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DEPARTMENT OF COMMERCE
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CONSOLIDATED INTERLINE SAFETY AGREEMENT AND AIRWAY TRAFFIC CONTROL PROCEDURES

October 1, 1936.

Drawn up at conference on Airway Traffic Control, called by Assistant Director of Air Commerce, on July 28, 1936, in Chicago, Illinois, revised in accordance with suggestions, and affecting the following airline operators:

American Airlines, Inc.,	Transcontinental & Western Air, Inc.
United Air Lines	
Chicago & Southern Airlines	Northwest Airlines
Pennsylvania Airlines	Braniff Airways, Inc.
Eastern Airlines	Central Airlines

covering

CHICAGO AREA	NEWARK AREA	CLEVELAND AREA
St. Louis-Chicago	Washington-Newark	Chicago-Cleveland
Kansas City-Chicago	Pittsburgh-Newark	Detroit-Cleveland
Omaha-Chicago	Cleveland-Newark	Buffalo-Cleveland
Minneapolis-Chicago	Buffalo-Newark	Newark-Cleveland
Detroit-Chicago	Albany-Newark	Camden-Cleveland
Cleveland-Chicago	Boston-Newark	Washington-Cleveland
Pittsburgh-Chicago		Columbus-Cleveland
Louisville-Chicago		
Cincinnati-Chicago		

The following agreement and procedures, effective in the above-listed areas, also supersede any other interline safety agreement with which it conflicts.

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GENERAL PROCEDURES

1. Aircraft will always report their altitude in feet above sea level from sensitive type altimeters adjusted to correspond with the nearest ground station sensitive altimeter, the hand of which will be kept set at the sea level altitude of the ground station. At terminals, where there are several operators, all ground stations should check barometer readings from their altimeters against each other daily.

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2. Eastbound planes, or any planes flying a true course from 360° to 180°, but not including 180°, will always cruise at ODD thousand foot levels above sea level, that is 1000', 3000', 5000', etc. Westbound planes, or any planes flying a true course from 180° to 360°, but not including 360°, will always cruise at EVEN thousand foot levels, that is 2000', 4000', 6000', etc., above sea level. This regulation must be followed day and night, and under all weather conditions, except when taking on ice or when encountering a condition which prohibits safety of flight at the stated level. When necessary for pilot to vary from stated altitude, or from altitude indicated in flight plan, pilot will obtain authority from Airway Traffic Control before contemplated change is made. In case of an emergency requiring immediate change, pilot will transmit information as to change in altitude as soon as possible.

3. All airplanes approaching or departing from an airport shall maintain a course along the right-hand side of the airway; the airway to be considered as the beacon light course when visible and the radio beam when beacons are not visible. (When flying through scattered or broken clouds, aircraft must keep on the right side of the radio beam and beacons.)

4. Inbound planes shall in all cases have the use of the radio range for approaching a station and shall be assumed to be either on the "on-course" signal or in the twilight zone on the right-hand side. Outbound aircraft shall stay off the "on-course" signal and beyond the right-hand twilight zone well to the right of the course until the next radio range can be picked up, at which time the pilot shall assume his position on the "on-course" signal, he then being an incoming pilot insofar as that radio range is concerned. (Pilots may elect to remain to the right of the incoming "on-course" signal on their approach to a station provided no landing is contemplated, but should never cross over and fly along the left-hand side of a radio range.)

5. Flights crossing an airway shall assume an altitude of 500' above the altitude (as prescribed in paragraph 2); e.g., 1500', 2500', 3500', etc. (The airway shall be crossed at an angle of not less than 45° and altitude must be maintained for at least four minutes before reaching the center line of the airway to be crossed, until the airway has been definitely crossed, and the flight is at least four minutes beyond the crossing point, except that if the airway is crossed from right to left the aircraft must maintain altitude until at least four minutes beyond the center of the straight line airway measured at right angles to the airway and normal direction of flight will not be resumed until airplane has passed at least 10 miles beyond the center line of the airway measured at right angles to the airway.)

