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The GLIDER PILOT TRAINING PROGRAM

1941 to 1943

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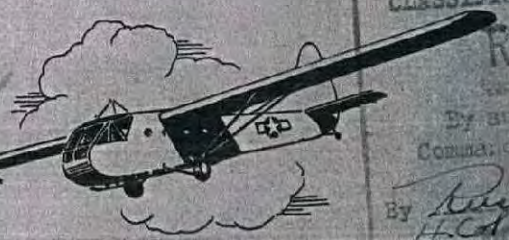

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PREPARED BY
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THE GLIDER PILOT TRAINING PROGRAM,

1941 to 1943

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Prepared by
Assistant Chief of Air Staff, Intelligence
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September, 1943

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FOREWORD

It is the desire of the President, the Secretary of War, and the Commanding General, Army Air Forces, that a solid record of the experiences of the AAF be compiled. This is one of a series of studies prepared as a "first narrative" in the projected over-all history of the Army Air Forces.

The decision to make the information contained herein available for staff and operational use without delay has prevented recourse to some primary sources. Readers familiar with this subject matter are invited to contribute additional facts, interpretations, and constructive suggestions.

This study will be handled in strict compliance with AR 380-5.

Clayton Bissell

CLAYTON BISSELL
Major General, U. S. Army
Assistant Chief of Air Staff,
Intelligence

Constructive criticisms and additional facts and interpretations are requested. To that end perforated sheets properly addressed are included in the appendix.

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INTRODUCTION

For hundreds of years men had tried to emulate the flight of the birds, but it was not until the last years of the nineteenth century and the first decade of the twentieth that a few daring individuals began to experiment successfully with gliding flight. Foremost among these were Otto Lilienthal in Germany and Octave Chanute and the Wright brothers in the United States. But with the development of powered flight and the subsequent concentration on military aviation during World War I, progress in the art of glider flying and the evolution of the glider all but stopped.

As early as 1909, however, a group of German schoolboys began to develop gliding as a sport. After the World War and the consequent restrictions placed on powered aviation in Germany, the gliding movement in that country commenced to gather momentum until by 1922 the first true sailplane had been designed and tested. Interest in gliding spread to France and England, but soon subsided, and it remained for Germany to develop the techniques of gliding and soaring throughout the twenties.

Motorless flight was again introduced to the United States in 1928 by a group of German pilots. A wave of enthusiasm for gliding and soaring swept the country. Soaring societies appeared overnight. As the civilian population became cognizant of the thrills and sport of gliding, the science of thermal soaring was mastered and goal flights were achieved.[1]

As early as 1929 civilian soaring enthusiasts began to advocate gliding as a safe and inexpensive means of preliminary power pilot training. In Germany, France, and other countries experiments and actual training along this line were being developed.[2] That year, in response to countless letters and queries, the Army Air Corps conducted a survey to determine the worth of glider training as an adjunct to power training.[3] The opinion of the personnel at Brooks Field, Texas, was:

> It is not believed that any good purpose would be served by introducing the use of gliding in the Army flying schools. The objective of the Army flying schools is to train pilots to fly military airplanes. These planes are high powered and no beneficial result would ensue from training our student pilots in gliding.[4]

At March Field, California, instructor opinion was somewhat different; they believed that "the use of gliders offered more promise of being of value, particularly in developing a feeling of sustentation, than it did of being of no value."[5] Opinion at the Advanced School at Kelly Field, Texas, was that:

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1. Lewin B. Barringer, Flight without Power, 1-12.
2. F. W. Pawlowski, Director of the National Glider Association, to Maj. Gen. J. E. Fechet, Chief of the Air Corps, Aug. 1, 1929, in AAG 373 A, Glider Flying. (Chief of the Air Corps hereinafter cited as C/AC).
3. C/AC to D. F. Walker, Manager of the National Glider Association, June 15, 1929, in ibid.
4. 2nd Indorsement (Executive, Office Chief of Air Corps to Commanding Officer, Air Corps Training Center, June 15, 1929), Commanding Officer, Brooks Field, Texas, to Commanding Officer, Air Corps Training Center, July 8, 1929, in ibid. (Office Chief of Air Corps hereinafter cited as OCAC; Commanding Officer, Air Corps Training Center hereinafter cited as CO, ACTC).
5. 4th Indorsement (Executive, OCAC to CO,ACTC, June 15, 1929), CO, March Field, California, to CO,ACTC, July 23, 1929, in ibid.

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> Students reporting at this school are, in general, considered competent pilots, able to fly any type of service equipment with a short period of transition training. Gliders cannot be utilized in the training of students at the Advanced Flying School.[6]

This study resulted in an Air Corps decision that "glider flying should not be added to the curriculum of the Air Corps Flying Schools."[7] This position was maintained throughout the thirties. Certain officers and men of the Air Corps and other branches of the Army began to manifest interest in soaring as a sport, but their experiments were terminated by an Adjutant General letter of December 28, 1931, which stated that "except on specific permission from the War Department Army personnel are prohibited from participating in any form of glider flying in other than Government-owned aircraft."[8]

As the rise of the dictator governments began to threaten international peace, the War Department, and especially the Air Corps, was deluged with advice and queries regarding inauguration of glider flying at Air Corps schools. The Air Corps clung to its old concept--that glider flying was of no benefit as a preliminary to instruction on airplanes. Air Corps opinion was based on information from abroad which indicated that although there had been "extensive glider flying in Germany and France, subsidized to some extent by the governments of those countries," it had not been included as a part of the curriculum of service flying schools.[9] Neither the Air Corps, the War Department in general, nor civilian soaring enthusiasts had yet realized the possibilities of the glider itself as a military weapon.

The surprise employment of mammoth troop-carrying and cargo-carrying gliders by the Germans in the Polish campaign in the fall of 1939 and later in the Low Countries in the spring of 1940 caused a renovation of Air Corps thinking regarding the potentialities and use of gliders. Early in 1941, before the spectacular Cretan campaign, "in view of certain information received from abroad" the Air Corps believed it "advisable that a study be initiated with a view to developing a type of glider that can be towed by aircraft."[10] Thus the Army glider program was born.

As a result of the German employment of gliders, civilian gliding in the United States acquired fresh impetus. In the spring of 1941 the National Youth Administration in conjunction with the Civil Aeronautics Administration laid plans for a glider training program for the youth of America.[11] During that year several bills were introduced in Congress which provided for the establishment of societies and workshops to promote interest in gliding and soaring.[12] The Air Corps opposed such programs on the grounds that the United States was then "in the midst of an all-out defense program" and that "military demands for powered aircraft and competent airmen should be paramount." Furthermore, the Air Corps believed that

> to effectively pilot a towed glider . . . does not require the knowledge and experience needed to navigate a soaring plane over long distances. Many

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6. 6th Indorsement (Executive, OCAC to CO,ACTC, June 15, 1929), CO, Kelly Field, Texas, to CO,ACTC, July 30, 1929, in ibid.
7. C/AC to D. F. Walker, Aug. 16, 1929, in ibid.
8. AG 580.2 (12-23-31) Misc. A. C., Dec. 28, 1931.
9. Memorandum for G-3 by Executive, OCAC, Oct. 4, 1929, in AAG 373 A, Glider Flying. (Memo will hereinafter replace memorandum.)
10. Routing and Record Sheet, Plans Division to Executive, Materiel Division, Feb. 18, 1941, in AAG 452.1 A, Gliders. (Hereinafter cited as R&R).
11. Memo for C/AC by Training and Operations Division, June 7, 1941, in AAG 353.9 A, Glider Training. (Training and Operations Division hereinafter cited as T&O.)
12. For further details of the legislative phase consult study, "Legislative Proposals and Enactments Relating to the AAF Training Program, 1939-1943," being prepared in AC/AS, Intelligence, Historical Division, Administrative History Branch. (Historical Division hereinafter cited as AFIHD.)

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thousands of pilots in this country, who have not completed or taken any part of the flight training given in our Army and Navy flying schools, could successfully handle sail planes after release from the tow, as these craft have been employed by the Germans.[13]

Preoccupation with plans for civilian glider activities grew less with the increasing likelihood of American involvement in war and with the demonstration by the Germans of the offensive and supply capabilities of the military glider. Upon the entrance of the United States into World War II and the requisitioning of all civilian gliders by the government, thinking progressed from fostering civilian glider programs to the development of the military glider and the training of the military glider pilot.

Out of the rather sudden awareness that the glider might be a forceful weapon of war, a new and untried training program was begun. The time was hardly auspicious. With the lack of combat experience, the peacetime neglect of the military potentialities of the glider was ominous for a nation belatedly attempting to achieve adequate national defense. Specifically, there had been no drafting of workable training plans, no development and testing of the needed materiel, and no determination of the tactical role of the glider in combat operations. The requirements of the general expansion program, difficult as they were to achieve, had been drawn up without reference to diverting manpower and materiel to production of a glider echelon. Harmony with other programs had to be obtained. And by the time the few months of necessary preliminary planning and experimentation were drawing to a close, the United States was engaged in a global war. In the tremendous task of conversion of a still inadequately prepared nation to a wartime footing, it is small wonder that the glider program was launched on a rocky course. But the pressure of world events had, by early 1941, convinced prominent Air Corps leaders that the glider was a military weapon needed by the United States Army. Despite the obvious difficulties attendant to the development of the program, they began thinking in terms of procurement, training, and employment of a glider echelon. The glider pilot training effort is the burden of this study.

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13. Assistant Secretary of War for Air to W. S. Evans, June 16, 1941, in AAG 452.1 A, Gliders.

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Chapter I

THE EXPERIMENTAL GLIDER PROGRAM, FEBRUARY 25, 1941

Inception of the Program. Tentative Air Corps thinking did not require long to materialize into perhaps the most controversial training program ever undertaken by the Army Air Forces. Formal initiation of the glider program occurred February 25, 1941, when Major General H. H. Arnold, Deputy Chief of Staff for Air, directed Major General G. H. Brett, Acting Chief of Air Corps,[1] to implement the development of a transport glider. The Air Corps had recognized the tactical value of the glider as demonstrated by the Germans in Poland and Belgium, for the directive specified a glider whose mission would be "transporting personnel and materiel and seizing objectives that can not normally be reached by conventional ground units." Specifically, the glider was to be troop- and cargo-carrying and capable of being towed singly or en-train, transporting 12 to 15 fully equipped soldiers and 4 portable machine guns with 500 rounds of ammunition for each gun, or capable of transporting an equivalent weight in equipment. Each glider crew was to be a self-contained combat team. On March 4 the directive was referred to the Technical Executive of the Materiel Division, at Wright Field, Ohio, for "necessary action," and a new phase in United States military aviation was under way.[2]

By mid-May eight two-place gliders had been ordered from four aircraft corporations as well as one eight-place and one fifteen-place glider for static and experimental tests. A wind tunnel model of an eight-place glider had also been procured for experimental purposes.[3] Three of these experimental training gliders were scheduled for delivery to Wright Field by the middle of June; therefore, the Materiel Division, Office Chief of Air Corps[4] felt that the glider project had "now reached a stage where it is imperative that training of glider pilots be arranged in order to carry on future development and service testing."

Proposals had already been received from two civilian agencies, the Frankfort Sailplane Company and the Elmira Area Soaring Corporation, to train six Air Corps officers each in glider piloting. The proposed courses were to be of approximately three weeks' duration at the cost of $350 to $395 a student.[5]

Consequently, on May 16, 1941, the Materiel Division was instructed to negotiate the necessary contracts to provide for the training of twelve Air Corps officers.[6] Before this experimental training could be implemented, however, it was necessary that the 1931 War Department restriction on glider flying by Army personnel be revoked. This was accomplished June 5, 1941.[7]

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1. On November 11, 1940, Major General Arnold became one of the three Deputy Chiefs of Staff, War Department General Staff. Major General Brett, Assistant Chief of Air Corps, assumed the duties of the Chief of Air Corps.
2. Memo for Maj. Gen. Brett by Maj. Gen. Arnold, Feb. 25, 1941, in AAG 353.9 3A, Glider Training.
3. Unsigned memo for Chief of Staff, May 28, 1941, in AAG 353.9 A, Glider Training.
4. The Materiel Division was located at Wright Field, Dayton, Ohio, with a Headquarters, Materiel Division in the Office Chief of Air Corps.
5. R&R No. 3, Materiel Division to Executive, T&O, Fiscal, Personnel, and Inspection, May 14, 1941, in AAG 353.9 3A, Glider Training.
6. Unsigned letter to Assistant Chief, Materiel Division, May 16, 1941, in AAG 353.9 A, Glider Training.
7. AG 580.2 (6-3-41) MT, June 5, 1941.

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First Experimental Training. From June 1 to 23, 1941, at the Elmira Gliding Area Soaring Corporation, Harris Hill, Elmira, New York, and the Lewis School of Aeronautics, Lockport, Illinois, the first experimental training of Air Corps officers in glider piloting took place. Twelve pilots were trained, four from the Materiel Division and eight from the 50th Transport Wing.[8] The training was similar to the course these institutions had been giving to their civilian students. At the Elmira Gliding Area Soaring Corporation

> Initial instruction was given on single-place Franklin Utility Gliders with automobile tow. The glider was towed across the field at 50 mph and the pilot required to keep the glider on the ground although he had sufficient speed to fly. Successive series of tows permitted the pilot to go 1, 5, 10, 30, 75, 150, 300, and 500 feet off the ground. After releasing the tow rope, the pilot would practice approaches and spot landing during the descent. After approximately eight hours of flying in Franklin Utility Gliders, the instruction was shifted to two-place Schweizer Sailplanes. The student occupied the front cockpit with the instructor in the rear cockpit. Instruction continued with winch, automobile, and airplane tows. When possible, the student would 'slope soar' or seek 'thermal activity' to prolong his flight. After demonstrating proficiency, students flew these sailplanes solo from the front cockpit. Dual sailplane airplane tows were made using Waco trainer with a 220 hp Continental engine. Each student completed eight hours of dual tow work, and had at least one hour as pilot of the tow plane. The flying of gliders in formation behind a tow plane did not present many new problems over formation flying. The operation of the tow airplane did introduce many new conditions. The last part of the instruction program consisted of a cross country flight. All students made at least one cross country flight which terminated on an airport at least 40 miles away.[9]

The initial instruction at the Lewis School of Aeronautics

> was given by instructor in the rear cockpit of the sailplane. The latter was launched by winch tow. After three winch tows, the student was allowed to solo, with emphasis on spot landings and accuracy approaches. After approximately ten hours of flying time with winch launches, the student was given initial airplane tows under the instructor's supervision. During the first two hours of airplane tow, the instructor gave instruction in thermal soaring as the glider was descending. After demonstrating proficiency, students flew solo on airplane tows with practice air work such as spins, stalls, and loops. Airplane tows were made using a Waco trainer with 220 H. P. engine. Each student completed at least ten hours of airplane tow and all students had at least one soaring flight of two hours.[10]

Plans for Future Training. This early experimental period of the first procurement of gliders and the training of the first twelve glider pilots was characterized by an absence of any detailed plan for the future training of glider pilots. The Materiel Division, concerned over the need of glider pilots for its experimental work, on June 14, 1941, urged the Training and Operations Division and Plans Division, Office Chief of Air

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8. R&R, OCAC to Deputy Chief of Staff for Air, June 13, 1941, in AAG 452.1 A, Gliders.
9. Memorandum Report, Materiel Division, Serial Number EXP-M-51-AD867, June 25, 1941, in AAG 353.9 A, Glider Training.
10. Memorandum Report, Materiel Division, Serial Number EXP-M-51-AD867, Add. 2, June 26, 1941, in ibid.

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Corps, to establish a definite glider training program utilizing the facilities of the operating school at Elmira while the trained instructors and personnel there were still available.[11]

Training and Operations temporized, stating that although it would undoubtedly be necessary in any future glider program to train instructor personnel at a civilian school,

> in the absence of a definite plan for the training of glider pilots it is impracticable for this Division to furnish any recommendations. It is felt that the period of time that will elapse before gliders are made available might render any effort to initiate the training of instructor personnel at Elmira premature at this time.[12]

Plans Division, however, did not concur with these recommendations and strongly urged that the Training and Operations Division be directed to determine a definite glider pilot training program.[13] The Chief of the Air Corps approved the recommendations of the Plans Division, and the problem was returned to Training and Operations for further consideration.[14] Training and Operations reported that it believed that the initial training could be given most satisfactorily at a civil contract school under a plan similar to that being employed for elementary pilot training. It proposed to initiate the program by training classes of from ten to fifteen officer pilots and then to assign them to units which would be eventually equipped with gliders. After the supervisory personnel had been trained, Training and Operations suggested that future glider trainees be enlisted men with the same status as enlisted pilots. It was also suggested that the initial training might be given by the Civil Aeronautics Administration.[15] On July 2 the tentative plan was approved by the Air Staff, and the Office Chief of Air Corps[16] was requested to work out a solution in conjunction with the Civil Aeronautics Administration.[17]

Previously, on June 13, 1941, Brigadier General Davenport Johnson, Chief of the Training and Operations Division, had contacted Brigadier General Donald H. Connolly, Administrator of the C.A.A., requesting whether the C.A.A. would consider the initiation of glider training on the following tentative basis:

> The C.A.A. to take over the initial phase of training glider pilots in much the same manner as is now being accomplished in the C.P.T. program. The Army to carry on additional training of the graduates for those who enlist in the Army. This phase to be directed to the performance of a military function.[18]

General Connolly replied on June 23 that the C.A.A. would consider such a program, but suggested that it be of an experimental nature and also pointed out that the cost of such a program would be at the expense of the Civilian Pilot Training Program.[19]

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11. R&R, Materiel Division to T&O, Plans, Executive, June 14, 1941, in ibid.
12. R&R No. 2, T&O to Plans, June 17, 1941, in ibid.
13. R&R No. 3, Plans to Executive, June 23, 1941, in ibid.
14. R&R No. 4, C/AC to T&O, June 25, 1941, in ibid.
15. R&R No. 5, T&O, to Executive through Plans, June 28, 1941, in ibid.
16. On June 20, 1941, the Army Air Forces with an Air Staff was created to coordinate the work of the Office Chief of Air Corps and the Air Force Combat Command.
17. R&R No. 6, Air Staff to OCAC, July 2, 1941, in AAG 353.9 A, Glider Training.
18. Brig. Gen. Davenport Johnson to Brig. Gen. Donald H. Connolly, June 13, 1941, in AAG 353.9 B, Glider Training.
19. General Connolly to General Johnson, June 23, 1941, in ibid.

