



INSTRUCTOR'S HANDBOOK

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The Gliding Federation of Australia,
Building 130, Wirraway Road,
Essendon Airport,
Victoria 3041
Tel: (03) 9379 7411, 9379 4629
Fax: (03) 9379 5519

PART 1

INSTRUCTOR TRAINING

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INTRODUCTION

There are obvious advantages in the adoption of standard procedures and methods of teaching gliding throughout all Associations and Gliding clubs affiliated with the GFA.

This document is the product of many years of development by the GFA National Gliding School (NGS) and the whole gliding movement in Australia. However, this does not mean that it is to be regarded as an inflexible and final doctrine of gliding instruction. No doubt as time goes on, changes and improvements will be introduced, particularly as future National Gliding Schools review current training policies and the development of training methods.

Wherever safety is involved the GFA requires that the set standards and procedures be rigidly adhered to, but in other matters, methods of teaching, minor details of sequence, how much should be taught at each stage, etc., a more flexible approach is permissible. The inexperienced instructor is advised to follow the recommended methods in every detail, but within reasonable limits it is left to the more experienced instructor to decide to what extent he should follow the recommended methods in every detail, or whether he should modify them to suit his own personality and ways of teaching.

For clarity of expression, only the male gender has been used in most of the text. It is intended that, where the male gender is used, the female gender is also implied, and vice-versa.

Shirt-pocket sized Flight Reference Cards ("Flip" Cards) are included with this handbook and may be found useful as a memory jog in the field.

Suggestions for improvements to this Handbook are welcome. They should be forwarded to the National Gliding School via the GFA Secretariat (address below) for consideration.

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THE LEARNING PROCESS - THE ACQUISITION OF SKILL.

The instructional task is twofold -

Firstly, to provide PILOT EDUCATION as a background for making FLEXIBLE responses.

Secondly, to provide PILOT TRAINING as a background for making CONDITIONED responses.

In this handbook, the generic term "Training" may be assumed to encompass both concepts referred to above.

This leads to two requirements –

1. The aims and objectives of the training must be clearly defined, not only as a complete syllabus of training but also at each stage of the syllabus.
2. The instructor's knowledge and ability in the subject matter of the syllabus, in theory and practice, must be of the very highest quality. Without knowledge, nothing can be provided to the student.

The aims and objectives of the GFA training syllabus are defined as follows:

To produce glider pilots with a high degree of ability, understanding, initiative and safety consciousness, leading in turn to safe, efficient and competent cross-country gliding. The syllabus of training to achieve this aim is set out in Part 2 of this Handbook.

It is the purpose of Part 1 of this Handbook to provide the aspiring instructor with the knowledge and ability to use the training syllabus to the best advantage.

If it is true that experience is the only true teacher, why is an instructor necessary? It is certainly true to say that a person can indeed learn to fly without any positive instruction, by trial and error if you like. It used to be done that way in gliding many years ago, before two-seat training gliders were available to clubs. Although the single-seat, trial and error training method did work after a fashion, and many pilots were trained that way, the accident rate during training was terrible. Several quite major crashes PER DAY were considered normal, and people took a very long time to become skilled. Nevertheless it does prove the point that "hands on" experience is essential to the acquisition of skill as a glider pilot, and no instructor should ever forget it.

Nowadays of course, with two-seat trainers in every club and a known syllabus to work to, we can speed up the training process considerably and cut the training accident rate to zero. This is what we are aiming for - to carry out high quality gliding training in maximum safety with minimum wastage of time. A high degree of flying ability and a positive attitude towards safety in the air are known prerequisites for an instructor-training candidate. We are concerned here with putting these two prerequisites together with an understanding of human learning limitations. In this way we achieve the maximum effect as instructors.

Much instructing is ineffective because it is merely factual and descriptive. It appeals to the memory and not to the reasoning powers of the students. Facts and descriptions are of course necessary, but such things can be provided by textbooks. Students can gain much knowledge from textbooks, but they cannot get from them the mental stimulus which they need to develop their powers of reason.

It is important that we instruct our students to think and to reason. This is more difficult and demands more thought and effort than does the exercise of their memory. It is not our business to do for our students what they can do for themselves. This is the easier way and it seems quicker, but it leads to failure and disappointment. The ultimate test of our instruction is not how much we have told them, but how much we have exercised their minds and "made them think".

Human limitations in learning a new skill

It has already been stated that people learn best through experience. When providing this experience for a student, an instructor needs to keep in mind several human limitations which are stumbling blocks in the acquisition of a new skill. These can best be summed up by considering the stages of memory through which knowledge and experience need to pass before they are thoroughly learned. A basic understanding of the mechanism of each stage is fundamental to being a successful gliding instructor.

Most skills can be thought of as information processing skills. A human receives information from the environment through the senses; this information is processed and results finally in some type of behaviour.

One of the basic questions about how we process information is whether a person is a single or multiple channel processor. That is, do the stimuli from various senses get processed simultaneously or does each signal get cleared through the channel one at a time? Some researchers believe that a human is a multiple channel system. We can drive a car, smoke a cigarette and carry on a conversation at the "same time" for example. Evidence is accumulating, however, that at least for fairly complicated tasks, a human has a single channel and this channel has a fairly limited capacity.

The ability to perform several actions at once can be explained by two concepts: (a) rapid time sharing, where the person alternates between information sources; and/or (b) the automation of sub-routines of responses through practice.

According to one view of human information processing the nervous system is hierarchical in organisation (Fitts and Posner, 1971). There are higher "executive" levels and lower "carry out instructions" centres. Each level has certain responsibilities or functions. Yet some autonomy is retained in the lower levels. For example, reflexes can occur without involving the higher centres. Early in learning, the higher centres are involved. Then as response patterns are learned, they may be initiated by the higher centre but carried on automatically by the lower centres, with only occasional monitoring and supervision by the higher centres.

Short Term Memory

If you have ever looked up a telephone number, been distracted and discovered you have to look the number up again because you have forgotten it, you have experienced the limitations of short term memory (STM). This ability is important in most continuing tasks. While STM is limited to a capacity of 8 to 10 items, it is not greatly influenced by the type of information. Information is rapidly forgotten if not given sustained attention. Continuous attention and rehearsal seem to be necessary for new information to be placed in the long term store, but this rehearsal occupies the central processor and limits the processing of other information. If information exceeds the capacity of the system, then some of it is lost, even if no interruption occurs.

Note that any information lost from short-term memory is totally lost and there is no possibility of recall. This accounts for why student pilots often deny having been told something, when the instructor is quite certain that the information has been given. Instructors must keep this point in mind when, for example, another instructor is being criticised for an apparent failure to put an important point across. (See also "reinforcement techniques").

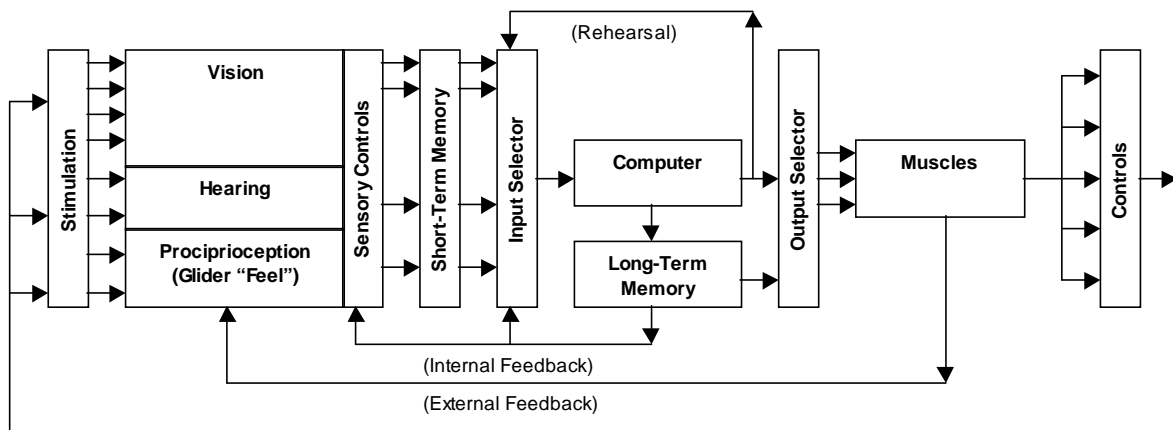
Input Selector

The manner in which the input selector (focuser of attention) operates is probably the single most important difference between the skilled and unskilled operator (Reason, 1974). As a result of

experience and training, the skilled operator learns that much of the incoming information is neither new nor important and can be ignored. Guided by the information stored in long-term memory the input selector sifts and orders the incoming information to maximise vital information flow through the limited capacity system. Once useless or redundant information can be filtered out, the skilled operator may have time to anticipate future actions which can further reduce load.

INFORMATION PROCESSING SYSTEM, CONCEPTUAL VIEW

ADAPTED FROM REASON, 1971



Computer

In contrast to a modern digital computer, man's "computer" is very slow. For simple tasks, the maximum processing rate is approximately 2 to 3 decisions per second. Even in continuous tracking tasks, the human computer performs intermittently, not continuously. The output may look smooth, but the processing is intermittent. If the task becomes more complex, processing time increases. Reaction time to the onset of a light when the person is expecting it, for example, may take about 0.3 seconds. Increasing the number of alternative lights that may go on increases reaction time. Rate of processing is a function of the amount of information in the stimulus sequence (Posner & Fitts, 1967). Simulator studies have found that the average time from engine failure to brake application in an aborted takeoff situation is 4.45 seconds (Kentley, 1975). Similar delays may be expected in various emergency cases which may be experienced in gliding, for example a winch cable-break.

Uncertainty can also increase the time required to make a decision. Unfortunately, when there is a greater need for speedy action, the delay is often increased. A good example of this is an aerotow rope-break at a height where a decision needs to be made whether to land ahead or turn back to the strip.

Of course, if a particular situation is anticipated and highly practised, speed can be greatly increased. Typists, telegraphers, piano players and other skilled workers can make many discrete responses extremely quickly.

Several things such as anticipation, pre-programming and automating make this possible. A glider pilot properly taught to anticipate a possible rope-break would mentally rehearse his likely response immediately before take-off. If an emergency does occur, the pilot is ready for it and the

basic plan is initiated automatically. Much of the information-processing system is therefore free for individual and detailed decisions to be made at the time the break occurs.

Long Term Memory

With repeated attention and practice an action or set of actions which originally required central processing becomes more automatic. Something like an automatic programme has been placed in long term storage. It is analogous to computer executive programmes and sub-routines. The executive programme defines the goal to be achieved and determines the general plan of individual actions. Sub-routines consist of relatively unchanging sequences of movements which are called into play at appropriate stages.

Although slow and often difficult to acquire, some skills can be lost quickly if not practised. A study found that instrument flying skills were reduced approximately 20 per cent after 4 months without practice. Procedures were the most affected. Skills of holding heading, altitude and speed suffered a smaller loss. Time required to relearn the skills was **DIRECTLY RELATED TO THE AMOUNT OF ORIGINAL TRAINING.** (Mengilkoch, Adams & Gainer 1971).

Each subroutine was probably once an executive programme.

Skilled tasks are learned by isolating one phase, learning it, and letting other parts be poorly performed. When spare capacity becomes available on first subtasks, experimentation with the second may start. An example of this is illustrated in a study reported by Reason (1974). In learning to drive a car, speed control and direction control are separate sub-tasks. Novice drivers worked very hard at steering but didn't vary speed, maintaining it at a very slow rate. As they progressed, steering variation was reduced, but speed control varied from very slow to very fast. Only in the final stages of learning did the two sub-tasks become integrated. This has a clear parallel in the learning of primary effects of controls. Each control is learned in isolation, then later integrated into, for example, smoothly co-ordinated turns. An experienced instructor knows that rushing these basic exercises is a grave mistake, as it removes one of the fundamental "building blocks" in learning to fly.

There is evidence to indicate that something properly learned or experienced is never really lost from the long-term store. Problems of long term memory may be matters of retrieval rather than storage. Skills once learned are more quickly relearned even after long periods of disuse. Electrical stimulation of brain areas during operations often arouse vivid memories of events that occurred 20 to 30 years earlier. Everyone has had the experience of not being able to remember the name of a familiar friend. Words are often "on the tip of the tongue".

