integrated graphics and real-life flight sequences which attract and hold pilot interest. They go beyond didacticism by featuring credible experts from each location giving safety tips after proving professional analyses of hazards (such as night operations or complex runway design). GAAP procedures are clarified.

In terms of affective learning, safety is presented as a pre-eminent value. Explicit instruction covers runway incursions, taxiing, planning, radio procedures and situational awareness.

In more general terms, the instructional design of the Instructor Pack also incorporates gender and cultural sensitivity and balance.

4.3 Achievement in the Cognitive Domain

The GAAP Training Materials are primarily in the cognitive domain. They seek to provide knowledge and develop intellectual skills associated with safe and efficient aerodrome procedures. This is exemplified by the Visual Pilot Guide series and the Visual Flight Rules Guide.

In the Visual Pilot Series the integration of graphical additions such as flow charts, completion lists, photographs, diagrams, and charts with boxed visuals
raise the cognitive level through comprehension towards application. In concrete terms, only the actual flight will provide application of GAAP. Similarly, the Aerodrome Safety Instructor Pack and the Operations in and around Controlled Airspace incorporate knowledge, comprehension and application levels in the Cognitive Domain. They incorporate content which would appeal to the Deep Learner, indicating why corridors are located where they are and why certain taxiways are hazardous. They go beyond simply providing the information of what one has to do.

4.4 Achievement in the Psycho-Motor Domain

By linking the roles of pilot and instructor, the Aerodrome Safety Pack does most to promote Psycho-Motor learning. It not only provides the cognitive learning needed for the execution of flying skills needed for GAAP, but gives a common knowledge to both instructor and trainee who would facilitate the first step: imitation. They have common GAAP expectations. To go beyond that point, the onus is squarely with the instructor. Manipulation, precision, coordination, communication, planning and so on will need to be demonstrated, rehearsed, corrected and repeated until they meet operational standards. This cannot be done by GAAP materials. Psycho-motor learning would be further enhanced by specification of GAAP requirements in a pilot licence syllabus, clarification in flying school notes, briefings and exercises, and inclusion in checks and tests. These are all required in a co-ordinated manner to progress the psycho-motor learning up the ladder to precise melding of all the skills needed so that they become automatic in the GAAP situation.

While the key role of instructors in flight training is recognised by both industry and the wider community, their specific responsibilities in terms of GAAP training could be emphasised in instructor training and subsequent communications (such as bulletins or brochures), seminars or conferences. Virtually all of the GAAP psycho-motor domain needs to be covered by flight instruction, as it cannot be achieved by printed (even multi-media) GAAP materials.

4.5 Achievement in the Affective Domain

The situation for the Affective Domain is similar. Attitudes, feelings, enthusiasm and values associated with GAAP will be derived only partly from GAAP materials. Influential models, such as instructors, experienced pilots and the peer group will be major influences on attitudes to GAAP. No matter how efficacious a pilot’s knowledge of GAAPS, or skill in executing the procedures, attitudes to safe operations and airmanship are pre-eminent. The primary objective of GAAP education and training is safety. The affective domain is the key. Unfortunately, it is also the most difficult and demanding because of the time it takes.
Invariably, trainee pilots are motivated. They want to learn to fly and they are prepared to listen. They will respond to GAAP material and to related briefs prior to flights, and debriefs afterwards. But that gets them only two rungs up the five steps of the ladder.

What will make them value GAAP? What will then attract them to accept that the procedures are to be used in every flight, and make GAAP a consistent part of their piloting?

One view is that when aircrew train in skills such as the procedures in GAAP, they also need training in decision-making and perception (Roscoe, 1980). GAAP procedures include the essential aviation, navigation, and communication roles of pilots. In decision-making, the pilots have to plan routes, maintain or prioritise crew functions, and assess hazards. Attitudes play a major part in decision-making. Finally, perceptual tasks include situational awareness and communication.

To be effective, training in attitudes to GAAP needs to come from a credible role model demonstrating the desired behaviour. The desired pilot behaviour in GAAP needs to be demonstrated by respected role models (such as instructors or more senior pilots) (Smith and Ragan, 1999). Then the attitude needs to be positively reinforced (Bednar and Levie, 2003). This can occur both immediately and in post-instruction debrief.