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The plan, however, proved to be abortive, for on July 26 General Johnson informed General Connolly of the following Air Corps decision:

> After further study and consideration of the problem involved, it is believed that all training insofar as the Air Corps is concerned should be confined to the training of personnel who are in the Military Service . . . utilizing such commercial facilities as are needed and suitable.[20]

Further Experimental Training. Early in July arrangements were made for a second class of officers to receive glider pilot training at Elmira. Arrangements at first indicate that ten officers were to take this course,[21] but it appears that it was given to twelve instructors from the training centers, who it was contemplated would later be used as instructors or supervisors upon further expansion of glider pilot training. The training, conducted in two classes of six students each, was completed September 20, 1941.[22]

At this time the Office Chief of Air Corps prepared the first program of instruction for glider pilots. This program was naturally tentative and subject to change as the techniques of military glider flying were developed. The duration of the course was not to exceed four weeks, and its objective was to qualify the officer-pilot to the degree of proficiency necessary for an instructor or supervisor of glider flying training. The scope of the program included

> qualification in the art of glider flying to include winch, auto, and airplane tow, the art of thermal soaring with particular emphasis on spot landing proficiency and dual airplane towing practice. Qualification in the duties of a ground supervisor to include use and care of equipment. Qualification in the duties of an air instructor and pilot of the tow plane.

Actual flying instruction was to last 25 to 30 hours, with 1 hour of familiarization, 9 hours of winch and auto tow, 2 1/2 hours of single airplane tow and 5 of double, one two-hour cross-country flight of at least 30 miles, and 5 1/2 to 15 1/2 hours of ridge and thermal soaring.

The ground school course, which was to be "given in the classroom or on the flying field in conjunction with daily flying activities," was to include aerodynamics pertaining to sailplanes and gliders, description of types of gliders and sailplanes with emphasis on efficiency, take-off technique methods, landing techniques, soaring meteorology, instruments and their uses, slope soaring, and thermal soaring. Familiarization with Lewin B. Barringer's book, Flight without Power, was also required.[23] Actually this course differed little from that given in the past by civilian soaring schools.

The 150 Officer-Pilot Program. By July 7, 1941, the glider program had progressed far enough to necessitate definite plans for the training of instructor personnel for the contemplated future production of glider pilots. On that date General Arnold directed Brigadier General Carl Spaatz, Chief of the Air Staff, to expedite the preparation of a directive outlining the requirements of the Air Forces for glider pilots. In order that full advantage might be taken of the civil glider schools already in operation, and so that the Training

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20. General Johnson to General Connolly, July 26, 1941, in ibid.
21. Memo for Chief of Statistics Branch, General Staff by Executive, OCAC, July 8, 1941, in AAG 452.1 A, Gliders.
22. 1st Indorsement (Asst. AG, West Coast Air Corps Training Center to C/AC, Sept. 20, 1941), T&O to Commanding General, West Coast Air Corps Training Center, Sept. 26, 1941, in AAG 353.9 A, Glider Training. (Commanding General, West Coast Air Corps Training Center hereinafter cited as CG,WCACTC).
23. Program of Instruction for the Training of Air Corps Officer-Pilots in Glider Flying at Civil Contract Schools, July 16, 1941, in ibid.

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Division could make the proper long-range plans, this was to be accomplished immediately. Specifically, General Arnold directed the training of 150 officer-pilots.[24]

At this time no definite doctrine had been formulated on the military employment of gliders, the units to be formed, the size of these units, and the number of men to be transported by the glider echelon. It was, therefore, impossible for the Air Forces to determine the over-all number of glider pilots to be trained. However, on August 21 the Chief of the Air Staff directed the Chief of the Air Corps to make the necessary plans for the instruction of the 150 officer-pilots.[25]

Seven days later, August 28, the Chief of the Air Corps submitted the following plan for approval. First, a contract should be made with the Elmira Area Soaring Corporation for the training of nine pilots, three from each training center, instruction to commence about September 25. This would provide a total of 33 glider pilots trained under the first program, 4 from the Materiel Division, 8 from the 50th Transport Wing, and 21 from the training centers. In order that training might get under way, immediate approval of this part of the plan was requested.[26] Approval was given on September 4,[27] and by the fifteenth orders had been issued for the nine pilots to proceed to Elmira for a four weeks' course beginning September 20.[28]

Secondly, the plan proposed the training of the remainder of the 150 pilots at contract schools in the South and West in order to take advantage of the more favorable weather prevailing there during the winter months. This training was to begin as soon as the sites had been selected and the requisite personnel and equipment assembled.

It was realized at this time that as soon as the requirements for glider training had been established, training on a far larger scale would be necessary. Accordingly, the Chief of the Air Corps also submitted a brief plan for the conduct of such training. Civil contract Elementary Schools were to be established for elementary glider training. At first only one Advanced Army Glider School was to be activated, with more in the future if the training program so required. This phase was expected to consist of two-place glider training with emphasis on towing work and transition to transport gliders. The key personnel, instructors, and the cadre for the Advanced School were to be furnished from the glider pilots already trained under the preliminary program and the 150 Officer-pilot Program. It was also suggested that the glider pilots be organized into units before their assignment to the Air Support Command. The plan also urgently recommended that at least fifty of the 150 pilots be from the Air Support Command, as it was believed that tow pilots should have the course in glider flying in order to perform their duties more effectively.[29] The entire plan was approved by the Chief of the Air Staff on September 4 except for the recommendation that fifty of the pilots be furnished by the Air Support Command. It was felt that these pilots could not be spared from their current duties.[30]

Administrative machinery to effect the 150 Officer-pilot Program was quickly placed in motion, for by the middle of September the training centers had been instructed to compile a list of at least fifty prospective glider students, and the secretary of the Elmira

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24. R&R, General Arnold to General Spaatz, July 7, 1941, in AAG 353.9 3A, Glider Training.
25. R&R No. 4, Chief of the Air Staff to C/AC, Aug. 21, 1941, in ibid. (Chief of the Air Staff hereinafter cited as C/AS).
26. R&R No. 5, C/AC to C/AS, Aug. 28, 1941, in ibid.
27. R&R No. 6, C/AS to C/AC, Sept. 4, 1941, in ibid.
28. R&R No. 7, T&O to C/AC, Sept. 15, 1941, in ibid.
29. R&R No. 5, C/AC to C/AS, Aug. 28, 1941, in AAG 353.9 3A, Glider Training.
30. R&R No. 6, C/AS to C/AC, Sept. 4, 1941, in ibid.

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Area Soaring Corporation was investigating sites for winter glider training.[31] Twenty-nine Palms Air Academy, Twenty-nine Palms, California, was selected, and a contract negotiated in September. This contract provided for the training of 126 officer-pilots, the first class to enter November 30, 1941, and the last March 21, 1942.[32] At this time an Advanced School was not considered necessary, but sites were being investigated.[33]

Training at Twenty-nine Palms did not begin as scheduled. Around the first of January, 1942, a refresher course was conducted for the civilian glider instructors, and initial student training commenced the nineteenth of that month with a class of twelve students.[34] Two weeks later a class of eighteen entered, and thereafter, classes of twenty-four every two weeks.[35]

The students, all volunteers from the instructors at the training centers, were given a four-week course. Instruction was similar to that at Elmira, with thirty hours of flying and training in the four methods of launching gliders: auto pull, pulley tow, winch tow, and airplane tow.[36] Naturally, at this time the curriculum for glider training was still in the experimental stage. Procurement of military type gliders was just getting under way, and the only men in this country familiar with the technique of glider flying were the civilian soaring enthusiasts who had been developing the art of thermal soaring over the past ten years. Consequently, training at Twenty-nine Palms was given in sailplanes and consisted principally of soaring, a type of training that later proved of little value in military glider piloting. During this period the glider training program, as well as other Air Forces programs, suffered from a severe lack of training equipment, in this case gliders and tow planes.[37]

One of the reasons for the early confusion and indecision which characterized the glider program was the fact that gliders and the training of glider pilots was entirely foreign to Air Corps personnel. There also seems to have existed then--and throughout the entire program--a disinclination on the part of various Air Forces agencies to take proper responsibility for its achievement. The basis for this situation can probably be found in the ever-present antipathy of the power pilot toward any other type of aircraft. Another cause of difficulty was perhaps that the glider program was a borderline project, a case of divided responsibility between the Ground and Air Arms.

This early confusion was alleviated considerably in October, 1941, when General Arnold personally summoned Lewin B. Barringer to Washington to act in a civilian capacity as coordinator of the glider program. Barringer was one of the outstanding authorities on the art of gliding in the United States. He was commissioned a major in May, 1942, and assigned to the Office of the Director of Air Support in full charge of all matters pertaining to gliders. Barringer continued in this position until January, 1943, when the plane in which he was flying to England was lost over the Caribbean.[38] To him must go much of the credit for the achievement of a new and tremendous project. Not only did he play a large part in the development of the glider production and training programs, but he also "made possible the practical application of a device which enabled an airplane in flight to pick up a tow-glider on the ground."[39]

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31. R&R No. 7, T&O to C/AC, Sept. 15, 1941, in ibid.
32. R&R, T&O to Materiel Division, Sept. 22, 1941, in ibid.
33. R&R No. 7, T&O to C/AC, Sept. 15, 1941, in ibid.
34. Telegram, Commanding General, Army Air Forces Flying Training Command to C/AC, Dec. 29, 1941, in Army Air Forces Flying Training Command Files. (Army Air Forces Flying Training Command hereinafter cited as AAFFTC).
35. Telegram, General W. R. Weaver, to CG,WCACTC, Jan. 2, 1942, in ibid.
36. WD Press Release, March 18, 1942.
37. Sketch by Maj. D. M. Hamilton, June 17, 1942, in AAFFTC Files.
38. Col. R. F. Stearley to Commanding General, Army Air Forces, April 22, 1943, in AAG 201, Lewin B. Barringer. (Commanding General, Army Air Forces hereinafter cited as CG,AAF).
39. Citation for Distinguished Service Medal, May 8, 1943, in ibid.

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Summary. In materiel development, training procedures, and tentative planning for future glider pilot production, the one year experimental glider program laid the foundation for larger programs to come. But retarded by a lack of knowledge of all aspects of glider pilotage and necessary preliminary experimentation, this period brought about only the most elementary developments. Establishment of a definite training procedure was hindered by the uncertainty of future glider employment and the resultant lack of plans for a glider echelon. In this time of preparation, an attempt was made to provide potential instructor personnel. Training, however, was experimental and subject to the use of civilian soaring methods and sport type gliders. Little progress was made toward military glider flying. A few characteristic policies were established, as, for example, the use of civilian contract schools and cooperation with the Civil Aeronautics Administration.

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Chapter II

THE 1,000 GLIDER PILOT PROGRAM, FEBRUARY 19, 1942

Plans for a Glider Echelon. While the 150 Officer-pilot Program was still in the implementation stage, plans were being formulated to provide the United States Army with a new type of weapon, a glider echelon. On December 2, 1941, the plan for the first large glider program, the 1,000 Program, was forwarded from General Spaatz, Chief of the Air Staff, to the Chief of Staff with the concurrences of G-1, G-3, War Plans Division, and the Chief of Staff of the G.H.Q. Air Force. This program was based on "providing air transport by means of troop airplanes and gliders for one air-borne division at the earliest practicable date" and "providing air transport by airplanes and gliders for a second air-borne division by expansion or continuation of the program as dictated by the experience in providing the air transportation for the first air-borne division." [1]

At this time the tactics and techniques of airborne divisions were still in the experimental stage. It was estimated that approximately 75 per cent of the personnel and equipment of the average triangular division of 14,000 men could be carried in gliders and the remaining 25 per cent could be transported by the tow planes. In order to transport the division, therefore, 1,000 gliders and 292 transport planes would be required. Of the gliders, 500 were to be eight-place, transporting 3,500 troops, and the other 500, fifteen-place, transporting 7,000 troops. It was estimated that four eight-place or three fifteen-place gliders could be towed behind each transport.

Even at this early date the Air Forces realized that the glider program might interfere with other projected aircraft programs, although it was believed that it would not cause any serious delay or disruption. Procurement of military gliders was already under way, one static test and one flight test model of both the eight-and fifteen-place gliders being on order from each of four manufacturers. Delivery of these gliders to the Materiel Division for testing and evaluation was expected between December 1, 1941, and March 1, 1942. It was estimated that the necessary experiments could not be completed before July 1, 1942. In view of the fact that the aircraft industry lacked the requisite experience and engineering knowledge for the manufacture of the large gliders, it was expected that it would take at least fifteen months to produce the 1,000 gliders. Provided that the Materiel Division would be able to place orders by April, 1942, it was estimated "that a sufficient number of gliders for an infantry test air-landing battalion can be produced by November 1, 1943."

The plan for the 1,000 Program was predicated on the belief that sufficient transport planes would be available for use as tow planes in the testing, pilot training, and operational training phases of the program. The facilities of the Douglas Company, producers of C-47 airplanes, were already being utilized under existing procurement schedules and would continue to be until January, 1943. It was believed, however, that the program could be carried out by transferring planes from other uses and by Douglas production between January and June, 1943. [2]

Training Plan. The plan also contained a program for glider pilot training. It did not contemplate the training of "other than qualified airplane pilots, preferably graduates of the Air Corps Flying Schools," due to the large amount of skill believed necessary to pilot gliders at night under instrument conditions and to land them in small fields. The plan outlined the following training program:

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1. Memo for Chief of Staff by C/AS, Dec. 2, 1941, in AAG 452.1 A, Gliders.
2. Memo for Chief of Staff by C/AS, Tab "A", Dec. 2, 1941, in ibid.

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> Primary training will be given in a four weeks course by civil schools, operating under contract to the Air Corps, with an annual training capacity of 1000 pilots. It is estimated that a maximum of four schools will be needed. This training will include auto, winch, and airplane tow in two-seater training gliders. The general pattern for these schools will follow that of the civil schools contracting for primary airplane training. . . . The graduates of these schools will receive the rating of Glider Pilot.
>
> Only one school for advanced glider training will be necessary. At this school graduates of the primary glider schools will receive thorough instruction in the flying and military use of the large troop carrying gliders. This training will include night flying and the actual carrying of ground troops and landing them under simulated war conditions.[3]

The 1,000 Glider Pilot Program was approved December 20, 1941, by General Arnold, Deputy Chief of Staff for Air.[4]

Procurement Basis. Shortly after Pearl Harbor it was realized that the pilot training program could not afford to lose 1,000 power pilots to the glider program. Accordingly, on December 27 the Assistant Chief of the Air Staff, A-3, recommended to the Training Division[5] that candidate glider pilots be selected from graduates of the civilian pilot training schools or that some system be worked out whereby glider trainees would be processed through the elementary stage of pilot training only and then be transferred to glider training.[6]

The Training Division had already been contemplating a revision of the procurement basis, and on the last day of December recommended the following changes to the Chief of the Air Staff on the condition that the training of the 150 officer-pilots continue as planned. Glider trainees were to be selected from volunteers in the following categories, in the order listed.

1. Power plane pilots who have had the CAA Secondary Course
2. Power plane pilots who have had the CAA Primary Course
3. Glider pilots who have had at least 30 hours glider time.

It was also recommended that applicants "come from the Combat Arms inasmuch as they should function as a member of the Combat Team upon landing," and also "that a grade not lower than Staff Sergeant be set up for personnel completing the glider course; the graduates to receive this rating after graduation from the Army Advanced Glider Course." This plan was approved by A-3, January 10, 1942.[7]

Program Inaugurated. Formal inauguration of the 1,000 Glider Pilot Training Program occurred February 19, 1942, under the authority of AAF 580.7. The schedule called for the graduation by January 1, 1943, of 1,000 glider pilots, in addition to those

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3. Memo for Chief of Staff by C/AS, Tab "B", Dec. 2, 1941, in ibid.
4. Memo for Chief of Staff by C/AS, Dec. 2, 1941, in ibid.
5. On November 22, 1941, the Training and Operations Division, Office Chief of Air Corps was split in three parts: the Training Division, the Operations Division, and the Communications Division.
6. R&R, Air Staff, A-3, to OCAC, Training Division, Dec. 27, 1941, in AAG 353.9 A, Glider Training.
7. R&R, OCAC to C/AS, Dec. 31, 1941, in ibid.

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Troop-carrying gliders load at dawn for an airborne operation. C-46 tow planes fly in from a dispersal field to hitch on.

C-46 transport takes off towing three fully loaded gliders.