Memory studies have found great differences in our ability to recognise information and recall information. Although the information may never be entirely lost, evidence suggests that skill is a relatively fragile thing and readily degrades if not practised. The degradation can be subtle and not noticed. Hence the need for careful checking and possibly retraining for a pilot who has had a long break from flying.

Feedback Loops

Very little effective learning takes place without knowledge of results, a process known as feedback. The essential information conveyed by feedback is the discrepancy between what was intended and what actually resulted. Feedback allows the individual to eliminate ineffective responses and to "fine tune" the response patterns. In initial phases of learning, feedback is obtained primarily through the visual and auditory (or sometimes pain) channels. The student sees or is told by the instructor the consequences of previous actions, together with the advice

necessary to correct the situation. This is known as EXTERNAL feedback and it takes up some of the information-processing capacity of the single-channel limited-capacity processor. As learning progresses, however, some of the feedback can be obtained through the INTERNAL feedback loops, a process generally known in gliding as developing a "feel" for whether the glider is flying correctly or not. This uses much less of the information-processing capacity of the student and is essential to the development of ANTICIPATION of the glider's reactions. It is obvious that maximum use of internal feedback cannot be obtained if the instructor is reluctant to let the student fly the glider.

It is easy to forget the importance of feedback but it not only is essential to learning, it acts as a powerful motivator as well. The sooner the feedback can be received, the greater its influence on behaviour.

Memory, with its limitations, will play a greater role when feedback is delayed.

REINFORCEMENT TECHNIQUES

Acknowledging the limitations of human memory, there are several ways in which the instructor can reinforce the learning process by making use of some well-established techniques.

Repetition

This is a well-known method of getting information absorbed into the long-term memory. It is so important that someone once coined the phrase "repetition is the foundation of clarity". Its use varies from the straightforward "by rote" learning which is typically employed in remembering cockpit checks and similar information, to the more sophisticated techniques used later in training. A typical example of the latter case might be in the teaching of secondary effects of controls. Rather than approach secondary effects dead cold, as it were, it is much better to refer back to primary effects as a starting point ("you recall that the primary effect of rudder is yaw in the direction you move the control"). Thus, as well as introducing the secondary effect the student is just about to see demonstrated, the primary effect of rudder is at the same time subtly reinforced by repetition.

Recency effect

Nowhere is the fragility of human memory better demonstrated than information fading away from our grasp after a period of time. The instructor can usefully capitalise on items learned recently by the simple expedient of sensible repetition while the information is fresh in a student's mind. Recency effect combined with repetition is a very powerful aid in ensuring that information is successfully transferred from short-term to long-term memory.

Strategies of Information Processing

Emphasis has been placed on the theory that the human has only a limited capacity for processing information. Yet his senses are receiving a continuous flow of massive amounts of information. The ability to react effectively to one thing may be incompatible with reacting effectively to something else. Attention can be devoted to only part of the information. For tasks which have not become "automatic" there is a trade-off between speed and accuracy. A human can perform almost any task at different rates. When emphasis is placed on speed, errors are increased. When emphasis is placed on accuracy, time is increased. When stimuli become uncertain, occur unexpectedly, or are difficult to discriminate, more samples need to be received to reach a given level of confidence that a given response should be made.

Thus the instructions provided (either implicitly or explicitly) will influence the way information is processed. Faced with a situation involving a large amount of information which cannot be processed in available time, a person may use several strategies to avoid undue pressure. One is to discard information merely because it fails to possess some feature. This is possible when all relevant stimuli have at least one characteristic in common. All other stimuli can be ignored and only those stimuli having the sought after characteristic will be considered. All of the information in the chosen stimuli may then be processed. This may explain why pilots, having got themselves low in the circuit and are probably under considerable pressure, may land with the undercarriage up IN SPITE OF THE WARNING HORN BLOWING LOUDLY.

Decision making

The end purpose of all the information processing is to reach a decision of some kind. Should an action be taken? If so, what sort of action? A decision is made when (a) some element of choice exists, (b) alternative choices (actions) have consequences of some type, and (c) outcomes have value to the decision-maker (Sime and White, 1971).

The research performed so far into decision making is limited in its applicability. One thing that has been determined, however, and that seems relevant to our interest, is that people tend to be conservative. In a sequence of related decisions, they don't change those decisions as rapidly as the available information suggests they should. In one study involving which of two classes of objects were more numerous, one group was required to make a guess before any information was made available. The other group did not make a preliminary guess. Information was presented sequentially; that is, subjects were offered additional information after each guess. The group which made a guess before any information was available was slow to change that guess, even when the information was not consistent with the guess. The second group was more willing to change. Other studies have confirmed the general finding (Sime and White, 1971).

A useful analogy here might be the pilot who joins the circuit for a landing, and the wind has changed considerably since he took off. He sets off on a circuit to suit his original take-off direction (preliminary "guess") and in spite of noting the wind-change during the downwind leg (additional information presented sequentially) he is reluctant to change his mind until it is too late. At a VERY late stage, he does change his mind, but it is too late and an accident results.

The Relevance of Central Information Processing to Gliding

It has been shown that the only ways the basic characteristics of the human being can be altered are through selection and training. In gliding we are not in a position to conduct selection processes on people who wish to take up the sport. This leaves training as our only possibility.

Pilot training has traditionally emphasised motor-skills and procedures. If information-processing skills are responsible for accidents, as the evidence indicates, perhaps special instruction in specific skills, using some of the information presented here will help reduce the accident rate.

STRESS

Stress is defined as the demand the work environment places on an individual. Included within stress are workload, boredom, anxiety, heat, noise, low humidity and other similar factors and conditions.

Overload

Considerable attention has already been given to the effects of overload. If the concept of the limited capacity single channel information processing system is accepted, it is not surprising that man's ability can be saturated by modern vehicles on occasion.

Two types of overload are recognised. One is speed stress. Speed stress occurs when the rate at which signals occur is excessive. The second type, load stress, results from having a number of different sources of information. The strategy for handling these stresses was briefly referred to earlier. Additional results or methods of coping with information over load are provided in the following table.

Typical human reactions to overload

- Omission. Ignore some signals (or responsibilities)
- Error. Process information incorrectly
- Queuing. Delay responses during peak loads; Catch up during lulls.
- Filtering. Systematic omission of certain categories of information according to some priority scheme.
- Approximation. Make a less precise response.
- Escape. Give up.

One characteristic of humans is that they tend to degrade gradually. Even when faced with excessively high requirements, the human can keep going.

Underload

The effects of overload are dramatic; those of underload not as immediately apparent. But underload can be as dangerous as overload. Adverse effects like illusions and hallucinations become apparent only after some time. Literally hundreds of studies indicate that performance rapidly degrades on tasks such as monitoring radar displays (in which the appearance of a target cannot be predicted and occurs infrequently). Degraded performance certainly takes place within half an hour, and probably within 10 minutes or so.

The effects are not a simple function of motivation. Monetary inducements can improve performance but do not return performance to its initial level. (Gabriel, 1965). It is probable that the effects of a boring task are related to basic brain characteristics (The Reticular Arousal System).

A gliding instructor may have to go from low-load to high-load conditions almost immediately. A good example of this is flying with a pilot who demonstrates quite a reasonable performance during a training flight, but fails to round out for the landing. The relaxed (underloaded) instructor lacking any kind of "warm-up period" to accustom him to the demands of the OVERLOAD situation now confronting him, will be unlikely to respond quickly to prevent a heavy landing.

HUMAN SKILL AND ACCIDENT PREVENTION

From the foregoing it is perhaps difficult to understand how man ever does anything without making an error. His perceptions are subject to illusions, he can only attend to one thing at a time, he is limited to the rate at which he can process information, he can't always directly control

responses once they have become automated, his memory can play tricks on him, he is beset by conflicts in motivation, he gets tired, etc., etc., etc.

And yet, despite all of these limitations, man is highly reliable and can do things automatic systems cannot. One author, using automobile traffic data, has concluded that man makes literally millions of decisions without an accident resulting (Reason 1974). The general form of his argument is: the average London driver reports an accident to his insurance company about once every six years. Studies of drivers have shown that they make a control input (decision) once every second. If the average time driven is two hours per day, then an accident results after 15,768,000 decisions (1 decision/sec x 60 sec/min x 60 min/hr x 2 hr/day x 365 day/yr x 6 yr/acc) and this record is achieved in spite of drunks, pedestrians and the frustrations of poor roads, bad visibility, incomprehensible signs and other less-than-optimum conditions.

Unfortunately, despite this impressive demonstration of reliability, estimates of the proportion of all accidents attributable to human error remain at approximately 80 percent. Many of these accidents can be avoided.

One study found that improperly written handbooks and manuals caused 33 percent more errors than did poorly designed indicators and controls. Another study found an increase in frequency of errors as crews became more experienced. This suggests that boredom with daily monitoring and highly automated job assignments was undermining vigilance and performance. New crews found the job sufficiently stimulating and committed few errors. Experienced and bored crews may have sought to relieve the monotony and either didn't pay attention or created challenges (Cornell, 1968).

Safety campaigns ought to be effective. Our basic motivation for survival and self-interest should be powerful forces in promoting safety. But safety propaganda has been found to be relatively ineffective in achieving improvements. One author (Kay, 1971) has suggested this is because we all tend to believe accidents happen to someone else, not to ourselves. The person reading a safety poster probably believes himself to be too skilled to make such an error.

The situation isn't hopeless. Systematic attacks on accidents will pay dividends. Too often in the past, we have resorted to patches rather than solutions. Rather than developing a real understanding of the problem, we have created a new rule which may have compounded the problem rather than solved it. Understanding of human characteristics has progressed sufficiently to be of real value in the design of tasks. If adequate priority and emphasis is placed on reducing human error, the goal can be achieved.

THE LAW OF PRIMACY

Primacy means simply to be first. In terms of gliding instruction it means that it is very important that whatever is taught to the student must be right the first time. Part of the instructional process is the formation of habits which will be relied on in a person's later flying life. It therefore follows that the habits instilled in the student must be good, safe habits.

From a student's viewpoint, it is much easier to learn something properly and correctly in the first place, rather than have to unlearn it and then re-learn it afresh. The same principle applies to the instructor - train properly in the first place and it will not be necessary to undo all the work already undertaken in order to do it all over again.

If correct and SAFE habits are not instilled into a student right at the beginning, **THEY WILL NOT BE ACQUIRED LATER**. The importance of the instructor's influence over a student's early experiences will therefore be recognised.

IMPORTANT INSTRUCTOR CHARACTERISTICS

Example

The tendency of a student to emulate what the instructor does has already been mentioned - indeed it is an important part of the training process. It follows that every aspect of the instructor's work must be of the highest quality - flying skill, airmanship, adherence to airspace restrictions, regard for placarded flight limitations, to name but a few.

An instructor flying sloppily will be copied, as will an instructor who adopts a "she'll be right" attitude towards, for example, airspace restrictions or the requirements of the Visual Flight Rules. Perversely, it seems much easier for trainees to adopt bad habits than to adopt good ones - probably one of Mr Murphy's laws at work - and the instructor must put continual effort into ensuring that the examples set are good ones.

Einstein once remarked "Example is not the finest way to influence people, it's the only way". Worth thinking about?

Self Discipline

This is the logical follow-on from the need to set a good example. There is no point in expecting people to exercise self discipline when the instructor is not prepared to do so himself.

In a self-regulatory sport like ours, everyone should take pride in adhering to the rules which we all play a part in formulating. This is especially true of instructors.

Integrity

An instructor must show consistency and impartiality throughout all instructional work. Nothing undermines the reputation and authority of an instructor as much as failing to adhere to these two basic qualities. One only has to think back to school days to remember the adverse effect of favouritism towards one pupil on the class as a whole.

Empathy

This can be defined as imagining what might be going through the student's mind during a training sequence. It can be thought of as putting yourself in the other person's shoes and imagining how you would respond under similar circumstances. It is of great benefit to an instructor to have a high degree of empathy and to recall what it was like when you were yourself a student pilot struggling to learn to fly.

