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U. S. DEPARTMENT OF COMMERCE
Civil Aeronautics Administration
Washington



FEDERAL AIRWAYS
MANUAL OF OPERATIONS

AIR TRAFFIC CONTROL DIVISION

CHAPTER C
AIRWAY TRAFFIC CONTROL SECTION

- 0 -

PART 1
STANDARD AIRWAY TRAFFIC CONTROL PROCEDURES AND PRACTICES

- 0 -

EFFECTIVE DECEMBER 1, 1941

PREFACE

An airway traffic control center is responsible for the issuance of information and instructions to pilots of aircraft under its control so as to

- (a) prevent collisions between such aircraft when flying in weather conditions requiring the observance of instrument flight rules and
- (b) minimize delay to aircraft operating in instrument flight rule weather conditions.

The procedures outlined herein are standards provided for the guidance of airway traffic control personnel in connection with the control of air traffic by airway traffic control centers of the Civil Aeronautics Administration. However, if instances arise wherein air traffic can be controlled more efficiently and more safely by deviation from these standards, it is the responsibility of personnel in charge to exercise their best judgment in each individual instance in effecting such deviations.

Although standard phraseologies applicable to the issuance of airway traffic control instructions and information are prescribed herein, it is not practicable to cover every possible situation. It is the intent of these standards that such instructions and information shall be transmitted as clearly and concisely as is possible, and personnel shall govern themselves accordingly.

Personnel shall extend at all times full cooperation and all possible service to the aeronautical public consistent with the performance of their duties.

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Chapter C
Airway Traffic Control Section

Part 1

Standard Airway Traffic Control Procedures and Practices

C1.0 FLIGHT PLAN APPROVAL

C1.00 General: Flight plan approval in the form of a "traffic clearance" shall be issued in accordance with the provisions of Part 60 of the Civil Air Regulations. It should be understood that a traffic clearance issued by an airway traffic control center is authority for a flight to proceed only insofar as known air traffic conditions are concerned and does not constitute authority for a pilot to violate any provision of the Civil Air Regulations.

C1.000 The flight plan concerning a flight in accordance with contact flight rules below 3500 feet above the ground or water may be handled in the same manner as an instrument flight plan insofar as communications facilities will allow, provided, that such handling shall cause no delay to such flight, and provided further, that the altitude level or levels at which the aircraft will be flown are included in the flight plan. Since flights conducted above 3500 feet above the ground or water require flight plan approval, all such flights will require traffic clearance regardless of weather conditions.

C1.001 Ordinarily no traffic clearances will be issued to a pilot having filed a flight plan specifying "CFR" as altitude information, indicating that no specific altitude will be observed but that pilot will conduct flight below 3500 feet above the ground or water in accordance with the contact flight rules.

C1.002 It is expected that aircraft operators utilizing their own radio facilities in relaying airway traffic control clearances will, when necessary, prefix a clearance issued by an airway traffic control center with the abbreviation "ATC" to differentiate between a company clearance and an airway traffic control clearance.

C1.01 Phraseology: Traffic clearances (flight plan approval), traffic control instructions (flight plan amendments), and traffic information shall be issued by an airway traffic

control center in accordance with standard phraseologies as prescribed in Cl.4.

Cl.010 Approving a Requested Change in Approved Flight Plan - When approving a requested change in an approved flight plan the exact nature of the change in flight plan shall be transmitted followed by "approved." Approval of a requested change in altitude shall be accompanied by complete altitude instructions covering the portion of the flight specified in the preceding clearance.

Example: Consider a flight cleared from X to Y, clearance for which was issued, "Cruise at 8000 feet, cross B at 6000 feet, cross C at 4000 feet," and subsequently pilot requests change in cruising altitude from 8000 feet to 10,000 feet. If approved, such change should then be issued as follows: "Cruise at 10,000 feet approved, cross B at 6000 feet, cross C at 4000 feet."

Cl.02 Traffic Clearance:

Cl.020 General - A traffic clearance (flight plan approval) shall cover a specified and limited portion of the control area of the airway traffic control center issuing such clearance, the extent of such portion of the control area depending upon existing traffic conditions, the nature of the flight, and other relevant factors. The point to which an aircraft is granted such a clearance shall be termed a "clearance limit." A clearance limit will be either a point of intended landing (range station, tower or airport), a reporting point (fix or holding point), a boundary point of a control area, "above 17,000 feet" or "below 3500 feet."

Cl.021 Off-Airway Flights or Flights Above 17,000 Feet Above Sea Level - Airway traffic control centers shall not exercise traffic control over air carrier or other aircraft movements which are conducted above 17,000 feet above sea level or which are not conducted within the control area of such airway traffic control center. However, if an air carrier or other aircraft operator has requested in writing to the Civil Aeronautics Administration that an airway traffic control center extend to its aircraft which are operated within the above two categories information pertaining to traffic, such information may be furnished by the center, but no responsibility will be assumed for the control of aircraft not operating within its control area or operating above 17,000 feet above sea level.

Cl.022 Time of Transmission of Clearance from Clearance Limit within Center's Control Area Boundaries - An airway traffic control center issuing a traffic clearance from a clearance limit to which clearance has been granted previously shall forward to the appropriate communications agency a traffic clearance to the next clearance limit at least 5 minutes before the

aircraft is estimated to arrive over or depart from clearance limit to which previous clearance has been issued. (Refer also to Cl.030.)

Example: A westbound aircraft flying from New York to Cleveland is cleared by the New York Airway Traffic Control Center as follows: "Cleared from New York to Allentown," etc. The approval of flight plan beyond Allentown (radio range station) is included in the clearance to the next clearance limit which is forwarded by the center to the appropriate communications agency at least 5 minutes prior to the time the aircraft is estimated to arrive over Allentown.

Cl:0220 When a clearance as described in Cl.022 is issued to an airway communications station of the Administration, such clearance shall bear instructions to the effect that attempt shall be made to transmit the clearance to the pilot concerned at a time which will be at least 5 minutes prior to the time the aircraft involved is estimated to arrive over the clearance limit. The time of transmission of the clearance by the center shall be governed accordingly.

Cl.023 Clearance to Center's Control Area Boundary (Another Control Area Adjoining) - An airway traffic control center issuing a traffic clearance to a boundary point of the center's control area shall specifically define such boundary point in the clearance.

Cl.0230 Time of Transmission of Clearance from Boundary Point of a Center's Control Area - An airway traffic control center issuing a traffic clearance from a boundary point of the center's control area to which clearance has been issued by an adjoining airway traffic control center as prescribed in Cl.023, shall forward to the appropriate communications agency a traffic clearance to the next clearance limit in sufficient time for transmission to the pilot of the aircraft concerned at the time such aircraft reports over or departs from the reporting point preceding the boundary point from which clearance applies, if such boundary point is not a reporting point, provided, that exception may be made as prescribed in Cl.023000. If such boundary point is also a reporting point, the same clearance procedure as described in Cl.022 shall apply.

Examples: (1) A westbound aircraft flying from New York to Cleveland is cleared by the New York Airway Traffic Control Center as follows: "Cleared from Allentown to

25 miles east of Mercer," etc. The Cleveland Airway Traffic Control Center forwards clearance for flight within its control area in sufficient time for transmission by the appropriate communications agency to the pilot concerned at the time aircraft reports over Bellefonte: "Cleared from 25 miles east of Mercer to Parkman," etc.