When the Army Air Forces first laid its plans for the development of a glider echelon, little was known about the military employment of the glider except what had been gleaned from German use of this new secret weapon. The extensive program launched was subject to the errors of experimentation. Without knowledge of the performance characteristics of a transport plane towing military gliders singly or en-train, it was believed that a twin-engine plane could tow at least three fully loaded gliders. Plans for combat employment were based on this assumption. Great achievements were hoped for from this new airborne striking force, utilizing maximum offensive power with a minimum expense of powered equipment.

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already in training. Their training was to include a preliminary course of approximately thirty hours in two-place training gliders at Twenty-nine Palms and an advanced course in transport gliders at an Advanced School yet to be selected. The minimum requirements for application for this training were those proposed by the Training Division and approved by A-3 except that glider pilots must have at least fifty hours of glider time instead of thirty.[8] This was later changed to thirty hours glider time or 200 flights.[9] The physical requirements were to be the same as those for aircrew training. The trainees were to receive training in enlisted status and upon graduation be promoted to the grade of staff sergeant.[10]

Administrative Changes. Shortly after the entrance of the United States into World War II, action was initiated in Headquarters to provide an agency solely responsible for the rapidly expanding training activities of the Army Air Forces. The supervision of training activities was a function of the Chief of the Air Corps, but it was felt that in order "to give effective supervision and direction to this vast training effort, it is necessary that the Chief of the Air Corps deal with one commander, who will be unencumbered by other duties."[11] On January 23, 1942, therefore, the Air Corps Flying Training Command was established[12] under Major General Barton K. Yount, the former Commanding General of the West Coast Training Center.*/ Thus, the individual training of the glider pilot became a function of the Flying Training Command.

Summary. With the planning and inauguration of the 1,000 Program, the glider pilot program progressed from experimental training of future instructors for a contemplated but yet unformulated project to a definite program based on the estimated requirements of an airborne division. Under this program many of the characteristic policies of the glider program were first established. These policies, although subject to subsequent changes in the glider pilot objective and influenced by fluctuation in the availability of personnel and materiel and the development of more efficient training methods, have remained essentially the same. Among the policies established were the personnel procurement basis of enlisted men with previous aviation experience, promotion upon graduation to the grade of staff sergeant, the rating of glider pilot, primary training at civil contract schools, and advanced training at Army schools. Future glider pilot programs followed the administrative pattern established under the 1,000 Program.

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8. AAF 580.7 Glider, Feb. 19, 1942.
9. Memo for Col. H. A. Johnson by Lt. Col. G. F. Schlatter, March 23, 1942, in AAFFTC Files.
10. AAF 580.7 Glider, Feb. 19, 1942.
11. Memo for Deputy Chief of Staff for Air by Acting C/AC, Dec. 23, 1941, in AAG 321.9 A, AF Technical Training Command, AF Flying Training Command.
12. AG 322.2 (1-4-42)MR-M-AAF/A-1, Jan. 23, 1942.
13. Acting C/AC to Maj. Gen. B. K. Yount, Jan. 18, 1942, in AAG 321.9 A, AF Technical Training Command, AF Flying Training Command.

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Chapter III

THE 4,200 GLIDER PILOT PROGRAM, APRIL 1, 1942

Tripling of the Program. Training under the 1,000 Glider Pilot Program actually never was effectuated. The last class under the 150 Officer-pilot Program did not matriculate at Twenty-nine Palms until the last of March, 1942, and on the twenty-sixth of that month General Arnold initiated a study to triple the glider program. It would seem that this experimental and yet untried project was caught in the tremendous expansion that was characteristic of the Army, and of the Air Forces in particular, in the early months of World War II.

Not only was the glider objective greatly increased, but the amount of time allotted to its achievement was decreased. On March 26 General Arnold stated to the Chief of the Air Staff:

> In any action involving air-borne troops, the use of gliders must be considered and in all probability they will be required. At the present time our glider development and procurement is proceeding without benefit of a definite plan. I believe that we should figure on a program of procuring and individually training a glider force of about 3000 five to eight place gliders by December 1942, and war-gaming this force with other troops immediately thereafter. Get the Staff busy on the plans for ultimate use of these gliders and the war-gaming necessary, and I will in the meantime get a program of procurement and pilot training started which will meet the dead-line as set at December 1942.[1]

The Directorate of Ground-Air Support immediately proceeded to implement this new program. A-4 was directed the following day to prepare a study for the approval of the Chief of the Air Staff on the procurement of 3,000 eight-place gliders to be delivered not later than September 15, 1942. Ground-Air Support set about selecting sites for glider training and preparing tables of organization. The Director of Individual Training was directed to provide for pilot procurement and training. The Commanding General, Army Ground Forces was informed of the increased program through the Airborne Section of the Ground Forces Staff.[2]

On April 1 General Arnold directed the Commanding General of the Materiel Command[3] to procure, in addition to the 150 two-place, 300 nine-place, and 700 fifteen-place gliders already on procurement, 150 two-place, 200 nine-place, and 3,000 fifteen-place gliders by July 1, 1943, 800 of the fifteen-place gliders to be delivered by January 1, 1943.[4]

Prior to General Arnold's second directive, representatives of A-4, the Directorate of Ground-Air Support, and the Materiel Command conferred on March 31 in regard to the preliminary directive. Due to a misunderstanding between A-4 and the Materiel Command, verbal commitments for an additional 4,000 gliders were made immediately by the Materiel

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1. R&R, CG,AAF to C/AS, March 26, 1942, in AAG 452.1 A, Gliders.
2. R&R No. 2, Director of Ground-Air Support to Assistant Chief of the Air Staff, A-3, April 4, 1942, in ibid. (Director of Ground-Air Support hereinafter cited as AFRGS, Assistant Chief of the Air Staff, A-3, as AFACT).
3. As a result of the March 9, 1942, reorganization of the Army Air Forces the Materiel Division became the Materiel Command.
4. CG,AAF to CG, Materiel Command, April 1, 1942, in ibid. (Materiel Command hereinafter cited as AFAMC).

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Chapter III

THE 4,200 GLIDER PILOT PROGRAM, APRIL 1, 1942

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> In any action involving air-borne troops, the use of gliders must be considered and in all probability they will be required. At the present time our glider development and procurement is proceeding without benefit of a definite plan. I believe that we should figure on a program of procuring and individually training a glider force of about 3000 five to eight place gliders by December 1942, and wargaming this force with other troops immediately thereafter. Get the Staff busy on the plans for ultimate use of these gliders and the wargaming necessary, and I will in the meantime get a program of procurement and pilot training started which will meet the dead-line as set at December 1942.[1]

The Directorate of Ground-Air Support immediately proceeded to implement this new program. A-4 was directed the following day to prepare a study for the approval of the Chief of the Air Staff on the procurement of 3,000 eight-place gliders to be delivered not later than September 15, 1942. Ground-Air Support set about selecting sites for glider training and preparing tables of organization. The Director of Individual Training was directed to provide for pilot procurement and training. The Commanding General, Army Ground Forces was informed of the increased program through the Airborne Section of the Ground Forces Staff.[2]

On April 1 General Arnold directed the Commanding General of the Materiel Command[3] to procure, in addition to the 150 two-place, 300 nine-place, and 700 fifteen-place gliders already on procurement, 150 two-place, 200 nine-place, and 3,000 fifteen-place gliders by July 1, 1943, 800 of the fifteen-place gliders to be delivered by January 1, 1943.[4]

Prior to General Arnold's second directive, representatives of A-4, the Directorate of Ground-Air Support, and the Materiel Command conferred on March 31 in regard to the preliminary directive. Due to a misunderstanding between A-4 and the Materiel Command, verbal commitments for an additional 4,000 gliders were made immediately by the Materiel

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1. R&R, CG,AAF to C/AS, March 26, 1942, in AAG 452.1 A, Gliders.
2. R&R No. 2, Director of Ground-Air Support to Assistant Chief of the Air Staff, A-3, April 4, 1942, in ibid. (Director of Ground-Air Support hereinafter cited as AFRGS, Assistant Chief of the Air Staff, A-3, as AFACT).
3. As a result of the March 9, 1942, reorganization of the Army Air Forces the Materiel Division became the Materiel Command.
4. CG,AAF to CG, Materiel Command, April 1, 1942, in ibid. (Materiel Command hereinafter cited as AFAMC).

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Command in an effort to expedite this program. In order to avoid replanning of the program and the consequent loss of time, on April 10 the Materiel Command requested that this figure be allowed to remain.[5] This request was granted April 22, 1942.[6]

In order that this mammoth training effort could be placed in operation as soon as possible, a directive dated April 1, 1942, over the signature of the Commanding General, Army Air Forces, ordered the Flying Training Command to train 4,200 glider pilots by July 1, 1943, 2,000 of whom were to be graduated by January 1. This entailed an increase of 3,200 over the previous program, as the 1,000 formerly directed were included in this figure. In conflict with the procurement policy of the 1,000 Program, as many as possible of these trainees were to be graduates of the Twin-engine Advanced Pilot Course of flight officer or commissioned grade.[7]

Procurement Basis. Two days later, however, the indecision which characterized this period again caused a change in procurement policy. All glider trainees were now to be enlisted graduates of the Air Forces Advanced Flying Schools. Advanced pilot graduates were specified for the following reasons:

1. Troop gliders now on procurement of 9 and 15-place type are roughly equivalent in size to a B-18 airplane.

2. 30-place experimental gliders with spans in excess of the B-17 are now under development.

3. Formation, night and instrument flying requirements will be commensurate to those required for airplane pilots.

4. Pilots must be provided at all stations to act as tug pilots. Glider pilots with this dual background can be utilized in this capacity.[8]

In compliance with this policy change, the Flying Training Command notified the Director of Personnel that there would have to be an immediate alteration in the supply of glider trainees. Under the 1,000 Program, graduates of the Civilian Pilot Training Program had been selected for training at Twenty-nine Palms beginning April 13. As the training of these men was now prohibited, forty-five enlisted pilots would have to be supplied for the April 13 class and additional students every two weeks thereafter.[9]

It was soon realized, however, that the transfer of 4,200 enlisted pilots to the glider program would seriously impair established pilot priorities. On April 11, therefore, the minimum requirements for glider pilot training were revised as follows:

1. Age 18 - 32 inclusive.
2. Physical: Class I
3. Flying experience: Meet one of the following:
   a. Graduate of the CPT Secondary Course.
   b. Hold or have held a private Airman Certificate or higher, with a 0 to 240 h.p. or 2 S rating.

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5. CG,AFAMC to CG,AAF, April 10, 1942, in ibid.
6. Executive, AFAMC to Technical Executive, Wright Field, April 22, 1942, in ibid.
7. CG,AAF to CG,AAFFTC, April 1, 1942, in AAG 353.9 3A, Glider Training.
8. Director of Individual Training to CG,AAFFTC, April 3, 1942, in ibid. (Director of Individual Training hereinafter cited as AFRIT).
9. AG,AAFFTC to Director of Personnel, April 8, 1942, in ibid. (Director of Personnel hereinafter cited as AFDOP).

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c. Glider pilots with 30 hours or 200 flights.

4. No candidate who has been eliminated from air crew training in the Army or Navy Air Force will be eligible.
5. Enlisted personnel who can qualify under 1, 2, and 3 above are authorized to train in grade.

Upon graduation the trainees would be given the rating of glider pilot and promoted to the grade of staff sergeant.[10]

As these new requirements were effective immediately, on the thirteenth of April, Military Personnel was instructed to procure students for the April 13, April 27, and May 11 classes at Twenty-nine Palms from enlisted personnel of the Army Air Forces.[11]

Establishment of Schools. Upon receipt of General Arnold's directive of April 1, the Flying Training Command immediately set about expanding facilities, establishing a course of instruction, and initiating requests for materiel. In addition to Twenty-nine Palms, action was taken to begin operations at three more civilian Elementary Schools between May 1 and June 1. They were Lamesa, Texas, under the Gulf Coast Training Center, Elmira, New York, under the Southeast Training Center, and Wickenburg, Arizona, under the West Coast Training Center. Action was also initiated at this time to establish two Air Force Advanced Schools.[12]

Program of Instruction. The program of instruction for enlisted personnel was established April 15, 1942. Although experimental glider training had been in progress for almost a year, the course actually differed very little from that established for the instructor officer-pilots. It contemplated thirty hours of flying instruction and seventy-two hours of ground school to be given in four weeks. The objective was to produce a glider pilot proficient to the degree that he would be qualified "to operate gliders in the various types of towed and soaring flight, both night and day, and to be qualified to service gliders in the field." The scope of the program was exactly the same, "qualification in the art of glider flying to include winch, auto, and airplane tow, the art of thermal soaring with particular emphasis on spot landing proficiency and multiple airplane towing practice. Qualification in assembly, servicing, and general maintenance of gliders and the towing gear."[13] The time to be spent in familiarization was increased to 2 hours, while that devoted to winch and auto tow was decreased from a total of 9 hours to 7 hours by day and 1 by night. The 7 1/2 hours allotted to airplane tows and the two-hour cross-country flight remained the same. Ridge and thermal soaring was reduced to 8 hours, and 2 1/2 hours of instrument flying under the hood were added.

The greatest change occurred in the ground school course. It prescribed seventy-two hours of instruction, four hours a day. It included instruction in meteorology, soaring technique, aero-dynamics, towing, maintenance, instruments, and navigation and was to be followed "only with such variations as are permitted in writing by the contracting officer."[14] Actually, it would seem at this time, and throughout the entire program, that ground school instruction was very sketchy. The contractors experienced great difficulty in securing adequately qualified instructor personnel, and as they were paid on the basis of actual flying hours per student, there was little incentive to provide truly adequate ground school instruction. A tentative program of fifty hours' training in advanced type gliders was also developed at this time.[15] Due to future changes in the glider program, however, this program was never placed in operation.

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10. AFRIT to C/AS, April 11, 1942, in ibid.
11. Daily Diary, AFRIT, April 13, 1942, in AAG 319.1, Daily Diary.
12. CG,AAFFTC, to CG's, TC's, April 27, 1942, in AAFFTC Files.
13. Program of Instruction for the Training of Air Corps Enlisted Personnel in Glider Flying at Civil Contract Schools, April 15, 1942, in AAG 353.9 3A, Glider Training.
14. Ibid.
15. Sketch by Maj. D. M. Hamilton, June 17, 1942, in AAFFTC Files.

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Materiel Requirements. The implementation and conduct of this new program required the maximum use of all available training gliders. The Flying Training Command, therefore, on April 25, 1942, requested that one suitable tow plane be made available for every three two-place gliders.[16] Early in May the Director of Ground-Air Support initiated action to provide the first twenty of the requested L-1A planes.[17] By this time, however, the glider pilot objective had been increased to such an extent that the tow plane needs of the Flying Training Command were completely changed.

Summary. Essentially, the 4,200 Glider Pilot Program constituted a continuation and expansion of the policies and facilities established under the 1,000 Glider Pilot Program. The belief that glider pilot trainees should be graduates of Service flying schools caused an attempt to return procurement to this basis, but rapid Air Forces expansion precluded its accomplishment. Although this program was in operation little over a month, training was effected, and a definite training program established which reflected the gradual, although small, development of Air Forces knowledge of glider training procedures and standards.

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16. AG,AAFFTC to AFRIT, April 25, 1942, in AAG 452.1 A, Gliders.
17. 1st Indorsement (AG,AAFFTC to AFRIT, April 25, 1942), AFRGS to CG,AAAFTC, May 9, 1942, in ibid.

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Chapter IV

THE 6,000 GLIDER PILOT PROGRAM, MAY 8, 1942

Increased Objective. On May 8, 1942, exactly thirty-eight days after the initiation of the 4,200 Program, the Flying Training Command was instructed by the Chief of the Air Staff to increase once more the glider pilot training objective. This directive specified that 3,000 glider pilots must be trained by September 1, 1942, and a total of 6,000 by December 31, 1942,[1] which constituded not only an increase in quotas but a decrease in production time. This greatly augmented program was the result of a conference held that same day, May 8, 1942, between members of the Flying Training Command, the Director of Personnel, and the Materiel Command on new objectives outlined by General Arnold.[2] The conference resulted in an entirely new training program.

As specified in the new directive, the 6,000 Program was to be accomplished by reducing the training program to six weeks' duration. Trainees were now to receive 30 hours within four weeks on cub type aircraft, 8 hours within one week on one- or two-place gliders, and 8 hours within one week on nine- or fifteen-place gliders, for a total of 46 hours' instruction. The qualifications for application for glider pilot training were changed, the new requirements being one of the following:

1. Male graduate of CPT - Citizen of the United States.
2. Holder of private C.A.A. Airmen Certificate or higher.
3. Former licensed C.A.A. pilots whose license has not been invalidated more than two years.
4. Between 18 and 35 years of age; never having been eliminated for flying deficiency in the Army, Navy, or C.A.A. flying training.[3]

The last qualification was changed three days later to allow former aviation cadets or aviation students to apply if they had been eliminated for flying deficiency after having successfully completed the elementary phase of instruction.[4]

Headquarters in Washington was charged with the procurement of the necessary personnel, the Flying Training Command with the establishment of the details of the new training program, and the Command in conjunction with the training centers with the acquiring, staffing, and equipping of the new training schools required by the accelerated glider program. On May 16 the training centers were instructed to implement the new program.

Establishment of Schools. For the accomplishment of the first phase of the objective, 3,000 glider pilots by September 1, 1942, the training centers were instructed to establish Preliminary Light Airplane Gliding Schools. All these schools were to be in operation by June 1, 1942.[5] By that date the tremendous task of opening eighteen civil contract Preliminary Schools was accomplished. They were:

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1. C/AS to CG,AAFFTC, May 8, 1942, in AAG 353.9 3A, Glider Training.
2. Daily Diarv. AFRIT. May 8, 1942.
3. C/AS to CG,AAFFTC, May 8, 1942. in AAG 353.9 3A, Glider Training.
4. Lt. Col. A. S. Barnhart to CG,AAFFTC, May 11, 1942, in AAG 353.9 A, Glider Training.
5. AAFFTC to CG's, TC's, May 16, 1942, in AAFFTC Files.