It almost goes without saying that, hand in hand with the quality of empathy, an instructor must at all times respect the student as an individual and must never indulge in tactics such as ridiculing, belittling or unnecessary assertion of authority.

Knowledge and ability

It is imperative that an instructor maintains a high level of skill and competency in every aspect of instructional activities. As well as maintaining currency on all the gliders in the club fleet (how can an instructor convert a pilot into a new type if he has not flown it in living memory?), an instructor should know his limitations in knowledge of theory subjects and in all GFA and club rules, regulations and procedures.

The worst thing an instructor can do is try to bluff a student. If a question is asked to which the instructor does not know the answer, there is no shame in admitting this and making every effort to find out the answer. It is vitally important that the required research is in fact carried out and that the instructor takes pains to locate the student and clear the matter up beyond doubt. If this is not done the instructor's credibility is seriously eroded.

Instructing assets

Assuming the foregoing characteristics are in place, the instructor must use them in the practical art of improving performance. Having acquired the knowledge, it is important that the instructor's personality is used in a positive way to ensure that the knowledge is successfully transferred to the student. Knowledge can be learned and lost. It can be re-learned and updated. However our personalities have been developed over many years and will take just as many to change. There is no correct blueprint for a successful instructor, but it is known that most of them have some of the characteristics listed in the diagram which follows. Go through the list, be as honest with yourself as you can, and check off your own characteristics as you see them.

ARE YOU?

	Always	Sometimes	Never
Knowledgeable			
Honest			
Enthusiastic			
Patient			
Shows interest			
Motivator			
Develops potential			
Encouraging			
Positive			
Good teacher			
Constructive			
Likeable			
Sense of humour			
Respectful			
Organiser			
Builds confidence			
Good communicator			
Understanding			
Polite			
Sensitive to needs			

PRINCIPLES OF GLIDING INSTRUCTION

The main principles of gliding instruction may be listed under the following headings.

- Responsibility
- Communication
- Orientation
- Skill
- Safety

Responsibility

Many of the instructor's duties are clarified when it is realised that the process of gliding instruction consists of a gradual transfer of responsibility from instructor to student.

This is demonstrated by the fact that, on a student's first flight, the instructor is taking 100% responsibility for the glider and its occupants while, at the end of pre-solo training, this 100% responsibility has been assumed by the student. During training, therefore, there has been a complete transfer of responsibility from instructor to student.

Two main rules arise from this:

1. It is the instructor's task to transfer responsibility at a rate with which the student can cope.
2. It should be absolutely clear to the student at all times exactly where his field of responsibility lies e.g. what controls he is responsible for, when he must fly and when the instructor will fly, what decisions are up to him, and so forth.

Early in training there will be a rapid switch of responsibility from instructor to student and back again, as air lessons develop from demonstration to practice. There must be no confusion as to who is doing what, and when.

Throughout training, the student learns to exercise the increasing degree of responsibility he is given but has always clear in his mind that the instructor has the overriding responsibility.

The instructor must never hesitate to take back responsibility for any good reason, but when he does he should take it all. In the earlier stages, particularly, the student will be made bolder and more confident if he knows someone is going to say, "I have control", and take over responsibility if trouble comes up.

Having given responsibility, the instructor, within the indicated limits, should let the student exercise this responsibility. If the student feels the instructor on the controls in his supposed area of responsibility he will know he is not really being given responsibility and he simply will not be responsible in that area. If the instructor feels he has to stay on the controls, however lightly, he can take this as a clear indication that something is wrong with the previous training. He should go back, teach that part again until the student checks out satisfactorily - because the first rule requires that the student be given responsibility at a rate with which he can cope.

Checking that student's ability to handle what he has been given is a constant process and one of the most important in the whole instructional field. One thing not properly learned can confuse future work completely.

Therefore, no advance is made until the instructor is quite certain of the student's understanding up to that stage. This involves demonstration by the student to the instructor, not only of an ability to perform the exercise in question, but also an understanding of it. This requires really good communication BOTH WAYS – information and questions from the instructor - questions, answers and comments from the student.

This ability to handle the responsibility given him is an important requirement for the student throughout, but at the stage of first solo it is vital. At his stage the instructor is checking for a complete transfer of flying responsibility, and whether the student has the ability to handle it. A useful mental exercise for the instructor might be to ask himself whether he would be happy to fly bound and gagged with the particular student at his particular stage of ability.

It should be clearly understood that, regardless of responsibility handed over for the purposes of training, the instructor takes the ultimate responsibility (or blame) for anything that happens on any flight under his instructional supervision.

Communication

During training the instructor is faced with the problem of communicating to the student all the knowledge and information he will require when he assumes the full responsibility of solo flight.

It is a primary principle that where any concept or fact has to be transferred from one person to another there is always a communication problem of greater or lesser degree. In everyday life we seldom allow for this.

Where the transfer of data is essential, as it is in gliding instruction, it follows that the instructor is required to recognise that communication difficulties always exist and that an important part of his task is to reduce these difficulties as far as it is humanly possible.

Certain rules may be applied to this task. The intelligent and thoughtful instructor, accepting the existence of communication difficulties, will work out his own rules from experience. A few basic guidelines follow.

To be effective, communication has to work both ways. Comments and questions from the student, as well as being invaluable in the assessment of the student's understanding, allow the student to participate in the act of communication, instead of being on the receiving end of one-way communication.

Because of the way the human mind and temperament operate, "one-way" communication in general is not only ineffective, but in some cases can lead to resentment, boredom, or confusion, to such a degree that real communication becomes impossible.

Such a situation may be termed a "communication block". This may be a far more common situation that is usually recognised. Social custom and upbringing train us all to disguise lack of interest out of politeness, and this makes it difficult to recognise the existence of a communication block - which is, put simply, a situation where a person who has a look of interest on his face is really making no effort whatever to understand what is being said to him. (Check this against the way you sometimes act yourself.

By encouraging the student to participate in the communication the instructor will not only be able to recognise communication blocks but will also be able to do much to remove them.

Communication can also be affected adversely when too much information is 'poured' into the student without intervals of quietness in which he can consider what has been said. This is particularly important during flying. It should be recognised that a definite 'lag' exists between the message and the student's understanding of what he has been told. It will be found that this lag will be of seconds or minutes, but in extreme cases it may extend over days or even weeks.

Constant assessment of the student's real understanding is therefore of the greatest importance, as calculated repetition is often the only way in which the lack of understanding may be overcome. As this assessment can only come from the student's participation, he should be encouraged to talk, if this is necessary.

Another factor to remember is that in all persons the period of full attention is quite short, and in some cases will be very short. The importance of dealing concisely and clearly with the main points under consideration will be obvious.

All people forget a fairly fixed percentage of any new information within a very short time of receiving it. Once again assessment by question and comment will show what has been forgotten and fix the areas where repetition is necessary.

In gliding instruction communication of information is not done only by talking; it is achieved most effectively by clear demonstration in the air. In effect, from a good demonstration, the student will find out something for himself and this is the way people learn best.

Talking a student through a demonstration or exercise is a very real art, which can only be perfected by thought and practice.

The instructor's thoughts should be so well organised that only essential information is given, and this information should be exactly synchronised with what the glider is doing. However, on no account should the information distract the student from full attention to what is being demonstrated. This leads to the provision that if something is going to happen very quickly the instructor may have to give verbal indication or warning just before, and then be silent as it actually happens, but again drawing attention after it has happened. Finally, to put it simply, the instructor usually does too much talking, and the student not enough.

It is not the instructor's task to tell the student everything the instructor knows in as much detail as possible, it is not to demonstrate how knowledgeable the instructor is, it is not to go through a programme of set exercises and standard patter. The instructor's real task is how to make quite certain, by one means or another, that the student really knows the relatively few important facts he simply has to know.

Notwithstanding what has been said above about the desirability of two way communication, it must be appreciated that there are occasions when one way communication is the only effective way to drive home a point about which the instructor is not inviting discussion or argument at that particular time.

Orientation

In dealing with a student who has never flown before, the instructor should bear in mind that, until now, all his experience has been in two dimensions. He handles all movements by instinctive measurements of relative change between points around him on the surface of the earth.

When the student is being introduced to the third dimension (height) he has to develop new habits by which he can locate himself in three-dimensional space.

As the pupil will have no reference points the instructor must give him some right from the start. Unless this is done, the pupil, on his early flights at least, will tend to 'locate' himself inside the glider, thus reducing the area around him to one he can handle by two-dimensional means. His attention needs to be directed outside the glider by the instructor.

This is a very simple principle and all that is required is that the instructor remembers, throughout the training process, that it is a most important one. Thus orientation should be provided and checked throughout training.

We may include, under the general heading of orientation, the direction of the student's attention during demonstration, correction, and practice. After a few flights it is easy for the instructor to assume the student knows where to look. He may not - and in any case a few words such as "Look at the horizon ahead", or "Notice we are flying towards that point", can sharpen the student's

attention. This need for directing of attention continues throughout training and becomes rather critical when, for example, cable-break stages and circuit planning are being undertaken.

Skill

In all forms of training, time must be allowed for the development, by practice, of the physical and mental skills called for by the particular activity being taught.

In gliding, a good understanding of the requirements of flight is desirable, but this in itself is not sufficient to turn a student into a pilot. Adequate time must be allowed for certain skills to be developed.

It follows from this that flight time should be used to the best advantage, and this means that the student should be doing as much as possible of the actual flying on each flight.

On the other hand, the student should not be confused by the instructor trying to put too much teaching into any one flight. No flight should involve more than one thing being taught at a time, and in every case the particular teaching exercise of the flight should be clearly indicated and understood. As much as is feasible of the remainder of the flight should be used to practise things taught previously.

Thus, for example, at a certain stage, the student could fly the "Full Climb" stage of the launch under the monitoring of the instructor. "Polishing of Turns" could be the teaching task in the exercise area, and in the circuit, the student could be getting some practice in "flying to a point" and "turning".

The instructor should take pains to plan each circuit to the maximum advantage of training, always allowing for a smooth transition to the "break-off" for normal circuit and landing procedure.

One aspect of skill is the ability to apply principles of action to a wide variety of situations. An important use of this ability is the prediction of trends, so that action may be started in time to meet a predicted event.

Training should involve the teaching of these principles. Though many of them will be absorbed unconsciously from an experienced instructor, there is room for a more conscious approach to this aspect of training. The instructor who analyses his own flying and who is aware of the principles he applies by habit to differing situations, will be better able to pass on this knowledge to students.

Learning by doing is a more effective method of training than a method which requires the following of complex instructions.

Most effective of all is the situation which allows the student to set his own pace.

Again, something the student can see for himself is of more value than any judgement the instructor might make on his performance.

Safety

The main intention of the principles expounded so far is that they should be used to train pilots who will not fly "mechanically", but who will think for themselves and bring an analytical attitude to bear on their own flying, in all respects.

The principle now to be discussed has the opposite intention. It suggests that a number of unbreakable HABITS OF SAFETY should be formed by the student during instruction.

For example, by solo stage, the pilot should have developed the habit of maintaining a "safe speed near the ground" so strongly that throughout his flying career he should feel acutely uncomfortable if for any reason his speed falls below a safe margin of speed near the ground. "Near the ground" means any height below the height needed to recover from the effects of any sharp reduction or loss of flying speed. "Safe speed near the ground" means 1.5 times the stalling speed of the glider.

Similarly the habit of always keeping a good lookout must be developed in the student, for the safety of himself and all other users of the air. It is particularly important before turning, but must never be forgotten at any time in any kind of aircraft.

All possible steps should be taken to form habits of coolness and confidence in the student to proof him as far as possible against the effects of panic, which may be defined as a sudden and complete loss of confidence in an emergency., The student should have confidence in his own ability, confidence in the glider and a clear knowledge of training in the standard emergency procedures. He should be convinced that in any emergency situation calmness and ability will bring him safely through.

It will be found that in almost every exception to this, some habit of safety that the pilot should have developed during training has been ignored or broken.

For example, overstressing of the structure - the habit of observing placard speeds and limitations should have been developed during training. Ignoring placard speeds on the launch or on gusty days, for example, will lead to a contempt for such restrictions. Collision - the habit broken here is the main habit of airmanship; keeping a good lookout at all times. Spinning too low for recovery - the habit broken here is probably the basic one of keeping to "safe speed near the ground".