(2) An eastbound aircraft flying from Pittsburgh to Harrisburg is cleared by the Pittsburgh Airway Traffic Control Center as follows: "Cleared from Pittsburgh to 25 miles west Harrisburg," etc. The New York Airway Traffic Control Center forwards clearance for flight within its control area in sufficient time for transmission by the appropriate communications agency to the pilot of the aircraft concerned at the time aircraft reports over the Cove Valley Radio Range: "Cleared from 25 miles west Harrisburg to Harrisburg Range Station," etc.

(3) A southbound aircraft flying from Philadelphia to Washington is cleared by the New York Airway Traffic Control Center as follows: "Cleared from Philadelphia to 25 miles southwest Philadelphia," etc. The Washington Airway Traffic Control Center forwards clearance for flight within its control area in sufficient time for transmission by the appropriate communications agency to the pilot of the aircraft concerned at or prior to the time aircraft departs from Philadelphia: "Cleared from 25 miles southwest Philadelphia to Washington Range Station," etc.

Cl.02300 When a clearance for flight from a boundary point is issued to an airway communications station of the Administration, such clearance shall bear instructions to the effect that attempt shall be made to transmit the clearance to the pilot concerned at a time which is the time the aircraft involved is estimated to arrive over the reporting point specified in Cl.0230.

Cl.023000 Clearance may be issued to an airway communications station beyond the boundary point if delivery thereof can be effected before flight enters the next control area.

Example: In the case of example number 2 under Cl.0230, the New York Airway Traffic Control Center could have issued clearance through the Harrisburg Airway Communications Station for transmission to the pilot before aircraft entered the New York control area.

- Cl.024 Clearance to Center's Control Area Boundary (No Control Area Adjoining) - An airway traffic control center issuing a traffic clearance to a boundary point of the center's control area where there is no adjoining control area shall advise the pilot of the aircraft concerned "Cleared out of control area _____ miles _____ of _____ (Location)," indicating that after leaving the control area flight is not under control of an airway traffic control center and the pilot will be governed by the procedures prescribed in Part 60 of the Civil Air Regulations applying to flight outside of airway traffic control areas unless another airway traffic control area is entered.
- Cl.025 Defining Route of Flight in Clearance - When it is desired to define the route of flight in a clearance, the words "over _____ (specified fix or fixes)" shall be included between the appropriate clearance limits.
- Examples: (1) "Cleared from Akron over Cleveland to Toledo" etc.
- (2) "Cleared from 25 miles southeast of LaFayette over Indianapolis, Dayton, to 25 miles west of Cambridge" etc.
- Cl.026 Clearance Procedure for Air Carrier Aircraft Only - The following phraseology shall be used when clearing air carrier aircraft:
- Cl.0260 The clearance procedure specifying "_____ miles _____ (direction) of _____ (location)" shall be deleted and in lieu thereof, the name of the center issuing the clearance shall be stated, followed by the word "boundary." A succeeding clearance shall specify the name of the control boundary to which previous clearance was issued, when issuing clearance for flight within the next control area.
- Cl.02600 The "boundary" will be identified by reference to the current map of the Administration specifying airway traffic control areas, based on the route to be flown by the aircraft.
- Cl.02601 Upon consideration of the route to be flown, the airway traffic control areas map will indicate to the pilot whether or not his flight will be conducted in part or wholly within a control area.

When an airway traffic control center issues a traffic clearance to a control area boundary where there is no further control area, after leaving this control area, flight is not under control of an airway traffic control center and the pilot will be governed by the procedures prescribed in Part 60 of the Civil Air Regulations applying to flight outside of airway traffic control areas.

Cl.03 Responsibility for Clearance Delivery: Since a traffic clearance (flight plan approval) is issued for a limited portion of a control area, airway traffic control centers shall forward further clearance, if such further clearance is required, prior to the time aircraft arrives over the clearance limit. This procedure, however, does not relieve the pilot of an aircraft, or a pilot through a responsible representative of the aircraft operator, from securing necessary flight plan approval as required by Part 60 of the Civil Air Regulations.

Cl.030 Responsibility of Aircraft Operators - When a traffic clearance (flight plan approval) as described in Cl.022 is forwarded to an aircraft operator for transmission over the operator's communications facilities, it will be considered the responsibility of such operator, unless otherwise advised by an airway traffic control center, to determine whether such clearance should be forwarded upon receipt to the pilot concerned or forwarded at the time pilot reports over the reporting point from which such clearance applies. Decision as to the time of transmission should be based on the nature and urgency of the traffic clearance, on traffic conditions, on weather conditions, or on any other factor which may be considered relevant by the operator. Placing the traffic clearance in the hands of the aircraft operator prior to the time pilot arrives over the clearance limit will be considered to meet the demands of the provisions of Part 60 of the Civil Air Regulations governing flight plan approval insofar as the pilot is concerned, provided that the aircraft operator advises the pilot if the necessary clearance has not been received. However, nothing herein stated shall be considered to relieve the pilot of an aircraft or a pilot through a responsible representative of the aircraft operator, of conforming in every respect to the requirements for obtaining flight plan approval as prescribed in the Civil Air Regulations.

Cl.0300 Communications Responsibility - It will be considered the responsibility of an aircraft operator handling communications through its facilities to advise a center promptly if it has been unable to deliver a message within 5 minutes of the expected delivery time. Unless specific acknowledgment of receipt by pilot has been requested by a center, it will be

assumed that a message has been delivered satisfactorily to a pilot unless the aircraft operator otherwise advises the center. Likewise, it will be considered the responsibility of an aircraft operator to advise a center promptly in the event of two-way communications failure with one of its aircraft.

C1.04 Cancellation: When it is desired to limit definitely the effective time of a traffic clearance (flight plan approval), provision for the cancellation of such clearance may be had by including in item (f) of the standard clearance the following advice:

"Clearance void after _____ (time); or

"Clearance void if not delivered by _____ (time); or

"Clearance void if aircraft not off ground by _____ (time)."

C1.05 Control Areas: The control area of each airway traffic control center is indicated on the current airway traffic control areas map issued by the Administration. It shall be the responsibility of each center to forward recommendations concerning changes in control areas and boundaries whenever necessary in the interest of more efficient control of air traffic by airway traffic control centers.

C1.1 TRAFFIC INFORMATION

C1.10 Essential Traffic: Essential traffic for an aircraft being issued a traffic clearance by an airway traffic control center shall be those aircraft within all of the following three categories:

(a) aircraft for which flight plans specifying flight altitudes (including altitude/CFR) have been received by the center, and in addition, aircraft being flown on a flight plan in which only "CFR" is indicated as altitude information if weather conditions make consideration as essential traffic necessary in the interest of safety;

(b) aircraft which are or will be on the same or converging courses as are within the specified limits covered by the clearance;

(c) aircraft which are 2000 feet or less above and below the aircraft being cleared.

C1.100 Essential Traffic Information - Essential traffic information for a given aircraft shall consist of information concerning the essential traffic described in C1.10 which falls within any of the following categories:

- (a) aircraft flying in the same general direction as the aircraft being cleared which are expected to be overtaken by or to overtake that aircraft;
- (b) aircraft flying in the same general direction or in a crossing direction to the aircraft being cleared, which are expected to be approached by or to approach that aircraft within a distance of 15 minutes or less flying time, or 10 minutes or less flying time if aircraft are traveling over a course on which radio fixes are sufficiently adequate to allow for highly accurate calculations of speed;
- (c) aircraft flying in an opposite direction to the aircraft being cleared if the flight levels are the same or if the flight levels of either the aircraft being cleared or the other aircraft are not constant.