6. All aircraft shall maintain level flight at prescribed or assigned altitudes while passing through twilight zones and "on-course" signals of intersecting radio ranges at designated cross-over points, or within range of radio markers at cross-overs not at range intersections.

7. All pilots departing from a terminal are to check in with the Airport Control Tower at that terminal before taking off and will continue to remain in contact with the Control Tower until at least 5 minutes from the airport, in order that the Control Tower may relay to departing pilots last minute information as to the position of approaching aircraft, etc. Pilots should check out with Control Tower before changing to company frequency.

8. Pilots approaching a terminal on contact flight shall call the Airport Control Tower at least 10 minutes out, or as early thereafter as practicable, for landing instructions. When weather conditions require letting-down-through an overcast at a terminal, determination of which plane has the right of way to approach first will be made by the Airway Traffic Control office. After such determination has been made and a plane starts its approach, additional contacts will be handled by the operating company of the plane concerned until the airplane is underneath the overcast, at which time the Airport Control Tower will take over and issue landing instructions directly through its own transmitter. For other than scheduled aircraft, instrument approach will be handled by the Airport Control Tower radio operator after consulting Airway Traffic Control.

9. Pilots not at constant cruising altitude will report whether they are climbing or descending and will also state the altitude at which they will resume normal level flight.

10. Scheduled aircraft, after passing inner marker, must stand continuous watch at all times on company frequency until the plane is in range of the airport and underneath the overcast, when the pilot shall contact Airport Control Tower for landing instructions.

11. If pilot misses first attempt to approach field, he must immediately contact his company advising that the first attempt has been missed and request instructions. Airway Traffic Control will determine whether pilot will be allowed another immediate attempt or instruct him to stand by on a designated leg of the range at a certain altitude until other aircraft in line have landed or taken off. This decision will be based upon existing conditions, such as remaining fuel, weather trend, etc. The decision to route the flight to an alternate airport will be made by the airline operator involved after conferring with Airway Traffic Control.

12. Aircraft waiting to take-off will be instructed by Airway Traffic Control through Airport Control Tower as to the direction of flight to assume and the altitude to be attained before proceeding on-course to destination, if flight plan previously received does not fit in with traffic on the course to be followed, or the airway concerned.

EMERGENCY ALTITUDES.

1. In the event two-way communication system fails en route and provided regulations in Bulletin 7-E permit, flight may proceed to the next terminal, weather conditions being definitely favorable for continuous ground contact flight to that terminal and flight shall be ground contact 500 feet below overcast or as far below the overcast as practicable.

2. In the event that contact flight is not advisable, landing will be made at the nearest satisfactory field.

3. If weather conditions do not permit landing or proceeding on contact to terminal, pilot will immediately assume assigned emergency altitude and proceed to terminal.

4. Emergency altitude will be maintained until inner marker is crossed and pilot may maintain emergency altitude up to the airport, if he so desires. Pilot may also start normal descent for approach from the inner marker to the airport. Emergency altitude to the ground between the inner marker and the airport will be kept clear and pilot will be allowed an additional 15 minutes over and above his estimated arrival time at terminal, after which normal traffic will be resumed. (Contact flight excepted.)

5. Procedure as indicated in paragraphs 3 and 4 will not be effective if a flight has previously received and acknowledged a clearance over the inner marker, clearance to the field, or flight instructions from the inner marker to the field. In such instance, the flight will proceed in accordance with his previously acknowledged instructions.

6. In the event pilot proceeds to field on emergency altitude and consumes additional 15 minutes allowed and is not on the ground or definitely assigned further right of way, situation shall be handled between operators concerned, Airway Traffic Control office, and Airport Control Tower. In the event of two-way communication failure, ground radio station shall broadcast blind to the pilot: "Your requested altitude not received or OK'd, cross the marker at your emergency altitude of____feet." Failure to receive blind emergency broadcast does not relieve the pilot from his duty to fly contact, land, or assume automatically, without further instructions, his emergency altitude over the checkpoint. (Contact flight excepted.)