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1. Under the jurisdiction of the Commanding General, Southeast Air Forces Training Center.

	Capacity
Jolly Flying Service, Grand Forks, North Dakota	212
L. Miller-Wittig, Crookston, Minnesota	80
Fontana School of Aeronautics, Rochester, Minnesota	112
Hinck Flying Service, Inc., Monticello, Minnesota	112
North Aviation Company, Stillwater, Minnesota	112
Morey Airplane Company, Janesville, Wisconsin	112
Anderson Air Activities, Antigo, Wisconsin	140

2. Under the jurisdiction of the Commanding General, Gulf Coast Air Forces Training Center.

McFarland Flying Service, Pittsburg, Kansas	120
Ong Aircraft Corporation, Goodland, Kansas	240
Hunter Flying Service, Spencer, Iowa	160
Sooner Air Training Corporation, Okmulgee, Oklahoma	160
Harte Flying Service, Hays, Kansas	160
Anderson and Brennan Flying Service, Aberdeen, S. D.	160
Kenneth Starnes Flying Service, Loanoke, Arkansas	80

3. Under the jurisdiction of the Commanding General, West Coast Air Forces Training Center.

Plains Airways, Fort Morgan, Colorado	184
Cutter-Carr Flying Service, Clovis, New Mexico	184
Big Spring Flying Service, Big Spring, Texas	80
Clint Breedlove Aerial Service, Plainview, Texas[6]	152

To accomplish the new type of instruction on training and cargo type gliders, the training centers were instructed to establish new Army glider schools in addition to the two already operating. They were authorized to request additional enlisted personnel to staff the schools, but the instructors would have to be provided from graduates of the glider schools. These schools were to be in operation by July 6, 1942, and tentage was authorized as there was not time for permanent construction.[7] By the first of June two new Elementary-Advanced Schools had already been opened. They were contract schools, the John H. Wilson Glider School, Lamesa, Texas, under the Gulf Coast Training Center, and the Arizona Gliding Academy, Wickenburg, Arizona, under the West Coast Training Center. These were in addition to the two already operating, Twenty-nine Palms, California, under the jurisdiction of the West Coast Training Center, and the Elmira Area Soaring Corporation now located at Mobile, Alabama, under the Southeast Training Center. Five additional Air Force Elementary-Advanced Schools were ready for occupation by July 6. They were at Amarillo, Texas, Waco, Texas, under Gulf Coast; Lockbourne, Ohio, under Southeast; and Fort Sumner, New Mexico, under the West Coast Training Center.[8]

6. Maj. Lewin Barringer to Col. J. B. Ackerman, May 28, 1942, in AAG 353.9 3A, Glider Training.
7. AAFFTC to CG's, TC's, May 16, 1942, in AAFFTC Files.
8. AAFFTC Pilot Training Report, July 5, 1942, in AFIHD Files.

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Plans were also laid at this time for the accomplishment of the second phase of the objective, the additional 3,000 graduates by December 31, 1942. By July 15 the training centers were to submit the names and capacities of the Preliminary Schools recommended for retention to accommodate a total of 250 students for all the training centers. The remainder were to be closed. All but one of the Army-operated schools were to be closed by August 24.[9]

Combat Training of the Glider Pilot. Up to this time the glider pilot training program may be said to have been in its first formative stage. Although the Air Forces had launched a program designed to give individual training to the glider pilot, very little planning had taken place toward developing his role in combat operations. It was known that he would be part of an airborne division, and upon completion of the glider's transport mission, he would take part in ground combat operations. Actually, the combat glider itself was still an experimental model, and the tactics and techniques for piloting this glider in a combat operation had not yet been established.

With the directive initiating the 6,000 Program, the first definition of the glider pilot's role as a member of the combat team was transmitted to the Flying Training Command and thence to the training centers. It stated:

> In training glider pilots, primary attention will be given to their training in the piloting role. The secondary function of these pilots . . . will consist of ground combat operations with the air-borne units which have been transported in their gliders.
>
> It is expected that the glider pilot will receive the majority of his ground combat training in conjunction with the mass training of air-borne troops in gliders. Ground combat training will be included as a secondary phase of his glider pilot training only to such extent as will not interfere with his training as a pilot.
>
> The role of the glider pilot in combat will be primarily to land his glider safely, expedite the rapid debarkation of his passengers, secure his glider on the ground, assure that transport which may land after the glider-borne troops have secured the airdrome or locality to permit reinforcement by transport-borne troops. The glider pilot will participate in ground combat only in exceptional circumstances or after his glider has been wrecked in landing.[10]

This definition was transmitted as a directive to the training centers, including the implementation of a ground combat training program.[11] It would appear, however, from conversations with instructor and student personnel, that at this time little in the way of a coordinated program was achieved. Evidently the contract schools did not have the instructors or the incentive, and little seems to have been done at the Air Force schools beyond a physical conditioning program.

Program of Instruction, Preliminary Schools. The establishment of the light airplane gliding course and the consequent opening of the Preliminary Schools was a matter of expediency dictated by the materiel factor, the lack of sufficient training gliders.[12] The four-week program of instruction at the Preliminary Schools had as its object to graduate a student proficient to the degree that he was "qualified to operate light airplanes, and to make all landings with ignition off, both night and day, and to be qualified to service these airplanes in the field." Its scope was defined as "qualifications in the art of light airplane gliding, to include particular emphasis on spot landing proficiency" and "qualification in the servicing and general maintenance of light airplanes."

9. AAFFTC to CG's, TC's, May 16, 1942, in AAFFTC Files.
10. Memo for AFRIT by Brig. Gen. L. S. Kuter, May 12, 1942, in AAG 211 A, Officers, Titles and Grades.
11. AAFFTC to CG's, TC's, May 16, 1942, in AAFFTC Files.
12. Sketch by Maj. D. M. Hamilton, June 17, 1942, in ibid.

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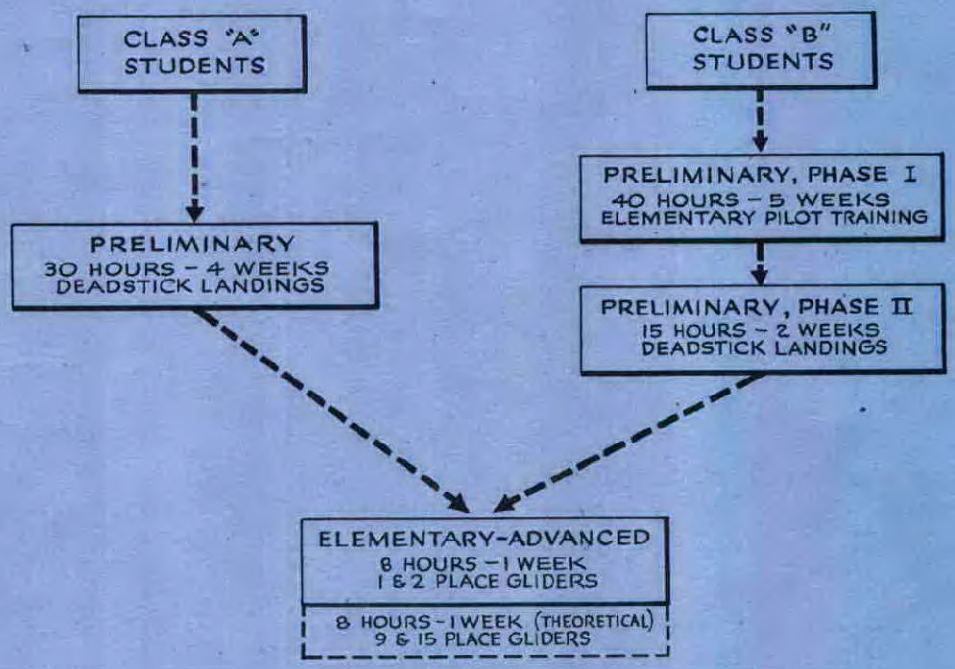
FLOW OF STUDENTS THROUGH GLIDER SCHOOLS

JUNE 15, 1942 - SEPT. 14, 1942



CLASS "A" STUDENTS

AERIAL EXPERIENCE OF ONE OF THE FOLLOWING TYPES REQUIRED:

1. *HOLDER OF CURRENTLY EFFECTIVE AIRMAN CERTIFICATE, PRIVATE GRADE OR HIGHER.*
2. *HOLDER OF A LAPSED AIRMAN CERTIFICATE, PROVIDED THAT SUCH CERTIFICATE DID NOT LAPSE PRIOR TO JANUARY 1, 1941.*
3. *HAVING COMPLETED 200 OR MORE GLIDER FLIGHTS.*
4. *PILOT TRAINING ELIMINEES, PROVIDED THEY HAVE FIFTY HOURS AS PRINCIPAL PILOT OR STUDENT PILOT IN MILITARY OR NAVAL TYPE AIRCRAFT.*

CLASS "B" STUDENTS

NO PREVIOUS AERIAL EXPERIENCE

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The thirty hours' flight instruction was intended to simulate glider flying as closely as possible. It was to be given for twenty days at one and one-half hours a day. Two hours were to be devoted to stalls and spins, and four hours to 180° approaches with the ignition turned off at 2,000 feet. The approaches were designed to develop approach patterns, putting the emphasis on high approaches and S turns and slips. Five hours were allotted to various approaches with the ignition turned off at 500, 1,000, 1,500, 2,000, and 3,000 feet. Five hours were also to be devoted to precision landings to a mark without the use of brakes and development of judgment of landing role, while "strange field landings from ignition off at 5,000 feet following navigation flight to 'ignition off point' short of landing field" were allotted five hours. To night landings from "ignition off point" at 2,000, 3,000, and 4,000 feet, five hours were also given. The remaining four hours of the course were to be distributed among the other phases of the course as training needs indicated.[13]

Actually the dead stick landing proved to be one of the most important phases in the training of the glider pilot. Once the motor was turned off the student had no recourse but to judge the approach correctly and achieve an accuracy landing. It was found that by requiring students to land precisely on a chalk mark on the field, they developed excellent judgment of distances and gliding range, qualities essential to proper glider pilotage.[14]

A sixty-hour course in ground school instruction was also included. This course called for twenty days' instruction at three hours a day. Field Manuals and Technical Manuals were listed as texts, and the training centers were directed to make every effort to supply each student with the necessary copies. This course was an improvement on previous ground school courses in that it better served to prepare the glider pilot as a member of the armed Service and for his eventual mission. It prescribed 10 hours of meteorology, 5 of navigation, 10 of maintenance, 2 of aircraft identification, 1 of chemical warfare defense, 4 of instruments, 20 of physical training, and 8 hours of customs of the Service, basic military indoctrination, and drill.[15]

These programs of instruction, however, were established merely as guides, and in no case were they rigidly followed. From conversations with glider personnel, it would seem that the contractors, in view of the terms of their contracts, were mainly interested in giving the required hours in the air to the students. Civilian instructors, due to the existence of other war training programs, were extremely difficult to secure. The desired ratio of instructors to students was placed at one to five, but the contractors were authorized verbally to operate with one instructor to seven and one-half students until additional trained instructors became available.[16] It would also appear that a very small percentage of the students received ground instruction, and what was received seems to have been very inadequate.

Program of Instruction, Elementary-Advanced Schools. The new two-week program of instruction for the Elementary-Advanced schools included both ground and flight school. The stated objective and scope of the course were exactly the same as those established under the previous program of April 15, 1942. The flight school, to operate for ten days at one hour and fifty-five minutes a day, was divided into two phases, elementary and advanced. The elementary course was similar to that given under the previous program, except that the addition of the light airplane gliding phase enabled the course to be shortened to eight hours and thirty minutes. Familiarization was allotted one hour. Only one hour instead of eight was to be devoted to precision landings from winch, pully, or auto tow. Four

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13. Program of Instruction for the Training of Air Forces Personnel in Preliminary Glider (Civil Contract) Schools--Light Airplane Gliding Course, May 12, 1942, in ibid.
14. Analysis of the Duties of Aircrew Personnel, Bulletin No. 9, The Psychological Division, Office of the Air Surgeon, Aug. 28, 1942.
15. Program of Instruction for the Training of Air Forces Personnel in Preliminary Glider (Civil Contract) Schools--Light Airplane Gliding Course, May 12, 1942, in AAFFTC Files.
16. AAFFTC to CG's, TC's, May 23, 1942, in ibid.

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single airplane tows were to be made in one hour, and four multiple airplane tows by day in two hours. At night four multiple airplane tows were also to be made, one hour and thirty minutes being devoted to these. The time allotted to soaring was decreased considerably, only two hours now being prescribed, and one of these under the hood. During the second week training was to be given on nine- and fifteen-place gliders. This was the first attempt to make out an advanced program, and due to subsequent developments it was never used. It prescribed one hour of familiarization, and four precision landings in two hours on the large gliders in single tow position. Four hours were to be devoted to multiple tow, one during the day, one during the day under the hood, one hour at night, and one during the day with a precision landing on a strange field after release at 5,000 feet. This was a purely hypothetical course, as the large gliders were not yet in production, and their performance characteristics were not known.

The new ground school course, as prescribed in the program of instruction for the Elementary-Advanced School, was to be given in ten days at three hours a day. Technical and Field Manuals were designated as texts for the 5 hours in Link trainer, 2 hours in radio equipment operation, 5 hours in maintenance, and 8 hours in physical training. These were new courses; those remaining from the old program were five hours of soaring meteorology and five hours to be devoted to the characteristics and flying technique of gliders. Barringer's Flight without Power was designated as the text for these last two courses.[17]

Light Airplane Requirements. In order to implement the new primary training program and thereby meet the dead line of 3,000 glider pilots by September 1, 1942, on May 18 the Flying Training Command informed Headquarters that it must be immediately supplied with 934 light airplanes of the "puddle jumper" type.[18] As was the case throughout the entire glider program, supply did not meet the demands of the objective. On May 28 the Director of War Organization and Movement stated that orders had been issued for transfer of 300 of these planes from Ground-Air Support units. Also the Air Service Command had been instructed to divert May production of liaison type aircraft to the Flying Training Command. By these means, the Command was to receive about 680 of the requested 934 light planes.[19]

This situation was but another indication of the problems of an expanding Army. The Field Artillery had been allocated 1,960 of these light planes for delivery prior to January 1, 1943, on a priority equal to that of the Flying Training Command, and both of these needs had to be met concurrently.[20] By the first of July, however, it appears that the needs of the Flying Training Command were met by further diversion from June production.[21]

Procurement of Personnel. As the gigantic task of training 3,000 glider pilots by September 1 had to be implemented by June 1 with a class of 600 trainees, action was taken immediately in Headquarters to expedite the procurement of personnel. The Director of Personnel was charged with the responsibility of procuring 3,600 trainees, an allowance of 20 per cent attrition, and having them at the training schools in seven classes between June 1 and September 1.[22]

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17. Program of Instruction for the Training of Air Forces Personnel in Elementary and Advanced Glider Schools, May 12, 1942, in ibid.
18. CS,AAFFTC, to CG,AAF, May 18, 1942, in AAG 452.1 A, Gliders.
19. Memo for AC/AS, A-4 by Director of War Organization and Movement, May 28, 1942, in ibid. (Director of War Organization and Movement hereinafter cited as AFROM).
20. Memo for CG,AAFFTC by AC/AS, A-4, May 22, 1942, in AAFFTC Files.
21. 3rd Indorsement (original unknown), A-4 to CG,AFAMC, June 10, 1942, in ibid.
22. C/AS to CG,AAFFTC, May 8, 1942, in AAG 353.9 3A, Glider Training.

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Glider trainees ready for a morning of simulated glider flying.

Student prepares to execute gliding approach and dead stick landing from "ignition off point."

Dead stick accuracy landing to white marker on the field.

The light airplane gliding course, established because of the lack of training gliders, proved to be of great value. It enabled the student to develop skill in accuracy landings and judgment of distances and gliding range.

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On May 9 The Adjutant General was requested to launch an extensive publicity campaign. The Civil Aeronautics Administration was also contacted and in cooperation with Military Personnel began the circularizing of approximately 85,000 Airman Certificate holders on record with that office.[23]

Procurement Plan, Air Forces Personnel. On May 11, 1942, a circular letter was sent to the Commanders of all Posts, Stations, Activities and Higher Headquarters of the Army Air Forces in the continental United States. This letter outlined the enormity of the program and urged that all qualified personnel be encouraged to apply for this training at once. The training was to be open to all officers and enlisted men who were citizens, eighteen to thirty-five years of age, and who had not been eliminated from a Service or civilian flying school. Aerial experience of one of the following types was required:

1. Holder of currently effective Airman Certificate, private grade or higher.
2. Holder of lapsed Airman Certificate, provided that such certificate did not lapse prior to January 1, 1942.
3. Having completed 200 or more glider flights.