- Cl.11 Issuance of Essential Traffic Information: Essential traffic information shall be issued by one of the following methods:
- Cl.110 No Traffic - When known traffic conditions are such that there is no essential traffic information reported for a given aircraft, item (e) of standard clearance forms shall be omitted when issuing a clearance to such aircraft.
- Cl.111 Traffic Description - When there is essential traffic information for a given aircraft, the appropriate clearance shall include the statement "Traffic is" followed by a description of the essential traffic as prescribed in Cl.12 and Cl.13.
- Cl.1110 Additional Traffic - When additional essential traffic information is reported for a given aircraft, such information shall be issued by stating "Additional traffic is" followed by a description of the traffic as prescribed in Cl.12 and Cl.13.
- Cl.112 Approach Sequence Number - Whenever an approach sequence number is issued to the pilot of an aircraft, such number ordinarily shall be considered as essential traffic information with respect to other aircraft in the approach sequence.
- Cl.12 Detailed Traffic Information: Detailed traffic information shall consist of direction of flight, type of aircraft (except as specified in Cl.14) and estimated time and altitude over a designated fix nearest to the point at which aircraft

constituting essential traffic are expected to be passed, overtaken or approached.

- Cl.120 Issuance - Detailed traffic information shall be issued when flight levels of the aircraft being cleared and the other aircraft are the same or when either are variable.
- Cl.1200 Variable flight levels shall include altitudes indicated as "at least 500 feet on top," CTC/altitude, altitude/CFR and CFR when an aircraft being flown on a CFR flight plan is considered as essential traffic.
- Cl.13 Minimum Traffic Information: Minimum traffic information shall consist of direction of flight and cruising altitude.
- Cl.130 Issuance - Minimum traffic information shall be issued when the aircraft being cleared and the other aircraft are at different constant flight levels. (Note from Cl.100 (c) that no traffic information need be issued concerning opposite direction traffic when aircraft involved are at different constant flight levels.)
- Cl.14 Description of Air Carrier Aircraft: When information concerning air carrier aircraft is given to other air carrier aircraft, air carrier and trip number shall be used in lieu of type of aircraft. Example: "Westbound American 21," or "Eastbound TWA 10," etc.
- Cl.15 Traffic on Request: If arrangements have been made between representatives of aeronautical interests concerned and an airway traffic control center whereby essential traffic information is not to be issued to the aircraft of such operator under certain circumstances, no statement need be included in the traffic clearance as to traffic conditions in such circumstances. At any time, however, that a pilot or aircraft operator may request traffic information, the procedures specified in paragraphs Cl.12 and Cl.13 shall be observed.
- Cl.2 APPROACH TIME
- Cl.20 General: In accordance with the provisions of Part 60 of the Civil Air Regulations governing failure of aircraft two-way radio communications, approach time information shall be issued, and currently revised, to an aircraft when any portion of the approach at point of intended landing is or may be conducted under instrument flight rule weather conditions. (Note: When an aircraft is cleared as number one aircraft to approach or cleared to an airport traffic control tower, the approach time information is not required in standard clearance phraseology.)

- C1.21 Phraseology: The expected approach time shall be forwarded to the pilot of an aircraft in accordance with standard phraseology prescribed in C1.451, which shall be included in item (d) in the standard clearance phraseology. (See C1.40.)
- C1.22 Determination: The expected approach time for a given aircraft shall be the time at which the center having jurisdiction expects to issue clearance to the pilot authorizing him to commence an approach for a landing.
- C1.220 Ordinarily the airway traffic control estimate shall be used as basis for control. However, if a pilot's estimate differs more than 3 minutes from the airway traffic control estimate, pilot shall be requested to recheck estimate. If pilot verifies correctness of his estimate and states that it will be made good, such estimate then shall be used as basis for control and the pilot shall be so informed.
- C1.23 Issuance: The expected approach time first issued to the pilot of an aircraft shall be included in a traffic clearance issued approximately 30 minutes to 1 hour prior to estimated time of arrival of such aircraft at point where approach will be started, or earlier if practicable. Revised expected approach times shall be issued as soon as possible after the revision is made.
- C1.3 APPROACH SEQUENCE
- C1.30 General: An approach sequence number shall be established by an airway traffic control center for each aircraft flying in accordance with instrument flight rules when any portion of the approach at point of intended landing is or may be conducted under instrument flight rule weather conditions, except that under certain conditions an airway traffic control center may delegate approach sequence authorization to an airport traffic control tower(see C1.574) or an approach controller.
- C1.31 Assignment: An approach sequence number shall be assigned in conjunction with an assigned altitude, the lowest approach sequence number and corresponding altitude to the first aircraft estimated to arrive at the point where approach is to be started, number and altitude increasing in accordance with sequence of arrival of other aircraft, unless special circumstances make a different procedure necessary.
- C1.32 Phraseology: Approach sequence assignment to the pilot of an aircraft shall be issued in accordance with the standard clearance form (see C1.40) as follows:

Item (a) (Flight Identification)

Item (c) (Altitude Instructions)

Item (d) (Expected Approach Time)

Item (e) (Approach Sequence Number)

Example: "(Flight Identification):
Descend to 4000 feet immediately;
Expect approach clearance at 4:15;
Number 3 to approach."

Cl.33 Issuance: An approach sequence number shall be issued initially in the traffic clearance covering flight of a given aircraft to the point from which approach will be commenced if a delay to such aircraft is anticipated. Subsequently, a lower approach sequence number shall be issued each time the approach sequence progresses.

Cl.4 STANDARD PHRASEOLOGIES

(Words capitalized and underscored shall be read as written; data shall be supplied as required by words in parenthesis.)

Cl.40 Clearance Form: Traffic clearances shall conform to the following standard form:

- (a) (Flight Identification)
- (b) (Clearance)
- (c) (Altitude, Approach or Departure Instructions)
- (d) (Any special Instructions or Information)
- (e) (Essential Traffic Information)
- (f) (Message Delivery Information and/or Cancellation Time, when Required)

Cl.41 Clearances:

Cl.410 Types - Traffic clearances shall conform to the following standard types.

Cl.4100 Clearance A - A traffic clearance governing flight between two clearance limits:

CLEARED FROM (Clearance Limit) TO (Clearance Limit).

(Note: The "from (clearance limit)" may be omitted if not considered essential to proper understanding of the clearance by the pilot.)

Cl.4101 Clearance B - A combined traffic clearance governing flight between two clearance limits with landing and take-off at one or more intermediate airports within the control area:

CLEARED FROM (Clearance Limit) THROUGH (Intermediate Airport/s) TO (Clearance Limit).

Cl.4102 Clearance C - A traffic clearance governing flight between two clearance limits with route of flight specified:

CLEARED FROM (Clearance Limit) OVER (Specified Fix or Fixes) TO (Clearance Limit).

Cl.4103 Clearance D - A traffic clearance governing flight from within to outside of an airway traffic control area:

CLEARED FROM (Clearance Limit) OUT OF CONTROL AREA (Location); or in the case of air carrier aircraft:
CLEARED FROM (Clearance Limit) TO (Name of) BOUNDARY.

Cl.4104 Clearance E - A traffic clearance governing flight crossing or joining one or more civil airways

CLEARED FROM (Clearance Limit) CROSS/JOIN (Name of) AIRWAY/S NEAR (Specified Location/s) TO (Clearance Limit).

(Note: Specifying "name of" airway/s and clearance limits is optional.)

Cl.411 Describing Clearance Limits - Clearance limits shall be described as follows:

- (a) (Name of Fix)
- (b) (Location of Control Boundary)
- (c) (Name of) BOUNDARY
- (d) (Name of) RANGE STATION
- (e) (Name of) TOWER
- (f) (Name of) AIRPORT
- (g) ABOVE 17,000 FEET
- (h) BELOW 3500 FEET

(Note: Item (c) is authorized for air carrier aircraft only.)