7. Temporary failure of two-way communication due to static or ice will not necessarily cause an emergency altitude to be assumed between terminal of departure and inner marker. However, if pilot cannot resume two-way communication by the time inner marker has been reached, emergency altitude must be assumed and maintained from inner marker to terminal, or until two-way communication is established, or until ground contact can be established and maintained.

GENERAL AIRWAY TRAFFIC CONTROL PROCEDURES

GENERAL

1. Previous to the departure of a flight for any purpose, Airway Traffic Control office shall be furnished with a flight plan to include:

   a. The altitude and estimated time over the first checkpoint (this altitude to be maintained for at least four minutes after crossing checkpoint.)

   b. Cruising altitude for the remainder of the flight.

   c. Estimated flying time to destination.

d. Type of equipment (when more than one type is used by company.)

e. Any other special information which might be useful to Control Office for coordinating traffic.

(Above flight plans include test flights, local flights, instrument practice, and, in case of flights which return to terminal airport, should include the estimated time at which return is expected.)

2. Flights landing at any point within the control area boundaries will give the landing and take-off time to Airway Traffic Control. Time of take-off should be given not later than five minutes after take-off. Take-off time is to be reported as the actual time of take-off. If airline has no means of ground communication at these points, it is the responsibility of the pilot to transmit this information by ship radio.

3. Immediately after departure of an inbound schedule, flight plan should be transmitted to Airway Traffic Control office giving:

a. Time of departure.

b. Proposed cruising altitude.

c. Type of equipment (when more than one type is normally used.)

d. Estimated flying time in hours and minutes between stops and to destination.

e. Proposed altitude over inner marker.

4. Flight plans, whenever possible, should be transmitted to Airway Traffic Control office over the interphone system in sufficient time so that proper instructions may be given if change in flight plan is necessary due to other traffic concerned.

5. Outbound flights will advise the exact time and altitude when they cross the inner marker (no other information will ordinarily be required of outbound schedules except when flight plan is changed while en route.)

6. Inner markers as specified in these instructions are the same for outbound as well as inbound schedules.

7. Pilot will report while in flight the exact time and altitude when passing or crossing each definite radio fix, and on passing the last definite radio fix before reaching the inner marker, will advise the time and altitude that he expects to pass or cross the inner marker and estimated arrival time over the terminal. (The expected altitude over the inner marker to be assumed at least four minutes previous to expected passing time over the marker and to be maintained until the marker has been definitely passed.) When reporting time and altitude over the inner marker, the pilot will revise his estimated arrival time over the airport, if it is apparent his previous estimate is in error in excess of two minutes.

8. Airway Traffic Control office will advise operators concerning all known traffic in the vicinity of the inner marker as soon as they have received

report over the last definite radio fix and will clear flight to inner marker as per flight plan, or will assign a definite altitude for crossing inner marker. This information to be given company as soon as possible after last definite radio fix has been passed. Flights will not proceed past the inner marker unless field clearance or flight instructions have been received. (Two-way radio failure necessitates emergency procedure.)

9. Airway Traffic Control office shall advise operator at least five minutes previous to estimated time of flight over the inner marker concerning traffic between the inner marker and the terminal, and shall issue clearance or flight instructions covering procedure to be followed from inner marker to terminal.

10. Estimated positions will not be given to Airway Traffic Control and ground contact or grid system position will only be given upon request from Airway Traffic Control.

11. Airway Traffic Control office shall furnish essential traffic information to any operator having an inbound ship on any airway, also flight plan of any outgoing aircraft of interest to each schedule concerned.

12. Operators will also be advised of any other inbound flights with 15 minutes or less separation. This information will include flights on the airway, over the inner marker, and arrival over the terminal.