Candidates must be able to pass the physical examination for flying duty, Class II or better. Enlisted applicants must be able to make a score of 110 or better on the Army General Classification Test.[24]

Only five days later this letter was amended, and the qualifications were reduced to tap a larger reservoir of prospective trainees. The period of lapse of the Airman Certificate was pushed back to January 1, 1941, and glider pilot training was no longer closed to those who had been eliminated from pilot training for flying deficiency provided they had flown as principal pilot or student pilot for at least fifty hours in military or naval type aircraft. Officers and enlisted men were to train in grade, and upon graduation the enlisted men were to be promoted to the grade of staff sergeant and rated as glider pilots. If the enlisted student held one of the first three grades, he would maintain that grade upon graduation.[25]

In an effort to make glider pilot training more attractive and thereby increase the number of applicants, this letter was further amended on June 5. Selected graduates were to be appointed officers in the Army of the United States. "Demonstration of soldierly qualities of leadership, judgment, force and discipline will be the criteria upon which such appointments are based."[26]

Procurement Plan, Civilian Applicants. Eight days after receipt of the directive of May 8, 1942, the procurement plan for the enlistment of civilian applicants had been planned, organized, and placed in operation. The Civil Aeronautics Administration was circularizing approximately eighty-five thousand Airman Certificate holders on record with that office. If the prospective trainee expressed interest in glider training, and if examination of the applicant's qualifications indicated adequate aerial experience and general requirements, the C.A.A. certified the applicant as generally suited for this training. Upon presentation of the certification to his local Army recruiting office, the applicant was accepted for enlistment and issued an authorization for travel to one of seventeen Air Force stations. The seventeen stations designated for processing were: McChord Field, Washington; Salinas Army Air Base, California; Army Air Base, Salt Lake City, Utah; March Field, California; Westover Field, Massachusetts; Mitchel Field, New York; Olmstead Field, Pennsylvania; Langley Field, Virginia,

23. Memo for AG by Military Personnel, May 9,1942, in AAG 353.9 A, Glider Training. (Military Personnel hereinafter cited as AFPMP).
24. AAF 352, May 11, 1942.
25. AAF 352, May 16, 1942.
26. AAF 352, June 5, 1942.

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Bowman Field, Kentucky; Chanute Field, Illinois; Scott Field, Illinois; Sherman Field, Kansas; Randolph Field, Texas; Lowry Field, Colorado; Shaw Field, South Carolina; Keesler Field, Mississippi; and Army Air Base, Orlando, Florida.[27] Upon arrival at one of these stations, the candidate was given either the Army General Classification Test on which a minimum score of 110 was necessary for qualification, or the Aviation Cadet Mental Screening Test, Form AC-10-B, on which the requisite minimum score was 65, or Form AC 10-B, with a required score of 75.[28] The scores necessary on the aviation cadet qualifying tests were fifteen points lower than those required for qualification for aviation cadet training.[29] Applicants found mentally qualified were then given the Physical Examination for Flying Duty. If they were found both mentally and physically qualified, applicants were then enlisted in the Air Corps (unassigned) as privates and attached to the station where they were processed pending issuance of orders from Headquarters, Army Air Forces, Director of Personnel for assignment to glider training schools.[30]

Procurement Plan, Army Ground Forces and Services of Supply Personnel. When it soon became apparent that adequate personnel for the energized glider pilot program would not be available from civil life and within the Army Air Forces, the Air Forces decided to tap the last remaining source. The Civil Aeronautics Administration, in its circularization of holders of pilot licenses, had discovered that a large number of properly qualified individuals were to be found among the personnel of the Army Ground Forces and Services of Supply. Consequently, on May 18, 1942, a memorandum was forwarded to G-1, War Department General Staff, requesting that, due to the necessity of meeting existing training schedules, action be authorized immediately to make glider pilotstraining available to qualified officers and men of these arms. This memorandum recommended a procurement plan whereby The Adjutant General would be directed to circularize all organizations of the Ground Forces and the Services of Supply.

> In the case of enlisted applicants for glider pilot training, The Adjutant General will issue orders immediately, transferring in grade to the Air Corps (unassigned) such men as are selected and recommended for this training by the Commanding General of the Army Air Forces, and directing men so transferred to the Air Corps to proceed to installations designated by the Commanding General of the Army Air Forces.
>
> The Adjutant General will issue orders detailing for the period of training such officers below field rank as may be selected and recommended for this training by the Commanding General of the Army Air Forces. The Adjutant General will issue orders transferring to the Air Corps Reserve, without loss of rank or seniority, those officers who successfully complete the prescribed course of glider pilot training.
>
> In addition to the foregoing, The Adjutant General, will, through immediate commanding officers only, communicate with such junior officers and enlisted men of the Army Ground Forces, Services of Supply and Army Air Forces as may be on lists furnished to that purpose by the Commanding General of the Army Air Forces. . . .

The following day, May 19, this plan was approved by G-1,[31] and four days later publicized by an Adjutant General letter.[32]

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27. AFDOP to Commanding Officers of seventeen stations, May 16, 1942, in AAG 353.9 B, Glider Training.
28. AAF 352, May 16, 1942.
29. WD Press Release, June 1, 1942.
30. AFPMP to Commanding Officers of seventeen stations, May 16, 1942, in AAG 353.9 B, Glider Training.
31. Unsigned memo for Assistant Chief of Staff, G-1, May 18, 1942, in AAG 353.9 A, Glider Training.
32. AG 353 (5-21-42)EA, May 23, 1942.

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Status of Procurement Effort. By the end of May it became apparent, in spite of the tremendous procurement effort on the part of the Director of Personnel, The Adjutant General, and the Civil Aeronautics Administration, that quotas for the first scheduled classes could not be met. By May 30 only seventy trainees had been ordered to the civilian schools.[33] Consequently, on June 1 the civil contract schools began operations on a reduced basis.[34] By the fourth of that month there were 228 students in training, but there was no backlog of students, and the program was already one week behind and short 1,100 candidates for the present classes alone. At this time it was hoped that the policy promulgated by A-1 to commission a certain number of graduates would encourage application when sufficiently circularized. So serious was the situation, however, that on June 4 the Director of Individual Training departed from time-honored military practice by recommending that immediate action be initiated to order to glider pilot training, without asking for volunteers, a sufficient number of qualified Army personnel from outside the Air Forces to meet the objective.[35]

A conference was held in the Office of the Assistant Chief of the Air Staff, A-1, on June 10 to devise further means for encouraging glider pilot applications. It was decided to make all members of the first class staff sergeants immediately, to intensify the campaign to secure volunteers from experienced pilots of light airplanes, to compile a list of aviation students who were willing to transfer to glider pilot instruction, and to reduce the physical requirements to those required by the Civil Aeronautics Administration.[36]

New Training Plan and Procurement Basis. Since only about one-third of the first weekly quota had reported for training by June 6, the Flying Training Command realized that the training plan established by the directive of May 8 could not possibly be fulfilled and submitted an alternate course of action. This new plan entailed entering all qualified applicants directly into the Elementary-Advanced Glider Schools. It was estimated that the Director of Personnel could fill approximately 30 per cent of the scheduled quotas for this type of personnel. In this way, the Elementary-Advanced Schools would graduate approximately one thousand pilots from the previously established four-week elementary course about August 17. By that time the Elementary Schools would begin to receive students from the Preliminary Schools and would change from the four-week elementary course to the two-week combination elementary-advanced course, as specified in the directive of May 8.

There still remained, however, 2000 glider pilots to be procured and trained to meet the 3,000 specified by September 1, 1942; therefore, the Flying Training Command proposed a new procurement basis. The Command suggested that applicants who had had no previous flying experience but who otherwise conformed to the present requirements be accepted for glider pilot training. This was indeed a departure from the day when only graduates of the Advanced Flying Schools were to be given glider pilot training. This new type of trainee was to be given an eight weeks' course consisting of airplane pilot training for five weeks and three weeks of dead stick landings in light airplanes. Then allowing one week for travel between glider schools, there would follow one week of elementary and one week of advanced glider training. The flying Training Command realized that this plan provided a sketchy training program for second quality personnel and admitted that it would undoubtedly be reflected in the final quality of the product. If approval of this new program were granted, the Command requested that the dead line for the final graduating class be extended two weeks, the final class graduating about October 12.

The Flying Training Command stated that it believed that under this new program the first objective could be reached by September 28 with a total of about thirty-two hundred trained flider pilots. In order to accomplish this objective, it would be

> necessary for personnel to be procured and delivered at the rate of about 825 per week for four weeks beginning June 22, 1942, in addition to approximately 200 a week who have had previous aviation training.

33. Memo for Chief of Staff by AFRIT, May 30, 1942, in AAG 353.9 B, Glider Training.
34. Teletype, CG,AAFFTC to CG's, TC's, May 30, 1942, in AAFFTC Files.
35. R&R, AFRIT to C/AS, June 4, 1942, in AAG 353.9 3A, Glider Training.
36. A-1 Daily Report, June 10, 1942, in AAG 319.1, A-1 Daily Report.

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> Allowing approximately 30% attrition, this should produce 2200 glider pilots, which added to those entered directly into the glider schools, should produce a total of about 3200 glider pilots by Sept. 28, 1942. . . .[37]

On June 11 the Director of Individual Training informed the Flying Training Command that its plan had been approved with one exception: "The allotment of time devoted to dead stick landing is reduced by one week. This is necessary in order to allow a one week cushion between the date of the total number required and the date the total number may complete training."[38] The dead line for the final graduating class was not extended as requested; however, on June 18 by directive from the Secretary of the Air Staff it was extended to September 25, 1942.[39]

On June 12, 1942, the Director of Military Requirements issued a formal directive embodying the revised glider pilot training plan of the Flying Training Command. This directive stated that applicants lacking previous aerial experience would be accepted for training provided they possessed the other requisite qualifications. This new type of student was designated as Class B, while trainees with previous aerial experience was designated Class A. This program would be in effect, however, only long enough to alleviate the shortage of students with aviation experience. These students were to receive instruction as follows:

1.	Elementary instruction	40 hours	5 weeks
2.	Dead stick landings	15 hours	2 weeks
3.	Travel time to glider schools approximately		1 week
4.	Glider training, 1- and 2-place gliders	8 hours	1 week
5.	Glider training, 9- and 15-place gliders or converted airplanes	9 hours	1 week
		72 hours	10 weeks

They were to be advanced on a proficiency basis. The students possessing the required aviation experience were to be entered directly into the thirty-hour elementary glider course and to be given "such advanced training as time and facilities permit."

The Director of Personnel by this same directive was instructed to commence immediate procurement of the new type trainee, but at the same time was to continue procurement of trainees with previous aviation experience as rapidly as possible.[40] Actually, procurement of this new type applicant, Class B, had been implemented three days earlier when the Director of Personnel instructed The Adjutant General to procure 1,000 Class B applicants by June 22, 1942.[41] Commanders in the field were informed of Class B training by AAF letter, June 10.[42] With the institution of Class B training, the other requisite qualifications remained the same, except that for any applicant the visual acuity for the Class II physical examination might be 20-40 without glasses, correctible to 20-20.[43]

37. CS,AAFFTC to CG,AAF, June 6, 1942, in AAG 353.9 3A, Glider Training.
38. 1st Indorsement (CS,AAFFTC to CG,AAF, June 6, 1942), AFRIT to CG,AAFFTC, June 11, 1942, in ibid.
39. Col. J. Y. York, Jr., Secretary Air Staff, to CG, AAFFTC, June 18, 1942, in ibid.
40. AFROM to CG's, AAFFTC, AFAMC, AFPMP, June 12, 1942, in ibid.
41. AFPMP to AG, June 8, 1942, in AAG 353.9 B, Glider Training.
42. AAF 353, June 10, 1942.
43. AFDOP to AG, June 8, 1942, in AAG 353.9 B, Glider Training.

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Inauguration of Class B Training. On June 15 the Flying Training Command directed the training centers to institute Class B training. As the first two phases of this training were to be different from the instruction given to Class A trainees, new programs of instruction were established. Phase I, elementary flying instruction in Preliminary Light Airplane Gliding Schools, was to consist of forty hours' training in five weeks. Emphasis was to be placed on coordination and precision landings, and progress of the individual student was to be based on proficiency with all possible consideration given to any previous aviation experience, however small. The second phase, dead stick landings in the Preliminary Light Airplane Gliding Schools, was to consist of fifteen hours' training in two weeks. Students were then to be allowed one week for travel to the Elementary-Advanced Glider Schools, but this travel time was to be held to a minimum and utilized as far as possible for training purposes.

This change in the method of instruction was merely a matter of expediency--necessitated by the enormity of the objective and the difficulty of securing adequately qualified trainees. It was not to interfere in any way with the course established on May 16, 1942, for the training of men with the required aviation experience. It was realized that the administration of this dual training would be extremely difficult. Therefore, the training centers were given complete authority to arrange the training in a manner best suited to maintain proper balance of Class A and Class B students in the schools. For the present the thirty-hour elementary glider course was to continue in operation, as no graduate of the dead stick landing course would be available until July 6, 1942. These schools were to be continued at capacity operation with Class A students as far as available equipment would permit.[44] To allow implementation of this new program, the Materiel Command negotiated the necessary contract amendments to provide for an enlarged total capacity and the additional phase of instruction.[45] The schools' total capacity was now 3,336 students with a weekly entrance rate of 834.[46]

Programs of Instruction, Class B Training. The first phase of the preliminary course for Class B students was designed to serve as a substitute for the previous flying training required of Class A students. Its objective was to produce a graduate "qualified to operate light airplanes, both night and day, and . . . qualified to service these airplanes in the field." Forty hours of flight school, twenty-five days at one hour and thirty-six minutes a day, was prescribed. This included nineteen hours of dual and twenty-one of solo training. The course was similar to the preliminary flying training given by the Civil Aeronautics Administration, although particular emphasis was to be placed on the attainment of proficiency in spot landings.

Ground school instruction was placed at seventy-five hours. The subjects, the amount of time to be devoted to each, and the texts were to be the same as prescribed for Class A students in the preliminary light airplane gliding course. As many of these students entered the glider pilot program directly from civil life, an attempt was made to give them some basic military training. To physical training twenty-five hours were to be devoted and sixteen to customs of the Service, basic military indoctrination, and drill.[47]

The second phase of instruction for Class B students, the dead stick landing course, was an abbreviated form of that given to Class A trainees. The hours specified for flying training were halved to fifteen, the duration reduced from five to two weeks. The review necessary for Class A students was eliminated. Instruction in all other maneuvers was retained except that the time to be allotted to each was decreased.

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44. AG,AAFFTC to CG's, TC's, June 15, 1942, in AAFFTC Files.
45. Unsigned letter to CG,AFAMC, July 4, 1942, in ibid.
46. Appendix V to letter, AG,AAFFTC to CG's, TC's, June 15, 1942, in ibid.
47. Program of Instruction for the Training of Air Forces Personnel in Preliminary Glider (Civil Contract) Schools.
    Phase I--Elementary Flying Course for Class "B" Students, June 12, 1942, in ibid.

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During the second phase, ground school instruction was continued. A total of 30 hours was prescribed, 8 hours to be devoted to meteorology, 3 to navigation, 5 to maintenance, 10 to physical training, and 4 to customs of the Service, basic military indoctrination, and drill.[48]

Administration of Dual Training. On June 13, 1942, the Flying Training Command submitted its revised schedule for glider pilot training to Military Personnel, requesting that Class A students be given priority assignment to each class and that they be distributed to all schools in proportion to the schools' capacity. It was further requested that only Class A students be ordered to the Elementary-Advanced Schools.[49] This procedure was changed July 1, 1942. After that date glider candidates were ordered to one of three stations, Lockbourne, Ohio, in the Southeast Training Center, Randolph Field, Texas, in the Gulf Coast Training Center, or Santa Ana, California, in the West Coast Training Center, which were designated as replacement centers for glider trainees. The training center commanders then distributed the candidates among the schools under their jurisdiction.[50] The glider replacement center at Santa Ana was later transferred to Kirtland Field, Albuquerque, New Mexico,[51] and in September the pool at Lockbourne, Ohio, was moved to Smyrna, Tennessee,[52] and in November to Stuttgart, Arkansas.[53]

Student quotas for the glider schools were at last being met by the end of June, the ratio of Class A students to Class B students being about one to one. By July 13, 3,800 trainees had entered preliminary training, 120 students had graduated July 11, and it was estimated that graduates would increase weekly until August 8 when the required weekly output of 680 would be established.[54]

Application Inducements. Although the personnel procurement program was progressing very well in view of the tremendous task facing the Air Forces, early in July it became apparent that there would be a shortage of the most desirable applicants. Consequently, the Director of Personnel promulgated a policy whereby Air Forces personnel able to meet the minimum aerial experience for Class A training would be granted certain waivers on the requisite physical qualifications. Applicants were to be certified as physically qualified provided they could "successfully pass a physical examination for flying (Glider Pilot Training), with a substandard visual acuity of 20-100, correctible to 20-20." Applicants were not to be disqualified due to defective color vision. For those "with defective color vision which would normally disqualify them, . . . an entire physical examination will be given, setting forth a complete study of the color vision."

At this same time another inducement designed to secure more applicants for training was put into effect. Enlisted Class A applicants below the grade of staff sergeants were to be promoted to that grade upon entering training instead of at the completion of the entire course. If these men were eliminated, however, they would revert to their former status.[55]

When the glider program was first initiated, it was planned that the personnel procured for glider pilot training would be of the same social and educational caliber as those for pilot training. But as the program expanded so rapidly and as it became necessary to

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48. Program of Instruction for the Training of Air Forces Personnel in Preliminary Glider (Civil Contract) Schools--Phase II--Light Airplane Gliding Course (Dead Stick--for Class "B" Students), June 12, 1942, in ibid.
49. CS,AAFFTC to CG,AAF, Attn: Aviation Cadet Section, June 13, 1942, in AAG 353.9 3A, Glider Training.
50. Daily Diary, AAFFTC, July 1, 1942, in AC/AS, Training Files.
51. Ibid., July 18, 1942.
52. Ibid., Sept. 12, 1942.
53. Ibid., Nov. 18, 1942.
54. Memo for AFRIT by Flying Training Section, AFAMC, July 15, 1942, in AAG 353.9 C, Glider Training.
55. AFDOP to CG, Air Service Command, July 3, 1942, in AAG 353.9 J, Training in Aviation, Pilot Training. (Air Service Command hereinafter cited as AFASC).