The thoughtful instructor will become aware by experience of these aspects of gliding which should be covered by fixed habits of safety (which it is the instructor's DUTY to instil in the student) and those aspects where, under initial guidance, the student should become thoroughly competent to think for himself.

METHODS OF GLIDING INSTRUCTION

This involves breaking down any particular exercise in the training syllabus into a series of steps. It is suggested that after first reading of this section, instructors compare the routine with actual sequences from Part 2, identifying the steps as they do so. The steps are as follows: -

- Pre-flight briefing
- Airborne demonstration and patter
- Hand-over/take-over procedure
- Student practice and feedback
- Fault analysis and prompting
- Post-flight debriefing

Pre-flight briefing

This is a vital part of gliding instruction and must NEVER be omitted. A successful pre-flight briefing consists of careful analysis of the task to be performed, along the following lines -

What stage has the student reached? What is the next stage to be attempted? How do teach it? How do I link it with the previous stage? How do I know when I have taught it?

The pre-flight briefing should be kept short and to the point. It is not a lecture. Diagrams should be used where necessary, and it should not be forgotten that the glider itself is a perfect "tool" for illustrating things like the effect of control movement on the camber of main surfaces, etc. It is a mistake to get too technical at the pre-flight briefing stage – if technical detail needs to be entered into it is better done after the flight than before it.

The prime objectives of the pre-flight briefing are to **DEFINE** the objective of the flight, **DESCRIBE** briefly what the objective consists of and **ALLOCATE RESPONSIBILITY** for who does what.

Airborne demonstrations and patter

The importance of this part of instruction should not be underestimated. Instructors must be able to give clear demonstrations of any exercise in the training syllabus. Some of these will demand deliberate mishandling of the glider; for example aileron drag and spinning. An instructor must be skilled at analysing all the exercises in the syllabus in order to break them down for presentation. This needs constant practice.

An instructor must develop synchronisation of words with the demonstrations. A brief but accurate description of exactly what is happening, synchronised with the glider actually doing what the instructor said it would, is extremely effective. Once again it needs practice, but it is well worth the effort. Instructors are cautioned against trying to simply repeat the pre-flight briefing during the airborne demonstration. The briefing and the "patter during demonstration" are two entirely different things.

The general pattern of instructor demonstrations will be as follows-

- Name the exercise and describe the effect(s) to be observed.
- Pause.
- Ensure the glider is established as a stable platform.
- Demonstrate clearly the nominated exercise, synchronising the demonstration with the patter.

Then...

Hand-over/take-over procedure

Many problems are caused by one or both pilots being unsure who has control of the glider. Most instructors have at least one hairy story to relate on this subject. It is vital to develop a clear, unmistakable hand-over/take-over procedure to eliminate confusion. One useful expression is "Your aircraft", to which the reply must be "My aircraft" when the student assumes control. Whatever expression is used, it must be clear and unambiguous, and must receive a response.

The exception to the above is when an instructor needs to assume control without any delay, to prevent a hazardous situation developing. An obvious example of this is failure to flare during the landing approach. Such a situation is ample reason to take control without comment and catch up with the formalities later.

Although it is hazardous to be unsure if anyone is actually in control of the glider, it can be very confusing and unsettling for a student if the instructor says he is handing over control but does not in fact take his hands and feet off. After the very first demonstrations where it might be acceptable to use the technique of "come on the controls with me" as a confidence builder, the instructor must ensure that on all occasions where he says "your aircraft" he does in fact relinquish control to the student. Trainees definitely know when an instructor is riding the controls. There is only one occasion, other than the introductory one already mentioned, where it is acceptable for an

instructor to be on the controls at the same time as the student. This will be covered in the section on "Fault analysis and prompting".

Student practice and feedback

When control of the glider has been handed over to the student, the instructor observes the results of his own briefing, demonstration and patten. Usually the success of the student's understanding of the exercise is in direct proportion to the quality of the instructor's performance. Students vary in their approach to taking over control; some are tentative and nervous, others aggressive and rough. The instructor must be ready to offer comments appropriate to the results he sees. The difficulty here is that the controls should not be interfered with by the instructor unless absolutely necessary.

The main feedback for an instructor is the success or otherwise of the student's emulation of a demonstration. It may be that another demonstration, perhaps with changed patten to suit the student's style, will provide the answer to a student who does not seem to have understood what the instructor is trying to say.

Fault analysis and prompting

Faults in a student's flying may be in the areas of skill, judgement or airmanship. Instructors should remember that students must be allowed to make mistakes and it is observation of these mistakes which provides the feedback necessary to positive instruction. It should also be remembered that an instructor would be required to retrieve any situation which is allowed to get out of hand. There should be no hesitation in taking control to prevent a hazardous situation developing.

It may be that the student has the basic idea right, but is having trouble with the exact amount of control to use. A good example of this is co-ordination of the rudder with the aileron - most students do not use enough rudder and their progress into turns and trying to fly straight and level is erratic and discouraging to them. It is quite in order for the instructor to come on the controls momentarily with the student to emphasise a point - "not quite enough rudder with the aileron; feel how much rudder I' m using", for example. This drives the message home, but it is imperative to get off the controls again as soon as the assistance is no longer needed.

Post-flight debriefing

The debriefing should consist of an accurate analysis of faults, without nit picking, and is a good opportunity to offer praise for the parts of the flight which were well handled. It is essential that the debriefing looks forward to the next exercises in the sequence and the student should be advised what to expect on the next flight.

Remember "recency effect". The student will remember most vividly those parts of the flight which have only just happened, i.e. the approach and landing. If there are other parts of the flight which need comment from the instructor, and there usually will be, the student will need help in recalling those items in order to absorb a debriefing. The instructor is not immune from recency effect either. Carry a small notebook in the shirt pocket or in the glider - brief memory jogs can be jotted down in the air for recall later on the ground. Do not rely on the frailties of human memory.

The debriefing will normally be augmented by suitable endorsement of the training card/logbook.

Summary

To summarise methods of gliding instruction, keep the following points in mind.

1. Keep briefings brief and to the point, otherwise confusion may result.
2. Relate each exercise to the syllabus as a whole; beware of Instructing any given exercise in isolation.
3. When demonstrating, start from and return to the stable platform. Ensure that the student does the same.
4. Do not fall into the trap of believing that once an exercise has been taught it will necessarily be remembered for all time. Remember the frailties of human learning capacity and keep in mind that constant practice and recapitulation are necessary to adequately develop pilot skills during, and after, initial training.
5. The training syllabus breaks the process of pilot training down into simple and clearly identifiable steps. It is a mistake to try and jump any of these steps and to push a student faster than he is able to cope. Each step is a building block for the next one, and any attempt to seriously disrupt the sequence risks a major misunderstanding which will at best hinder progress and at worst put a pilot at risk at a later stage.
6. Let the student make mistakes. There is no substitute for actual experience.
7. When you hand over to the student, **STAY OFF THE CONTROLS.**
8. Remember that application of the Methods of Gliding Instruction depends on a sound understanding of Principles of Instruction and of Skill Acquisition. Remember also that instructors are susceptible to the same human frailties as their students.
9. Carry a notebook and **USE IT.**

FLIGHT MANAGEMENT

Unlike power flying, where the pilot can easily determine the duration of a flight, the gliding instructor has to make the best use of the resources at his disposal. The following factors therefore must be taken into account when planning and executing an instructional flight.

- The performance of the glider.
- The weather conditions.
- The launch method.
- The exact needs of the student on the particular flight.

Glider performance

Training gliders range from low-performance machines with still-air sink rates in excess of 2 knots and glide-angles of 20 or less (e.g. Kookaburra and Falke) to higher performance gliders with better sink rates and glide-angles in the mid 30s (e.g. IS28B2 and Puchacz). An instructor may be called upon to work in a glider at either of these extremes or somewhere in between.

The performance of the glider in use has a marked effect on the management of each instructional flight. For example, nothing cures an instructor who is a compulsive talker like a 1,000 ft winch launch in a short-wing Kookaburra. If the flight is not properly organised and managed, the instructor could still be talking about the release procedure as the wheel touches the ground on the landing. This is admittedly an extreme example, but it serves to illustrate the point that the

instructor must know the performance of the glider and plan realistically to take it into account. Wastage of airborne time is a big enemy of effective gliding instruction.

Weather conditions

Obviously the weather has an important bearing on the probable duration of each flight and will affect the management task considerably. The instructor must be flexible enough to make intelligent use of good soaring conditions to control flight duration, without using those conditions to prolong the flight unnecessarily or for his own, rather than the student's, benefit.

Wind velocity is an important factor in flight management. Gliders drift easily downwind and most trainers take a long time to penetrate back into wind. Much time can be wasted by an unthinking instructor who allows the glider to drift downwind, necessitating a long battle into wind in order to get back to the field. In a low-performance glider, there can also be a great increase in the instructor's anxiety when a long way downwind of the field. Anxiety is another enemy of effective gliding instruction. There is no point in having two anxious people in the glider at the same time.

As a general rule, work on the upwind side of the field as much as possible when instructing and only accept a downwind drift if the rate of climb in a thermal justifies it. To keep your eye on this requires management of the flight.

Launch method

Clearly an aerotow or a motor-glider gives the instructor more ability to control flight duration than a winch launch. Winch launch pilots have to take what they can get in terms of launch height and in calm, non-soaring conditions, flight duration is doomed to be short, especially in low performance gliders.

The likely duration of a flight affects the pre-flight briefing, which can always be modified or added to in flight if unexpected soaring conditions crop up. This means that an instructor must adopt a flexible approach to flight management, changing with the conditions and circumstances if necessary.

Exact student requirements

An instructor must ensure that the needs of the student are being properly met and the management of the flight must take this into account. Although some would argue that the opportunity to soar must never be ignored, if the student really needs take-off and landing practice at that particular time, the amount of soaring on that flight should not be overdone. Otherwise the student may get only one flight that day, when the requirement was for two or three. There will be a useful compromise to be reached on all flights of this kind. It is up to the instructor to find that compromise.

It will be obvious that an instructor must be something of an opportunist, to grasp soaring chances and turn them into useful instructional time. That's fine, as long as the quality of management that goes into each flight ensures that the person who benefits is the student. If the instructor wants to indulge himself in soaring for his own benefit, let him take one of the single-seaters and soar to his heart's content. In fact, it would be a good idea if more instructors did exactly that.

RISK MANAGEMENT

Gliding is basically a safe activity. However there are some risks attached to our sport, which have to be managed in such a way that they do not become a factor in our operations. This is not always easy.

Part of an instructor's job is risk management. This means recognising that a given risk exists and managing the flight so that there is no risk worth worrying about. Let's look at an example: -

A winch launch has a number of potential hazards. The cable can break, the winch engine can run out of fuel, the glider could pick up a "dead" cable, etc. A number of people play a part in managing these risks down to acceptable proportions. The pilot is the last link in the chain and, should an emergency occur despite all the efforts of others, must manage the flight in such a way that no accident results from any of the failures. If the risk management falls down, an accident is likely.

Such an approach to risk management on the part of the pilot is known as "defensive flying". The instructor clearly plays a major part in the development of a defensive flying culture in the student. If the instructor fails to get this message across, an accident-prone pilot is the likely result.

In reality, there is no such thing as "accident-proneness". People who traditionally get this title just don't know how to manage risks properly.

INSTRUCTOR/STUDENT RELATIONS.

The biggest failing of the pilot training system in gliding is that a student often has to fly with a wide variety of instructors before going solo. It might be argued that this is really not a problem and that exposure to a wide variety of instructional style results in a better and more flexible pilot. There is no evidence to support this contention, but there is plenty of evidence that adherence to such practices prolongs training unnecessarily, sometimes forces incompatible people to fly together, and still risks missing something major out of the syllabus on the way to becoming a pilot.