In theoretical terms, persuasiveness is helped by linking with existing knowledge (Martin and Briggs, 1986). This is a matter for professional flight instructors, but elements of GAAP appear to exist in circuit training and in use of a training area. A vital component in acquiring a positive attitude is the opportunity to practice it. In GAAP, that means hands-on GAAP for trainees with instructor feedback. Also, involving the trainee in planning, design and presentation of briefs and exercises promotes acceptance of values (Simonson and Maushak, 2001).

One affective strategy used in the Visual Pilot Guides is the graphic following advertising strategies (see, for example, “Flying Blind” in the Parafield Visual Pilot Guide, p.8), with the attention-grabbing photograph of a blindfolded male. This technique raises the reader’s affective learning above receiving and responding towards valuing. Such advertising is a means of integrating affective and cognitive learning in GAAP. There appears to be the potential for increasing the aviation context in such graphics.

4.6 Suggestions for Improvement of GAAP Materials

4.6.1 Introduction

The GAAP materials show a range of approaches. In educational terms, each of the formats has a function.

- For the pilot seeking GAAP information, the Visual Flight Rules Guide is authoritative.
- More specific information is obtainable from the Visual Flight Guides. These have the advantage of supporting graphics.
• Pilot-eye views, identification of local hazards and hints for the use of specific aerodromes are provided by the DVDs and CDROM (Controlled Airspace Operations; On Track/Remote Aerodromes).

• The most versatile and effective is the most recent: Aerodrome Safety Pack. It can be used by an individual pilot, a group, or by a class under the leadership of an instructor. It has intrinsic appeal in its use of integrated graphics, and ensures a standard of instruction with clear and systematic guidelines for use.

These materials are complementary. It is doubtful that any one of them could do the work of them all. Given, then, that a range of GAAP materials will continue, it makes sense to co-ordinate them to provide unified information and structured learning.

4.6.2 Improving GAAP Materials

There are two ways in which GAAP Materials can be improved: the macro and the micro.

1. Macro.

GAAP materials need to address all three domains of learning: knowledge, skill and attitudes. The current materials do the first (knowledge) but will need periodic updating to continue to do so. They can do so more efficiently if all the materials are seen in a more unitary way so that overlaps are reduced and cross-referencing is introduced. This will cover the cognitive domain.

However, pilot skills in the use of GAAP and attitudes towards GAAP do not derive, in the main, from these materials. They come primarily from flight instructors and other pilots. The Aerodrome Safety Instructor Pack is indicative of ways to involve these groups. **GAAP materials need systematic integration with the theory syllabus, flight training, checks and testing (both theory and flight).**

2. Micro

In the materials provided, there are some means of improving their educational applications.

• **Add self-testing questions to GAAP materials**
These would enable trainees to ascertain what they do not know and to establish a personal base-line. That helps them identify which part(s) of the material are most relevant and avoids the need to go over material already learned. Instructors could use the questionnaires for both formative and summative evaluation. It would be motivational if the test items could go beyond the textual true/false, multiple choice types to incorporate some of the visuals provided in the materials.

- Provide a means of evaluative feedback from instructors, trainees and pilots.

A simple tear-out or inserted reply-paid form could elicit feedback on needs for other materials or improvement to the existing ones.

- Maintain the affective content of text materials by integrating persuasive graphics which sell the value of GAAP safety.

In the design of such high-impact visuals, the use of the flying context and pilots as the depicted people make the application explicit.

- Expand the use of experienced and expert pilots as presenters or interviewees.

They add credibility, provide models, and enhance affective learning.

- Guide instructors or presenters on how the material can be used with ab initio or experienced pilots.

This could be done through either a separate booklet or colour-coded section which includes suggestions about methods, timing, and pitfalls.

- In each of the GAAP materials, indicate how it relates to other GAAP materials available.

As revised editions are produced, any overlaps could be removed and a specific focus tightened so the package has overall coherence.

5 Summary

Criteria for the evaluation of GAAP training materials are derived from:

- The three domains of learning;
- Pilots’ approaches to learning;
- Adult education, and
- The concrete/abstract continuum.

Nine GAAP publications are reviewed. They include a manual, two DVDs, a CDROM and five localized booklets. The range of material and media has advantages for flexibility in both instruction and learning. The integration of pilot-eye graphics and actual flight scenarios provide concrete aids to learning.
The materials are limited primarily to cognitive learning and some lower-order psycho-motor and affective learning. The materials cannot be expected to promote major attitudinal change to GAAP or to improve all but basic GAAP flying skills such as local navigation. The affective and psycho-motor aspects of GAAP need to come from instructors, experienced pilots and respected peers. Supervised practice, feedback and reinforcement are vital.