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TG-5 Aeronca.

TG-6 Taylorcraft.

TG-8 Piper

An increased training load necessitated more training-type gliders than were on hand or in production. By removing the engines, three types of light airplanes were converted to completely satisfactory training-type gliders.

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widen the procurement basis so extensively, the Air Forces found it almost obligatory to enlist all applicants physically and mentally qualified. The glittering publicity employed to energize the program--promises of high pay, rapid advancement, and adventure--brought in a type of man heretofore rarely found among the ranks of Air Forces pilot personnel. From conversations with trainees it would seem that many of the prospective glider pilots joined the program for just these reasons or in the belief that glider pilotage would prove a lucrative occupation in postwar aviation. This situation is perhaps one of the contributing factors to the extreme morale and disciplinary problems that later characterized the program.

Personnel Procedures. During this early period the growth of the glider program necessitated the establishment of certain personnel procedures. In September, 1941, action was initiated to establish the rating of glider pilot.[56] This rating was later authorized, and an appropriate aviation badge approved. During June, 1942, however, it was decided that glider pilots would not be given ratings but issued certificates. This ruling created a storm of protest among the individuals closely connected with the program, as it was felt that Headquarters was breaking faith with its previous promises to the glider trainees. Finally, in September the rating was re-established.[57] In May, 1942, glider trainees were extended the same benefits and legislative provisions as aviation students, including $10,000 government life insurance.[58]

The question of flight pay for glider trainees and pilots, with all its potential Congressional ramifications, also caused considerable discussion in the early days of the program. Authority for the payment of flying pay was granted in March, 1942,[59] but rated power pilots undergoing glider training had to perform the required number of flights and hours in the air to receive their flight pay.[60]

Shortage of Equipment. As training under the 6,000 Program began to get under way, early in July it became evident that the actual numbers of light airplanes on hand at the Preliminary Schools and tow planes and gliders at the Elementary-Advanced Schools would not take care of the increased training load and the constantly growing flow of trainees to the schools. Two attempts had been made to alleviate this situation. Three makes of light airplanes had been converted by removing the engine. These light planes, converted in this manner, possessed many of the characteristics of gliders and had proved to be quite satisfactory. All privately owned gliders in the United States of a satisfactory type had been secured either by purchase or condemnation. Many of these, however, were found to be in a state of disrepair amd presented a major maintenance and repair problem. Due to the lack of equipment, students were collecting at the glider replacement centers and were having to be pooled there awaiting the time when they could be accommodated at the glider schools.[61]

Revised Training Schedule. Consequently, on July 13 and 14 a conference of representatives of the training centers was called at the Headquarters of the Flying Training Command. It was decided to discontinue entering students into the Preliminary Schools for the next three weeks, and to keep all preliminary graduates at these schools for further training until they could be accommodated at the Elementary-Advanced Glider Schools.[62] This was just the first indication of the tremendous materiel problem that was to play so great a part in the glider program--a problem brought about by lack of coordination of procurement of men and materiel.

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56. Materiel Division, OCAC to Experimental Engineering Section, Wright Field, Sept. 8, 1941, in AAG 211 D, Pilots.
57. Project Book of the CG,AAFFTC.
58. Memo for CG,AAF by AFDOP, May 20, 1942, in AAG 353.9 B, Glider Training.
59. Memo for CG,AAFFTC,by G-3, AAFFTC, April 10, 1942, in AAFFTC Files.
60. AAFFTC to CG,WCACTC, March 10, 1942, in ibid.
61. Memo for CG,AAFFTC by Col. G. F. Schlatter, July 15, 1942, in ibid.
62. Ibid.

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On July 17 the Flying Training Command instructed the training centers to place this revised schedule in operation. The shortage of equipment had necessitated such a decrease in the flow of students that there were not enough trainees to support the eighteen Preliminary Schools. Consequently, the Southeast Training Center was instructed to close all of its Preliminary Schools, the Gulf Coast to close three of its seven, and the West Coast to reduce the entrance rate in its four schools to a total of 148 trainees each week. The Elementary-Advanced Schools at Lockbourne, Waco, and Lubbock were also closed, and the schools at Dalhart and Fort Sumner were to be transferred to Advanced Schools for transition training on cargo gliders when those gliders became available.[63]

Potential Training Estimates. The following day the Flying Training Command reported to the Commanding General, Army Air Forces that

> With the gliders now actually on hand and in commission at the Elementary-Advanced Glider Schools, it will be possible to train approximately eight hundred (800) glider pilots between July 27, 1942 and September 28, 1942. As of July 27, 1942 about five hundred (500) glider pilots will have been produced, making a total of approximately thirteen hundred (1300) glider pilots available by September 28, 1942.

This was less than one-half the number called for by the directive. The most recent production figures which had been received by the Flying Training Command, however, indicated that 13 gliders and 110 converted light airplanes would be delivered in July, 21 gliders and 500 planes in August, and 26 gliders and 140 planes in September. If deliveries conformed to these schedules, the Command estimated that "a vastly accelerated program will begin on August 3, 1942, and will reach its peak of over five hundred (500) glider pilot graduates per week by September 1, 1942." On this basis it was estimated that through July 500 glider pilots would be trained, 1,400 in August, and 2,000 in September. After the 3,000 objective had been reached, the Command planned to reduce the accelerated rate of training so that about three hundred trainees would be graduated each week during the rest of 1942.

Although the requisite number of personnel would have been trained, they would not have received transition training on cargo type gliders. The Command, therefore, urgently requested that if it was desired that this type of training be given by it, that it should immediately be furnished with cargo gliders, multiengine tow planes and pilots, and temporary additional training sites.[64]

Training Problems. It would seem that the Flying Training Command's estimates of potential training were a bit optimistic in view of the acute glider shortage. The accomplishment of the glider training objective required 144 one- and two-place gliders and 180 nine- and fifteen-place gliders in July. The Materiel Command had previously estimated that thirty-one converted gliders would be delivered in June and 180 in July; however, by the fifteenth of July not one of these gliders had been received at the training schools. Previous estimates of fifteen-place gliders had contemplated the manufacture of 250 in July, 500 in August, and 750 in September. By mid-July, however, the Materiel Command estimated that none would be manufactured in July, but that quantity production would be reached during August and September with 1,000 cargo gliders being manufactured during these months.

The glider program was again stalled. Now that the personnel procurement problem had been solved, the failure to provide gliders was resulting in large numbers of elementary glider graduates for whom advanced training was not available. This condition was further complicated by a serious housing shortage. Construction at the Advanced

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63. AAFFTC to CG's, TC's, July 17, 1942, in AAFFTC Files.
64. CS,AAFFTC to CG,AAF, July 18, 1942, in AAG 353.9 3A, Glider Training.

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Schools had been provided on the basis of two classes being present at one time; therefore, it was impractical to order elementary graduates to these stations to await further training.[65] Solution of some of these problems was to come with further revision of the glider pilot training objective.

Summary. In no other period as that from May 8 to July 18, 1942, when the 6,000 Program was in effect, did the glider program undergo so many significant changes. These changes were, in the majority, a result of the excessive requirements of the objective and the extremely short amount of time allotted to its execution. Old policies were modified, new ones introduced. In fact, all subsequent programs are but a modification of the production quotas and personnel procedures established. Future glider pilot objectives, with one exception, are but a downward revision of the production quotas of this program. The extensive widening of the procurement basis to secure applicants from all Arms of the Service and civilian life and the lowering of qualifications to admit trainees without previous aerial experience represents the high tide of procurement effort. Further procurement policies are marked by a narrowing of the basis and a tightening of qualifications. It cannot be said that the 6,000 Program is characterized by the most significant changes in the training program, for it was later subject to the dictates of other salient factors. But certain important developments did occur. Among these were the introduction of an entirely new type of training, the dead stick landing course, which, although brought about as a matter of expediency, proved to be of high value. Also under this program, the ground school developed more fully, and for the first time there was a realization of the need for preparing the glider pilot for his future combat duties. Under the 6,000 Program, the scarcity of materiel for the first time became a major factor in determining the future course of the glider program, a factor which was to grow both in stature and influence as glider pilot training progressed.

65. Memo for AFRIT by Flying Training Section, Materiel Division, July 15, 1942, in AAG 353.9 C, Glider Training.

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Chapter V

THE JULY 18, 1942, REVISION OF THE GLIDER PILOT TRAINING OBJECTIVE

Revised Objective and Training Program. Concurrent with the Flying Training Command's attempt to harmonize maximum glider pilot graduation with fluctuating glider production estimates, Headquarters realized that under existing materiel conditions achievement of the 6,000 objective was impossible. Consequently, on July 18, 1942, the Director of Individual Training halved the immediate program. The new directive required the training of 1,500 glider pilots by September 26, 1942, and an additional 1,500 by December 31. Glider pilot production during 1943 was to continue at the rate of 12,000 a year. The directive also authorized the Flying Training Command to amend and increase the course of instruction in order to insure maximum proficiency in each phase so far as available equipment would permit. It was pointed out that more instruction should be given in towed gliders, both the converted airplane type and the fifteen-place glider. If practicable, this instruction should be doubled. [1]

Upon receipt of this directive, a conference of representatives of the training centers was convened at the Headquarters of the Flying Training Command. This conference resulted in a radical revision of the entire glider pilot training program, which went into effect by directive, August 7, 1942. Up to the achievement of the first half of the new objective, 1,500 glider pilots, training at the Preliminary Schools was to consist of 40 hours' primary flight training for Class B students in 5 weeks plus an additional 15 hours in 2 weeks of dead stick landings, and 30 hours in 4 weeks of dead stick landings for Class A trainees. Both types of students were to receive 17 1/2 hours in 2 weeks of elementary-advanced training. [2]

Program of Instruction. The program of instruction for Class B students in both phases, the primary flying course and the dead stick landing course, and the dead stick landing course for Class A students remained essentially the same. In the seventeen and one-half hour elementary-advanced course more emphasis was placed on certain maneuvers whose use was contemplated to prepare the glider pilot more adequately for combat operations. Among the maneuvers practiced were straight and level flying, precision turns, entry and recovery from spins and spiral dives, stalls, wing overs, lazy eights, and accuracy landings. The wing over and lazy eight were taught because they require the pilot to master precision flying and coordination of controls. Launching by means of winch and auto tow was no longer employed, for it had been found that the small time prescribed could be devoted more advantageously to airplane towing. Also prescribed time was no longer allotted to soaring training or instruction in the use of thermals, as it was gradually being realized that this type of training proved to be of little value in towing or in landing in a special approach pattern.

The ground school instruction varied with the different schools, both in the courses taught and in the amount of instruction given. On the whole the curriculum was relatively the same as when elementary-advanced instruction had first been established. Approximately eight hours of instruction was now being given on Link trainers. The trainers, however, had not been modified to fly as gliders, and consequently their flying characteristics differed considerably from those of gliders [3]

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1. AFRIT to CG,AAFFTC, July 18, 1942, in AAG 353.9A, Glider Training.
2. Project Book of the CG,AAFFTC.
3. Analysis of the Duties of Aircrew Personnel, Bulletin No. 9, The Psychological Division, Office of the Air Surgeon, Aug. 28, 1942.

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As training progressed certain weaknesses became evident in the curriculum. It would seem that there was not enough correlation between the preliminary glider and the glider schools. Student flying was suffering from inadequate instruction in signals and standard operating procedure. In flight training insufficient time was being devoted to precision flying and strange field landings. In the ground school the students were not taking an active enough part in the maintenance course. The Training Section of the Flying Training Command made an attempt to rectify these faults by directive,[4] but some of the weaknesses in the training program must of necessity be laid to inadequate materiel and training aids. For example, many of the schools were without instruments and therefore could not give the required hours in instrument training. This situation was recognized as unavoidable, and on August 26 the Elementary-Advanced Schools were authorized to graduate students without instrument training.[5]

When the glider training program was instituted, military glider training in the United States was a completely new science. Consequently, absolutely no texts, either for instructors or students, were available to supplement the bare outlines of the programs of instruction issued by the Flying Training Command. The responsibility for providing texts, therefore, devolved upon the directors of training at the individual schools. Throughout the period June, July, August of 1942 written manuals began to appear at the schools. No coordinated text, however, was ever published until tentative Technical Manuals appeared in 1943.

Administration of Training. While the first half of the new training objective was being reached, further entrance of trainees into Preliminary Schools was to be discontinued. All preliminary graduates who could not be accommodated at the Elementary-Advanced Schools were to be held at the Preliminary Schools for further dead stick landing practice. The Elementary-Advanced Glider Schools were to be kept in operation at maximum capacity until September 7, 1942.

On September 14, 1942, a new glider training program of sixteen weeks of instruction in four separate stages was scheduled to go into effect. Each phase was now to be four weeks long and given at a separate school. It was to consist of a beginner's course of 30 hours in power flying for Class B students at Preliminary Schools, a 30-hour course in dead stick landings for Class A students and graduates of the Preliminary Schools at Elementary Glider Schools, a 30-hour course in training gliders at the Basic Glider Schools, and at Advanced Glider Schools, a 40-hour course of instruction in cargo gliders.[6]

This new program would require 8 Preliminary Schools, all new, 8 Elementary Schools, 8 Basic Schools, an increase of 4 over the existing number, and 5 Advanced Schools.[7] It was contemplated that during August the Troop Carrier Command would assign to the Flying Training Command three of its stations complete with personnel, cargo gliders, tow planes, tow plane pilots, and crews. The 1,600 graduates of the elementary-advanced course would be transferred to the Troop Carrier Command and given as much advanced training as possible by September 26. On that date the instructors, who would have been previously trained at a special instructors' school at Lockbourne, Ohio, would return to the Flying Training Command to initiate the new advanced training program. This completely revised training program was scheduled to begin August 24 in the Elementary Schools, September 14 in the Basic Schools, and October 5 in the Advanced Schools. Training was also scheduled at this time to begin October 12 in the Preliminary Schools; however, negotiations were being carried on with the Civil Aeronautics Administration with a view to that agency's giving this type of training.[8] These negotiations were completed July 25, the Civil Aeronautics Administration agreeing to supply 3,000 Class B preliminary graduates by September 15, 1942.[9]

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4. Daily Diary, AAFFTC, Aug. 19, 1942
5. Ibid., Aug. 26, 1942
6. AG,AAFFTC to CG's, TC's, Aug. 7, 1942, in AAFFTC Files.
7. Project Book of the CG,AAFFTC.
8. AG,AAFFTC to CG's, TC's, Aug. 7, 1942, in AAFFTC Files.
9. Memo for the Assistant Secretary of War by C/AS, Oct. 13, 1942, in AAG 353.9 B, Training--C.A.A.

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Plans for Advanced Training. The glider pilot training program during the summer of 1942 was in a state of flux, constant changes in the method of accomplishment being necessitated by revised objectives and the shortages of materiel. Actually, training had limped along as materiel became available. Throughout this period plans had been made to implement advanced training, but up to September no advanced training whatsoever was given on fifteen-place tactical gliders simply because these gliders were not coming off the production lines. Glider students were being processed as far as possible and were accumulating in great numbers awaiting the advanced stage of training. As early as June the Flying Training Command began to make definite preparations to implement this training as soon as possible. On the twentieth of that month it requested the Materiel Command to make arrangements in order that pilots could be sent from each training center to Wright Field for instruction on the fifteen-place glider. This was necessary in order to insure that in each training school there would be at least one pilot with experience in flying this ship.[10]

On July 17, 1942, the Materiel Command asked the Flying Training Command to reconsider its request. The Materiel Command stated that although a glider field was being established at Wilmington, Ohio, it could not be used for large gliders until the field was expanded, and it would not be ready for operations until about November 1. In the meantime glider flying would continue at Wright Field, but

> Operations of gliders at Wright Field at the same time that experimental airplanes are flying constitutes a dangerous condition and seriously handicaps normal operations of both the gliders and airplanes. To operate a glider pilot training school off Wright Field would aggravate an already serious condition. Only two 15-place experimental gliders have been delivered to date. These are being used to get the handling characteristics, cooling data and range information while being towed by various airplanes contemplated for tug airplanes. It is estimated that within the next few months approximately 15 different airplanes will be tested for suitability as glider tugs. Pilot indoctrination cannot be carried out on the two gliders at the present time by delaying the experimental development program. . . .[11]

Consequently, the Materiel Division suggested an alternate plan. This plan entailed sending the first production fifteen-place gliders to one of the established glider schools such as that at Lockbourne, Ohio. The instructors from the training centers would be sent to this field for pilot indoctrination, and the Glider Unit, Aircraft Laboratory, Experimental Engineering Section would make available two glider pilots on temporary loan for thirty days to act as instructors.[12]

On July 24, the formal plan for the initiation of the advanced glider program was presented by the Director of Individual Training. The plan contemplated that:

a. The Materiel Command be required to furnish two or more competent 15-place glider pilots to the Flying Training Command as soon as production model 15-place gliders are available. These glider pilots are to to be used for
   (1) Ferrying approximately the first 10 gliders from the factory to Air Force Advanced Glider School at Lockbourne, Ohio.
   (2) For instructing Flying Training Command glider pilots in piloting the 15-place gliders.

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10. AG,AAFFTC to CG,AFAMC, June 20, 1942, in AAG 211 B, Officers, Titles and Grades.
11. 1st Indorsement (Executive,AFAMC to Technical Executive, Wright Field, June 27, 1942), AFAMC to AAFFTC, July 17, 1942, in ibid.
12. Ibid.