The best relationship between instructor and student is established when the student flies with, at most, two or three instructors in a club (this assumes a largish club with an Instructor Panel of between 10 and 20). The individuals get to know each other and establish a rapport which means that progress is made quite rapidly. It should be remembered that students often have doubts and even fears about the sport they have got themselves into. Expression of these doubts and fears comes more easily to a person they have got to know, rather than be confronted with a succession of complete strangers exhibiting styles ranging from sympathetic to downright intimidating.

Although it is a well-recognised fact that disillusionment with the effectiveness of the club training system is a major factor in the high dropout rate during training, there is reluctance in most clubs to take any action to change a system that has become traditional. With this in mind, strategies need to be worked out to ensure that students receive the best possible standard of instruction within the self-imposed limitations of our system and that instructors make every effort to establish a relationship which achieves that end.

There are some specific points in instructor/student relations which are important enough to isolate.

Criticism

Although criticism is an essential part of any kind of training, instructors must remember that it is destructive if carried to excess. To some kinds of personalities, it is enough to cause them to drift away from gliding. This is not to say that an instructor must not criticise - far from it - but do make sure that is relevant, justified and positive. The biggest trap to fall into is to criticise someone for doing something that was actually quite acceptable, but doesn't happen to be the way you would choose to do it yourself. This is sometimes quite a difficult course to steer, but an instructor must keep it constantly in mind.

Praise

This is a positive side of instructional work which has the capacity to improve a student's performance considerably if applied carefully and judiciously. Everyone knows the effect that praise has on human performance, but there is one point which should be watched carefully. Beware of false praise or any tendency to try and use praise to lift a student's game when the problem lies further beneath the surface than you are able to see. If a student has worries or fears and the instructor brushes them off with a flippant remark designed to build confidence, this will have the opposite effect when the student eventually realises that the instructor has not put the amount of thought or effort that he should have into analysis of the student's problem. In short, the student has been "conned". Once again the result can be an unnecessary loss to gliding.

Some people hold the view that praise has a detrimental effect, because it causes the recipient of the praise to become swollen-headed. Once again, there is no evidence to support this as a general principle, although it may be that it has occurred in a couple of isolated instances. Generally speaking, the effect of well-judged praise is entirely positive.

Respect

An instructor must have the respect of the student if any progress is to be made. This means that the instructor must in turn respect the student as a person and endeavour to understand as much as possible about that person's needs, aspirations and concerns.

Progress

Students need to know the instructor's opinions on the progress being made. The instructor must therefore be conscientious about completion of the student's card or training book at each stage of the syllabus. Comments written in these documents are for the benefit of both the student and the next instructor. They must therefore be brief, to the point and above all truthful. The last thing a student needs is a false impression of progress.

Standardisation. This is a particular problem when a student has a number of instructors. Each individual has personal foibles that can confuse the student and cause frustration. Instructors are urged to adhere closely to the Principles and Methods outlined in Part 1 of this Handbook and to carry out their instruction according to the syllabus in Part 2.

THE AIR EXPERIENCE INSTRUCTOR RATING

Purpose

The Air Experience Instructor rating is an authorisation issued to pilots in command of Air Experience flights carrying persons who may not be members of the Gliding Federation of

Australia. It is assumed that such visitors to a gliding club have an interest in the sport of gliding and wish to experience it before committing themselves to membership. Therefore it is also assumed that some instruction, albeit limited, will take place in the course of an Air Experience Flight, in the interests of letting the visitor "have a go" at the controls.

Prerequisites

- At least 50 hours experience. Power pilots may count 10% of their power hours towards this requirement, provided they have a minimum of 10 hours gliding.
- At least a C Certificate.
- Thoroughly conversant with flight rules and procedures and free of basic flying faults.

Training

The training for an Air Experience Instructor rating shall be carried out by the club CFI or a suitable experienced Level 2 Instructor delegated by the CFI.

The syllabus of training is as follows: -

- Stalling and spinning sequences in accordance with Part 2 of this Handbook and emphasising the recognition of the symptoms of an accidental spin.
- All relevant launch emergencies
- Accurate circuits, approaches and landings without reference to the altimeter.
- Running out of height in the circuit.
- Flying a tandem two-seater from the rear seat.
- Correct hand-over/take-over procedure.
- Talking while flying - basic conversational patter.
- Passenger awareness briefing, including coping with such reactions as sickness, fear, etc., in accordance with the Air Experience chapter in Part 2 of this Handbook.
- Pre-flight briefing and post-flight debriefing of passengers.

Privileges and limitations

- The Air Experience Instructor rating limits the pilot solely to the conduct of Air Experience Flights.
- The Air Experience Instructor must carry out all launches, circuits, approaches and landings and is not authorised to permit another person on the controls below 800ft AGL.

THE LEVEL 1 INSTRUCTOR RATING

Prerequisites

The selection of suitable candidates for instructor training is of the utmost importance. Instructing is a responsible undertaking that requires flying ability, a proven maturity and stability, a high regard for the importance of safety shown both in actual flying and general conduct, a sound background knowledge of gliding, a suitable personality and manner, an even temperament, an ability to explain and teach and the time available in which to instruct. All instructors must have skill as a soaring and cross-country pilot, but such skill does not necessarily pre-suppose potential skill as an instructor.

Very broadly, the Club Committee has the say on acceptability of the candidate as a person. The CFI or the Instructor's Panel makes the final decision on the acceptability of the candidate on

more technical grounds. As in practice it often proves most difficult and unpleasant to remove an unsatisfactory instructor it is wise, when making the initial selection, not to give benefit of the doubt in marginal cases.

With few exceptions the CFI or Chairman of the Instructors Panel will be familiar with the flying ability and personal qualities of the candidate. It is likely that the candidate would be doing much solo and relatively unsupervised flying prior to his acceptance as a student instructor. Possibly he may have developed a number of habits which might not be dangerous but may not conform to the standard of orthodoxy required of an instructor.

Club pilots selected for Level 1 Instructor training requires a minimum of 75 hours gliding. Power pilots may count one tenth of their power time towards the 75 hours after they have done a minimum of 10 hours gliding. It would be considered an advantage if a candidate held an Air Experience Instructor rating, but it is not essential.

Theoretical knowledge

Prior to the commencement of practical flight training as an instructor, the candidate's knowledge of basic theory appropriate to the instructing task is tested. From 1st January, 1994, this will be done by undertaking an oral examination on basic theory of flight, basic airworthiness, flight rules and procedures, basic meteorology and a sound knowledge of the GFA Instructor's Handbook and Operations Manual.

Guidelines for the oral examination are produced by GFA and all clubs hold copies. Club CFIs or suitable delegates may conduct the examination.

Questions in the examination will use the following publications as source material:

- Instructor Handbook (GFA)
- Operations Manual (GFA)
- Basic Gliding Knowledge (GFA)
- Daily Inspector's Notes (GFA)
- Aviation Meteorology (Bureau of Meteorology)

Club preparation

The examination having been successfully carried out, the very early part of preparation for instructor training will consist of a fairly critical appraisal of basic flying ability. Nobody is looking for the impossible, but it should not be forgotten that good flying standards begin with the instructor, and student pilots have a disconcerting habit of emulating their instructors and picking up some of their techniques and habits. It goes without saying that they will pick up the bad with the good, thus placing a premium on a high standard of flying ability on the part of the instructor.

Research has shown that a student's respect for an instructor is in direct proportion to that instructor's ability as a pilot and as a person who takes instructing to heart.

On the flying side, the club's preparation work shall consist of the following: -

- Ability to fly a well executed launch and to carry out an accurate circuit, approach and landing without reference to instruments.
- Ability to fly accurately at designated speeds, e.g. minimum sink, best L/D and by MacReady ring.
- Ability to turn without slip or skid. To produce slip or skid as required.
- Ability on request to increase bank keeping speed constant and conversely to increase speed keeping bank constant.

- Ability to stall with nose attitude high and with nose attitude just above the normal glide position with correct recovery action in the event of a wing drop.
- Ability to give a good demonstration of a developed spin followed by the correct recovery action.
- Ability to correct quickly an incipient spin off a badly executed turn.
- Competent as a soaring pilot.
- Competent in "flying from the rear seat" of a tandem trainer and the right seat of a side-by-side trainer.
- Ability to perform neat basic aerobatics.
- Competent in handling emergencies.

A good standard of flying in the above exercises is necessary because a major part of an instructor's work consists of clear, accurate demonstrations of every sequence in the training syllabus. The same principle applies to airmanship, which must also be of the highest order.

Potential ability to communicate

Having brought the candidate's basic flying ability up to the required standard, the Instructor Panel can usefully go one stage further by giving a basic introduction to the world of instruction that the candidate is about to enter. A very valuable exercise is to have an experienced instructor fly the glider, with the candidate offering instructions as to what to do, e.g. "turn right now, straighten out here, now fly at 50 knots towards that hill ahead", etc. The objective here is to give the candidate some practice in getting the glider to go where he wants it to go by talking alone. This can be done in perfect safety with the experienced instructor on board and is a very useful insight for the candidate into the skills required of an instructor - a clear idea of what he wants the other pilot to do, the ability to communicate this idea, and the ability to keep his hands off the controls while the other pilot practises it.

Note that any experienced instructor may carry out this preparatory work, but keep in mind that it will be the CFI who will sign the candidate's application for instructor training and who bears the responsibility for his flying standard.

With the theory examination and flying preparation successfully completed, the CFI will complete a form "Application for Instructor Training", obtainable from RTO/Ops (sample overleaf). The completed form is then returned to the RTO, who then makes the necessary arrangements for instructor training to commence.

Sample application for instructor training - Level 1

APPLICATION FOR INSTRUCTOR TRAINING - LEVEL 1 RATING
DETAILS OF FLYING EXPERIENCE

Name	Date of birth
Address	
Phone (home and work)	
Club	
Gliding hours (total)	(Last 12 Months)
Launches (total)	(Last 12 Months)
Badges (or part badges) held	
Power flying experience (hrs)	Tug-pilot?
Powered sailplane experience	
No of flights in back seat of glider	
AEI or Charter rating? If so, experience (hrs)	

CLUB PREPARATION

CFI to sign that the candidate has been prepared for instructor training and that a satisfactory standard has been attained in the following areas:

- Airmanship
- Flying accuracy
- Soaring ability
- Circuit planning without use of altimeter
- Approach control
- Consistently good two-point landings
- Stalling
- Spinning
- Conversant with "Basic Gliding Knowledge"
- Conversant with GFA Op Regs and MOSP
- Current in all applicable launch emergencies
- Has acquired Instructor's Handbook
- Has been coached in commanding the glider by talking alone in accordance with the paragraph "potential ability to communicate" in the Handbook.

Name of CFI	
Club	
Signature	Date

FORWARD THIS APPLICATION FORM TO RTO/OPS

LEVEL 1 INSTRUCTOR TRAINING - FLYING PROGRAMME

All flying shall be carried out under the tuition of a Level 3 (NGS) Instructor. The student instructor shall occupy the rear seat of a tandem two-seater or the right-hand seat of a side by side two-seater.

Before undertaking the flying programme all student instructors shall be familiar with Part 1 of the GFA Instructor's Handbook. In particular the Section on Principles of Instruction shall be thoroughly studied.

The routine laid down in the Section on Methods of Instruction shall be used on each flight to familiarise the student instructor with this method of working.

It is suggested that flights be grouped together in any one day to give the student instructor some continuity. The Level 3 Instructor shall demonstrate clearly how a pre-flight briefing is carried out, how to give clear airborne demonstrations and must emphasise a clear hand-over/take-over procedure. Competence must be assured in all these areas. Use of a cassette recorder greatly assists in assessing the flight performance of the student instructor during debriefing.

As instructor training proceeds, the Level 3 Instructor will progressively complete the "Flight Progress Report" supplied for the purpose.

All work carried out in the flying programme shall be in accordance with Part 2 of the GFA Instructor's Handbook.

Session 1: Stability and introduction to control.

Session 2: Effects of controls and the straight glide. Trimming.

During these sessions the Level 3 instructor will demonstrate the exercise and the kind of patten used. Students will then practise the exercises and patten under guidance. Level 3 Instructor carries out a demonstration circuit, approach and landing during these early sessions. This shall act as a model for the student instructor for the remainder of the programme. Level 3 Instructor demonstrates positive hand-over/take-over procedures, which MUST be adhered to for the entire programme. Introduce use of the Instructor's Flight Reference Cards as memory jogs at this stage.

