

OFFICE OF CIVILIAN DEFENSE
CIVIL AIR PATROL

TRAINING DIRECTIVE)
NO. 22)

NATIONAL HEADQUARTERS
WASHINGTON, MARCH 23, 1942

AVIATION COMMUNICATIONS

I. General

The purpose of this course is to give Command and Staff Officers and Flight Personnel of the Civil Air Patrol an understanding of the requirements of radio communications for the Patrol and also a knowledge of the requirements of a signal communications system for the Air Forces.

2. Text

The text material presented on the following pages will be supplemented by Air Corps Field Manual (FM 1-45) - Signal Communication - published by the War Department.

3. Distribution

Copies of this Directive and Text will be distributed on the basis of four copies per Headquarters.

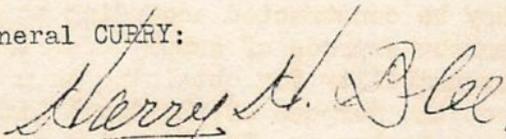
4. Requirement

All Command and Staff Officers and all Flight Personnel are required to take this course.

5. Instruction Procedure

In addition to required individual study of the text, there will be eight classroom instruction periods of one hour each which will include lectures, general discussion, and questions covering this subject.

By Command Of Major General CUBRY:



HARRY H. BLEE
Colonel, Air Corps
Training & Operations Officer

RADIO COMMUNICATION AND DUTIES OF COMMUNICATIONS OFFICERS1. Purpose

Adequate two-way radio telephone communication is absolutely necessary to carry out successfully Civil Air Patrol flight missions. Without radio communication the purpose of such missions is essentially defeated before they are started. Therefore, experience has indicated that all such systems of communication must be standardized to such extent that they will function in practically the same manner in all Wings of the Civil Air Patrol. It is recommended that all Communications Officers of each Wing and its subordinate units adopt the following rules and suggestions. Should any changes or additional rules be necessary, the information will be incorporated in bulletins that will be supplied from time to time from National Headquarters. All Civil Air Patrol airplanes must be equipped with adequate two-way radio communication, in order to carry out successfully any assigned mission.

2. Available Frequencies

a. Frequencies for radio use in the Aviation Service have been allotted and set up by the Federal Communications Commission and have been operating satisfactorily for some years. There has been no change in this existing communication system and this headquarters has been informed that it will continue without change at least for the present.

b. 3105 Kc is assigned to itinerant aircraft radio-telephone transmitters. This frequency will be used by all Civil Air Patrol Airplanes under proper license by FCC.

c. The frequency spectrum from 200 to 400 Kc has been assigned to the Civil Aeronautics Administration for use in their extensive communication and radio range system.

d. All pilots are familiar with the above and it is not necessary to go into further details concerning the same.

3. Aircraft Radio-Telephone Transmitters

It is recommended that radio-telephone transmitters installed on Civil Air Patrol planes on 3105 Kc be of at least 10 watts power and that they be constructed according to sound engineering principles. There are numerous sources of supply for transmitters coming under this category and responsibility for obtaining them is left to the individual purchaser. It is not the purpose of the Civil Air Patrol to recommend the products of any manufacturer. The decision must be entirely the purchaser's own.

However, if equipment is needed in a hurry for some specific official mission, National Headquarters will attempt to secure a higher priority for the purchaser if in the opinion of the National Commander or Executive Officer such procedure is necessary.

4. Aircraft Radio Receivers

It is recommended that radio receivers installed on Civil Air Patrol planes be constructed according to good engineering principles and that each receiver be capable of receiving on at least the CAA 200 to 400 Kc band. Capability to receive signals on other bands is optional. Responsibility of procuring radio receivers is also that of the individual purchaser in the same manner as indicated under the paragraph "Aircraft Radio Transmitter." FCC License for Radio Receivers are not required.

5. Licensing of Aircraft Transmitters

a. Formal license application blanks may be secured from the Federal Communications Commission, Washington, D. C., and must be filled out according to the rules contained thereon. In the event immediate use is required for some specific Civil Air Patrol duty, address a telegram direct to the Federal Communications Commission, Washington, D. C., requesting immediate temporary telegraphic authority to use a radio-telephone transmitter of (specified) power on 3105 Kc's, installed on (specified) make of plane, State CAA license number, owner's name and address, that the plane is to be used for Civil Air Patrol duty, and authorize the Federal Communications Commission to send answer collect. Permission probably will be granted within twenty-four hours.

b. On the same day the telegram is sent, mail your application and in addition to required information enclose a copy of your telegram and a letter from your Wing Commander substantiating your request. This will further expedite the issuance of your formal license.