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As soon as the gliders have been delivered to Lockbourne and a sufficient number of instructors have been qualified to insure continuation of the instructors school, the glider pilots from the Materiel Command will be returned to Wright Field.

b. The Troop Carrier Command be required to furnish C-47 type transport airplanes, with proper towing attachments and competent crews for:
   (1) The ferrying of 15-place gliders from the factory to the instructors school at Lockbourne.
   (2) For the conduct of the instructors school at Lockbourne.
   (3) The ferrying of additional gliders from the factory to other advanced glider schools.
   (4) For towing gliders at advanced schools.
   (5) It is further recommended, in the event that it has not already been done that the Troop Carrier Command send at least 10 crews to the Materiel Center for instruction in glider towing operations. It is recommended that this be accomplished as early as practicable and in any event in sufficient time to insure an adequate number of towing crews being available by August 10th.

c. The Director of Base Services be charged with providing necessary ballast (approximately 600 lbs. per 15-place glider) at the factory at Wichita, at a rate comparable to the delivery rate of the gliders . . . .[13]

This plan was immediately concurred in by the Director of Ground-Air Support and the Director of War Organization and Movement, provided that the Troop Carrier Command's commitment would not exceed one group.[14] The concurrences of the Troop Carrier and Materiel Commands were also secured, and arrangements were made with the Commanding Officer of the Troop Carrier Command for the instruction of tow plane crews in glider towing operations.[15] On August 1 the Chief of the Air Staff approved the plan and instructed the Director of Individual Training to issue the necessary directives to implement the program.[16] Accordingly, on August 7, 1942, a formal directive was issued to the Flying Training Command requesting that immediate action be taken to put the advanced glider training program into effect.[17]

Fifteen-Place Glider Production. At the time this plan was promulgated, it was estimated that the first deliveries of the CG-4A glider, the fifteen-place glider, from the Cessna plant would occur August 10.[18] The delivery date was soon revised to the twelfth or fifteenth,[19] and a few days later the Materiel Command advised that the gliders would be delivered August 21, delay being caused by difficulty in securing certain raw materials.[20] Actual delivery of the first CG-4A glider came on September 1, 1942.[21]

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13. R&R, AFRIT to C/AS through AFRGS, AFROM, AFAMC, and Troop Carrier Command, July 24, 1942, in AAG 353.9 C, Glider Training. (Troop Carrier Command hereinafter cited as AFTCC).
14. R&R No. 2, AFRGS to AFROM, July 24, 1942, and No. 3, AFROM to AFTCC, July 26, 1942, in ibid.
15. R&R No. 4, AFRGS to AFAMC, July 27, 1942, and No. 5, AFAMC to C/AS, July 29, 1942, in ibid.
16. R&R No. 6, C/AS to AFRIT, Aug. 1, 1942, in ibid.
17. AFRIT to CG,AAFFTC, Aug. 7, 1942, in ibid.
18. Ibid.
19. AFRIT to CG,AAFFTC, Aug. 4, 1942, in ibid.
20. Daily Dairy, AFRIT, Aug. 14, 1942.
21. Ibid., Sept. 1, 1942.

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The responsibility for the delay in the production of the fifteen-place glider cannot be laid at anyone's doorstep; the glider production program was a victim of circumstances. Early in the spring of 1942 the Materiel Command was directed to secure 1,500 fifteen-place gliders by October 1, 1942, and an additional 1,500 by the end of the year. From the beginning of the production program the Materiel Command realized that it was practically impossible to meet the fifteen-place glider requirement, but it was informed that strategically the project was most urgent and that the production schedule must be met.

The glider procurement program, moreover, had to be accomplished without interference with the airplane production program. Accordingly, the Materiel Command utilized every potential resource, calling on many small companies which had had no experience in building gliders, and often aircraft of any kind.[22]

Throughout the summer of 1942 the glider manufacturers experienced extreme dificulty in securing the necessary raw materials. Early in June, "on the insistence of the Commanding General of the Army Air Forces," gliders were removed from Group VI and placed in Group I of the Aircraft Preference List.[23] This alone illustrates the importance attached to the glider program, as previously only four-engine heavy bombers had been assigned to this priority.[24] But gliders did not enjoy this position for very long, and despite the continued efforts of the Materiel Command, the priority rating accorded to gliders was continually shifted from one category to another by changing priority directives. This situation resulted in production delay, manufacturers' plants being swamped with partially fabricated gliders which they were unable to complete.[25]

The situation was doubly complicated by the fact that some of the smaller companies were poorly managed and financed. Their contribution to early fifteen-place glider production proved to be almost negligible. The larger manufacturers such as Cessna and Ford, however, were better able to avail themselves of the assistance of the Materiel Command on engineering and materiel problems.[26] In order to expedite production, Cessna was particularly aided by the Materiel Command, even to the extent of upsetting other aircraft programs.[27]

Tow Plane Requirements. But constant delay in the procurement of gliders was not the only materiel problem that hindered the accomplishment of the advanced glider program. Transport airplane production of the Douglas plant was committed through 1942, and Troop Carrier groups, whose responsibility it was to furnish the tow planes for advanced glider training, were being committed to active theaters as soon as they were trained.

As early as the last of April, 1942, the Flying Training Command began to request tow planes for the time when nine-and fifteen-place gliders would become available.[28] On June 8 the Command requested that the Director of War Organization and Movement make available 60 C-47's, or 90 of a type plane capable of towing two cargo type gliders, or 180 of a type able to tow one of these gliders.[29]

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22. Memo for the Under Secretary of War by Brig. Gen. B. E. Myers, April 14, 1943, in AAG 452.1, Gliders.
23. Memo for Joint Aircraft Committee by General Myers, June 5, 1942, in ibid.
24. CG,AFAMC to CG, Materiel Center, June 5, 1942, in AAG 452.1 B, Gliders.
25. Memo for Joint Aircraft Committee by CG,AFAMC, Sept. 11, 1942, in AAG 452.1 C, Gliders.
26. Asst. CS,AFAMC to Air Inspector, Feb. 13, 1943, in AAG 452.1. Gliders.
27. Memo for CG,AAF by CS,AFAMC, Aug. 25, 1942, in AAG 452.1 B, Gliders.
28. AG,AAFFTC to AFRIT, April 25, 1942, in AAG 452.1 A, Gliders.
29. 3rd Indorsement (AG,AAFFTC to CG,AFAMC, May 28, 1942), AAFFTC to AFROM, June 8, 1942, in ibid.

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This request illustrates one of the fallacies upon which the glider training objective was founded. When the program was planned and the tables of organization established, it was believed that large transport airplanes would be capable of towing three fully equipped and manned cargo gliders at the same time. During June, 1942, the Experimental Engineering Section at Wright Field conducted flight tests with a C-47 towing two fifteen-place gliders. It was found that "the estimated take-off run was 4000 feet. The estimated distance to clear a fifty foot obstacle was 6000 feet. Climb was very slow, the maximum altitude attainable was 3500 feet above sea level. During a period of this tow, engine temperatures exceeded those permitted." Although action was immediately taken to improve the cooling of the C-47 engine, the Materiel Command believed that towing three fully loaded CG-4A gliders would be impossible and that towing of two seemed questionable from a tactical standpoint.[30]

The Flying Training Command's request for tow planes had been referred to the Air Transport Command,[31] but that Command replied that "the tactical commitments of the Command, under the specific directives from General Arnold, have been so integrated with the available and expected aircraft of both C-47 and C-53 types as to make it impossible to provide the towing aircraft."[32] The Flying Training Command replied that if the required aircraft were not furnished, it would be impossible to give glider pilots transition training and thereby complete their training.[33] In an effort to alleviate the situation, the Director of War Organization and Movement requested information from the Materiel Command as to what other types of planes had been tested as prospective glider tugs.[34] At this time, mid-June, only the B-23 and the C-47 had been tested, but it was expected that tests on the AT-10 and the AT-11 would be completed by the end of July.[35] By June 24 the prospect for tow planes had not changed. The Flying Training Command was informed by the Director of War Organization and Movement that

> All C-47 airplanes are now being assigned to a high priority project. There are only 24 B-23 airplanes and the present uses of them, mainly towing targets, proving ground tests, and transportation for the staffs of Air Forces makes it inadvisable to reassign them for glider training. As soon as the suitability of available types of airplanes for towing nine-place and fifteen-place gliders has been determined, this Headquarters will take the necessary action to provide them.[36]

As the Flying Training Command obviously could not conduct advanced glider training without the necessary tow planes, a conference was called in Washington the week of July 12 to 19 to work out a feasible solution. It was participated in by the Commanding Officer of the Troop Carrier Command, the Director of Ground-Air Support, and the Director of Individual Training. The conference decided that one Troop Carrier group, the 61st, would "be delayed in its movement program in order to provide aircraft and pilots for the towing of large gliders for the purpose of training glider pilots and transport pilots in such work." This group was to be available prior to July 25, 1942, but the increased delay in the delivery of fifteen-place gliders made it unnecessary for the Troop Carrier Command to furnish the planes at this time.[37]

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30. Inter-office Memo, Materiel Division for CG,AFAMC by Chief, Experimental Engineering Section, June, 1942, in AAG 452.1 B, Gliders.
31. On June 20, 1942, the Air Transport Command was renamed the Troop Carrier Command and the Ferrying Command became the Air Transport Command.
32. CS, Air Transport Command to AAFFTC, June 6, 1942, in AAG 452.1 A, Gliders.
33. 1st Indorsement (CS, Air Transport Command to AAFFTC, June 6, 1942), AAFFTC to AFROM, June 15, 1942, in ibid.
34. 2nd Indorsement (CS, Air Transport Command to AAFFTC, June 6, 1942), AFROM to CG,AFAMC, June 18, 1942, in ibid.
35. 3rd Indorsement (CS, Air Transport Command to AAFFTC, June 6, 1942), AFAMC to AFROM, June 21, 1942, in ibid.
36. 4th Indorsement (CS, Air Transport Command to AAFFTC, June 6, 1942), AFROM to CG,AAFFTC, June 24, 1942, in ibid.
37. CS,AFTCC to CG,AAF, July 21, 1942, in ibid.

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Training Glider and Liaison Airplane Requirements. While the implementation of the advanced training program was delayed, the training that was being carried on during July was also hampered by the lack of adequate materiel coupled with a dearth of civilian glider instructors. The delivery of converted and cub type airplanes and sailplanes was not sufficient to meet current glider pilot quotas.[38] The materiel situation was further complicated in July by the decision that two-place sailplane gliders were only of limited value in training. Further production of these was discontinued, and as all future training was to be accomplished in three-place converted cubs, the demand for this type craft became even more urgent.[39] Even though the objective had been halved, the Flying Training Command needed an additional ninety L-1A or similar type plane for elementary and basic training immediately and another ninety by August 15. These planes were requested July 27.[40] On the third of August the Director of War Organization and Movement replied that a maximum of only 120 additional L-1 or L-1A planes could be furnished. These ships were now assigned to observation organizations, and due to a lack of suitable replacements, they could not be transferred at a rate of higher than twenty-five a month. The Command was told that the additional small tow plane requirements must be met by conversion of training type airplanes already assigned to it.[41]

Instructor Requirements. Since the implementation of the glider training program, the lack of adequately qualified civilian instructors had constituted a serious drag on the accomplishment of the glider objective. Glider flying in the United States was a comparatively new art, and only those few men who had been interested in soaring as a sport were familiar with the technique of flying gliders. As gliding before the war had been developed principally in Germany, many of these soaring experts were of German extraction or had extensive connections in that country. This factor naturally made it even more difficult to secure the necessary instructors. Many of these civilian soaring enthusiasts were employed in the contract schools, and as, especially in the early days of the program, the actual instruction had been left almost entirely to their discretion, the schools were turning out graduates qualified in soaring but with comparatively little practice in the techniques, as they were later developed, requisite for combat glider flying. The rapid expansion of the program even more seriously complicated the problem, so finally in July the Flying Training Command decided to employ qualified graduates of the glider schools as instructors. The Materiel Division was requested to negotiate the necessary change orders,[42] and this was accomplished by the middle of August.[43]

Summary. With the revision of July 18, 1942, the glider pilot training program progressed to a new phase. The basic operating policies, with a few exceptions, had already been established during the period of rapid expansion. After July the major factors influencing the course of the program were the availability of materiel, particularly gliders and tow planes for advanced training, and later, the development of combat glider tactics and techniques. During the time the revision of July 18 was in effect, the lessons learned from previous training began to exert a more definite influence, for example, the deletion of thermal soaring and auto and winch tow from the training program, and the development of a new type of training glider. In this period plans for the four-stage training program, the training plan that continued until the reduction of glider pilot training, were established. With the promulgation of the plan for advanced training, the training program had theoretically attained its final type form.

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38. Project Book, CG, AAFFTC.
39. R&R, AFRGS to AFAMC, July 25, 1942, in AAG 452.1 B, Gliders.
40. Asst. AG,AAFFTC to CG,AAF, July 27, 1942, in ibid.
41. R&R No. 2, AFROM to AFRIT, Aug. 3, 1942, in ibid.
42. CG,AAFFTC to CG,AFAMC, July 13, 1942, in AAG 353.9 C, Glider Training.
43. Contract Section, AFAMC to CG,AFAMC, Aug. 14, 1942, in ibid.

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Chapter VI

THE AUGUST 10, 1942, REVISION OF THE GLIDER PILOT TRAINING OBJECTIVE

Sudden Revision of Objective. As a result of figures compiled by the recently established Office of Program Planning and Control, another upward revision of the glider pilot training objective occurred August 10, 1942. This unexpected new directive called for the training of 7,800 glider pilots by March 1, 1943, instead of the 6,000 that would have been produced by that date under the revision of July 18. Glider pilot training was to be stabilized at the rate of 12,000 graduates a year thereafter.

The Flying Training Command immediately proceeded to effectuate this new program. It could only be accomplished by the fabulous graduation rate of 700 pilots every two weeks until February 17, 1943, an annual rate of approximately eighteen thousand. Thereafter, the annual rate was to be reduced to 12,000, 462 trainees graduating every two weeks.[1] The training centers were instructed to enter every two weeks, beginning August 28, a total of 869 students for the elementary course, 816 students for the basic course, and 776 students for the advanced course.[2]

As the Civil Aeronautics Administration would not be able to meet the requirements of the new directive immediately with graduates of its elementary flying course, the Southeast Training Center conducted four classes beginning August 31 of 665 students each at its seven Preliminary Light Airplane Gliding Schools.[3] On September 2 the Director of Individual Training requested the Civil Aeronautics Administration to enter students in its preliminary course in sufficient numbers to supply 540 graduates for elementary training every two weeks after December 4, 1942,[4] for a grand total of 16,440 glider trainees.[5] After the necessary flow from the C.A.A. schools had been established, the Preliminary Schools in the Southeast Training Center were to be closed.[6]

The course of instruction was established at 12 weeks, 100 hours for Class A students, and 16 weeks, 130 hours for Class B students. Class B students received thirty hours at Preliminary Schools. Both Class A and Class B students were to be given thirty hours in dead stick landings at Elementary Schools and thirty hours in basic training gliders at the Basic Schools. At this time it was planned that the advanced course would consist of forty hours on cargo gliders. In the interim before the new training program was to go into effect, training continued under the former plan.

Establishment of Schools. Aside from the 7 Preliminary Schools in operation, there were 8 Elementary Schools and 9 Basic Schools. Three of these Basic Schools were scheduled to close about October 1, but arrangements were made to open four others.[7] As advanced training was scheduled to begin on a permanent basis on October 1, the Flying Training Command estimated that seven stations for this type of training had to be in operation by that date. In the West Coast Training Center they included Fort Sumner, New Mexico, and a new site yet to be designated. In the Gulf Coast Training Center, Dalhart, Texas, and two more new stations were necessary, while in the Southeast Training Center, Walnut Ridge, Arkansas, and Stuttgart, Arkansas (Lockbourne, Ohio, being transferred there about the first of October), would have to be in operation.[8]

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1. AFRIT to CG,AAFFTC, Aug. 10, 1942, in AAG 353.9 A, Glider Training.
2. Daily Diary, AAFFTC, Aug. 17, 1942.
3. Memo for A-4,AAFFTC, by Col. W. R. Carter, Aug. 15, 1942, in AAFFTC Files.
4. Daily Diary, AFRIT, Sept. 2, 1942.
5. Memor for Assistant Secretary of War by C/AS, Oct. 13, 1942, in AAG 353.9 B, Training--C.A.A.
6. AG,AAFFTC to CG,GCAFTC, Aug. 20, 1942, in AAFFTC Files.
7. Project Book of the CG,AAFFTC.
8. AG,AAFFTC to CG,AAF, Aug. 31, 1942, in AAG 353.9 A, Glider Training.

