

**Soaring Society of America, Inc.**

**Master Instructor Cross-Country Program**



**Instructor Supplement**

**to**

***Cross-Country Handbook for Students***

First Edition

January 2002

**Soaring Society of America, Inc.**

**Master Instructor Cross-Country Program**

**Instructor Supplement**

**to**

***Cross-Country Handbook for Students***

**Contents**

	<b><u>Page</u></b>
Rationale for Program	3
Handbook	3
Barriers to Cross-Country Flight	3
Building Student Confidence	4
Structured Approach to Cross-Country Skills	4
Observe and Follow	4
Necessary Student Experience	5
Equipment	5
Instructor Experience and Currency	5
Training Objectives and Completion Standards	6
Safety	6
Relevant Rules	6
Sources	7
Feedback Needed	8

# **Instructor Supplement**

## **to**

### ***Cross-Country Handbook for Students***

#### **Rationale for Program**

The SSA instituted the Master Instructor Cross-Country Program in response to member demands for better access to cross-country instruction. One of the perceived needs for this goal to be achieved is the availability of instructors with skills to give cross-country instruction over and above those required for FAA CFIG certificate issuance or renewal.

#### **Handbook**

The SSA has devised the *Cross-Country Handbook for Students* (“*Handbook*”) both as a guide for students attending cross-country camps (“Student Camps”) and other pilots starting out to fly cross-country, and as a road map for instructors seeking the skills necessary to qualify them to give cross-country instruction to students. It summarizes the knowledge and skills needed to successfully attempt cross-country flight.

The *Handbook* is an essential tool for SSA Instructors attending instructor cross-country courses (“Instructor Courses”) and instructing at Student Camps or otherwise giving basic cross-country instruction. You as a cross-country instructor must have access to an up-to-date copy of the *Handbook*, as must your student.

You will observe that the contents of the *Handbook* are expressed in the form of ground and flight *instruction*. While many successful cross-country pilots have been self-taught, this is somewhat analogous to jumping in at the deep end and teaching yourself to swim straight after you discovered you could float and, perhaps, after having read ‘Swimming for Dummies’. A much better way, both safer and quicker, is to learn with the help of a qualified instructor, hence the SSA initiative in promoting the Program.

This Supplement contains additional information needed by cross-country instructors using the *Handbook* for attendance at Instructor Courses, instructing at Student Camps or otherwise giving basic cross country instruction.

#### **Barriers to Cross-Country Flight**

Many glider pilots who have not flown cross-country, even those who have demonstrated good local soaring skills, perceive barriers to safe and successful cross-country flight. Some of these are physical - a lack of the various skills needed to make a safe and

successful cross-country flight; and some of these are psychological - probably generalized as a fear of not getting to the planned goal, and being forced to endure the

risks and danger of an off-field landing, with no assurance of the safe outcome. These psychological fears have likely been increased by personal experience, e.g. when pressing further away from the home field, finding a couple of good looking clouds in succession then discovering nothing but heavy sink, engendering a lack of confidence in the ability to stay up. In addition, turning away from the home field, breaking the umbilical cord and getting beyond gliding distance from it, is the opposite of what all previous flights have involved, namely getting back safely to the home field.

### **Building Student Confidence**

Part of the confidence building process can be explaining that the probability of finding thermals down the chosen route is just as high as it is close to the home field. Additionally, until the student's confidence of his/her own abilities has developed, planning should allow for remaining within gliding distance of an airport, thus removing concern about a real off-field landing.

### **Structured Approach to Cross-Country Skills**

While clearly world champions and the like have developed a high level of the skills required, safe and successful cross-country flight is not a branch of rocket science. It encompasses practical knowledge and ability in a number of relatively straightforward areas which can be separated out and learned. The approach taken is to examine each of these in turn, from the standpoint of giving instruction, both on the ground and in the air. The *Handbook* sets out what is required for giving competent cross-country instruction. While not specific, it assumes knowledge by the instructor of current glider instructional technique, e.g. as advocated in the *Knauff* basic instruction manuals. A comprehensive approach should also include knowledge of the following areas, which are not covered in detail in the *Handbook* –

- Instruments, their characteristics and operation
- Turnpoint verification for FAI Badge flights (photo and data logger)
- Soaring weather forecasts and interpretation.
- Airspace considerations.

### **Observe and Follow**

It will be observed that there are no references in the *Handbook* to the 'observe and follow' method of training cross-country pilots, sometimes incorrectly described, and carried out as, lead and follow. This is not because of a disdain for this method. It does

require, however, thorough ground instruction in the areas which are covered in the *Handbook* and largely takes for granted the piloting skills outlined there. Accordingly, observe and follow is not a substitute for the skills and knowledge covered in the *Handbook*; it can be a good way to proceed once these have been acquired. If used, the Guidelines set out in Appendix 1 to the Master Instructor Cross-Country Program Guide should be followed.

### **Necessary Student Experience**

What is the skill / experience level required by a student before taking cross-country instruction, and thereafter making a first cross-country flight? Probably to take best advantage of a Student Camp he/she needs to have completed the SSA A, B, C and Bronze badges. (See Annex A to the *Handbook*). By that time, he/she should have achieved reasonable mastery of the glider, and the ability to fly it with some precision - the accuracy landings required for the Bronze badge are a reasonable standard to expect. Once the student has received the cross-country instruction contemplated in the *Handbook* he/she should be close to ready; however a student whose skills have not developed to the level that he/she can climb in thermal up to 500 ft below cloudbase may not yet be. If practicable, the student should have successfully attained the FAI Silver badge height and duration legs before trying for the distance leg, usually the first step in solo cross-country achievement. Information on FAI Badge requirements and standards, forms and declarations are set out in Annex B to the *Handbook*.