13. Outbound flights will receive information on inbound aircraft in the vicinity of or within the inner marker area through the AIRPORT CONTROL TOWER. This information will take the following form:

    a. Estimated time over inner marker.

    b. Expected altitude over inner marker.

14. If, due to congestion of traffic, weather, or for any other reason, a flight is re-routed to an alternate airport by the company or by the pilot, or if a flight is held at a station for these reasons, Airway Traffic Control will notify company as to the time this flight can proceed from the alternate airport to terminal. It is especially important that flight be in readiness to proceed at the exact time specified.

CHICAGO AIRWAY TRAFFIC CONTROL.

1. Chicago Airway Traffic Control boundaries are: Minneapolis, Detroit, Cleveland, Pittsburgh, Cincinnati, Louisville, St. Louis, Kansas City, and Omaha. All inbound flights from the control boundaries, or within the area bounded by these points, must be immediately reported to the Airway Traffic Control Office.

2. Airway Traffic Control will be in operation within the above boundaries between the hours of 7:30 A.M. and 12:00 Midnight.

3. The radio check points and inner markers for the Chicago area are defined as follows and must be used by all flights having two-way radio and proceeding along or across the airways within the area:

St. Louis-Chicago

a. Direct course, contact flight only: Springfield, Illinois; Lincoln, Illinois (which point is approximately the intersection of the southeast leg of the Davenport radio range with direct course between St. Louis and Chicago)

Inner marker: Joliet.

b. Via Peoria, contact flight only: Springfield, Illinois; Peoria, Illinois.

Inner marker: Joliet.

c. On top or instrument: All flights operating on top or on instruments between St. Louis and Chicago will proceed via Morse. The inner marker for this airway is designated as Morse, with secondary inner marker at the intersection of the east leg of the Davenport range with the southwest leg of the Chicago range (approximately Sheridan, Illinois). All aircraft approaching Morse, Illinois, when operating on that portion of the Chicago-St. Louis airway, will assume an altitude of 500 feet above cruising altitude in order to eliminate possibility of collision at this junction with inbound aircraft coming in on the Kansas City-Chicago airway. The increased altitude to be maintained until authority granted by Airway Traffic Control to change to normal cruising altitude.

d. Flight plan out of St. Louis should indicate course which pilot expects to fly out of Peoria and instructions will be available from Airway Traffic Control office as to the course to be followed when pilot reports his time in and out of Peoria. In the event of radio communication failure, flight is to be made via Morse on designated emergency altitude, or on contact flight, as per emergency altitude procedure.

e. Outbound flights flying contact on the direct course will proceed directly out of Chicago at a heading of 210° True unless otherwise advised by Airway Traffic Control office. Flight plan will indicate altitude and time of passing Joliet when using direct course to St. Louis or Peoria. When operating via Morse, flight plan should indicate time and altitude over Sheridan.

f. Pilots on outbound flights will report exact time and altitude when passing Joliet and Sheridan.

Kansas City-Chicago

a. Radio fixes: Kirksville, Burlington, south leg of Sterling range, intersection east leg of Davenport range with southwest leg of Chicago range (Sheridan, Illinois.)

b. Outbound flight plan will indicate time and altitude over Sheridan.

c. Pilots on outbound flights will report exact time and altitude when passing Sheridan.

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Omaha-Chicago

a. Radio fixes: Des Moines, Iowa City, Davenport, Sterling, east leg of Davenport range with southwest leg of Chicago range (Sheridan, Illinois) Inner marker: Sterling; secondary inner marker: Sheridan.

b. United Air Lines' eastbound flights, whenever on instruments or on top or when visibilities are reported less than five miles on the direct course between Sterling and Chicago, will proceed on the east leg of the Davenport range after passing Sterling, and intersect the southwest leg of the Chicago range at Sheridan.

c. Inbound flights upon passing south leg of Sterling range will give estimated time and expected altitude over Sheridan. When direct flight has been authorized, pilot will estimate time and expected altitude over Aurora.

d. Outbound flight plans will be based on south leg of Sterling as inner marker. Pilots on outbound flights will give time and altitude over the south leg of Sterling.