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Actually, all of these schools were not activated, as they were never required due to the delay in the delivery of advanced equipment and subsequent maintenance difficulties. In October Stuttgart, Arkansas, and Lubbock, Texas, were in operation, and in November Dalhart, Texas, and Victorville, California, entered trainees into the advanced stage. Fort Sumner, New Mexico, remained a Basic School, Walnut Ridge, Arkansas, was never used, and the third school in the Gulf Coast Training Center was never activated.[9]

Training by the Civil Aeronautics Administration. Around the first of September the new four-stage glider training program went into effect. Preliminary training, except for the four classes conducted in the Southeast Training Center, was now delegated to the Civil Aeronautics Administration. The full utilization of the facilities of the Civil Aeronautics Administration by the Army Air Forces enabled the Flying Training Command more efficiently to carry out its training commitments--both power and glider pilot. The trainees were enlisted in the Air Corps Enlisted Reserve, and after completion of C.P.T. training were called to active duty for glider pilot training. Students were given the eight-week C.P.T. elementary course, which consisted of 240 hours' ground school instruction and 35 to 45 hours' flight instruction in 50 to 65 h.p. aircraft.[10]

As was the case throughout all phases of the war training program, the C.A.A. soon found that it could not entirely meet its assigned quotas. By September 24 approximately two thousand graduates had been assigned to Flying Training Command stations, but as the Command had been previously informed of this delay, it had been able to make adjustments accordingly.[11] When the Civilian Pilot Training graduates began flowing to the glider pools, it was found that many of them did not meet the requisite physical qualifications or that they had been graduated with insufficient flying training. Of 2,185 trainees examined at the glider pools through October 10, 15.88 per cent were found to be physically disqualified.[12] On another occasion it was necessary to return seventy-one trainees to the C.P.T. for further training.[13] In accordance with a later reduction of the glider pilot objective, early in October C.P.T. glider pilot training was curtailed, and procurement of additional trainees discontinued.[14] Training continued, however, through November and December, with final delivery of trainees about January 15, 1943.[15]

Elementary Program of Instruction. The new elementary training course for both Class A and Class B students was established at thirty hours' flying time within four weeks. The stated objective was to produce a pilot "proficient in the flying of light airplanes, both with power on and with power off. The trainee must understand the fundamentals of airplane flying and must become accustomed to making stall and wheel landings with ignition off both night and day, and must be qualified to service equipment in the field." The defined scope was similar to that of the old preliminary course for Class A students except that "military training to further the trainee's appreciation of the necessity for strict compliance with instructions, and prepare him for the duties and responsibilities of an officer," and "physical training to maintain and improve physical and mental alertness" were added.

The flying training was prescribed at a minimum of 30 hours, 13 1/2 dual and 16 1/2 solo. Night flying was to occupy at least five of the thirty hours. As the number of prescribed hours was definitely limited, the ratio of dual to solo might be changed in accord-

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9. Consolidated Flying Training Report, Nov., 1942, in AFIHD Files.
10. Proposed AAF Memo 50- , Oct. 30, 1942, in AAG 353.9 B, Training--C.A.A.
11. Memo for Assistant Secretary of War, by C/AS, Oct. 13, 1942, in ibid.
12. Daily Diary, AAFFTC, Oct. 17, 1942.
13. Daily Diary, AFRIT, Oct. 28, 1942.
14. Ibid., Oct. 29, 1942.
15. Ibid., Dec. 24 and 25, 1942.

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ance with the ability of the individual student. Night flying was to be concentrated in the last third of the program with emphasis on landings from 500, 800, and 1,000 feet. After the first hour of dual, all landings were to be made with the ignition turned off.[16]

Basic Program of Instruction. The new thirty-hour, four-week basic course was similar in many ways to the first half of the old elementary-advanced course. Its objective and scope were defined in the same manner, except, as in the new preliminary course, military and physical training were added. The general flight plan was as follows:

	Dual	Solo	Total
Familiarization	2		2
Precision landings, basic maneuvers, and precision flying.	5	8	13
Soaring (Weather and equipment permitting, otherwise distribute time as needed).	1	1	2
Instrument time under the hood in free flight.	1		1
Night Flying.	2	4	6
Navigational flights and strange field landings. 'Cut-off point' to be maximum distance from landing field.	2	4	6
Total	13	17	30

The ratio of dual to solo time depended on the progress of the individual students. Students were also required to have a minimum of three passenger hours in the tow ship, and ten hours of Link trainer instruction.[17] The Director of Base Services had been requested to provide the Basic and Advanced Schools with Link trainers at a minimum ratio of three for each 100 students.[18]

Ground Program of Instruction. A new ground training program was established, coordinated between the three stages given at the Air Force schools. In elementary 117 hours were to be devoted to ground training, 24 to military, 55 to ground training, 11 to medical training, 24 to physical, and 3 to line maintenance. The fifty-five hours of ground training included weather, chemical warfare, and code and blinker communications. The military program included instruction in close order drill, ceremonies, inspections, military courtesies and customs of the Service, War Department publications, and safeguarding military information.

The basic ground school prescribed 106 hours of training to be distributed among 24 of military, 46 of ground, 9 of medical, 24 of physical, and 3 of line maintenance. In the ground phase, meteorology, map reading and navigation, glider characteristics, code and blinker communications, and instruments were included. The military program included close order drill, ceremonies, inspections, military courtesies and customs of the Service, interior guard duty, and military correspondence.[19]

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16. Directed Program of Elementary Glider Training, Jan. 15, 1943, in AAFFTC Files.
17. Directed Program of Instruction for Basic Glider Training, Jan. 15, 1943, in AAFFTC Files.
18. Daily Diary, AFRIT, Aug. 14, 1942.
19. Directed Program of Instruction in Ground Training in Elementary-Basic-Advanced Glider Schools, Jan. 15, 1943, in AAFFTC Files.

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From an examination of these programs it is evident that a more concentrated effort was being devoted to preparing the prospective glider pilot for his duties as a member of the military establishment. Many of the trainees entered the glider program directly from civilian life, and the only basic military training they received was incidental to their training as glider pilots. For this reason, it had been found that many of the early graduates, although qualified in glider flying, possessed little knowledge or training in the qualifications and duties of military personnel.

Aside from Technical and Field Manuals, the schools were still almost entirely without standard texts and detailed breakdowns of programs of instruction. One exception may be found in the meteorological instruction at the Elementary and Basic Schools. While glider training was operating under the preceding program, Captain B. L. Wiggen of the Office of the Director of Weather made a tour of inspection of the glider schools for the express purpose of coordinating and standardizing meteorological instruction.[20] As a result of this tour, Captain Wiggen drew up a comprehensive and standardized syllabus of weather instruction; the elementary was implemented at the schools in September,[21] and the basic in October, 1942.[22]

Advanced Instructors' School. As it was necessary to initiate advanced training as soon as possible, and since delivery of the fifteen-place glider was expected daily throughout August, on the twenty-third of that month the Flying Training Command was instructed to order fifty power pilot graduates of the basic course to Lockbourne, Ohio, for transition training on the cargo glider. Fifteen of these future instructors immediately proceeded to Lockbourne, and forty-five more, for a total of sixty, soon followed.[23] Although these men were vitally needed at the training centers, they bided their time at Lockbourne until the arrival of the gliders. By the middle of September the transition training of these men had been accomplished, and after ferrying the gliders to the new Advanced Schools, they returned to their former stations. These men were distributed among the Advanced Schools and became the backbone of the advanced glider training program.

The fifteen-place CG-4A glider was an entirely new military machine, both to the glider pilots and to the pilots of the 61st Troop Carrier Group who provided the towing. It was their responsibility to establish an operational and transition training procedure as well as correct towing methods. Actually, the CG-4A proved to be a comparatively simple craft for an experienced power pilot to fly, and the transition training of these future instructors consisted of about two hours of checking off in the new glider. It would appear from conversations with men who attended the Lockbourne school that the entire instructors' course was characterized by argument and disagreement, and that considerable time was lost due to a lack of cooperation between the glider pilots and the Troop Carrier pilots. This condition, that first manifested itself here, seems to have been prevalent throughout the whole program.

Inauguration of Advanced Training. As soon as these sixty instructors had finished their training and personnel had been provided for the Advanced Schools, the advanced training course was at last implemented. Instead of the previously planned forty-hour course, training was decreased to fifteen hours.[24] As was the case throughout the entire glider program, the actual method of instruction was left to the discretion of the director of training and his instructors at the individual schools. No attempt was made at first to adhere to established flow charts; men were trained as available equipment permitted.

Program of Instruction. The usual program of instruction outlining the required minimum training was established for the fifteen-hour, two-week advanced glider course on September 21, 1942. It had as its objective the production of a glider pilot "qualified to operate cargo gliders in the various types of towed flight, both night and day,

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20. AG,AAFFTC to CG,AAF, July 17, 1942, in AAG 353.9 B, Training, Meteorology.
21. AG,AAFFTC to CG,AAF, Aug. 28, 1942, in ibid.
22. Daily Diary, AAFFTC, Sept. 19, 1942.
23. Teletype 916G, CG,AAFFTC, to CG,AAF, Aug. 25, 1942, in AAFFTC Files.
24. Teletype, CG,AAFFTC to CG,SEAFTC, Sept 15, 1942, in ibid.

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and . . . qualified to service gliders in the field." The scope of the course was defined as "qualifications in the art of glider flying to include airplane tow, with particular emphasis on spot landing proficiency, and night flying. Qualification in the assembling, loading, and general maintenance of gliders and the towing gear."

The flight school instruction was established as follows:

	Dual	Solo
Familiarization flight	1/2	
Tow technique, take-off, climb, climbing turns; straight and level tows, recovery from bad tow position, to include prop wash.	1	1
Coordination exercises.	1/2	1/2
Stalls, partial and complete with immediate recovery, from straight glides and gliding turns.	1	1
Precision flying, stress constant air speed.	1	1
Landings, including use of brakes and nose skid for short roll.	1	1
Accuracy landings, 180° stage.		1
Descent on tow from 3000 feet to 180° side position.	1/2	1/2
Night flying.	1	2
Final check.		1/2

It was specified that the last five hours of day and the last hour at night should be flown with gross load.[25]

The twenty-five-hour ground school course prescribed subjects that heretofore had not been taught. Technical Manuals and Field Manuals were designated as texts. Ten hours were to be devoted to maintenance of gliders and tow equipment. The students were to do servicing and minor repairs, as it was contemplated that they would have to perform this function in the field. The program prescribed five hours for tactical maps and aerial photographs. To aircraft identification six hours were allotted, and two to camouflage.[26] During the early experimentation with the cargo glider, it had been decided that in combat operations some of the craft in the glider echelon would transport a jeep and six men. Consequently, in May, 1942, the Flying Training Command had been instructed to include instruction "in operation, servicing, and minor maintenance of the jeep including the most efficient method of loading, storing, and unloading jeeps from 15-place gliders."[27] Mock-ups of the fifteen-place glider were provided to facilitate the two hours' instruction to be devoted to this type of training.[28]

25. Program of Instruction for Advanced Glider Schools, Sept. 21, 1942, in AC/AS, Training Files.
26. Ibid.
27. Daily Diary, AFRIT, May 18, 1942.
28. R&R, AFAMC to AFRIT, July 23, 1942, in AAG 452.1 B, Gliders.

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In implementing the advanced course, the directors of training at the Advanced Schools soon found that they could not adequately prescribe methods of training without information as to the type of training to be given by the Troop Carrier Command, the ultimate mission of the glider pilot, and the ground duties he might be called on to perform. These functions were not known in the Headquarters of the Flying Training Command; they had not been worked out in the Troop Carrier Command nor in Washington. The Flying Training Command felt, however, that the schools should not concern themselves with more than limited transition training and ground school--the short fifteen-hour course precluded more extensive training.[29]

Shortage of Gliders and Tow Planes. By the end of September the Flying Training Command realized that it could not possibly meet the training objective as determined by the directive of August 10, 1942. The plan as originally established had "contemplated entering 737 advanced glider students every two weeks, for a four week course of 40 hours on CG-4A gliders, and would have required 369 gliders and 369 tow planes." When the course had been reduced to fifteen hours, the situation had been helped considerably, only 154 gliders and 154 tow planes being required. But by this time the Command had received information that only ninety gliders and fifty-two planes were to be furnished. Furthermore, as one squadron of tow planes was to be used for ferrying purposes, only thirty-nine tow planes would be available to conduct the entire advanced training program. Experience had demonstrated that one tow plane could not provide towing for more than five students in each class. It was estimated, therefore, that the thirty-nine tow ships would not enable training of more than 195 glider pilots every two weeks or approximately forty-eight hundred glider pilots a year, allowing for 5 per cent elimination.

The situation was doubly complicated by the fact that the 18,000 a year training rate had already been instituted as far as procurement of personnel was concerned, The Preliminary and Elementary Schools were already operating at this rate. Basic Schools were operating at the rate of about 10,000 a year, but were being rapidly expanded as fast as the necessary equipment was received. Naturally, this condition led to the accumulation of vast numbers of partially trained students for whom no advanced training was available. The Flying Training Command had met the situation by accumulating these students in two glider pools, one for those awaiting basic training and one for those awaiting advanced.

The necessity for the establishment of an integrated program was obvious; therefore the Flying Training Command proposed two solutions. Either action must be taken to increase the capacity of the Advanced Schools by providing the necessary equipment, or the glider pilot objective must be reduced to an extent to enable the absorption of those already in training while at the same time drastically cutting off the flow of students entering training.[30] The effort to deal with this situation occasioned another revision of the glider pilot training objective.

Summary. Throughout the fifty-one days that the revision of August 18, 1942, remained in effect no major new or unplanned policy changes occurred. The period was characterized by implementation and adjustment of the new four-stage program. But with the commencement of advanced training, indications of later changes and influencing factors relative to training began to appear. Among these was a consciousness of the eventual mission of the glider pilot and the need for a training program designed toward this end. But the availability of materiel remained the dominating determiner, both in possible pilot production and in the resultant serious problem of rapid accumulation of partially trained students in pools.

29. 2nd Indorsement (CO, South Plains Army Flying School to CG,GCAFTC, Sept 12, 1942), AG,AAFFTC to CG,GCAFTC, Sept 24, 1942, in AAFFTC Files. (South Plains Army Flying School hereinafter cited as SPAFS).
30. CG,AAFFTC to CG,AAF, Sept. 30, 1942, in AAG 353 A, Glider Training. See Appendix B.

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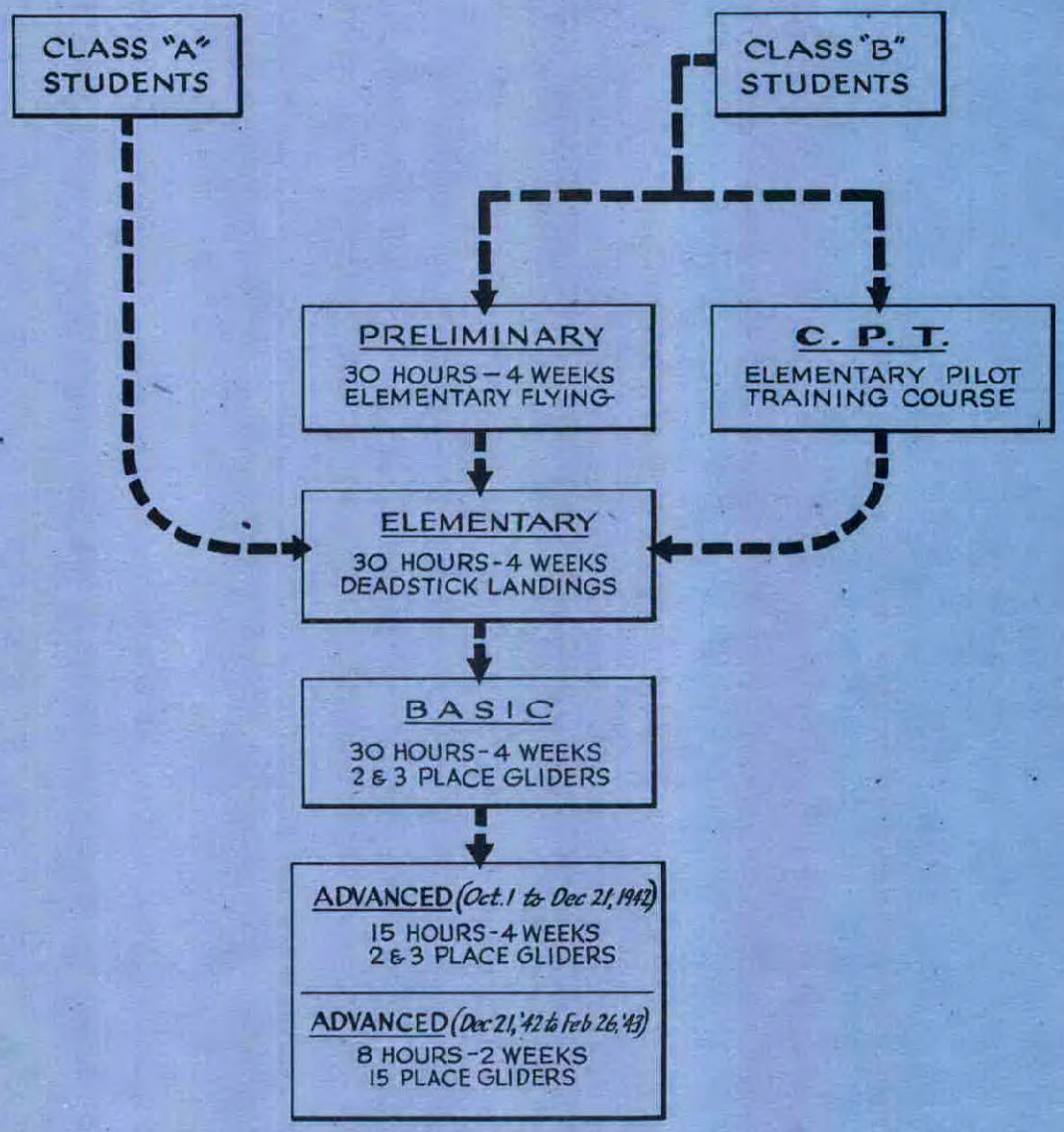
FLOW OF STUDENTS THROUGH GLIDER SCHOOLS

SEPT. 14, 1942 – FEB. 26, 1943



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