Training standards vary widely, and often are focused on meeting the minimum FAA practical test standards rather than having as an end-product a pilot able to soar competently and land safely anywhere. Accordingly it is vital that any pilot attending a Student Camp or otherwise receiving basic cross-country instruction can satisfactorily accomplish accuracy landings in the manner and to the completion standard set out in Section 1 of the *Handbook*.

### **Equipment**

The two-place glider used for the training contemplated in the *Handbook* will likely be decided by availability. However, that said, to give realistic cross-country training, a glider with a best L/D greater than 30:1 is highly desirable. A Grob G 103 or ASK 21 will work well while a Schweizer 2-33, LET Blanik L 13 or L 23 or Krosno KR-03A will make the training objectives much harder to achieve.

### **Instructor Experience and Currency**

A graduate instructor from an Instructor Course should have acquired the necessary knowledge and skill to give the required instruction. However, one element may still be missing - giving the student the confidence to go out and do it successfully requires an

instructor who has, and can pass on, that confidence. In the case of an instructor who has the minimum required cross-country experience it will probably be necessary for him/her to first gain that confidence before he/she can give effective instruction to students. That means going out and making some personal cross-country flights, probably earning some FAI badge legs beyond the Silver badge (a prerequisite for qualification as a Master Cross-Country Instructor). It should be strongly emphasized that all competent and confident flight instruction needs currency/recency in the particular areas in which the instruction is being given. For cross-country instruction, that means currency/recency in *cross-country*. If that is lacking, the instructor needs to obtain this before giving flight instruction in the area or relevant part of it.

### **Training Objectives and Completion Standards**

Each section of the *Handbook* contains a paragraph on Training Objectives, and a paragraph setting out a Completion Standard. As well as informing the student of what he/she is expected to learn and the standard of performance required for instructor sign-off, these provide general guidance to instructors as to what they are required to teach, and the standards they are required to achieve in giving the relevant instruction.

### **Safety**

Users of the *Handbook* will see recurring references to safe techniques and procedures. Instructors should keep constantly in mind that safety must be the prime concern of everyone involved in the Program. It is worth repeating that soaring has no redeeming moral, social or financial value for its participants – its only justification is that it is fun. Regardless of how an individual may define “fun”, one thing is certain; when accident or injury occurs, soaring stops being fun. As a cross-country instructor, you must be continually cognizant of this, both in setting a safe example, and in teaching safe procedures to, and insisting on observance of good judgment and safe standards by, students. Doing this carries a high responsibility and requires you, as an instructor, to demand and insist on high standards at all times.

### **Relevant Rules**

While the object of the *Handbook*, Instructor Courses and Student Camps is cross country instruction, part of the knowledge and skills involved are a required element in the FAA Practical Test requirements. These include –

**Off-Field Landings** (Section 2 of the *Handbook*). FAR Part 61 requires emergency operations training to be given as a prerequisite to solo (FAR§61.87(i)(19)), and also required to be logged as ground and flight training (FAR§61.107(6)(x)). Additionally, the Practical Test Standards, Area X

(Emergency Operations), Task A, require knowledge of simulated off-airport landings.

**Thermal Acquisition and Centering** (Section 3 of the *Handbook*). FAR Part 61 requires training in procedures and techniques for thermalling to be given as a prerequisite to solo (FAR§61.87(i)(18)), and ground and flight training in thermalling is required to be logged (FAR§61.107(6)(vi). Additionally, the Practical Test Standards, Area VI (Soaring Techniques), Task A, require knowledge of thermal soaring.

**Speed-to-Fly** (Section 4 of the *Handbook*). FAR Part 61 requires ground and flight training in performance speeds to be logged (FAR§61.107(6)(x). Additionally, the Practical Test Standards, Area V (Performance Airspeeds), require knowledge of speed-to-fly and minimum sink airspeeds.

**Map Reading and Navigation** (Section 5 of the *Handbook*). FAR Part 61 requires ground and flight training in navigation to be logged (FAR§61.107(6)(viii). Additionally, the Practical Test Standards, Area VIII (Navigation), require knowledge of flight preparation and planning, navigation and the national airspace system.

**Cross-Country Techniques** (Section 6 of the *Handbook*). The Practical Test Standards, Area VI (Soaring Techniques), require knowledge of cross-country techniques.

Instructors are encouraged to include the training contemplated in the *Handbook* in their normal student training syllabus and in preparation for practical tests. Doing so will likely result in a candidate trained to a higher standard than the minimum required, give a pointer to him/her of the way forward to cross-country flying, and make the later training for that easier.

## **Sources**

While there are a fair number of texts discussing and giving advice on cross-country flight, several of which are highly recommended, there is no known text (at least in the English language) on *teaching* how to instruct cross-country. The *Handbook* has been drawn from many published and unpublished sources on 'how to' fly cross-country, and prepared in a manner which is also suitable for use by instructors teaching basic cross-country knowledge and skills. The SSA gratefully acknowledges all these authors whose work has been an inspiration for or helped in the evolution of the *Handbook*, as well as those others who have made contributions to it.

## Feedback Needed

This is the SSA's first attempt at approaching the task of cross-country instruction in a systematic way. Accordingly, the *Handbook* (and this Instructor Supplement) is a work in process. Feedback and suggestions for improvement are both welcome, strongly encouraged, and essential to the ultimate success of the Program.

Safe soaring!

Dean Carswell  
SSA Chief Master Instructor  
8041 Jordan Lane  
Midlothian TX 76065-5956  
972-775-1835  
[rdcarswell@aol.com](mailto:rdcarswell@aol.com)  
January 2002