Cl.4110 When issuing a traffic clearance to an aircraft for a landing at an airport at which no airport traffic control tower is located, "(Name of) AIRPORT" shall be used in lieu of "(Name of) TOWER."

Cl.42 Altitude Instructions:

Cl.420 Instructions requiring that an aircraft descend to a specified altitude shall be issued in accordance with the following:

DESCEND TO (Approved Altitude)
IMMEDIATELY; or
IMMEDIATELY AFTER PASSING (Specified Fix); or
AT (Specified Time); or
BEFORE ENCOUNTERING INSTRUMENT FLIGHT RULE
CONDITIONS AND ADVISE; or
IF VISIBILITY GOES BELOW (Specified Number)
MILES AND ADVISE.

Cl.421 Instructions requiring that an aircraft maintain a specified altitude shall be issued in accordance with the following:

MAINTAIN (Approved Altitude)
UNTIL PAST (Specified Fix); or
UNTIL (Specified Time); or
UNTIL ADVISED BY (Name of) TOWER; or
WHILE ON CIVIL AIRWAY.

Cl.422 Instructions requiring that an aircraft climb to a specified altitude shall be issued in accordance with the following:

CLIMB TO (Approved Altitude)
IMMEDIATELY; or
IMMEDIATELY AFTER PASSING (Specified Fix); or
AT (Specified Time); or
BEFORE ENCOUNTERING INSTRUMENT FLIGHT RULE
CONDITIONS AND ADVISE; or
IF VISIBILITY GOES BELOW (Specified Number)
MILES AND ADVISE.

Cl.423 Instructions requiring that an aircraft be flown at a specified altitude with no specific time of altitude change shall be issued in accordance with the following:

CROSS (Specified Fix) AT (Approved Altitude).
CRUISE AT (Approved Altitude).

Cl.424 Instructions authorizing an aircraft to descend or climb between specified altitude levels subject to specified minimum visibility conditions shall be issued in accordance with the following:

DESCEND FROM (Specified Altitude) TO (Specified Altitude) IF FORWARD VISIBILITY REMAINS (Specified Number) MILES AT ALL TIMES; IF NOT POSSIBLE (Alternate Instructions) AND ADVISE; or
CLIMB FROM (Specified Altitude) TO (Specified Altitude) IF FORWARD VISIBILITY REMAINS (Specified Number) MILES AT ALL TIMES; IF NOT POSSIBLE (Alternate Instructions) AND ADVISE.

Cl.425 Instructions authorizing an aircraft to descend or climb between specified altitude levels if possible to do so in accordance with contact flight rules shall be issued in accordance with the following:

DESCEND FROM (Specified Altitude) TO (Specified Altitude) IN ACCORDANCE WITH CONTACT FLIGHT RULES; IF NOT POSSIBLE (Alternate Instructions) AND ADVISE; or
CLIMB FROM (Specified Altitude) TO (Specified Altitude) IN ACCORDANCE WITH CONTACT FLIGHT RULES; IF NOT POSSIBLE (Alternate Instructions) AND ADVISE.

Cl.426 Instructions requiring an aircraft to proceed on top or underneath an overcast because of conflicting traffic shall be issued in accordance with the following:

REMAIN AT LEAST (Specified Number) FEET ABOVE ALL CLOUDS; or
REMAIN AT LEAST (Specified Number) FEET BELOW ALL CLOUDS

Cl.427 Instructions requiring an aircraft to maintain specified vertical or time separation from another aircraft shall be issued in accordance with the following:

MAINTAIN AT LEAST (Specified number of feet or minutes) SEPARATION FROM (Aircraft Identification).

Cl.428 Instructions requiring an aircraft to report on leaving or reaching specified altitude levels shall be issued in accordance with the following:

REPORT IMMEDIATELY ON LEAVING (Specified altitude level or levels); or

REPORT IMMEDIATELY ON REACHING (Specified altitude level or levels).

(Note: "Specified altitude level or levels" shall include either the desired numerical values or "even" or "odd" thousand foot levels.)

Cl.43

Approach Instructions:

Cl.430

Instructions specifying an instrument approach for a landing shall be issued in accordance with the following:

INITIAL APPROACH AT (Specified Altitude) and/or
FINAL APPROACH ON (Specified) LEG OF (Name of)
RANGE; or
STANDARD INSTRUMENT APPROACH.

Cl.431

Instructions authorizing a contact approach or a contact flight rule approach shall be issued in accordance with the following:

CONTACT APPROACH; IF NOT POSSIBLE (Alternate Instructions) AND ADVISE; or
CONTACT FLIGHT RULE APPROACH; IF NOT POSSIBLE
(Alternate Instructions) AND ADVISE.

Cl.432

The omission of altitude and approach instructions will indicate that either an instrument, contact or contact flight rule approach may be executed, depending upon existing weather conditions.

Cl.44

Departure Instructions:

Cl.440

Instructions specifying direction of take-off and/or direction of turn after take-off shall be issued in accordance with the following:

TAKE-OFF (Direction) and/or TURN (Right or Left)
AFTER TAKE-OFF

Cl.441

Instructions authorizing an airport traffic control tower operator to release an aircraft for take-off subject to the discretion of the control tower operator with respect to arriving aircraft shall be issued in accordance with the following:

RELEASE SUBJECT YOUR DISCRETION WITH RESPECT TO
(Aircraft Identification/s).

Cl.45

Special Instructions and Information:

Cl.450

Holding Instructions -

Cl.4500 Instructions requiring that an aircraft be held on a specified leg of a radio range between two points shall be issued in accordance with the following:

HOLD ON (Specified) LEG OF (Name) RANGE BETWEEN
(Location) AND POINT (Number of Minutes and
Direction)
UNTIL (Specified Time); or
UNTIL ADVISED BY (Name of) TOWER.

Note: When required, include any special instructions necessary, such as:

MAKE TURNS IN (Specified) QUADRANTS.

Cl.4501 Instructions requiring that an aircraft be held on specified legs of a radio range between points on these legs a specified number of minutes from the range station shall be issued in accordance with the following:

HOLD ON (Specified) LEGS OF (Name) RANGE
BETWEEN POINTS (Number of Minutes and
Directions) FROM STATION
UNTIL (Specified Time); or
UNTIL ADVISED BY (Name of) TOWER.

Note: When required, include any special instructions necessary, such as:

MAKE TURNS IN (Specified) QUADRANTS.

Cl.4502 Instructions requiring that aircraft of aircraft operators to which specifications of holding points have been issued, be held in accordance with the holding instructions contained in Cl.4500 and Cl.4501, shall be issued in accordance with the following for such holding points as are defined:

HOLD (Direction) OF (Specified holding point)
UNTIL (Specified Time); or
UNTIL ADVISED BY (Name of) TOWER.

Cl.4503 Instructions requiring that an aircraft be held at a specific location by visual reference to the ground or water shall be issued in accordance with the following:

HOLD AT (Specified Location)
UNTIL (Specified Time); or
UNTIL ADVISED BY (Name of) TOWER.

Cl.451 Approach Clearance Information

Cl.4510 Instructions relative to approach clearance time shall be issued in accordance with the following:

Cl.45100 Delay Expected -

EXPECT APPROACH CLEARANCE AT (Time at which pilot may expect to receive clearance authorizing him to commence approach.)

Cl.45101 No. delay expected -

NO DELAY EXPECTED.