Two areas of improvement for GAAP materials are identified. At the micro level, means of self-testing and providing evaluative feedback can be included in each of the materials. Where persuasive advertising is used to promote safety attitudes, identifiable aviation contexts and figures should be used.

At a macro level, the systematic coordination of the materials can identify the specific role each plays in GAAP education and training. At a macro level, GAAP training can be coordinated through ground school, flight instruction, check, training and testing.

It is recommended that future GAAP materials extend the use of real-life scenarios, incidents and accidents as concrete bases for learning. Affective learning would be enhanced by continuing with credible experts as presenters or local guides. Deep learning would be facilitated by optional additional reading or other sources of information, and by related seminars and discussions.

5 Recommended areas for improvement in training methodology and educational material.

• **Expand the educational approach of the multi-media packs.**

The packs cater for both individualized and adult learning, while ensuring the quality of instruction. Strengths of the approach (see, for example, *Operations in and Around Controlled Airspace*) are the orientation of the material from a pilot’s viewpoint, and the standardization of content. The pilot’s-eye visuals facilitate learning by removing the need for the reader to make the adaptation. Showing actual landmarks (the Bahai temple or Prospect Reservoir, for example) as seen from the cockpit, or providing a graphic of the Cairns taxiway, assist the pilot to understand, apply and recall the information.

• **Expand the integration of real-life scenarios, incidents and accidents as concrete bases for adult learning.**

They are motivational, too, adding intrinsic interest for pilots.

• **To promote higher order cognitive learning, psycho-motor and affective learning, continue the design strategy of The Aerodrome Safety Pack, providing instructors with suggested methods, pacing and materials.**
• Integrate and coordinate GAAP in the flight syllabus, groundschool, flight training, checking and testing.

In order to obtain higher level cognitive, psycho-motor and affective learning, the full range of aviation instruction and training has to be utilized in a sustained and structured way. GAAP materials for instructors should stress their key role as models and motivators for the affective and psycho-motor domains.

• Continue to assist the pilot who seeks understanding rather than simply factual knowledge.

GAAP materials are most successful when they provide the why as well as the how. Other sources of information (including Safety Digest articles) could be listed for pilots who wish to explore the topic. Detail further reading, videos, and seminar or conference presentations on the topic.

• Provide and promote GAAP discussions, such as the current Safety Seminars, which facilitate deep and affective learning.

Facilitate peer contributions and presentations. These enable deep learning for adults and promote the development of attitudes and values.

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*Ross Telfer*
Emeritus Professor
The University of Newcastle
# Appendix 2

## GAAP TRAINING REVIEW

### CHIEF FLYING INSTRUCTOR SURVEY

<table>
<thead>
<tr>
<th>What type of aircraft does your school train in?</th>
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<tbody>
<tr>
<td>Aeroplane</td>
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<tr>
<td>Helicopter</td>
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</table>

<table>
<thead>
<tr>
<th>How long have you been a Chief Flying Instructor?</th>
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<tbody>
<tr>
<td>Total years = ____________________ Current school = ____________________</td>
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</table>

<table>
<thead>
<tr>
<th>How many Flying Instructors does the school employ?</th>
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<tbody>
<tr>
<td>Grade 3 full time: ________ part time: ________</td>
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<tr>
<td>Grade 2 full time: ________ part time: ________</td>
</tr>
<tr>
<td>Grade 1 full time: ________ part time: ________</td>
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<table>
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<tr>
<th>How many hours per annum does the organisation conduct?</th>
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<tbody>
<tr>
<td>Total: ____________________ Flying training: ____________</td>
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</table>

<table>
<thead>
<tr>
<th>What training approvals does your school have (circle as applicable)?</th>
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</thead>
<tbody>
<tr>
<td>PPL                   NVFR                   CPL                   ME       CIR       FIR</td>
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<thead>
<tr>
<th>Do you have an ATO delegation (circle one)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If yes, which testing approvals do you hold (circle as applicable)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFPT                    PPL                   NVFR                   CPL       CIR       FIR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many hours do you have?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total = __________ PIC = __________ Instructional = __________</td>
</tr>
</tbody>
</table>
1. As a CFI, have you always operated at a GAAP airport (circle one)?
   - Yes
   - No

   If no, what, if any, GAAP familiarisation training did you receive when you were inducted to this flying school?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. Does your school teach students from non-English speaking backgrounds?
   - Yes
   - No