Minneapolis-Chicago

a. Direct course radio fixes: LaCrosse, Lone Rock, and Rockford. Inner marker: Rockford.

b. Via Rochester: Rochester, LaCrosse, Lone Rock, and Rockford. Inner marker: Rockford.

c. Via Milwaukee: LaCrosse, Lone Rock and Milwaukee. Inner marker: Milwaukee.

d. Outbound flight plans will indicate time and altitude over Rockford or time to Milwaukee.

e. Pilots on outbound flights will report time and altitude over Rockford or arrival at Milwaukee.

Detroit-Chicago

a. Radio fixes: North leg of Archbold range, north leg of Goshen range.

Inner marker: McCool.

b. Outbound flights will proceed on the right-hand side of the Southeast leg of the Chicago range to a point to the south of Ford Airport (Lansing, Illinois), where the west leg of the Goshen range intersects the Chicago range, thence east along the right-hand side of the Goshen range, crossing the Cleveland-Chicago airway at McCool.

c. Outbound flight plan will indicate time and altitude over Lansing and McCool.

d. Pilots on outbound flights will report time and altitude over McCool.

Detroit-Chicago (cont.)

e. Direct flights across Lake Michigan:

1. Eastbound: Minimum altitude to be attained before leaving Chicago airport - 1600 feet. Minimum altitude at center of Lake - 6000'. Visibility 3 miles or more. Flights to proceed east keeping south and parallel to 63rd Street until Lake Shore is reached in vicinity of Jackson Park, thence on a course of 95° True to east shore of Lake Michigan, thence directly to Detroit.

2. Westbound: Flights out of Detroit will set a course on Niles, Michigan, thence westward across Lake Michigan to Chicago Radio Range Station. Minimum altitude in center of Lake - 6000 feet, visibility 3 miles or more.

Cleveland-Chicago

a. Radio fixes: South leg of the Wayne County range, Archbold, Goshen.

Inner marker: McCool.

b. Outbound flights will proceed on the right-hand side of the southeast leg of the Chicago range to a point to the south of Ford Airport (Lansing, Illinois) where the west leg of the Goshen range intersects the Chicago range, thence east along the right-hand side of the Goshen range.

c. Outbound flight plan will indicate time and altitude over Lansing and time and altitude of passing south of McCool.

d. Pilots on outbound flights will report time and altitude at which McCool is passed.

Pittsburgh-Chicago

a. Direct course radio fixes: Northeast leg Columbus range, south leg Wayne County range, south leg Archbold range, Goshen. Inner marker: McCool.

b. Westbound flights will intersect the Cleveland-Chicago airways at Goshen and any variation must be reported to Airway Traffic Control office.

c. Via Cleveland: Radio fixes: Cleveland, south leg Wayne County range, Archbold, Goshen, McCool. Inner marker: McCool.

d. Outbound flights for Cleveland or Pittsburgh will follow procedure as designated for Cleveland-Chicago airway.

e. Outbound flight plans will indicate time and altitude over Lansing and time and altitude of passing south of McCool.

f. Pilots on outbound flights will report time and altitude at which McCool is passed.

g. Via Indianapolis: Radio fixes: Cambridge, Columbus, north leg Wright

Buffalo-Newark

a. Radio fix: Elmira, N. Y.

Inner marker: Martin's Creek.

Albany-Newark

a. Radio fix: None.

Inner marker: New Hackensack, N. Y.

Boston-Newark

a. Radio fix: None.

Inner marker: Intersection of the northwest leg of the Mitchel Field range with the northeast leg of the Elizabeth range.