6. Portable Mobile Licenses

It is also possible to secure a Portable Mobile License for a 3105 Kc transmitter which may be used on any one of several different airplanes. On your license application give the CAA License numbers and make of each airplane upon which the transmitter is to be used. The Licensee must also be the actual owner of each of these airplanes.

7. Operators License Requirements

Operators of aircraft radio-telephone transmitters on 3105 Kc must possess a valid FCC Restricted Radiotelephone Operator Permit or higher grade license. (See FCC rules and regulations for information on this.)

8. Responsibility of Communications Officers

a. The Communications Officer of a Wing and subordinate units should be a man of executive ability well qualified to handle any communication problem that should arise for that immediate unit. He should be thoroughly acquainted with the existing aircraft to ground radio communications system, as well as the practical possibilities of this set up for his immediate unit; that is, a knowledge of just how far good reliable two-way communication can be carried on in his vicinity.

b. He should secure an assistant who holds a Commercial Second Class Radiophone License (or higher grade) as well as a radio amateur who holds an Amateur Class "A" Operator License. These men will be of invaluable aid to him in keeping the transmitting equipment on the planes of his unit in good operating condition especially if engaged in an active mission. If he by chance should hold any of these licenses himself, so much the better.

c. He should keep a complete and accurate record of all radio equipment on planes in his unit and also post on his Unit's Operation Bulletin Board the frequency, call identifications, services rendered and magnetic range bearings of all CAA Radio facilities within two hundred miles of his base.

d. He should acquaint himself with the Civilian Defense authorities in his community and, together with his Squadron Commander, should inform them of the existence and function of their local CAP unit. He should also acquaint himself with the Managers of the local telephone, telegraph, and radio broadcasting services so that he will know with whom to get in touch in case of emergency. He or his Squadron, Group or Wing Commander should also request a voice in the name of the Civil Air Patrol on his local Defense Council and in the case of Wing Commands on the State Defense Council, informing each of these concerning the duties and function of the Civil Air Patrol.

e. If his unit is asked by the Army Air Forces to perform any specific mission, he should be prepared along with the others of his group to drop whatever he is doing in private life in order to devote all of his time in assisting his unit successfully to carry out the mission. This he should be prepared to do as a patriotic duty to his country. Adequate communication at that time is a vital part of his Patrol Unit and must not fail.

f. It is possible from time to time that his unit may be requested to perform a mission at some point out of range of existing CAA radio facilities. These possibilities will have been investigated at National Headquarters and arrangements will be made to take care of a problem of this nature according to its existing circumstances and he will be informed as to what to do.

g. If he has not done so, he should immediately begin a series of training lectures, preferably in the evening, at some centrally located place where there is a blackboard (school room, Y.M.C.A., etc., in his community). He should assemble all of his personnel, pilots, observers and other interested persons, and in these lectures instruct them how to use existing CAA radio facilities. These instructions should cover all points of aviation radio communications, such as proper calling procedure, filing of flight plans, operation of transmitters and receivers, acknowledgment of instructions transmitted to them by radio, when to call a control tower, the business of maintaining constant watch, and how to handle any and all aviation radio communications problems that may present themselves.

h. These lectures should last from an hour to an hour and a half on several evenings a week and should continue until all members of a unit are thoroughly trained in this important problem. If it will assist certain individuals to identify radio range stations by their transmitted Morse code identification signals, he should ask some local radio amateur to organize a code practice class. This man knows how to do this and will be glad to cooperate.

i. The duties of a Communications Officer are numerous and in cooperation with his Wing, Group or Squadron Commander he should be capable of solving promptly any communications problem that may arise. He should be in complete charge of all communications for his unit, and be entirely responsible to his Commander for the same.

j. It shall be the responsibility of each Wing Commander to appoint an able Communications Officer for his Wing and to see that each of his subordinate Group Commanders appoint an able Communications Officer for their Groups and so on down the line.

k. A Wing Communications Officer should make it his business either to visit or contact in some satisfactory manner each of his subordinate Communications Officers so that he can be sure that each of these men thoroughly understand the duties he is asked to perform as has been outlined herein.

l. It is only by a National standardization of methods of organizing and training CAP personnel that proper coordination of communications can be maintained. All facilities are set up and in working order; it is therefore necessary only that we all know exactly how to use them.