   If yes, what would be the percentage of non-English speaking students at your school (circle one)?
   - 100%
   - 75%
   - 50%
   - 25%
   - <10%

3. Does your school formally teach GAAP procedures to your instructors and students (circle one)?
   - Yes
   - No

   If yes, how do you conduct this training (tick those items as applicable):
   a) in classroom briefings
   b) during pre-flight briefings from your instructor
   c) by reading the company operations manual
   d) by reading material published in Civil Aviation Safety Authority (CASA) publications or documents
   e) by reading material published by Airservices Australia, visiting the control tower, viewing their website
   f) other – please detail
   __________________________________________________________
   __________________________________________________________

4. Does your school use GAAP related training material provided by CASA and/or Airservices Australia (tick those items as applicable)?
   a) Visual Pilot Guide for specific GAAP aerodrome
   b) VFR Flight Guide
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>c)</strong></td>
<td>Operations in and around CTA DVD</td>
</tr>
<tr>
<td><strong>d)</strong></td>
<td>Aerodrome Safety pack</td>
</tr>
<tr>
<td><strong>e)</strong></td>
<td>Runway posters</td>
</tr>
<tr>
<td><strong>f)</strong></td>
<td>AsA website “Flying Around”</td>
</tr>
<tr>
<td><strong>g)</strong></td>
<td>Local AsA educational material</td>
</tr>
<tr>
<td><strong>h)</strong></td>
<td>Other</td>
</tr>
</tbody>
</table>
On the Airservices Australia website:

Do you require your instructors to demonstrate these websites and the information to your students (circle one)?

Yes  No

10. Who is responsible for separating your aircraft from others in a GAAP control zone? Do you believe this is understood by all instructors and students?

11. Does your school have a method to teach students aircraft recognition for types that usually operate at your GAAP aerodrome (circle one)?

Yes  No

How is this training conducted, and what is to be taught about these aircraft?

12. What procedure does your school teach students to do when the following situations occur:

   a) The preceding aircraft is flying wide circuits

   b) Their aircraft is catching up with the aircraft that is in front of them

   c) Their aircraft is overtaken by another aircraft on downwind in the circuit
d) Their aircraft is on final at a GAAP aerodrome and they are unable to obtain a landing clearance due radio congestion

e) Their aircraft is approaching a GAAP inbound reporting point and due to radio congestion they are unable to obtain a clearance to enter the GAAP zone before passing overhead the approach point

f) The student does not understand an instruction from ATC.

g) The student hears their call sign but do not hear the instruction from ATC

13. What does your school teach is the purpose of a “read back” following receipt of an instruction from ATC?

If during a dual lesson, one of your students does not give a required read back to an instruction from the Tower, what would you expect the instructor to do? How is this expectation promulgated?
14. What does your school teach your students regarding the critical need not to overshoot the turn onto finals, nor to drift to the opposite circuit after take-off at a GAAP aerodrome?

________________________________________________________________________

________________________________________________________________________

If during a dual lesson, it becomes apparent that one of your students may overshoot the turn onto finals, or is drifting to the opposite circuit after take-off, what action do you expect your instructors to take, and when? How is this expectation promulgated?

________________________________________________________________________

________________________________________________________________________

15. What is the purpose of the downwind radio call when operating in the circuit at a GAAP aerodrome?

________________________________________________________________________

________________________________________________________________________

16. How does your school teach students to decide if another aircraft is going to come into conflict with their aircraft and compromise safety? For example, their aircraft is catching up with another aircraft on upwind or downwind or they are on a converging track with another aircraft.

________________________________________________________________________

________________________________________________________________________

17. What is taught in relation to collision avoidance?

________________________________________________________________________

________________________________________________________________________

18. What would be the maximum flight time students are programmed to fly:
   a) In the circuit
b) In the training area

19. What is the maximum number of flights students are programmed to fly in a day?

_________________________________________________________

20. Does your school have a method to assess if instructors or students are becoming fatigued?

_________________________________________________________

_________________________________________________________

21. What do you think would cause a student to become fatigued more quickly?

_________________________________________________________

_________________________________________________________

_________________________________________________________

22. What would you do if you considered an instructor or a student was fatigued?

_________________________________________________________

_________________________________________________________

_________________________________________________________

23. What does your school teach a student regarding the following situation? They are on short final, they have been cleared to land and an aircraft enters the runway and holds in the line up position.