NEWARK EMERGENCY ALTITUDE ASSIGNMENTS

(See paragraphs 4 and 7 - Emergency Altitudes)

Emergency altitudes for southeast leg of Martin's Creek and the intersection of the southwest leg of Elizabeth Range (Princeton)

Eastern Airlines	1500 feet	from Washington or Camden
United Air Lines	2500 feet	from Camden
Transcontinental & Western Air	3500 feet	from Camden
American Airlines	4500 feet	from Camden

Emergency altitudes for the intersection of the southeast leg of Martin's Creek Radio Range with the west leg of the Elizabeth Range

United Air Lines	2500 feet	over Martin's Creek
Transcontinental & Western Air	3500 feet	over Martin's Creek
American Airlines	4500 feet	over Martin's Creek

Emergency altitudes for the radio marker at New Hackensack, N. Y.

American Airlines	2500 feet	over New Hackensack
United Air Lines	3500 feet	over New Hackensack

Emergency altitudes for the intersection of the northeast leg of the Elizabeth Range with the northwest leg of the Mitchel Field Radio Range (New Rochelle)

American Airlines	2500 feet

CLEVELAND AIRWAY TRAFFIC CONTROL

1. Cleveland Airway Traffic Control boundaries are: Buffalo, N. Y; Newark, N.J; Camden, N.J; Pittsburgh, Penn; Columbus, O; Chicago, Ill; and Detroit, Mich. All inbound flights from the control boundaries, or within the area bounded by these points, must be immediately reported to the Airway Traffic Control Office.

2. Airway Traffic Control will be in operation within the above boundaries between the hours of 10:30 A.M. and 2:00 A.M.

3. The radio check points and inner markers for the Cleveland area are defined as follows and must be used by all flights having two-way radio and proceeding along or across the airways within this area.

Chicago-Cleveland Airway

a. Radio fixes: Goshen, Archbold.

Inner marker: Intersection of west leg of Cleveland range with south leg of Wayne County range (Toledo).

b. Outbound flight plan will indicate time and altitude over Toledo.

c. Pilots of outbound flights report time and altitude over Toledo.

Detroit-Cleveland Airway

(A) Flight on instruments

a. Detroit-Toledo-Cleveland airway must be used.

b. Radio fix: Wayne County Airport.

Inner marker: Intersection of west leg of Cleveland range with south leg of Wayne County range (Toledo).

(B) Contact Flight.

a. Detroit-Cleveland via Toledo

b. Radio fix - Wayne County Airport.

Inner marker: Genoa Beacon.

c. For outbound flights Cedar Point is the inner marker instead of Genoa Beacon.

(C) Detroit-Cleveland, over water

a. Radio fix: None.
Inner marker: Huron, Ohio Beacon.

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Buffalo-Cleveland Airway

a. Radio fix: Erie, Pa.

Inner marker: Perry, Ohio.

Newark-Cleveland Airway

a. Radio fix - Bellefonte, Pa. and north leg of Harrisburg range.

Inner marker: Mercer, Penn.

Camden-Cleveland

a. Radio fixes: North leg Harrisburg, Penn. radio range; Bellefonte, Penn.

Inner marker: Mercer, Penn.

Washington-Cleveland Airway

(A) Washington to Cleveland (non-stop)

a. Radio fix: Pittsburgh, Penn.

Inner marker: Akron, Ohio.

(B) Pittsburgh-Cleveland

a. Radio fix: None.

Inner marker: Akron, Ohio.

Columbus-Cleveland Airway

a. Radio fix: None.

Inner marker: Hayesville, Ohio.

EMERGENCY ALTITUDES ARE ASSIGNED AS FOLLOWS FOR INBOUND PLANES TO CLEVELAND

(See paragraphs 4 and 7 - Emergency Altitudes)

Toledo, Ohio		Perry, Ohio	
United Air Lines	2500 feet	American Airlines	4500 feet
Central Airlines	1500 feet		
Pennsylvania Airlines	3500 feet	Mercer, Penn.	
Hayesville, Ohio		United Air Lines	2500 feet
American Airlines	4500 feet	Akron, Ohio	
		Pennsylvania Airlines	3500 feet
		Central Airlines	4500 feet