Session 3: Aileron drag and co-ordination.

Level 3 Instructor demonstrating airborne patten in all exercises, followed by student instructor practising demonstration and patten.

Session 4: Turning.

Demo, student practice. Student demonstrates changing station on tow and "boxing the slipstream". (Obviously only applicable to aerotow). Level 3 instructor demonstrates common turning faults as out-lined in Part 2 of this Handbook.

From this point on, more and more emphasis should be placed on pre-flight briefings and post-flight debriefings. The student instructor must become skilled in this somewhat neglected area.

Session 5: Emergencies, stall, circuits, etc.

Student carries out launches. Demonstration by student of coping with selected launch emergencies at Level 3 Instructor's discretion. Student demonstrates to Instructor all aspects of stall and recovery. Continuing student work in circuit patten, with Level 3 Instructor flying the glider and doing exactly as the student instructor tells him.

Session 6: Incipient spinning.

Student carries out demonstrations under guidance. Practice in synchronising patten with glider behaviour.

Session 7: Spinning.

Several spins of a least 1 full turn to be carried out in accordance with Part 2 of the Instructor Handbook.

Further consolidation on circuit work, including airborne patten, during all these flights, Level 3 Instructor carrying out flying under student direction. Particular emphasis on approach and landing faults, especially mishandled flares and misuse of airbrakes, loss of directional control, etc.

It is essential that circuit precision be continually developed. Student instructor practising instruction of the launch on these flights (as appropriate to the launch method in use).

Session 8: Fault-finding.

Level 3 Instructor flies launches - basic fault-finding by student. Basic aerobatics on an opportunity basis, student flying. NGS Instructor flies circuit, approach and landing, student practising patten and tuition in the air.

Session 9: Consolidation.

Consolidation of above but concentrate on approach and landing faults.

The foregoing flying sessions can be suitably arranged to fit in with the candidate's and the club's requirements.

There is no particular number of hours or flights laid down in the programme. This is intentional, as so much depends on varying factors, glider type, launch method, weather, student progress, to name just a few. However the point must be made that there is no sense in skimping the programme and the NGS Instructors must resist all temptation to do so. The high standard necessary for an instructor must be put into place right from the very start of instructor training. We have no hope of catching up with it later. With this in mind, all assessments of performance during instructor training must be made on the conservative side.

Effective 1st January, 1994, the Level 3 Instructor will carry out an oral theory examination with the candidate. This will be done on an "open book" basis, toward the end of the training programme and using Basic Gliding Knowledge, this Handbook and the "Flip" cards as the references.

When this has been carried out and the flying programme completed to the Level 3 Instructor's satisfaction, an independent rating test will be carried out by another Level 3 Instructor and a recommendation made to the RTO/Ops for the issue of the appropriate rating.

NOTE: Level 3 (NGS) Instructors are the only people allowed to carry out instructor training and recommend the issue of ratings. They are experienced gliding instructors who are specifically trained at National Gliding School for the task of training instructors. They undergo checking and refresher training at NGS every two years.

THE LEVEL 1 INSTRUCTOR RATING TEST

At the end of the instructor training course candidates will be required to undergo a practical flying test. An independent Level 3 (NGS) Instructor will, if possible, carry this out.

The candidate should not be put off by the word "test". Every effort is made to break down the examination atmosphere. However we have to find out somehow what a person knows, and this is the only realistic way to do it. An example of the kind of positive approach that might set the tone of a rating test might be "My objective here today is to assist you in passing this test and in working together I'm sure we'll have an enjoyable day ", or something along those lines.

The exact form of the flying test depends on a number of factors - glider type, launch method, type of site, etc. The test will normally comprise a minimum of 2 aerotows to 3,000 ft, about 4 winch launches or 40 minutes in a motor glider. Due allowance will be made for unfamiliarity with type/site, although this should not be a great problem.

During preparations for the test, the NGS instructor will probably have used a tape recorder to analyse the development of the candidate's patter. The Examiner may also use one to assist in the debriefing following the flying test.

The flying test will cover the following points: -

- Flying skill
- Airmanship
- Pre-flight briefings
- Airborne demonstrations
- Hand-over-take-over procedure
- Fault analysis and prompting
- Post flight debrief
- Emergencies
- Running out of height in circuit.

Flying skill

The candidate should show a high degree of skill at all times during the flying test. Examples of this skill are: Attitude/speed control, co-ordination, position of the glider in relation to the airfield, accurate trimming. The skill level must not deteriorate noticeably when explanations are being given.

Airmanship

Poor airmanship shows itself in many ways - slapdash checks, poor lookout, failure to think ahead, etc. Airmanship is usually the first thing to fall by the wayside when a candidate is put under stress. The Examiner will from time to time generate stress to observe the effect on the candidate's airmanship and flying skills. Airmanship will be under observation the whole time.

Pre-flight briefings, airborne demonstrations, hand-over/take-over procedure, fault analysis and prompting, post-flight debrief.

These will be examined in accordance with the respective sections in "Methods of Instruction".

Emergencies

The most common emergency is launch failure, and should this or any other emergency occur the candidate will be expected to deal competently with the situation.

Running out of height in circuit

This is not quite in the emergency category, but it demands clear decision-making on the part of the pilot, who should carry out an other-than-normal circuit routinely and without apology. It is essential that any instructor will do this without prompting, and the Check Instructor is at liberty to set up such a situation during the rating test.

Flying discipline

Extensive study of accident reports over the years indicates that lack of flying discipline is the primary cause of about 65 % of accidents and a major contributory factor in about 80%. Lack of flying skill is also a factor, but nowhere near as big a factor as the lack of discipline. Strong personal discipline, the setting of a good example and the ability to communicate these factors to a student are the prime qualities required of an instructor. That is what the Check Instructor will be looking for.

Level 1 Instructor privileges and limitations

- A Level 1 Instructor may only give instruction under the supervision of a Level 2 or higher Instructor.
- A Level 1 Instructor is not authorised to approve initial solo flight, nor is he authorised to take charge of a day's flying operations.

Level 1 Instructor revalidation requirements

To retain a Level 1 Instructor rating, a pilot must fly a total of 40 hours or 200 launches in a two-year period, of which 20 hours or 100 launches shall be instructing. A check of instructional skill shall be carried out by the club CFI prior to each biennial revalidation.

THE LEVEL 2 INSTRUCTOR RATING

HUMAN RELATIONS

Leadership, supervision and discipline

The nature of the sport of gliding brings about a situation where many people are for the first time in their lives accepting responsibilities as club instructors without any previous background in instructing techniques or the art of handling people. It is with the latter subject that this section is mainly concerned.

Inherent in the art of instructing is the need to direct or supervise. In other words all instructors are to some degree supervisors, more so in the case of Level 2 Instructors than at Level 1.

A person holding a Level 2 Instructor rating is authorised to take complete charge of a gliding operation on any given day, to act in the capacity of "Duty Instructor". Since the Duty Instructor is effectively the CFI's delegate for the day, it is clear that the position carries considerable responsibility for the safe and efficient conduct of all aspects of the operation.

Recognition of the supervisory factor in instructing is of prime importance because every supervisor, or instructor, as we will now refer to him, has obligations that differ greatly in degree from those of other club members. Let us look at these obligations. What are they?

They may be briefly summed up as: -

- Responsibility for the performance of others
- Responsibility for the maintenance of standards, especially those relating to safety; and
- Responsibility for the protection and care of equipment.

In brief we may say that the instructor is primarily responsible for making things happen through the efforts of people. His job therefore is essentially one involving the art of human relations in managing people, guiding them in the direction of getting things done and of achieving the desired objectives with maximum efficiency, with due regard for the interests of all concerned. This demands judgement and leadership of a high order. To instruct efficiently calls for the building of morale, the development of co-operation, the use of proper instructional methods, the ability to discipline wisely and above all A SOUND KNOWLEDGE OF HUMAN NATURE.

For any club to be strong and efficient it is therefore necessary that those entrusted with supervisory responsibilities should exhibit marked qualities of leadership. Most of us are not naturally endowed with these qualities but in many cases these can be acquired with conscious effort. It is impossible to list those personal qualities which combine to make a for good leadership but there are some which cannot be overlooked. A few of them have already been considered in the section on "Important Instructor Characteristics", others are looked at for the first time here. In any case they are important enough to be reminded of time and time again in instructional work.

Self discipline

A number of the problems of bad discipline arise because of our own inability to discipline ourselves - to set a good example and to make it quite clear to those whom we supervise what is expected, and that by our example we mean what we say.

It is no use expecting people to be amenable to discipline if we ourselves cannot be so. This is most important. In fact if we are not prepared to be honest with ourselves in this matter we will never gain the real respect of members. We are all inclined to think at times that a set of rules is made for someone else, but certainly not for ourselves.

We are at all times under the critical eyes of all club members. Being human, they are quick to notice and mentally criticise us if we break the rules we expect them to keep. Every time this happens our authority or ability to maintain discipline is lessened, whether we like it or not. The force of example is a very potent factor in creating a suitable climate for effective discipline, so the first thing an instructor must learn to do is to discipline himself, to train himself to abide by the rules laid down by his organisation and to set an example which cannot be criticised by the people with whom he associates in his capacity as an instructor.

Willpower

Instructors should have sufficient strength of character to make and adhere to the right decision in the face of pressure and adverse criticism. They should be strong enough to place the qualities of duty and self-respect above the desire for popularity and self-interest. An instructor should not however confuse will power with foolish obstinacy once he realises he has made a wrong decision.

Intelligence

This is an essential leadership quality without which an instructor cannot hope to win the support and confidence of the ordinary member.

Integrity

To be successful an instructor must establish a reputation for honest dealing and reliability, which can only be developed by consistent and impartial behaviour towards those with whom he associates as an instructor.

Ability to inspire confidence

Unless members have confidence in the instructor's ability, know how, judgement, impartiality and sincerity it will not be possible to inspire enthusiasm or interest in them.

Technical knowledge

An instructor must have a sound knowledge of his duties and be capable at all times of advising members on all matters affecting his particular responsibilities. He should have a comprehensive knowledge of G.F.A. and club policy and procedures and any relevant CAA requirements.

Decisiveness

An instructor must be prepared to make and accept responsibility for his decisions. He must not be guilty of unwarranted procrastination in this direction. Failure to accept the responsibility for making decisions can only be construed by the member as weakness and lack of instructing knowledge. However instructors should never allow themselves to be stampeded into giving a decision without being in possession of all relevant facts. Once a concession has been made it is difficult to rescind without causing dissatisfaction, even if it transpires that the original decision was based on insufficient information or a misinterpretation of the facts available.

Enthusiasm

Unless an instructor is able to exhibit a sincere enthusiasm towards his task, it is unlikely members will show any better response.

Fairness

The need for this quality is so obvious that there is no need to comment further.

The attributes referred to are all positive qualities and are directed to the stimulation and interest of persons under the instructor's control. Although the use of disciplinary action is sometimes necessary in certain cases, this is a negative approach to the question of leadership, and can be better described as driving rather than leading.

Discipline

Having raised this question of discipline it becomes necessary to discuss this term as the duty of maintaining discipline in a club is a major responsibility of every instructor and one which cannot be avoided.

In considering the meaning of "discipline" we find that the use of this word sometimes raises a feeling of resentment in the average person because in the past the term has often been associated

with unpleasant consequences. In the minds of some people the words "discipline" and "punishment" have become synonymous and it is not unusual to hear people use the expression, "You will have to discipline him", when they mean the person concerned should be punished.

It is unfortunate this stigma has become attached to the word, as in reality, no such construction is justified and every effort should be made to overcome any prejudice arising from the use of this expression.

The proper use of the word "discipline" is "training to comply with the rules and regulations of the organisation". Note the intentional use of the word "training".

All thinking people recognise the necessity of rules and regulations to control the activities of any human agency, and will readily admit that without defined rules, direction and control would be impossible.