_________________________________________________________

_________________________________________________________

_________________________________________________________

24. What process and methods do you use to determine, before promoting instructors to ‘senior’ grade 3 and higher, that they are able to assess a student has the situational awareness, judgment and decision making to enable the student to operate solo safely?

_________________________________________________________

_________________________________________________________

_________________________________________________________
25. How do you induct an instructor into the school who is unfamiliar with the GAAP airport and its individual conventions?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

26. How do you ensure your instructors are competent with GAAP procedures?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

27. Does your school promote any special activities (taxi simulations etc) to assist with recognition of potential threats in and around the GAAP zone?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

28. How do manage, investigate and correct any ESIRs or any adverse events reported to you by other organisations, the tower, your instructors or students?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

29. Have you ever received a call from the Tower regarding an abnormal occurrence by one of your instructors and/or students?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

30. Do you discuss any issues with GAAP procedures with AsA or your CASA FOI?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

31. What risk treatment measures are in the company operations manual (such as Wx, traffic, helo ops etc)?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
32. What do you perceive is the role of the Air Traffic Controllers at GAAP aerodrome?

___________________________________________________________
___________________________________________________________
___________________________________________________________

33. What in your view are the main risks associated with operations at GAAP aerodromes? How have you dealt with these?

___________________________________________________________
___________________________________________________________
___________________________________________________________

34. What additional training material on GAAP procedures do you believe would be beneficial for CASA to produce?

___________________________________________________________
___________________________________________________________
___________________________________________________________
# GAAP TRAINING REVIEW
## INSTRUCTOR SURVEY

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>What type of aircraft do you train in (circle one)?</td>
<td>Aeroplane</td>
</tr>
<tr>
<td></td>
<td>Helicopter</td>
</tr>
<tr>
<td>What grade of flight instructor rating do you hold (circle one)?</td>
<td>Junior Grade 3</td>
</tr>
<tr>
<td></td>
<td>Senior Grade 3</td>
</tr>
<tr>
<td></td>
<td>Grade 2</td>
</tr>
<tr>
<td></td>
<td>Grade 1</td>
</tr>
<tr>
<td>Do you have an ATO delegation (circle one)?</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>If yes, which testing approvals do you hold (circle as applicable)?</td>
<td>GFPT</td>
</tr>
<tr>
<td></td>
<td>PPL</td>
</tr>
<tr>
<td></td>
<td>NVFR</td>
</tr>
<tr>
<td></td>
<td>CPL</td>
</tr>
<tr>
<td></td>
<td>CIR</td>
</tr>
<tr>
<td></td>
<td>FIR</td>
</tr>
<tr>
<td>How many hours do you have?</td>
<td>Total = ________</td>
</tr>
<tr>
<td></td>
<td>PIC = _________</td>
</tr>
<tr>
<td></td>
<td>Instructional =</td>
</tr>
</tbody>
</table>

*Please answer the following questions to the best of your knowledge, explaining your understanding of the topic where requested.*

1. Were you originally trained at a GAAP airport (circle one)?
   - Yes
   - No

   If no, how were you trained on GAAP procedures when you were inducted to this flying school?

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. Do you teach students from non-English speaking backgrounds?
   - Yes
   - No

   If yes, how often (circle one)?
3. What flying training activities do you conduct most (circle one)?

<table>
<thead>
<tr>
<th>Always</th>
<th>Regularly</th>
<th>Occasionally</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ab initio (GFPT)</td>
<td>PPL</td>
<td>NVFR</td>
<td>CPL</td>
<td>ME/IFR</td>
</tr>
</tbody>
</table>

4. Do you formally teach GAAP procedures to your students (circle one)?

Yes    No

If yes, how do you conduct this training (tick those items as applicable):

g) in classroom briefings  
h) during pre-flight briefings from your instructor  
i) by reading the company operations manual  
j) by reading material published in Civil Aviation Safety Authority (CASA) publications or documents  
k) by reading material published by Airservices Australia, visiting the control tower, viewing their website  
l) other – please detail

---------------------------------------------------------

5. What documents, charts or other material do you require your students to carry and use when you are undertaking:

e) flying training in the circuit (dual or solo)

---------------------------------------------------------

f) flying training in the training area (dual or solo)

---------------------------------------------------------

6. Do you know if your flying school’s operations manual contains specific instructions for operating at a GAAP aerodrome (circle one)?

Yes    No

If yes, do you have access to the instructions whenever you need to refer to them?