Cl.45102 Delay not determined (Revised clearance time shall be forwarded as soon as determination can be made) -

DELAY INDEFINITE EXPECT APPROACH CLEARANCE NOT LATER THAN (Specified Time).

Cl.46 Essential Traffic Information

Cl.460 Phraseologies to be used in connection with the issuance of essential traffic information (see Cl.1) shall be as follows:

TRAFFIC IS (essential traffic information); or
ADDITIONAL TRAFFIC IS (essential traffic information); or
NUMBER (Approach sequence number) TO APPROACH.

Cl.5 INSTRUMENT FLIGHT RULES

Cl.50 General: Aircraft flying within an airway traffic control area in weather conditions requiring the observance of the instrument flight rules prescribed in Part 60 of the Civil Air Regulations shall be controlled by the airway traffic control center for such area in accordance with the control procedures which follow.

Cl.501 Whenever practicable and desirable in the interest of safer or more efficient control of air traffic, an airway traffic control center shall issue alternate control procedures to pilots of aircraft being controlled by such center.

Cl.5010 Airway traffic control centers shall include in the clearances to pilots alternate procedures whenever there is any possibility of flight not being continued through contact flight rule conditions when control of traffic has been predicated on the continuance of such conditions. When required, such alternate procedures or special instructions shall be forwarded by the issuing airway traffic control center as a matter of information to the airway traffic control center into the control area of which such aircraft next will enter.

- Cl.502 When it is desired to know the condition of flight of a given aircraft in order that determination can be made as to the appropriate instructions which may be issued, the pilot shall be requested to forward information with respect to one or more of the following: icing conditions, turbulence, visibility, ceiling, altitude of aircraft with reference to the clouds, precipitation, and whether or not flight can be continued in accordance with contact flight rules.
- Cl.503 When an airway traffic control center desires to issue instructions to an aircraft approaching its control area while such aircraft is in the control area of another center, the desired instructions shall be forwarded to the airway traffic control center having jurisdiction over the aircraft involved for approval and transmission by such center.
- Cl.51 Horizontal Separation (Time): Aircraft ^{traveling} ~~travelling~~ in the same general direction on the same or converging courses at the same altitude shall be separated by a minimum of 15 minutes in flying time, unless aircraft are traveling over a course on which radio fixes are sufficiently adequate to allow for highly accurate calculations of speed, in which event such aircraft shall be separated by a minimum of 10 minutes in flying time.
- Cl.510 Aircraft separated vertically by not more than 2000 feet shall be separated by not less than 5 minutes in flying time when crossing altitude levels, provided that such minimum time separation is authorized only when a preceding aircraft is cleared for descent or a succeeding aircraft is cleared for climb, and provided further that aircraft have reported over a definite radio fix within 10 minutes of the time altitude change is to be commenced.
- Cl.511 Establishment of Time Separation (Aircraft Enroute) - Time separation of aircraft enroute shall be established by requesting the pilot of an aircraft to hold in accordance with the procedures prescribed in Cl.450 or to "Lose Time" to arrive over a specified fix at a specified time. Pilots of aircraft in direct radio communication with each other may be requested to maintain a specified minimum time separation between their respective aircraft provided fixes can be obtained which are sufficient to allow the maintenance of such separation. (For phraseology, see Cl.427.)
- Cl.512 Establishment of Time Separation (Aircraft Departing) - Time separation from an aircraft departing from an airport shall be established by requesting the pilot of the aircraft to hold on the ground until a specified time.

Note: When holding an aircraft on the ground prior to take-off, the pilot of such aircraft shall be advised as to the probable clearance time whenever possible, requesting that motors be run-up in preparation for such clearance in order that take-off may be effected immediately upon receipt of take-off clearance.

Cl.52 Vertical Separation (Altitude): Aircraft traveling in the same general direction on the same or converging courses separated horizontally by less than the minimum flying time specified in Cl.51 shall be separated vertically by a minimum of 2000 feet, unless in the interest of safer or more efficient control of air traffic less vertical separation is necessary, in which event

- (a) aircraft being flown in conditions of visibility which are less than 1 mile shall be separated vertically by not less than 1000 feet, or
- (b) aircraft being flown in conditions of visibility which are less than 3 miles but not less than 1 mile shall be separated vertically by not less than 500 feet, provided that the airway traffic control center has ascertained that aircraft concerned are using the same altimeter setting. When it has not been determined that aircraft concerned are using the same altimeter setting, a minimum of 1000 feet separation will be required in accordance with Cl.52 (a).

Cl.520 Vertical Separation Between Aircraft Holding - Aircraft being held in flight shall be governed by the minimums specified in sub-paragraphs (a) and (b) under Cl.52 above, and in addition, aircraft being held on top of an overcast or other formation during the hours of darkness shall be separated vertically by not less than 500 feet. (It should be noted that Cl.54 applies only to aircraft enroute.)

Cl.53 Lateral Separation (Right-side Rules): Aircraft traveling in opposite directions on the same course ordinarily will be afforded lateral separation by flying to the right of the on course signal projected down the course as required by the right-side traffic rules prescribed in Part 60 of the Civil Air Regulations.

- Cl.530 Non-applicability of Right-side Rules - Aircraft traveling in opposite directions on a course on which radio range facilities are not satisfactory for the observance of right-side rules shall be separated vertically while passing by the appropriate minimum specified in Cl.52 or Cl.54.
- Cl.5300 When opposite direction traffic regularly is provided altitude separation by an airway traffic control center because of unsatisfactory radio range facilities or other sufficient cause, the required procedures or information shall be contained in operations letters issued by such center.
- Cl.531 Lateral Separation of Same Direction Traffic (Use in Emergency Only) - Aircraft traveling in the same general direction on the same or converging courses which cannot be separated horizontally by the flying time minimums or vertically by the altitude minimums may be separated laterally by requiring flight on opposite sides of and well off a well defined on course signal of a radio range if no confliction with opposite direction traffic will occur.
- Cl.54 On-top Flight: No separation minimums shall apply to enroute aircraft being flown at a specified altitude above a well defined top of a cloud or other formation, either during the hours of daylight or darkness, or at a 5/OTP altitude (see Cl.553) during the hours of daylight, if the pilot weather reports indicate that the visibility is sufficiently adequate not to require the observance of any specified separation. If one or more of the pilots concerned state that the visibility is such as to require separation, then the aircraft shall be given the separation prescribed in Cl.51, Cl.52 or Cl.53.
- Cl.55 Altitude Assignment:
- Cl.550 Priority of Assignment - The following priority shall be observed by airway traffic control centers in connection with the assignment of altitudes to aircraft considered essential traffic:
- (a) An aircraft at an altitude shall have priority over other aircraft desiring that altitude.
 - (b) When two or more aircraft are at the same level, the preceding aircraft shall have priority at that level.
 - (c) When a flight plan includes a proposed change in altitude enroute, the aircraft flying under this flight plan shall give way, if necessary, to another aircraft which may be at the proposed altitude at the time the change is to be made.