When people join a gliding club one of the conditions of their acceptance would be that they agree to submit to the rules laid down by their club. Proper rules and regulations minimise direct supervision giving stability and security to the club and its individual members. However unless written rules are orally and intelligently interpreted and the spirit behind them is clearly defined, too often they will be observed to the letter of the rules in situations where judgement should prevail. In general, the fewer the rules consistent with safety, the better. It is important to remember that rules, which are too rigid or arbitrary, invite members to find a way around them. Individuals will not obey rules if they feel they are unreasonable or unfair. In other words any rules should be "good" rules.

In considering the question of discipline we may say there are two recognisable types: -

Positive discipline (Sometimes referred to as internal discipline).

This encourages the member to comply with the rules of the organisation because he realises that compliance with these rules was one of the conditions of his membership. Usually where a member is happy and contented it is because he feels his interests and those of the club are identical and he has confidence in the officials of the club. He thus falls within the positive discipline group.

Negative (or external discipline).

This relies on the fear of consequences to force the subject to comply with the rules of the organisation. The use of negative discipline is undesirable generally and should only be used as a last resort when it is clear that the person concerned is not amenable to those influences which are productive of positive discipline.

Of course the important thing in controlling discipline on the flying field is the respect, not fear, that members have for their instructor. This respect and control is only achieved by the instructor's attitude to personnel under his control. Our members will respect us only if they know that we mean what we say, that we are firm, yet fair, uniform and consistent.

The quality of discipline in any gliding club is usually a reflection of the efficiency of its instructors. If they are efficient with good personal qualities they can induce voluntary discipline in the club. If they are deficient or fail to direct some conscious effort to this end the club will be inefficient and the use of negative discipline common.

We can therefore see that the morale of a club - which can be defined as the desire of a group to discipline itself - is closely allied to discipline and the efficiency of club instructors. To illustrate this point we must understand that an organisation is created when a number of people band together to achieve a common objective. It is only while their activities are directed towards this mutual purpose through a high standard of discipline that they can be correctly termed an

organisation. Once they abandon the common object they revert to a group of individuals, and as such it is impossible to make effective use of their collective efforts.

Every instructor should regard himself as a two-way channel of communication between the Committee and members. He should correctly interpret club instructions and policy to members and at the same time keep club officials informed of any grievances, complaints, dissatisfaction or other factors affecting the morale of the club which manifests itself in members under his control. Incipient dissatisfaction, if detected early, can often be remedied by appropriate action to remove or modify the cause of complaint.

The creation of good morale requires the ability to recognise the temperamental differences existing in different types and formulating an approach to get the best from them. The instructor must recognise that although there may be marked differences in the mental and emotional outlook of club members, they should all conform to a reasonably common standard of behaviour.

Correcting members, particularly trainees, is part of the everyday duties of a club instructor. There is no one right way to make corrections, but there are many wrong ways. Certain general guides are useful in changing behaviour and to get members to accept recommendations without resentment: -

Consider the personality and attitudes of the member before you correct him. Wait a while if he is upset.

Be sure your attitude is one of general helpfulness. If you are criticising only to show your authority you will make few improvements. Instead you will build up a personal resentment against yourself. NEVER CORRECT IN ANGER. Always allow yourself time to calm down and think coolly.

Get the facts first. If possible, find the cause of the behaviour or error before you talk to the person concerned. Many an instructor has been seriously embarrassed and has lost the respect of members because he reprimanded before he was sure of the facts.

Errors are sometimes due to factors beyond the control of the individual. Blaming a member under such circumstances means loss of prestige for the instructor who gets the reputation for being unfair.

In getting the facts don't make snap judgements. Give a member a fair hearing and let him tell his side of the story fully.

Be a good listener. Don't interrupt the person unless you need to clarify some points. Careful attention to the story may bring out important facts that you might otherwise overlook.

Share the responsibility for an error. Many instructors have learnt the value of letting people save face when they point out errors. They don't insist that a person admit mistakes; rather they shoulder part of the blame.

Advice is given in a friendly manner. The instructor says, "Bill, maybe I didn't make it quite clear that you are supposed to do it this way". Contrast the possible reaction to this when compared with a statement such as the following, "What the were you trying to do?"

Don't belittle the member. Personal abuse offends, so that the member won't listen to your suggestions with an open mind. Such criticism is apt to frustrate.

Be tactful without emotion. Show patience and goodwill. Never use sarcasm or ridicule. People respond much better if they believe the instructor has faith in them and think they have the ability and intelligence to carry out the exercise correctly.

Don't blame the member. Seek together the cause of the error. Be sure the member understands the cause of the trouble and explain the right way to eliminate it and substitute the correct action.

Explain how and why a particular thing must be done. Treat the person as an adult and appeal to his intelligence.

Criticise constructively. Point out how improvement can be accomplished. Offer praise for what has been done right, and build in the person a desire to do better by showing him the advantage of using the right methods.

Ask - don't demand. Whenever possible, give your order as a suggestion not as a command. Suggestions can be phrased in many ways, e.g. "How about helping with this?" "Do you think we can do this?", etc. An order phrased as a suggestion is not a weak order. It carries just as much authority as a command but there is a great difference in the way it is received. Use your authority sparingly. Always put yourself in the other person's place before you give an order. If you do this, you will make the instructions acceptable.

The wisest course for the instructor to follow is to get the facts first, determine the real cause for the lapse, and then apply appropriate measures in accordance with the gravity of the offence.

Ordinarily, educating and training are more effective tools for better behaviour than punishment. While punishment may be easy to administer, its results are limited.

Public reprimands have a very bad effect but are not quite as serious as the use of sarcasm, ridicule or abuse.

We have spoken of the factors involved in correcting members. How often do we hear an instructor praise a member for good flying or operating procedure? Praise is one of the strongest motivating forces at the instructor's command but we rarely hear it on our flying fields.

Some people believe that praising a person makes him conceited and too self satisfied and that perhaps lives or club equipment might be jeopardised as a result. An industrial survey taken on this subject revealed that 87.5 % of the people coming under the scope of the survey improved their work when they were praised for their efforts. Some thought could well be given by instructors to the use of judicious praise where it is deserving.

If instructors give thought to their attitude to members, morale in the club will be higher and dissension largely avoided, for if the club has good morale, its members recognise the fairness of the rules and help the instructor to enforce them by exercising pressure on a wayward member.

There are occasions when a breach of discipline does however warrant relatively severe action being taken. The question as to how much power an instructor should have in such situations is a contentious one.

Generally it should be limited and largely left in the hands of the executive committee. Obviously, the instructor must have some power to take effective action where this is clearly necessary. Usually this is accomplished by giving the instructor power to ground a member.

This power is often used indiscriminately by instructors, mainly because of the failure to realise that good discipline has three faces; individual correction, reward and finally punishment IF NO OTHER COURSE IS OPEN, to achieve the desired objective. Many instructors do not realise that disciplining for an infraction involves more than one person. What happens to one person under given conditions indicates to others what they may expect for themselves under the same conditions. Disciplining occurs after some failure. It concentrates in the present, the results of past events and future consequences. Important emotional tensions are caused and often involve far-reaching consequences upon the group as a whole.

An instructor's power in respect to punishment should be limited to that sufficient to prevent a member endangering his own safety or that of others and club equipment. In the case of an infraction of rules by a member where the instructor considers disciplinary action necessary by way of punishment, then full particulars should be placed before the Instructor's Panel and thence the club committee by the instructor as soon as possible. This has obvious advantages and should ensure fairness to the member. If the initial decision of the instructor is right it will be backed by the club and his authority strengthened. It will somewhat remove the personal aspect between the instructor and member and it will ensure the club management is aware (as it should be) of any infringement of club rules by members. Last but not least it will avoid a hurried decision, perhaps under stress, and avoid the rather common situation where an instructor appears to be a rule unto himself. Too often discipline is thought of only in terms of restraints and penalties. Effective discipline is educational and not punitive.

Where leadership qualities are high in an organisation the following points will manifest themselves:

- Good discipline
- Loyalty to the instructors and the organisation
- Ready co-operation
- Interest in the activities of the club
- Pride in the organisation

The state of morale in any gliding club may be gauged by looking at these effects. If these factors do not exist, then the club is heading for trouble particularly if it falls upon difficult times, for this is when morale is truly tested.

Apart from the human factor, there are organisational factors which are vital in the building, of good morale, of which the most important are:

- Clearly defined objectives.
- Proper division of work into clearly stated tasks.
- Effective oral and written expression.
- Keeping members informed on matters which concern them.
- Delegating responsibility and authority where appropriate.
- Fair and firm discipline.
- Dealing promptly with complaints and grievances.
- Developing understudies for all club executive positions.
- Giving clear and adequate instructions.

Actions which destroy morale are the opposite of the above morale building factors. Common morale-breaking methods are: -

- Favouritism amongst individuals
- Uncontrolled temper
- Unkept promises
- Prejudice and bias in making decisions
- Belittling of the club's management
- Too much display of authority
- The spreading of unsettling rumours.

The task of maintaining good discipline and morale is inherent in the duties of every instructor and is a continuing responsibility.

CHECK LIST FOR DISCIPLINARY SITUATIONS

Getting the facts

- Have I secured the necessary facts?
- Did the member have an opportunity to fully tell his side of the story?
- Did I investigate all other sources of information?
- Did I hold my interviews privately so as to avoid embarrassing the member?
- Did I exert every possible effort to verify the facts?
- Have I made enquiries about the member's past record?

Disciplinary measure

In deciding upon the disciplinary measures, have I: -

- Found out what has been done in similar cases?
- Shown discrimination towards an individual or group?
- Let personalities affect my decision?
- Considered whether the measure fits the violation?
- Considered whether the measure will prevent a recurrence?
- Considered whether the measure will maintain morale?
- Considered whether the measure will encourage the member's initiative?
- Considered whether the measure will create a desire on the part of the member to do what is right?
- Checked this decision with a fellow instructor?
- Considered whether the matter could be dealt with to advantage by the club Committee?

FIRST SOLO

One major difference between a Level 1 and a Level 2 Instructor is that the latter person has the privilege of assessing a pilot's suitability to make his first solo flight. No matter how we try to play down this event, or assert that solo flight is "just another stage of training", we must accept that its effect upon a pilot is considerable and may be positive or negative depending on how it is handled.

Part 2 of this Handbook covers all the practical aspects of assessing suitability for first solo. There is little else to comment upon here, except to draw attention to the list of requirements in Part 2, which exactly aligns with the requirements under "Methods of Instruction" in Part 1 (Responsibility - Communication - Orientation - Skill - Safety). Thus it will be understood how the principles and methods expounded right from the beginning in this Handbook are vitally important to ensure that the student is equipped to handle the command responsibility which goes with solo flight.

SUPERVISION OF EARLY SOLO FLYING

The period immediately following first solo is a very crucial period and is a time of consolidation and review, as well as a gradual building of ability and confidence towards the stage where a pilot is able to accept increasing amounts of command responsibility.

Part 2 of the Handbook contains guidelines for the post-solo training and consolidation work necessary to develop a pilot's skill and initiative after solo. Here in this section of Part 1 we are concerned with the supervisory aspects of this work, with which the Level 2 Instructor is deeply concerned.

Although a pilot is not permitted to be sent on the first solo by anyone holding less than a Level 2 rating, it is permissible for a Level 1 Instructor to check this pilot on subsequent flying days to assess whether he is still suitable to fly solo. In addition to the purely checking function of such flights, sufficient post-solo consolidation and review work needs to be incorporated into the task to ensure that the aims of paragraph 1 above are being met. Traditionally this has not been the case and the post solo area has become the weak link in the chain of pilot training.

It stands to reason that a pilot at an early and vulnerable stage of post-solo development needs a competent and preferably experienced hand to guide him. There is a discouragingly high drop-out rate in the post-solo area, and it is useful to examine why this is so. This in turn may lead us to some effective guidelines for post-solo supervision.

Before solo, pilots have been very closely and carefully supervised. This is obvious, because all flights up to the first solo have had an instructor on board. After the first solo, or at least the first few solos, this supervision tends to drop off rapidly and this can lead to nagging doubts creeping into the pilot's mind, doubts which can escalate into real worries and erode the pilot's confidence to the extent that he gives up. A good example of this is the simple case of an early solo pilot who does a landing which, while not exactly heavy, is perhaps a bit bumpy. Suppose no instructor saw it, or if it was seen it was not commented upon. The pilot would go home that night feeling under-confident in his ability to land. Will the same thing happen next time he flies? Will something worse happen? Think about it, think back to your own training days. How did you feel when you did something like that and nobody seemed to care?