Yes    No
7. Do you ever visit the CASA or Airservices Australia websites (circle one)?
   Yes    No

   If yes, what information do you access:

   On the CASA website:
   __________________________________________________________
   __________________________________________________________

   On the Airservices Australia website:
   __________________________________________________________
   __________________________________________________________

   Do you demonstrate these websites and the information you access to your students (circle one)?
   Yes    No

8. Who is responsible for separating your aircraft from others in a GAAP control zone?
   __________________________________________________________

9. Do you teach your students aircraft recognition for types that usually operate at your GAAP aerodrome (circle one)?
   Yes    No

   How do you conduct this training given and what do you teach about these other aircraft?
   __________________________________________________________
   __________________________________________________________

10. What do you teach your students to do when the following situations occur:

    a) The preceding aircraft is flying wide circuits
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
b) Your aircraft is catching up with the aircraft that is in front of you

________________________________________________________________________
________________________________________________________________________

________________________________________________________________________

g) Your aircraft is overtaken by another aircraft on downwind in the circuit

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

h) Your aircraft is on final at a GAAP aerodrome and you are unable to obtain a landing clearance due radio congestion

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

e) Your aircraft is approaching a GAAP inbound reporting point and due to radio congestion you are unable to obtain a clearance to enter the GAAP zone before passing overhead the approach point

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

f) The student does not understand an instruction from ATC.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

g) Your student hears your call sign but do not hear the instruction from ATC

________________________________________________________________________

________________________________________________________________________

11. What do you explain to your students is the purpose of a “read back” following receipt of an instruction from ATC?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
If your student does not give a required read back to an instruction from the Tower, what do you do?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

12. What do you explain to your students regarding the critical need not to overshoot the turn onto finals, nor to drift to the opposite circuit after take-off at a GAAP aerodrome?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

If it becomes apparent that your student may overshoot the turn onto finals, or is drifting to the opposite circuit after take-off, what action do you take, and when?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

13. What is the purpose of the downwind radio call when operating in the circuit at a GAAP aerodrome?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

14. How do you teach your students to decide if another aircraft is going to come into conflict with your aircraft and compromise safety? For example, your aircraft is catching up with another aircraft on upwind or downwind or you are on a converging track with another aircraft.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

15. How do you assess if your student is becoming fatigued?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
16. What do you think would cause a student to become fatigued more quickly?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

17. What would you do if you considered your student was fatigued?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

18. What do you teach a student regarding the following situation? You are on short final, you have been cleared to land and an aircraft enters the runway and holds in the line up position.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

19. How do you gauge a student’s readiness for solo at a GAAP aerodrome with regard to the following:
   a. Situational awareness
      _______________________________________________________________________
      _______________________________________________________________________
      _______________________________________________________________________  
   b. Traffic considerations/awareness
      _______________________________________________________________________
      _______________________________________________________________________
      _______________________________________________________________________  
   c. Weather conditions
      _______________________________________________________________________
      _______________________________________________________________________
      _______________________________________________________________________  
   d. ATC procedures
20. How would you report (and have you reported) any problems or adverse experiences / incidents / accidents? Did you get any feedback?

21. What would you do if a student came to you with a report of something abnormal that happened in the GAAP zone?

22. Have you ever received a call from the Tower regarding an abnormal occurrence by one of your students, and if so, what did you do about it?

23. Are you aware of any risk treatment measures in the company operations manual (such as Wx, traffic, helo ops etc)?

24. What do you perceive is the role of the Air Traffic Controllers at GAAP aerodrome?

25. What additional training material on GAAP procedures do you believe would be beneficial for CASA to produce?
# Appendix 4

**GAAP TRAINING REVIEW**  
**STUDENT SURVEY**

<table>
<thead>
<tr>
<th>What type of aircraft are you training in?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeroplane</td>
</tr>
<tr>
<td>Helicopter</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What stage of training are you up to (circle one)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-solo</td>
</tr>
<tr>
<td>Pre-area solo</td>
</tr>
<tr>
<td>Pre-GFPT</td>
</tr>
<tr>
<td>Pre-PPL</td>
</tr>
<tr>
<td>Pre-CPL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many hours do you have?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual = ____________________</td>
</tr>
<tr>
<td>Solo = ____________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What was your last flying lesson?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Did you undertake your pre-PPL training at an aerodrome operating to GAAP procedures (circle one)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

If no, where did you undertake your pre-PPL flight training?