- Cl.5500 The priority of altitude assignment set forth in Cl.550 shall not apply when, in the interest of simplifying and/or expediting the landing or take-off of aircraft, an airway traffic control center finds it necessary to assign altitudes in a different manner.
- Cl.551 Minimum Altitudes - An airway traffic control center shall not assign an altitude to any aircraft which will require such aircraft to maintain flight below the altitude minimums specified in Part 60 of the Civil Air Regulations, or below other known minimums specified by an aircraft operator. However, if a pilot requests an altitude below the minimums specified in Part 60 of the Civil Air Regulations and such altitude does not conflict with other traffic, flight plan approval may be granted insofar as air traffic is concerned.
- Cl.5510 If the pilot of an aircraft files a flight plan for a flight in accordance with instrument flight rules and wishes to conduct flight as long as possible by visual reference to the ground or water (minimum altitude of 500 feet above the ground or water), such flight plan may be approved by an airway traffic control center provided that it does not conflict with other aircraft movements within the control area. (Note: When the pilot no longer can conduct flight by visual reference to the ground or water, it should be understood that he will climb to the altitude level specified in his flight plan as approved or amended, such altitude level to be normally the minimum instrument flight altitude for the particular terrain over which flight is being made.)
- Cl.552 Method of Assignment -
- Cl.5520 An aircraft may be assigned an altitude level by specifying time of starting descent or climb, and upon receipt of acknowledgment that descent or climb has been started and level has been vacated, succeeding aircraft may be assigned immediately to the level vacated. Information should definitely indicate that the first aircraft has actually vacated the level prior to assigning the succeeding aircraft to that level. (Note: This procedure must be used with caution and should not be used when turbulent conditions are known to exist.)
- Cl.5521 Pilots of aircraft belonging to the same operator in direct communication with each other when traveling in the same general direction on the same or converging courses, may be requested to maintain a specified vertical separation between their respective aircraft during descent or climb (for phraseology see Cl.427).

- Cl.5522 When it is not practicable to use either of the procedures specified in Cl.5520 or Cl.5521, an aircraft shall not be assigned an altitude level until the aircraft previously at that level has reported at the next succeeding higher or lower level.
- Cl.5523 Unless impracticable, cruising altitudes of aircraft flying the same course and having the same destination shall be assigned in a manner that will be correct for an approach sequence at destination.
- Cl.553 On-top Altitude - "At least 500 feet on top" (5/OTP) may be assigned to an aircraft for flight on top of an overcast during the hours of daylight in lieu of a specified altitude if the ceiling and visibility generally are unlimited on top of the overcast. If the ceiling and visibility generally are not unlimited on top of the overcast or during the hours of darkness, a specified altitude shall be assigned to an aircraft for flight on top of an overcast.
- Cl.554 Altitude Changes - When it is essential that an altitude change be made at a particular time or place to prevent possible confliction between aircraft, an airway traffic control center shall advise the pilot either the time or place that such change shall be made.
- Cl.56 Aircraft Holding: Airway traffic control centers shall attempt to handle aircraft movements in a manner such that minimum delay will be occasioned aircraft in flight either enroute or at point of destination. This may be accomplished by an exchange of communications between adjacent centers relative to holding departing aircraft on the ground at point of take-off, spacing departing aircraft, etc.
- Cl.560 Holding Flight Path - The standard holding flight path for aircraft being held by an airway traffic control center shall be defined as follows:

"Flight path of an aircraft being held by an airway traffic control center shall follow the right edge of the on course signal of the specified leg of the appropriate radio range, holding between the designated holding point and 4 minutes flying time therefrom in the direction specified, starting procedure turns at the holding point and point 4 minutes therefrom. Unless prevented by obstructions or unless otherwise advised by an airway traffic control center, the initial turn of a procedure turn shall be made to the left when flying away from the range station and to the right when flying toward the range station."

Note: Should an airway traffic control center receive a request from a pilot of an aircraft who has been issued holding instructions in accordance with Cl.45 for permission to deviate from the standard holding flight path, such permission may be granted if known air traffic conditions permit.

Cl.561 Holding Procedure (No Vertical Separation from Opposite Direction Traffic) - When an aircraft being held in flight is following the standard holding flight path, vertical separation is not required with opposite direction traffic governed by approved departure procedures prescribed in accordance with Cl.582, unless the center determines that vertical separation is necessary in the interest of safety.

Example: Considering the above procedure, the Washington Airway Traffic Control Center would issue instructions in the manner indicated below in effecting lateral separation between inbound and departing aircraft when the departing aircraft is required to climb through the flight level of the inbound aircraft holding between two points. In this example, the inbound aircraft is to maintain 3000 feet between Mason Springs intersection and a point 4 minutes south, and cruising altitude of southbound aircraft is 4000 feet. Instructions issued to inbound aircraft: Maintain 3000 feet, hold on south leg of Washington Range between Mason Springs intersection and point 4 minutes south. Instructions issued to departing aircraft: "Cleared from Washington to Mason Springs, cruise 4000 feet," (approved departure procedures to apply) and subsequently "Cleared from Mason Springs to Richmond Airport, cruise 4000 feet," etc.

Cl.562 Holding Procedure (Vertical Separation from Opposite Direction Traffic) - When an aircraft being held in flight is not following the standard holding flight path or when considered necessary in the interest of safety, the appropriate vertical separation minimums described in Cl.52 or Cl.54 shall be effected between holding aircraft and opposite direction aircraft while opposite direction aircraft are within 5 minutes flying time of the ends of the holding aircraft's flight path.

Example: Considering the above procedure, the Washington Airway Traffic Control Center

would issue instructions in the manner indicated below in effecting 1000 feet vertical separation between an inbound and departing aircraft, when the departing aircraft is required to climb through the flight level of the inbound aircraft holding between two points. In this example, the inbound aircraft is to maintain 3000 feet between Mason Springs intersection and a point 4 minutes south, and cruising altitude of southbound aircraft is 4000 feet. Instructions issued to inbound aircraft: "Maintain 3000 feet, hold on south leg of Washington range between Mason Springs intersection and a point 4 minutes south." Instructions issued to departing aircraft: "Cleared from Washington to Mason Springs, maintain 2000 feet," and subsequently, "Cleared from Mason Springs to Richmond Airport, maintain 2000 feet until 10:30, cruise at 4000 feet." (Note: The time "10:30" indicates point at which departing aircraft will start climb to 4000 feet. This point will be at least 5 minutes flying time past the end of the flight path of the holding aircraft.)

Cl.57 Aircraft Arriving:

Cl.570 General - Ordinarily clearance to an arriving aircraft to make an approach for a landing shall be issued as soon as practicable after preceding aircraft has reported contact. Clearance to an arriving aircraft to make an approach while a preceding aircraft is making an approach may be effected if suitable approach control procedures have been established or approved by the regional office.

Cl.571 Instrument Approach - A traffic clearance requiring a specified instrument approach shall be issued for the purpose of expediting the take-offs of departing aircraft and for the purpose of expediting any other air traffic.

Cl.5710 In clearing an aircraft from a clearance limit to an airport traffic control tower or airport for a specified instrument approach, the phraseologies "INITIAL APPROACH AT (Specified

Altitude) AND FINAL APPROACH ON (Specified) LEG OF (Name of) RANGE" combined shall be used. However, when an aircraft is cleared to an airport traffic control tower or airport from an altitude the aircraft is maintaining in close proximity to the related airport, only the phraseology "FINAL APPROACH ON (Specified) LEG OF (Name of) RANGE" need be used.

Cl.5711 The phraseology "STANDARD INSTRUMENT APPROACH" may be used in lieu of the phraseologies described in Cl.5710 where a standard instrument approach is established, but only for pilots known to be familiar with such standard approach procedures. When this phraseology is used for air carrier pilots, it shall be considered to mean the instrument approach procedure, including the missed approach procedure, specified in the air carrier company operations manual.

(Note - If a pilot establishes ground contact before completion of an instrument approach, the standard approach should be executed unless pilot obtains an airway traffic control clearance direct to the airport or unless the standard instrument approach specifies a straight-in approach.)