A supervising instructor should not underestimate the powerful effect of these feelings and the consequent need for careful (and caring) support and guidance during this critical period. An instructor is a guide and mentor for a long time after the first solo has taken place. The first two dozen solos are crucial to the confidence building phase of the pilot's development. If anything occurs to create a setback during this phase, the pilot's confidence will be undermined and he will almost certainly drop out. It is the instructor's DUTY to keep an eye on as many solo flights as possible and offer appropriate comments on each one. For advice on exactly how to go about this, see the section on Human Relations.

The main point of all this is the fact that the Level 2 Instructor on duty on any given flying day is responsible for the overall supervision of the flying that takes place. This includes planning for who is going to fly with whom - it is no use putting an inexperienced Level 1 Instructor to fly with an inexperienced and under-confident pilot. The blind will be leading the blind. Supervise the instructors sharing your duty day with you.

But above all keep a careful supervisory eye on as much of the early solo flying as you can, within the limitations of your own flying duties for the day. The immediate post solo period should be a period of increasing confidence for the student pilot. If you have a pilot whose confidence you feel is a bit shaky, make sure you observe the critical parts of the flight and comment appropriately. It can make all the difference between keeping him and losing him.

SUPERVISION OF TUG FLYING

Tug pilots hold licences issued by the Civil Aviation Authority (CAA) and are trained as tug-pilots by GFA members who are themselves experienced tug pilots and approved by CAA to

carry out the training. This sometimes leaves the Duty Instructor a bit out on a limb when it comes to supervising, or in particular disciplining, a tug pilot. This is especially so if the Duty Instructor is himself not a tug pilot.

The supervision of tug flying can create a number of problems. Generally speaking, if the flying of the tugs is not proceeding along the lines required by the Duty Instructor, for example inappropriate or even dangerous climb-out patterns, then it is relatively easy for the Duty Instructor to insist that procedures are carried out in the prescribed manner. It is sufficient to say something along the lines of "the club does not want it done that way, it wants it done this way" to obtain satisfaction.

However, when a misdemeanour occurs which falls outside of the area of GFA jurisdiction and into that of the CAA, things become a bit more difficult. An example here might be dangerously low flying over a crowd of people while the rope is attached to the tug. In this case, the Duty Instructor needs to tread very carefully. If such a thing happened and it is certain from a conversation with the tug pilot that it was inadvertent, an error of judgement or a lapse in concentration perhaps, then the matter could be handled by the club, as long as no-one got hurt. If, however, it was wanton and deliberate, further action must be taken. Because the tug-pilot is a licensed pilot, any action to vary, suspend or withdraw his licence is the CAA's prerogative and theirs alone. The Duty Instructor/tug pilot panel/club may take any action they see fit to safeguard the club's membership and property, but the occurrence must be reported to the CAA in the form of an "Air Safety Incident Report" to enable further action to be taken by the appropriate authority. Failure on the part of the club to submit such a report could leave the club vulnerable to prosecution for failing to report the occurrence, should someone external to the club happen to see the incident and report it themselves.

Sample application, upgrading from Level 1 to Level 2

APPLICATION FOR INSTRUCTOR UPGRADING - LEVEL 1 TO LEVEL 2
DETAILS OF FLYING EXPERIENCE

Name	Date of birth
Address	
Phone (home and work)	
Club	
Gliding hours (total)	(Last 12 Months)
Launches (total)	(Last 12 Months)
Instructing hours (total)	(Last 12 Months)
Badges (or part badges) held	
Power flying experience (hrs)	Tug-pilot?
Powered sailplane experience	

CLUB CERTIFICATION

CFI to certify that the candidate has performed satisfactorily as a Level 1 instructor in all pre- and post-solo instructional sequences.

In addition, at least one check flight shall be carried out by the CFI prior to the upgrading work being carried out by a Level 3 (NGS) Instructor. The check flight shall ensure that the candidate is free from basic flying faults and is considered satisfactory for upgrading.

Finally the CFI is to certify that candidate has at least 12 month's service as a Level 1 instructor, during which a minimum of 25 hours or 100 launches as an instructor must have been completed. (Note: the 12 month period may be lowered in special cases, at RTO/Ops discretion, but the hours/launches requirement must be met.

Name of CFI	
Club	
Signature	Date

FORWARD THIS APPLICATION FORM TO RTO/OPS

FULL TIME OPERATIONS

Most gliding operations take place at clubs which operate on weekends only. There are however a few organisations which conduct operations seven days a week, although not all of such operations take place all the year round. Many of the full time operators run midweek courses, and such courses are an important factor in gliding operations in Australia for the following reasons: -

- A course is an attractive way to get a good consolidated start to gliding training.
- Statistically, 50% of "first solos" in Australia in any one-year result from full-time courses.
- The full-time operators employ a number of gliding instructors on a permanent or seasonal basis around Australia.

It is pertinent to examine the instructional effects of the above three points. A full-time course has two valuable attributes from the student's point of view.

The first is continuity of training, which keeps the student at a high level of interest and concentration while capitalising on the known effectiveness of repetition and recency effect as instructional tools.

The second is that the student will usually spend most or all of his time on the course with one instructor. They develop a rapport between them which is productive and effective. Furthermore, the instructor is continually honing his skills in all instructional sequences in the syllabus, in contrast to the average rostered club instructor who may not instruct in some sequences for months. Little wonder that, at any given level of experience, the instructor in a full-time operation will generally exhibit a higher level of confidence and competence than his counterpart in a weekend club, PROVIDED that the full-time operation does not get carried away on a tide of commercialism and standards do not bow to the lure of the almighty dollar.

Given the above, why is it that weekend clubs sometimes complain that pilots who join their clubs, having initially been trained on a full time course, demonstrate a very low level of flying ability, airmanship and general awareness? There is no doubt that many of these pilots do demonstrate such low levels of ability, but on the other hand there probably wasn't a great deal wrong with their initial training either.

Except for one thing. Go back to the section entitled "Long term memory", and you will see that it has been established that, given a break, the time required to learn complex skills is DIRECTLY RELATED TO THE AMOUNT OF ORIGINAL TRAINING. This is the key to the problem seen by clubs when integrating a course-trained pilot into their club operation. Full time operators, most of whom no longer offer guarantees of "solo in one week", should advise pilots receiving concentrated training that they can expect a fair degree of regression if they continue their gliding with a club after a break. The break only needs to be as short as one month before significant regression takes place, and this is enough to cause the pilot concern about his actual ability and the club to worry about the standard of the initial training work.

Full time operators and clubs should remember that skill is a fragile thing and needs to be carefully nurtured by both parties if a pilot is to become a trustworthy and reliable operator.

Full time operations place demands on an instructor which are not present in a weekend club operation. Commercial pressures, long working hours and the intensive working pace demanded by the courses all combine to place considerable stress on an instructor. For these reasons it is recommended that inexperienced instructors are not employed in a full-time operation, unless that

operation can see its way clear to offer close supervision in the instructors' early days, a situation which often clashes with commercial reality.

CHIEF FLYING INSTRUCTOR (CFI)

CFI responsibility

Operationally, each club or organisation has a Chief Flying Instructor (CFI) or a Chairman of the Instructors Panel (CIP). In effect the two positions are functionally identical, the only difference being that a CIP is seen by some to be less dictatorial than a CFI. The CFI/CIP must hold a minimum of a Level 2 rating, is recommended by the club and ratified by RTO/Ops.

A CFI/CIP is directly responsible to a club committee and to the RTO/Ops for ensuring that all flying operations are carried out properly and safely. Furthermore the CFI/CIP may be considered as the MANAGER of the Instructors Panel.

Relationship of instructor panel to club committee

Considering now the case of the long-established club, which has an effective Instructors Panel working in an atmosphere of goodwill and agreement (a situation which exists in a large number of clubs) we might briefly look at how such a Panel works. Firstly, the panel gives due consideration to the sometimes-delicate balance between its own rights and the rights of the Club Committee. The Committee will, and even should, include members who have been elected more for their enthusiasm and general ability than for their detailed knowledge and experience of gliding.

Therefore, while considering Committee views, the Panel will not normally accept any undue interference on technical matters of instruction, training and operations.

In this field the Committee should be guided by the Panel and not vice versa.

In other matters the Panel should be prepared to accept committee guidance. There is no use pretending that this is not sometimes a delicate balance, but certain traditional courtesies will make matters run smoothly.

The Committee is the ruling body of the club, but it should be careful not to attempt to rule on matters outside its technical competence.

The Panel, on the other hand, should be careful to refer to the Committee for ratification (usually a formality) those matters on which it feels obliged to make decisions, and which it might seem to come somewhere on the borderline between Panel and Committee rights and functions.

The spirit in which this relationship is carried on is more important than the details.

Instructor Panel management

When adding from time to time to its numbers, the Panel should give due consideration to the temperamental suitability of proposed new instructors. Troublemakers, who seem to be rationed by some freak of nature at the rate of at least one per club, can play havoc with the smooth functioning of an Instructors Panel. Instructors should be very conscious of the seriousness and possible dangers of their work and should not be distracted by avoidable tribal warfare.

An aspect of Instructor Panel management, which stresses the role of the CFI as a Manager of the Panel, is the supervision and guidance of the less-experienced members of the Panel, especially

newly trained Level 1 Instructors. This basic rating is very much a licence to learn the trade and careful supervision is essential if maximum performance is to be obtained from these valuable people. This is a somewhat neglected aspect of Instructor Panel work.

THE LEVEL 3 (NATIONAL GLIDING SCHOOL) INSTRUCTOR RATING

General

The training of instructors may only be carried out by persons holding a Level 3 (NGS) rating. This rating is issued to experienced instructors who must undertake a course of training in practical instructor-training techniques.

Prerequisites

- Gold C with Diamond Goal.
- A minimum of 200 hours instructing as a Level 2 instructor.
- Recommended to GFA Director of Operations by RTO/Ops from a pool of candidates suggested by CFIs.
- Trained and assessed by the GFA Director of Operations or delegate at a seminar/flying programme convened for the purpose.

Privileges and limitations

- May carry out training of Level 1 and Level 2 instructors at the direction of RTO/Ops.
- May carry out rating tests on Level 1 and Level 2 instructors.
- May be co-opted by RTO/Ops to assist in biennial Operations Status Checks of gliding clubs in the region.

Revalidation requirements

Attendance at biennial seminar/flying programme run by the GFA Director of Operations or delegate, at which an assessment of the persons effectiveness as a Level 3 (NGS) instructor will be made.

THE LEVEL 3 (HIGH-PERFORMANCE) COACHING RATING

Elite coaching philosophy and requirements

From time to time, there may be a need for coaching of high-quality cross-country pilots for selection to the Australian team for the World Gliding Championships. Organisation of this elite coaching requirement is carried out by the GFA High Performance coach, who may be appointed to cater for the need and who will recommend the appointment of additional coaches in each region to assist in meeting the objectives.

The GFA High Performance coach, and the persons selected to hold similar positions at regional level, holds Level 3 (High Performance) ratings. These persons need not hold a Level 1 or higher instructor rating but must hold at least an AEI rating. In addition, they must be cross-country racing pilots of known repute. They are selected by the GFA High Performance coach and

recommended to the GFA Director of Operations for the issue of a Level 3 (High Performance) rating.

Level 3 (High Performance) ratings are renewable biennially on the recommendation of the GFA High Performance coach and re-issue of rating by the GFA Director of Operations.

THE NATIONAL GLIDING SCHOOL

Purpose

The GFA National Gliding School (NGS) is an internal function of the GFA Operations Panel with specific responsibility for supervision of instructor-training standards and development.

The National Gliding School runs a number of seminars/flying programmes in each region from time to time, the purpose being to conduct renewals of Level 3 (NGS) ratings and to train new personnel for this rating.

The National Gliding School may also become involved in assessment and comparison of two-seat training gliders and is constantly monitoring the accident rate with a view to improving standards and methods of flying instruction.