________________________________________________________________________________________

*Please answer the following questions to the best of your knowledge, explaining your understanding of the topic where requested.*

1. Have you received specific training in relation to operating at a GAAP aerodrome (circle one)?

   Yes                                                                                           |
   No                                                                                            |

If yes, how was this training conducted:

- m) In classroom briefings
- n) During pre-flight briefing from your instructor
- o) By reading the company operations manual
- p) By reading material published in Civil Aviation Safety Authority (CASA) publications or documents
q) By reading material published by Airservices Australia, visiting the control tower, viewing their website
r) Other – please detail

2. What documents, charts or other material do you carry with you when you are undertaking:
   i) flying training in the circuit (dual or solo)
   j) flying training in the training area (dual or solo)

3. Do you know if your flying school’s company operations contains specific instructions for operating at a GAAP aerodrome (circle one)?
   Yes    No

   If yes, do you have access to the instructions whenever you need to refer to them?
   Yes    No

4. Do you ever visit the CASA or Airservices Australia websites (circle one)?
   Yes    No

   If yes, what information do you access -

   On the CASA website:

   _______________________________________________________
   _______________________________________________________
   _______________________________________________________
On the Airservices Australia website:

5. Who is responsible for separating your aircraft from others in a GAAP control zone?

6. Have you had any training in recognising other aircraft types that usually operate at your GAAP aerodrome (circle one)?

Yes    No

How was this training given and what were you taught about these other aircraft?

7. What have you been taught to do when the following situations arise:

a) The preceding aircraft is flying wide circuits

b) Your aircraft is catching up with the aircraft that is front of you

k) Your aircraft is overtaken by another aircraft on downwind in the circuit
l) Your aircraft is on final at a GAAP aerodrome and you are unable to obtain a landing clearance due radio congestion

_____________________________________________________
_____________________________________________________
_____________________________________________________

e) Your aircraft is approaching a GAAP inbound reporting point and due to radio congestion you are unable to obtain a clearance to enter the GAAP zone before passing overhead the approach point

_____________________________________________________
_____________________________________________________
_____________________________________________________

f) You do not understand an instruction from ATC.

_____________________________________________________
_____________________________________________________
_____________________________________________________

g) You hear your call sign but do not hear the instruction from ATC

_____________________________________________________
_____________________________________________________
_____________________________________________________

8. What is the purpose of a “read back” following receipt of an instruction from ATC?

_____________________________________________________
_____________________________________________________
_____________________________________________________

9. Why do you think it is critical not to overshoot the turn onto finals at a GAAP aerodrome?

_____________________________________________________
_____________________________________________________
_____________________________________________________

10. What is the purpose of the downwind radio call when operating in the circuit at a GAAP aerodrome?

_____________________________________________________
_____________________________________________________
_____________________________________________________

55
11. Why do you think it is important not to drift to the opposite circuit after take-off at a GAAP aerodrome?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

12. How do you decide if another aircraft is going to come into conflict with your aircraft and compromise safety? For example, you are catching up with another aircraft on upwind or downwind or you are on a converging track with another aircraft.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

13. What is the longest training flight you have undertaken in:
   a) The circuit           dual - ___________ solo - ___________
   b) The training area    dual - ___________ solo - ___________
   c) Dual followed by solo dual - ___________ solo - ___________

How tired did you feel by the end of the longest training flights?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Have you ever advised your instructor that you were tired and wanted to stop your lesson (circle one)?

Yes        No

Have you ever not departed on a solo flight or returned early because you were tired? How did you know you should not continue?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Have you undertaken more than one flight training session in a day (circle one)?
14. Your aircraft is on short final and has been cleared to land. Another aircraft enters the runway and holds in the line-up position. What would you do:

a) continue your approach as you have been cleared to land  
b) wait for the tower to instruct you to go around  
c) conduct an orbit  
d) initiate a go around and advise the tower

15. Have you ever reported any problems or issues to your flying school or flight instructor that have arisen whilst you have been flying solo (circle one)?