Cl.572 Contact Flight Rule Approach - A traffic clearance specifying a contact flight rule approach, "CFR APPROACH," shall be used if one or more aircraft are cleared for simultaneous approaches to an airport and aircraft are to be flown below cloud levels and with the minimum forward visibility requirements as specified in the contact flight rules.

Cl.573 Contact Approach (Instrument Flight) - A traffic clearance to an instrument flight requiring a contact approach may be issued only for the purpose of expediting the landings of other arriving aircraft and only if there is a ceiling at the point at which such contact approach is to be made which is at or above the approved initial approach altitude for the particular flight involved.

Cl.5730 When the phraseology "CONTACT APPROACH" is used in accordance with Cl.573, such instruction shall be issued only to the number one aircraft to approach and any succeeding aircraft shall be given suitable separation from this aircraft.

Cl.574 Contact Approach (Contact Flight) - Aircraft flying in weather conditions such that the visibility is below visibility minimums as prescribed in contact flight rules, but not less than 1 mile, may be cleared to an airport traffic control tower operated by a certificated control tower operator at a control airport at altitudes of 500 feet separation vertically in

accordance with Cl.52 (b), in which case no approach sequence number shall be issued by an airway traffic control center.

Cl.5740 When aircraft are cleared to an airport traffic control tower in accordance with paragraph Cl.574, the airway traffic control center issuing such clearance shall specifically instruct the control tower operator to clear such aircraft for a landing at the airport in a manner as dictated by the existing conditions, when the aircraft become visible to such control tower operator.

Cl.575 No Specific Approach - A traffic clearance shall be issued without specifying any particular approach when traffic conditions permit.

Cl.58 Aircraft Departing:

Cl.580 General - Every effort shall be made to expedite the take-off of departing aircraft commensurate with safe and orderly control of air traffic. Aids which may be employed by airway traffic control centers in accomplishing this objective include the following:

- (a) An airway traffic control center may suggest direction of take-off when the wind velocity is under 10 miles per hour, even though a cross wind take-off is involved. It then will be the responsibility of the pilot to determine whether he wishes to perform such take-off or be delayed awaiting normal take-off.
- (b) The pilot of an arriving aircraft may be requested to forward the time at which procedure turn on the final approach is started so as to allow take-offs to be effected with more precise information concerning such arriving aircraft.
- (c) The pilot of one or more departing aircraft may be instructed to maintain contact flight rules when weather conditions permit until a specified time after departure.

Cl.581 Separation between Departing Aircraft - Separation between departing aircraft shall be accomplished by the use of any one or a combination of the following procedures:

- (a) Time Separation - A minimum separation of 5 minutes on take-off shall be effected between departing aircraft when one aircraft will be flown through the altitude level of

the other aircraft if both aircraft propose to fly in the same general direction and take-off is in the same general direction as direction of flight. The airway traffic control center shall take such action as is necessary to insure that the 5 minute separation will be maintained or increased when altitude levels are crossed.

- (b) Altitude Separation - Aircraft proposing to fly in the same general direction may be cleared for take-off without reference to time separation if such aircraft are separated at all times vertically by the prescribed minimums.
- (c) Lateral Separation - Aircraft cleared for take-off without reference either to time or altitude separation shall be separated laterally when altitude levels are crossed, as for example, in different quadrants of a radio range station or if one aircraft has made a left turn on take-off and the other has made a right turn.
- (d) General procedures for the operations described in (a), (b) and (c) above shall, when practicable, be described for a specific airport in Operations Letters or a chart or charts illustrating departure procedures.

Cl.582 Separation from Arriving Aircraft - Separation between departing and arriving aircraft shall be effected by lateral or vertical separation and such separation shall take the general form of specifying direction of flight to be assumed after take-off, altitude to be obtained before taking desired heading and any other special instructions required by the existing circumstances.

Cl.5820 Departure and enroute procedures for operation prescribed in Cl.561 shall be described in operations letters, or a chart or charts illustrating these procedures.

Cl.5821 Instrument Approach -

Cl.58210 If an arriving aircraft will make a complete instrument approach (initial and final approach):

- (a) Departing aircraft may be permitted to take-off in any direction until such arriving aircraft has reported over the cone of silence on initial approach.

- (b) Departing aircraft may be permitted to take off in a direction away from the final approach leg after the arriving aircraft has reported over the cone of silence on the initial approach, provided that no departing aircraft shall be permitted to take off less than 5 minutes prior to the time an arriving aircraft is estimated to arrive over the airport on final approach.

Cl.58211 If an arriving aircraft will make a straight-in approach (final approach only):

- (a) Departing aircraft may be permitted to take off in a direction toward the leg on which the arriving aircraft is approaching only if the arriving and departing aircraft are separated vertically, horizontally or laterally by the required minimums;
- (b) Departing aircraft may be permitted to take off in a direction away from the leg on which the arriving aircraft is approaching until such arriving aircraft is estimated to be less than 5 minutes flying time from the airport.

Cl.5822 Contact Approach - The pilot of an arriving aircraft approaching under conditions of ground contact (visibility less than visibility minimums specified in contact flight rules) and having been cleared to an airport traffic control tower shall be requested to forward necessary visual position reports, which will

- (a) allow departing aircraft to be permitted to take-off in any direction until such arriving aircraft has been reported to be 5 minutes flying time from the airport;
- (b) allow departing aircraft to be permitted to take-off in a direction away from arriving aircraft until such arriving aircraft has been reported to be 3 minutes flying time from the airport.

Cl.58220 When clearing departing aircraft in accordance with Cl.5822, the airport traffic control tower shall be instructed to keep each aircraft informed of the procedure being followed by the other aircraft while within the control zone for airport of departure.

Cl.6 EMERGENCY PROCEDURES

- Cl.60 General: Upon receipt of advice that an aircraft in flight within its control area has encountered an emergency which may affect other air traffic, the airway traffic control center concerned shall take such action as will afford the aircraft encountering the emergency priority over any other aircraft involved.
- Cl.61 Emergency Descent: Should it become necessary for an aircraft holding to make an emergency descent for a landing through other traffic, it is expected that the pilot of such aircraft through appropriate communications facilities will so advise the airway traffic control center within the control area of which landing is proposed.
- Cl.610 Upon receipt of advice that an aircraft is making an emergency descent through traffic at assigned altitudes over an airport, the airway traffic control center shall immediately call the appropriate communications stations with an "Emergency to All Concerned" and request an emergency broadcast on the appropriate radio range frequency which shall be transmitted as follows:
- EMERGENCY TO ALL CONCERNED
EMERGENCY LANDING AT _____ AIRPORT
ALL AIRCRAFT BELOW _____ THOUSAND FEET WITHIN
RADIUS OF _____ MILES OF _____ RADIO RANGE
LEAVE _____ LEG/S IMMEDIATELY
- Cl.611 Upon receipt of such a broadcast, pilots of aircraft affected will be expected to clear specified areas in accordance with emergency instructions, and as soon as possible through the appropriate communications facility will obtain further instructions.
- Cl.612 Immediately after such an emergency broadcast has been requested, the airway traffic control center involved shall forward further instructions to the proper communications agencies for transmission to aircraft affected by the broadcast.
- Cl.62 Two-way Radio Failure: In the event of failure of two-way radio communications between an aircraft and the ground, the center concerned may issue appropriate instructions to be broadcast "blind" over air carrier radio facilities (for air carrier aircraft), over military radio facilities (for military aircraft) and over suitable radio range facilities. If pilot does not continue flight in accordance with contact flight rules nor effect an emergency landing and if instructions to the contrary broadcast "blind" are not received, he will be governed by the following procedures and control shall be effected accordingly:

- (a) If expected approach clearance time has not been received and acknowledged, pilot will continue flight in accordance with flight plan and make landing at point of intended landing as closely as possible to estimated time of arrival.
- (b) If expected approach clearance time has been received and acknowledged, pilot will comply with current traffic clearance and instructions and maintain last assigned altitude to the point of intended landing, starting approach at the acknowledged approach clearance time.
- (c) If holding instructions have been received, pilot will comply with those instructions until such time as it will be necessary to continue flight so as to arrive at the point of intended landing at expected approach clearance time and approach then will be started at that time. After leaving holding point, initial approach altitude will be obtained as quickly as possible.

Cl.63

Unreported Aircraft: An unreported aircraft shall be maintained on the flight progress boards in an airway traffic control center for whichever of the following times is later:

- (a) thirty minutes after estimated time of arrival on initial approach over the range station at airport of intended landing, such estimated time of arrival to be based on the longest time estimated to complete the flight either by pilot in original flight plan or enroute, or by the airway traffic control center, (or thirty minutes after actual time of arrival over the range station at airport of intended landing if received); or
- (b) thirty minutes after the expected approach clearance time last acknowledged by the pilot, (or thirty minutes after actual approach clearance if issued to and acknowledged by the pilot).

Cl.630

During the 30 minute period described in paragraph Cl.63, the airway traffic control center concerned shall restrict aircraft operations in such manner as is considered appropriate to prevent possibility of collision between the unreported aircraft and other known aircraft within the control area of the center.

- Cl.631 If an aircraft still is unreported after expiration of the 30 minute period described in Cl.63, action shall be taken as required by Chapter C, Part 2, of the Federal Airways Manual of Operations and normal control of aircraft operations then may be resumed in a manner and at such time as is considered advisable by the airway traffic control center. Upon resumption of normal control, the center shall forward to the aircraft operators or pilots of other aircraft concerned pertinent information regarding the unreported aircraft and it then will be the responsibility of the operators or pilots so advised to determine whether they will engage in normal operations or take other action.
- Cl.7 CONTACT FLIGHT RULES
- Cl.70 General: The control procedures prescribed in Cl.5 shall not be required in connection with the operation of aircraft flying in contact flight rule weather conditions. However, in accordance with the provisions of Part 60 of the Civil Air Regulations, an airway traffic control center may, for reasons of safety, restrict or suspend contact flight operations within the airway traffic control area of such center.
- Cl.700 Should an airway traffic control center receive a request from the pilot of an aircraft flying in contact flight rule weather conditions that such aircraft be given altitude or time separation from other known aircraft, such request shall be complied with insofar as known air traffic is concerned. Any delay which might be occasioned by such separation shall be caused to the aircraft requesting the separation, unless impracticable for reasons of safety.
- Cl.8 AIRPORT TRAFFIC CONTROL TOWER
- Cl.80 General: As specified in Chapter D, Part 1, of the Federal Airways Manual of Operations, an airport traffic control tower shall observe such instructions as are issued by the airway traffic control center in the control area of which such tower is located. The following procedures shall be observed by an airway traffic control center in connection with the operation of airport traffic control towers within its control area, in addition to other applicable procedures specified elsewhere herein.

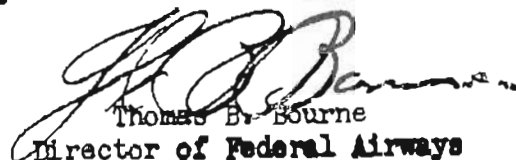
Note: All references below to "inbound" and "outbound" shall be considered to mean direction of flight of other than local flights with reference to a given airport traffic control tower.

- Cl.81 Minimum Aircraft Information to be Forwarded to Airport Traffic Control Towers by Airway Traffic Control Centers:
- Cl.810 Inbound Aircraft - Information on inbound aircraft shall be forwarded to an airport traffic control tower not less than 15 minutes before estimated time of arrival and not more than 1 hour before estimated time of arrival, and such information shall be revised as necessary.
- Cl.8100 Information on inbound aircraft shall consist of estimated time of arrival over the airport of destination and, if considered necessary, actual time and altitude over the reporting point preceding airport of destination and any other information considered pertinent. When approach sequences are established for an airport at which an airport traffic control tower is located, such tower shall be advised as soon as possible whenever an aircraft is cleared to that tower.
- Cl.811 Outbound Aircraft - Information available to an airway traffic control center on such outbound aircraft as may be unknown to an airport traffic control tower shall be forwarded to such tower prior to departure of the aircraft. When clearance is required, such information shall be contained in the clearance followed by any additional information necessary.
- Cl.812 The names of air carrier pilots and ship numbers ordinarily are not required by an airway traffic control center and any request for same shall be referred to the air carrier concerned.
- Cl.82 Division of Control:
- Cl.820 Inbound aircraft - An airway traffic control center shall retain control of inbound aircraft until aircraft have established communication with an airport traffic control tower after having received clearance to such tower by the airway traffic control center. Not more than one aircraft shall be given clearance at the same time to a given airport traffic control tower during instrument flight rule conditions, except as prescribed in Cl.574 and Cl.5740 or unless special procedures providing otherwise are issued or approved by the regional office. During contact flight rule conditions, aircraft ordinarily will be cleared to an airport traffic control tower without being separated by the airway traffic control center, except that, for reasons of safety, an airway traffic control center may restrict or suspend flight within its control area at any time.
- Cl.821 Outbound Aircraft - A traffic clearance issued by an airway traffic control center for an aircraft departing from an airport at which is located an airport traffic control tower shall

be forwarded to such tower for transmission to the aircraft prior to take-off. Such traffic clearance shall be forwarded in standard phraseology to the airport traffic control tower and it will be expected that the tower will forward this clearance to the aircraft in the same phraseology. Discretionary power in establishing the take-off time of departing aircraft during instrument flight rule conditions with respect to arriving aircraft may be delegated by an airway traffic control center to an airport traffic control tower if procedures relative thereto have been issued or approved by the regional office. (See Cl.441 for phraseology.) It is expected that pilots of air carrier companies will notify their dispatchers regarding any change in their flight plans through the air carrier company radio facilities.

- Cl.8210 In lieu of detailed traffic information in each clearance, an airport traffic control tower may be instructed to forward, in standard phraseologies, information concerning other aircraft known to the tower. If such instructions are acknowledged by the airport traffic control tower, such tower will be fully responsible for furnishing properly the necessary information.
- Cl.822 Local Airport Movements - An airport traffic control tower is required to notify the airway traffic control center within the control area of which such tower is located whenever it contemplates authorizing contact flights in its control zone during Class "N" weather as provided for in Part 60 of the Civil Air Regulations. Upon receipt of such notification, the airway traffic control center then shall determine whether or not it will be necessary to restrict or suspend contact flight in that particular control zone in the interest of safety.
- Cl.83 Reporting Departure and Arrival Times: Since an airport traffic control tower is considered as the official designator for announcing aircraft departure and arrival information for the airport served by such tower, an airway traffic control center shall take steps to insure that airport traffic control towers within its control area will forward promptly required departure and arrival times and other information concerning aircraft movements known to such tower.
- Cl.84 Weather Information: An airway traffic control center shall forward to an airport traffic control tower within the control area of such center, if not otherwise available to such tower, information concerning the weather classification for the airport served by such tower. This information shall consist of advice whenever the local weather changes its classification, i.e.: from "C" to "N;" "N" to "X;" "N" to "C" etc.

By direction of the Administrator:


Thomas B. Bourne
Director of Federal Airways

30454