Yes  No

If yes, how did you give the report (verbal, written, on a particular form)?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Did you receive any response after submitting your report? How was the response provided?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
**Appendix 5**

**GAAP TRAINING REVIEW**

**FLYING SCHOOL SURVEY**

<table>
<thead>
<tr>
<th>Which GAAP aerodrome does your school operate into most:</th>
</tr>
</thead>
</table>

**What type of aircraft does your school train in?**

<table>
<thead>
<tr>
<th>Aeroplane</th>
<th>Helicopter</th>
</tr>
</thead>
</table>

**How many Flying Instructors does the school employ?**

<table>
<thead>
<tr>
<th>Grade 3</th>
<th>full time: ________</th>
<th>part time: ________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 2</td>
<td>full time: ________</td>
<td>part time: ________</td>
</tr>
<tr>
<td>Grade 1</td>
<td>full time: ________</td>
<td>part time: ________</td>
</tr>
</tbody>
</table>

**How many hours per annum does the organisation conduct?**

| Total: _________________ | Flying training: ______________ |

**What training approvals does your school have (circle as applicable)?**

| PPL | NVFR | CPL | ME | CIR | FIR |

1. **Does your school teach students from non-English speaking backgrounds?**

   Yes    No

   If yes, what would be the percentage of non-English speaking students at your school (circle one)?

   100%  75%  50%  25%  <10%

2. **Does your school formally teach GAAP procedures to instructors and students (circle one)?**

   Yes    No
If yes, how do you conduct this training (tick those items as applicable):

s) in classroom briefings
t) during pre-flight briefings from your instructor
u) by reading the company operations manual
v) by reading material published in Civil Aviation Safety Authority (CASA) publications or documents
w) by reading material published by Airservices Australia, visiting the control tower, viewing their website
x) other – please detail

__________________________________________________________
__________________________________________________________

5. Does your school use GAAP related training material provided by CASA and/or Airservices Australia (tick those items as applicable)?

a) Visual Pilot Guide for specific GAAP aerodrome
b) VFR Flight Guide
c) Operations in and around CTA DVD
d) Aerodrome Safety pack
e) Runway posters
f) AsA website “Flying Around”
g) Local AsA educational material
h) Other

__________________________________________________________
__________________________________________________________

4. Does your school require instructors and students to use these products and how are they accessed/distributed?

__________________________________________________________
__________________________________________________________

5. Has your school developed “in-house” GAAP procedures training material, if so, what is it?

__________________________________________________________
__________________________________________________________

6. Do you ever visit the CASA or Airservices Australia websites (circle one)?

Yes

No

If yes, what information do you access:

On the CASA website:
On the Airservices Australia website:

Do you require your instructors to demonstrate these websites and the information to your students (circle one)?

Yes  No

7. Who is responsible for separating your aircraft from others in a GAAP control zone? Do you believe this is understood by all instructors and students?

8. What procedure does your school teach students to do if the following situations occur within a GAAP zone:

a) The preceding aircraft is flying wide circuits

b) Their aircraft is catching up with the aircraft that is in front of them

c) Their aircraft is overtaken by another aircraft on downwind in the circuit

d) Their aircraft is on final at a GAAP aerodrome and they are unable to obtain a landing clearance due radio congestion
e) Their aircraft is approaching a GAAP inbound reporting point and due to radio congestion they are unable to obtain a clearance to enter the GAAP zone before passing overhead the approach point

f) The student does not understand an instruction from ATC.

g) The student hears their call sign but does not hear the instruction from ATC

9. What does your school teach as the purpose of a “read back” following receipt of an instruction from ATC within the GAAP zone?

10. What does your school teach students regarding the critical need not to overshoot the turn onto finals, nor to drift to the opposite circuit after take-off at a GAAP aerodrome?

11. What is the purpose of the downwind radio call when operating in the circuit at a GAAP aerodrome?
12. How does your school teach students to decide if another aircraft is going to come into conflict with their aircraft and compromise safety? For example, their aircraft is catching up with another aircraft on upwind or downwind or they are on a converging track with another aircraft.

___________________________________________________________
___________________________________________________________
_________________________________________________________

13. What does your school teach a student regarding the following situation at a GAAP zone? They are on short final, they have been cleared to land and an aircraft enters the runway and holds in the line up position.

___________________________________________________________
___________________________________________________________
_________________________________________________________

14. How do you ensure your instructors are competent with GAAP procedures?

___________________________________________________________
___________________________________________________________
_________________________________________________________

15. What do you perceive is the role of the Air Traffic Controllers at GAAP aerodrome?

___________________________________________________________
___________________________________________________________
_________________________________________________________

16. What in your view are the main risks associated with operations at GAAP aerodromes? How have you dealt with these?

___________________________________________________________
___________________________________________________________
_________________________________________________________

17. What additional training material on GAAP procedures do you believe would be beneficial for CASA to produce?

___________________________________________________________
___________________________________________________________
_________________________________________________________